

Thesis

2060

THE DEVELOPMENT AND VALIDATION OF THE STIRLING EATING DISORDER SCALES

Thesis
submitted in fulfilment of
the requirements for the degree of

DOCTOR OF PHILOSOPHY

at the

Department of Psychology

UNIVERSITY OF STIRLING

by

Gwenllian-Jane Williams

June, 1992



TABLE OF CONTENTS.

PAGE.

VOLUME ONE.

Acknowledgements.....7
List of Tables.....8
List of Figures.....12
List of Appendices.....14
Abstract.....15

PART ONE: LITERATURE REVIEWS.

CHAPTER ONE: PREFACE.....18

**CHAPTER TWO: THE HISTORICAL PERSPECTIVE, DEMOGRAPHIC BACKGROUND,
CLINICAL FEATURES AND DIAGNOSTIC CRITERIA, AND
AETIOLOGICAL THEORIES OF PRIMARY EATING DISORDERS.....22**

2.1 The Historical Perspective Of Primary Eating Disorders.....23
2.2 The Demographic Background Of Primary Eating Disorders.....26
2.3 The Clinical Features And Diagnostic Criteria Of
Anorexia Nervosa.....27
2.4 The Clinical Features And Diagnostic Criteria Of
Bulimia Nervosa.....28
2.5 Issues Surrounding The Diagnostic Criteria Of Primary
Eating Disorders.....31
2.6 Overview Of Aetiological Theories Of Primary Eating
Disorders.....33

**CHAPTER THREE: THEORETICAL ISSUES BEHIND THE PRESENT STUDY - DO
PRIMARY EATING DISORDER PATIENTS FEEL MORE CONTROLLED
LESS ASSERTIVE, LOWER IN SELF-ESTEEM, AND MORE
HOSTILE TO THE SELF THAN DIETARY/WEIGHT GROUPS?.....38**

3.1 Definitions.....39
3.2 The Claimed Components Of A Primary Eating Disorder
Personality.....40

	PAGE
3.3 Links Between Primary Eating Disorders And Dietary/Weight Concern Groups.....	44
3.4 Implications For The Investigation Of Primary Eating Disorder Characteristics.....	49
3.5 Research Background To The Present Project.....	52
3.6 Issues For Further Research.....	54
3.7 Overall Aims Of The Present Project.....	55
 CHAPTER FOUR: REVIEW OF LITERATURE ASSESSING PERCEIVED CONTROL, ASSERTIVENESS, SELF-ESTEEM, AND SELF-DIRECTED HOSTILITY IN EATING DISORDER PATIENTS AND OTHER DIETARY/WEIGHT CONCERN GROUPS, EACH ALONE AND IN COMPARISON.....	 57
4.1 Overview Of Chapter.....	58
4.2 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups, On Measures Of Perceived Control, Each Alone And In Comparison.....	59
4.3 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Assertiveness, Each Alone And In Comparison.....	73
4.4 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Self-Esteem, Each Alone And In Comparison.....	82
4.5 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Self-Directed Hostility, Each Alone And In Comparison.....	91
4.6 Conclusions.....	96
4.7 Research Implications For The Present Project.....	100
 CHAPTER FIVE: REVIEW OF EATING DISORDER ASSESSMENT LITERATURE AND THE CASE FOR A NEW MEASURE.....	 111
5.1 Overview Of Chapter.....	112
5.2 The The Move Towards Addressing Cognitive Issues In The Treatment Of Eating Primary Disorders.....	112

5.3	Recommendations For The Treatment Of Perceived Control, Low Assertiveness, Low Self-Esteem, And Self-Directed Hostility In Primary Eating Disorders.....	114
5.4	The Importance Of Dietary/Weight Issues In The Treatment Of Primary Eating Disorders.....	116
5.5	The Development Of Multidimensional Treatment Approaches.....	120
5.6	The Homogeneity/Heterogeneity Of Primary Eating Disorders And The Ramifications For Assessment.....	121
5.7	Summary Of Requirements For An Assessment Measure For Primary Eating Disorders.....	123
5.8	Review Of Primary Eating Disorder Assessment Measures.	
5.9	Conclusions.....	151
5.10	Research Implications For The Present Project.....	160
CHAPTER SIX: LINKS BETWEEN PRIMARY EATING DISORDERS AND OTHER PSYCHOLOGICAL DISORDERS.....		167
6.1	Overview Of Chapter.....	168
6.2	General Links Between Primary Eating disorders And Other Diagnostic Groups.....	169
6.3	Research Assessing Eating Disorder Patients, Depressed Patients, And Panic Disorder Patients With Or Without Agoraphobia On Measures Of Perceived Control, Each Alone And In Comparison.....	173
6.4	Research Assessing Eating Disorder Patients, Depressed Patients, And Panic Disorder Patients With Or Without Agoraphobia On Measures Of Assertiveness, Each Alone And In Comparison.....	177
6.5	Research Assessing Eating Disorder Patients, Depressed Patients, And Panic Disorder Patients With Or Without Agoraphobia On Measures Of Self-Esteem, Each Alone And In Comparison.....	179

6.6 Research Assessing Eating Disorder Patients, Depressed Patients, and Panic Disorder Patients With Or Without Agoraphobia On Measures Of Self-Directed Hostility, Each Alone And In Comparison.....182

6.7 Conclusions.....185

6.8 Research Implications For The Present Project.....186

PART TWO: EMPIRICAL STUDIES.

CHAPTER SEVEN: OVERVIEW OF RESEARCH IMPLICATIONS FOR THE PRESENT STUDY.....189

CHAPTER EIGHT: STUDY ONE - COMPARISON OF ANOREXIC PATIENTS, BULIMIC PATIENTS, OBESE DIETERS, NON-OBESE DIETERS, AND NORMAL CONTROLS ON MEASURES OF EATING BEHAVIOUR, PERCEIVED CONTROL, ASSERTIVENESS SELF-ESTEEM AND SELF-DIRECTED HOSTILITY, AND PSYCHIATRIC CASENESS.....192

Section 1: METHODS.....194

Section 2: RESULTS.....209

Section 3: DISCUSSION.....239

CHAPTER NINE: STUDY TWO - DEVELOPMENT AND VALIDATION OF A NEW ASSESSMENT MEASURE FOR PRIMARY EATING DISORDERS - THE STIRLING EATING DISORDER SCALES.....264

Section 1: METHODS.....266

Section 2: RESULTS.....289

Section 3: DISCUSSION.....317

CHAPTER TEN: STUDY THREE - ASSESSMENT OF THE STIRLING EATING DISORDER SCALES IN TERMS OF SENSITIVITY TO CHANGE IN PATIENTS OVER TREATMENT TIME.....	338
Section 1: METHODS.....	340
Section 2: RESULTS.....	348
Section 3: DISCUSSION.....	391
CHAPTER ELEVEN: STUDY FOUR - COMPARISON OF EATING DISORDERS WITH MAJOR DEPRESSIVE DISORDER, AND PANIC DISORDER WITH OR WITHOUT AGORAPHOBIA.....	402
Section 1: METHODS.....	404
Section 2: RESULTS.....	412
Section 3: DISCUSSION.....	446
CHAPTER TWELVE: SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS FOR FUTURE RESEARCH.....	461
 <u>VOLUME TWO.</u>	
References.....	1
Appendices.....	39

ACKNOWLEDGEMENTS.

My gratitude and respect to Dr Kevin Power who has given me unending support, wisdom, advice and humour during the course of this research project. Without his help and confidence, this thesis would never have been started or finished.

My appreciation also goes to Dr H.R. Millar, who has remained a consistent and supportive research friend for the past six years. I am also indebted to Dr C.P. Freeman, Dr A. Yellowlees, Mr T. Dowdes, Dr M. Walker, and Prof. Parry-Jones for their assistance in recruiting patients and comments on publications; also Mr Simon Booth for his patience and statistical advice; and Prof. I Markova for helpful comments on the thesis.

My thanks also to all the patients and others who have so willingly taken part in the research, especially those patients who stayed true to the project when it required involvement for many months.

Others to whom I am deeply grateful include Kay Weaver, Elinor Moodie, Nancy Tavendale, Lyndall Wallace and Dave Farley for being supportive friends at all times.

A special gratitude goes to Michael, who has been my rock and dearest friend through all the ups and downs. Thankyou for being there and for support which has gone beyond what I expected or deserved from anyone. What you have given cannot be put into words - and thankyou cannot express the gratitude I feel.

Finally, my parents, to whom this thesis is dedicated. How can I thank you for all the support, belief, help, and wisdom you have given me?. Without you I would not be where I am now, or where I am going. I owe it all to you both. I love you both - and thankyou.

This thesis is dedicated to my parents - Gwenllian and Keri Williams.

LIST OF TABLES.Chapter Four.

Table 4.1: Summary Of Literature Assessing Perceived Control, Assertiveness, Self-Esteem, And Self-Directed Hostility In Eating Disorder Patients And Other Dietary/Weight Concern Groups, Alone And In Comparison.....	101
--	-----

Chapter Five.

Table 5.1: Summary Of Measures For Primary Eating Disorder Patients.....	161
---	-----

Chapter Eight.

Table 8.1: Summary Of Demographic Data For The Eating Disorder, Obese Dieter, Non-Obese Dieter, And Normal Control Groups.....	211
Table 8.2: Results Of Statistical Comparisons Between The Eating Disorder, Obese Dieter, Non-Obese Dieter And Normal Control Groups On Demographic Variables.....	212
Table 8.3: Group Means And Statistical Comparisons On Measures Of Perceived Control, Assertiveness, Self-Esteem, Self Directed Hostility And Psychiatric Caseness.....	214
Table 8.4: Correlations Between Measures Of Eating Behaviour Perceived Control, Assertiveness, Self-Esteem Self-directed Hostility And Psychiatric Caseness.....	238

Chapter Nine.

Table 9.1:	Scale Weight And Ambiguity Of The 80 Final Items In The SEDS.....	291
Table 9.2:	Percentage Of Panel Allocating Each Seds Item To The Correct Scale.....	295
Table 9.3:	Alphas And Split-Half Reliability Coefficients For The Eight SEDS.....	298
Table 9.4:	Internal Split-Half Reliability Coefficients Of The SEDS Within The Anorexic, Bulimic And Control Groups.....	299
Table 9.5:	Response Bias Correlations For The Eight SEDS.....	301
Table 9.6:	Summary Of Demographic Data For The Anorexic, Bulimic, And Control Groups.....	304
Table 9.7:	Results Of Statistical Comparisons Between The Anorexic, Bulimic, And Control Groups On Demographic Variables.....	305
Table 9.8:	Group Means And Statistical Comparisons On The Eight SEDS.....	307
Table 9.9:	Concurrent Correlations Of The Eight SEDS With The Comparison Measures.....	311
Table 9.10:	Concurrent Validity Correlations Of The Eight SEDS And Other Measures Within The Anorexic, Bulimic And Control Groups.....	312
Table 9.11:	Test-Retest Correlations For The Eight SEDS.....	314
Table 9.12:	Test-Retest Correlations For The Eight SEDS Within The Anorexic, Bulimic And Control Groups.....	315

Chapter Ten.

Table 10.1:	Recruitment Numbers And Number Of Patients Completing Each Assesment Stage In Change Over Treatment Time Study.....	350
Table 10.2:	Summary Of Demographic Data Of The Anorexia Nervosa And Bulimia Nervosa Groups In The Change Over Treatment Time Study.....	352
Table 10.3:	Eating Disorder And Treatment Background Of The Two Patient Groups In The Change Over Treatment Time Study...	355
Table 10.4:	Results Statistical Comparisons Between The Patient Groups On Disorder And Treatment Background Variables....	356
Table 10.5:	Change Over Treatment Time - SEDS Total.....	361
Table 10.6:	Change Over Treatment Time - Anorexic Dietary Cognitions Scale.....	363
Table 10.7:	Change Over Treatment Time - Anorexic Dietary Behaviours Scale.....	365
Table 10.8:	Change Over Treatment Time - Bulimic Dietary Cognitions Scale.....	367
Table 10.9:	Change Over Treatment Time - Bulimic Dietary Behaviours Scale.....	369
Table 10.10:	Change Over Treatment Time - Perceived External Control Scale.....	371
Table 10.11:	Change Over Treatment Time - Low Assertiveness Scale.....	373
Table 10.12:	Change Over Treatment Time - Low Self-Esteem Scale.....	375
Table 10.13:	Change Over Treatment Time - Self-Directed Hostility Scale.....	377

Table 10.14: Change Over Treatment Time - EAT-40.....	379
Table 10.15: Change Over Treatment Time - BITE.....	381
Table 10.16: Number And Percentage Of Patients In Each Diagnostic Group Showing Clinically Significant Change Over Treatment Time.....	388

Chapter Eleven.

Table 11.1: Summary Of Demographic Data Of The Anorexic, Bulimic, Depression, Panic Disorder, And Normal Control Groups.....	415
Table 11.2: Results Of Statistical Comparisons Between The Eating, Disorder, Depression, Panic Disorder And Control Groups On Demographic Variables.....	416
Table 11.3: Disorder And Treatment Background Of The Eating Disorder, Depression, and Panic Disorder Groups.....	418
Table 11.4: Results Of Statistical Comparison Between Eating Disorder, Depressed, And Panic Disorder Groups On Disorder And Treatment Variables.....	419
Table 11.5: Eating Disorder, Depression, Panic Disorder And Normal Control Group Means And Statistical Comparisons On The SEDS And Other Three Measures.....	421

List Of Figures.Chapter Eight: Study One.

Figure 8.1:	Group Mean scores On EAT-40.....	216
Figure 8.2:	Group Mean Scores On BULIT.....	218
Figure 8.3:	Group Mean Scores On Internal Control Scale.....	220
Figure 8.4:	Group Mean Scores On Powerful Others Scale.....	222
Figure 8.5:	Group Means Scores On Chance Control Scale.....	224
Figure 8.6:	Group Mean Scores On Assertiveness Inventory.....	226
Figure 8.7:	Group Mean Scores On Low Self-Esteem Scale.....	228
Figure 8.8:	Group Mean Scores On Self-Directed Hostility.....	230
Figure 8.9:	Group Mean Scores On Guilt Subscale.....	232
Figure 8.10:	Group Mean Scores On Self-Criticism Subscale.....	234
Figure 8.11:	Group Mean Scores On General Health Questionnaire.....	236

Chapter Ten: Study Three.

Figure 10.1:	Change In Group Mean SEDS Score Over Time.....	361
Figure 10.2:	Change In Group Mean Anorexic Cognitions Over Time.....	363
Figure 10.3:	Change In Group Mean Anorexic Behaviour Over Time.....	365
Figure 10.4:	Change In Group Mean bulimic Cognitions Over Time.....	367
Figure 10.5:	Change In group Mean Bulimic Behaviours Over Time.	369
Figure 10.6:	Change In Group Mean Perceived External Control Over Time.....	371
Figure 10.7:	Change In Group Mean Low Assertiveness Over Time.....	373
Figure 10.8:	Change In Group Mean Low Self-Esteem Over Time.....	375
Figure 10.9:	Change In Group Mean Self-Directed Hostility Over Time.....	377

Figure 10.10: Change In Group Mean EAT-40 Score Over Time.....	379
Figure 10.11: Change In Group Mean BITE Score Over Time.....	381

Chapter Eleven: Study Four.

Figure 11.1: Group Mean Scores On SEDS Total.....	423
Figure 11.2: Group Mean Scores On Anorexic Dietary Cognitions Scale.....	425
Figure 11.3: Group Mean Scores On Anorexic Dietary Behaviours Scale.....	427
Figure 11.4: Group Mean Scores On Bulimic Dietary Cognitions Scale.....	429
Figure 11.5: Group Mean Scores On Bulimic Dietary Behaviours Scale.....	431
Figure 11.6: Group Mean Scores On Perceived External Control Scale.....	433
Figure 11.7: Group Mean Scores On Low Assertiveness Scale.....	435
Figure 11.8: Group Mean Scores On Low Self-Esteem Scale.....	437
Figure 11.9: Group Mean Scores On Self-Directed Hostility Scale.....	439
Figure 11.10: Group Mean Scores On The BDI.....	441
Figure 11.11: Group Mean Scores On The CAQ.....	443
Figure 11.12: Group Mean Scores On The GHQ.....	445

List Of Appendices. - Volume Two

Appendix A: Eating Attitudes Test - 40.....	39
Appendix B: Bulimia Test.....	42
Appendix C: I. P. C. Scales.....	48
Appendix D: Rathus Assertiveness Schedule.....	51
Appendix E: Rosenberg Self-Esteem Scale.....	54
Appendix F: Hostility And Direction Of Hostility Questionnaire.....	56
Appendix G: General Health Questionnaire - 28.....	59
Appendix H: Personal Details Forms.....	62
Appendix I: Clinicians Checklist.....	68
Appendix J: Rating Questionnaire - Item Selection.....	75
Appendix K: Final SEDS Items - Concept Validity Questionnaire.....	89
Appendix L: Final Version Of The Stirling Eating Disorder Scales.....	95
Appendix M: Bulimia Investigatory Test - Edinburgh.....	99
Appendix N: Multidimensional Health Locus Of Control Scales.....	102
Appendix O: Assertiveness Self-Report Inventory.....	104
Appendix P: Index Of Self-Esteem.....	107
Appendix Q: Personal Feelings Questionnaire.....	109
Appendix R: Automatic Thoughts Questionnaire.....	112
Appendix S: Clinicians Rating Checklist.....	115
Appendix T: Clinical Anxiety Questionnaire.....	117
Appendix U: Beck Depression Inventory.....	119

ABSTRACT.

The thesis addresses three main research issues in eating disorders.

Study One compared anorexic, bulimic, obese dieters, non-obese dieters and normal controls on measures of eating behaviour, perceived control, assertiveness, self-esteem, and self-directed hostility. Results indicated that eating disorder patients could be differentiated from both dietary/weight concern groups and normal controls.

Study Two developed and validated a new primary eating disorder assessment measure - the Stirling Eating Disorder Scales (SEDS). The SEDS were developed according to the Thurstone Method of scale construction and fully standardised. Results indicated that the SEDS are internally consistent, between group and concurrently valid, reliable, and are not subject to gender or response bias.

Study Three assessed the SEDS in terms of sensitivity to detect change in patients over treatment time. Eating disorder patients undergoing treatment, completed the SEDS and two other standardised measures on three occasions over six months. Results indicated that the SEDS are sensitive and detect change in the patients dietary/behaviours and cognitive/emotions over treatment time.

Study Four compared eating disorder groups with depressed and panic disorder patients and normal controls on the SEDS and three other psychological measures. Results indicated that eating disorder patients can be differentiated from panic disorder and controls on all scales, but are similar to depressed in terms of perceived external control, low assertiveness, and low self-esteem. Differences/links between eating disorders and other psychological groups and the criterion validity of the SEDS are discussed.

THE DEVELOPMENT AND VALIDATION OF THE STIRLING EATING DISORDER SCALES.

VOLUME ONE

LITERATURE REVIEWS AND EMPIRICAL STUDIES.

PART ONE: LITERATURE REVIEWS

CHAPTER ONE

PREFACE

The central aim of this project was to present the rationale, development and validation of a new assessment measure for use with primary eating disorder patients. Following comprehensive literature reviews, four interlinked studies have been designed. The thesis is presented as follows: **Chapter Two** - presents the historical perspective of eating disorders, demographic and clinical features, diagnostic criteria and issues, and an overview of the main aetiological theories of primary eating disorders. **Chapter Three** - presents the claims that perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important characteristics of a primary eating disorder personality. However, these claims are weakened by evidence that many features associated with primary eating disorders are also noted in non-clinical dietary groups. Reasons for the inclusion of dietary control groups in empirical research are presented. Past research which has used this approach is reported; and the weaknesses of that research outlined. Three issues which arise from that research are presented:

1. There is a need to assess the importance of perceived control, low assertiveness, low self-esteem and self-directed hostility in primary eating disorders, by investigating whether these differentiate between primary eating disorders and non-clinical dietary/weight groups.
2. If these are important characteristics of primary eating disorders, then it is important that they can be adequately measured, as well as the dietary/behavioural characteristics of primary eating disorders.
3. It is important to investigate whether these characteristics differentiate, or show links between primary eating disorders and other clinical psychological groups.

Chapters Four to Six present literature reviews appertaining to the three research issues.

Chapter Four - reviews the literature to assess the question of whether eating disorders can be differentiated from dietary/weight concern by their perceived cocontrol, low assertiveness, low self-esteem, and self-directed hostility. This necessitates a lengthy review, as the issues has not been addressed elsewhere. It is concluded that there is a need to investigate the importance on the four characteristics in eating disorder patients by comparison with dietary groups as well as normal controls..

Chapter Five - compiles evidence from past research by the author, and other relevant research is presented for the purpose of defining five development requirements for an assessment measure for primary eating disorder patients. All currently available eating disorder measures are subsequently reviewed to assess the ability of those measures to meet the five requirements. Again, this necessitates a lengthy review, as no detailed, appraisal of these measures is available elsewhere. It is concluded that a new comprehensive assessment measure for eating disorder patients is required.

Chapter Six - Reviews empirical studies which assess perceived control, assertiveness, self-esteem and self-directed hostility in primary eating disorders, major depressive disorder and panic disorder with or without agoraphobia patients. It is concluded that there is a need to compare these clinical groups on these four characteristics.

Part Two of the thesis presents the four empirical studies designed to address the above research implications.

Chapter Seven - presents a summary of the conclusions arising from the three review chapters.

Chapter Eight (Study One) - presents the aims, methods, results, and discussion of a study which compares anorexic, bulimic, obese dieters, non-obese dieters, and normal controls, on measures of eating behaviour, perceived control, assertiveness, self-esteem and self-directed hostility.

Chapter Nine (Study Two) - presents the aims, methods, results, and discussion of the development and validation of a new assessment measure for primary eating disorders - The Stirling Eating Disorder Scales (SEDS).

Chapter Ten (Study Three) - presents the aims, methods, results, and discussion of a study which assesses the SEDS in terms of its ability to detect change in clinical patients over treatment time.

Chapter Eleven (Study Four) - presents the aims, methods, results, and discussion of a study which compares anorexic, bulimic, depressed and panic disorder with or without agoraphobia patients on the SEDS and other group relevant measures.

Chapter Twelve - presents a summary of the main achievements and findings of the project.

References and appendices are presented in Volume Two

CHAPTER TWO:

THE HISTORICAL PERSPECTIVE, DEMOGRAPHIC BACKGROUND, CLINICAL FEATURES AND
DIAGNOSTIC CRITERIA, AND AETIOLOGICAL THEORIES OF PRIMARY EATING DISORDERS.

2.1 The Historical Perspective Of Primary Eating Disorders.

The historical evolution of the description, understanding, and treatment of the primary eating disorders, anorexia nervosa and bulimia, can roughly be divided into four broad periods (Selvini-Palazoli, 1974). It is certain that cases of disordered eating, notably self-starvation, have been known since time immemorial. A detailed medical-historical search of literary material by Parry-Jones (1991) has revealed that both bulimia and anorexia have been noted pre-1400, can be noted in early Latin texts, and can even be traced back to ancient Greece. Yet when described it was in terms of either spiritual and religious purification or satanic possession (Bhanji & Mattingly, 1988).

However, the first detailed description from a medical perspective is generally ascribed to Dr Richard Morton in his writing 'Psthysilogia seu Exercitationes de Psthisis' (1694). In this he described two cases of 'nervous atrophy' which assumed the clinical characteristics of consumption, but which was due to an apparent lack of appetite rather than the usual fever or dyspnoea. His description of the presenting symptoms - namely self-starvation with consequent emaciation ('like a skeleton clad only with skin'), amenhorea, hyperactivity, and constipation - clearly distinguish the patients as cases of anorexia nervosa. In addition, Morton was before his time in alluding to the cognitive/emotional basis of the disorder, stating that such 'nervous consumption' was the physical expression of 'sadness and nervous cares'.

Despite this progressive start the next one hundred years saw no advances in defining the symptomatology and aetiology of eating disorders. The only notable events were the presentations of a further two detailed descriptions of anorexia by Whitt (1767) and Nadeau (1789).

In the second half of the nineteenth century, anorexia nervosa became recognised as a distinct clinical entity, with a defined symptomatology and the cognitive/emotional basis reiterated. In 1873, Leseague, a French physician, published his definitive paper 'On Hysterical Anorexia' which he claimed was the physical expression of a mental state resulting from emotional disturbance, reinforced by family interaction patterns. One year later, William Gull (1874), a British surgeon, published his paper on 'apepsia hysterica' which he later relabeled 'anorexia nervosa'. Like Leseague, William Gull asserted the psychosomatic nature of anorexia nervosa, and claimed that it was distinguished from hysteria. The idea was widely supported, and finally, despite the criticisms of biologically orientated clinicians, anorexia was firmly established in the realms of psychological disorder by the end of the nineteenth century.

The third period in the history of eating disorders was one of confusion. In the years 1914 - 1916, Simmonds described three cases of fatal cachexia which was due to the atrophy of the anterior lobe of the pituitary - Simmonds Disease. The term anorexia nervosa was rapidly dropped and clear cases of anorexia were subsequently treated as pituitary marasmus or Simmonds Disease with significant treatment implications. Cases of self-starvation were met with pituitary grafts or extract injections. However, in the background, there was a growing body of evidence that earlier claims of a cognitive/emotional basis to disordered eating were correct.

The fourth period actually has its root in the claims of the early physicians. Psychogenetic studies gradually began to overshadow classificatory investigations. These generally were presented in the form of detailed psychological descriptions of patients such as 'The case of Ellen West' (Binswanger, 1959). Throughout the 1960's and 1970's the study

and theory of primary eating disorders expanded, spearheaded by Bruch in America, Selvini-Palazoli in Italy, Meyer in Germany, and also Dally, a British psychiatrist who defined a classification system for anorexia nervosa.

Recognition of the primary eating disorders, especially anorexia nervosa, grew throughout the 1960's. Towards the end of the 1970's, eating disorders became an area of interest for many psychiatrists and psychologists - probably due to the dramatic increase in prevalence (Crisp, 1980). A broader range of theories emerged to explain the expression of eating disorders, including behaviourist (Russell, 1979), family psychopathology (Minuchin et al., 1978), feminist (Boskind-Lodahl, 1976), socio-culturalist (Lawrence, 1979), developmental (Crisp, 1980), and others. Naturally, there was a concordant expansion in therapeutic approaches.

In addition the nosology of eating disorders advanced to the point where it was officially recognised that some patients diagnosed as 'anorexic' were actually attempting to control weight by bingeing and purging large quantities of food (Johnson et al., 1984a), though, as noted above, this behaviour had been reported since the 1300's (see Parry-Jones, 1991; Parry-Jones & Parry-Jones, 1991). In 1976, Boskind-Lodahl used the term bulimarexia, then three years later, Russell (1979) coined the label 'bulimia nervosa' amidst evidence that such patients were qualitatively different from patients with anorexia nervosa (Garfinkel, Moldofsky, & Garner, 1980). By 1980 bulimia nervosa was entered into DSM III as a disorder, distinct from anorexia nervosa.

Finally, the latest development in the nosology debate is the beginning of suggestions that this division may have been erroneous - that anorexia

and bulimia are alike in their cognitive/emotional basis and that the differences between anorexic and bulimic patients may be only in terms of behavioural manifestation of the same disorder ((Garner et al., 1985a; Fairburn, 1990). However, as will be noted below, abandoning this diagnostic separation is premature in the absence of extensive comparative research (Patten, 1988) or adequate treatment outcome comparison (Fairburn & Garner, 1986).

2.2 The Demographic Background Of Primary Eating Disorders.

Anorexia nervosa and bulimia are primary eating disorders which overwhelmingly affect young females (Casper, 1983; Fairburn & Cooper, 1982, 1983; Halmi, 1974). Only 6% of anorexics are male (Bemis, 1978; see Beaumont, Bearwood & Russell (1972) for specific information on male anorexics). Binge eating has also been reported in males (Loro & Orleans, 1981). Data to indicate the percentage of males among all sufferers is not available, though a rate of 10% has been suggested (Striegel-Moore et al., 1986).

Both disorders are of increasing clinical concern due to their rapidly increasing prevalence (Crisp, Palmer, & Kalucy, 1976, Crisp, 1980). Epidemiology among young females has been estimated at up to 1% for anorexia and 2% to 6% for bulimia (Cooper & Fairburn, 1983; Moss et al., 1984; Vanthorre & Vogel, 1985). Prognosis of complete recovery from anorexia is poor with only 50% of anorexics recovering fully after six years, the remainder maintaining severe problems or limited improvement (Hsu et al., 1979; Morgan et al., 1983; Hall et al., 1984). Mortality for anorexia is just over 3% (Patton, 1988). Anorexic patients who develop bulimia are described as having a weaker prognosis than restricting

anorexics (Garfinkel et al., 1980). Short-term outcome in bulimia appears similar to that in anorexia (Hsu & Holder, 1986); but long term follow up of bulimia nervosa is still required before overall prognosis can be adequately compared to that of anorexia nervosa (Patton, 1989).

Other demographic features include overrepresentation in upper social classes (Halmi, 1974; Morgan & Russell, 1975; Kog & Vandereyken, 1985); in educated women (Lawrence, 1984; Johnson et al., 1984); and a limitation to western culture (Garfinkel & Garner, 1982). However, these cultural biases are not exclusive (Thomas & Szmuckler, 1985) and the social class distribution has been noted as widening (Garfinkel & Garner, 1982). Further, it should also be noted that the bulk of epidemiological research has been conducted in large city hospitals in western countries - America, Britain, South Africa - and the apparent class/culture of patients may reflect this fact (Bhanji & Mattingly, 1988).

2.3 The Clinical Features And Diagnostic Criteria Of Anorexia Nervosa.

Anorexia usually begins as an apparently normal diet which becomes increasingly restrictive in calorific intake in an all consuming pursuit of thinness (Bruch, 1978; Selvini-Palazoli, 1974). The most striking feature of the full blown syndrome is severe emaciation due to self-induced weight loss and refusal to maintain a weight which is adequate for height and weight (Bhanji & Mattingly, 1988). Consequent amenorrhoea is found in all cases (Crisp, 1980). Other physical features include oedema, dehydration (Dally, 1969); hypothermia, hypoglycemia, hair loss (Halmi et al., 1981); hyperactivity manifested in compulsive exercising (Kron et al., 1978); electrolyte imbalance and hypothalamic dysfunction (Vigersky & Lorigou, 1977); biochemical abnormalities (Johnson-Sabine & Wakeling, 1983); and

lanugo hair (Crisp, 1980). For a full medical description of anorexia nervosa, see Bhanji and Mattingly (1988).

The most prominent cognitive features include total denial of disordered eating or illness (Bruch, 1973, 1978) and severely distorted body image (Bruch, 1973; Casper et al., 1979; Garner, 1981). The majority of patients will also display obsessive compulsive traits (Smart et al., 1976); food preoccupation and hoarding (Garfinkel & Garner, 1982); rigid thought patterns (Selvini-Palazoli, 1978); magical ideations concerning food (Bruch, 1978); social isolation and lability (Malloney & Farrell, 1980; and loss of libido (Halmi, 1974).

Over the past two decades there have been several attempts made to formulate a working criteria for anorexia nervosa (Feigner et al., 1972; Garrow et al., 1975). However, the most widely recognised and used diagnostic criteria is that defined by the American Psychological Association (A.P.A., 1987) for the Diagnostic and Statistical Manual - Revised (DSM III (R)). The most recent criteria are as follows:

- A. refusal to maintain body weight over a minimal normal weight for age and height, e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during a period of growth, leading to body weight 15% below that expected.
- B. Intense fear of gaining weight or becoming fat, even though underweight.
- C. Disturbance in the way in which one's body weight, size, or shape is experienced, e.g., the person claims to "feel fat" even when emaciated, believes that one area of the body is "too fat" even when obviously underweight.
- D. In females, the absence of at least three consecutive menstrual cycles when otherwise expected (primary or secondary amenorrhea). (A woman is

considered to have amenorrhoea if her periods occur only following hormone, e.g., oestrogen, administration).

2.4 The Clinical Features And Diagnostic Criteria Of Bulimia Nervosa.

Bulimia nervosa has been given several different names, including dietary chaos syndrome (Palmer, 1979), the bulimic syndrome (Lacey, 1972), and bulimarexia (Boskind-Lodahl & White, 1978). However, the most popular terminologies are the American 'bulimia' and the British 'bulimia nervosa'. For the purpose of this thesis the term bulimia nervosa will be employed.

Bulimia nervosa, like anorexia nervosa, usually starts in a period of dietary restriction (Fairburn & Cooper, 1982; Pyle et al., 1981). This disorder is characterised by episodic, uncontrolled ingestion of large amounts of food, lasting from minutes to hours (Pyle et al., 1981) and usually preceded by a period of dietary restraint (Ruderman, 1986c; Wardle, 1987a). These eating 'binges' are followed by self-induced vomiting and/or laxative abuse, with excessive exercise and/or fasting in an attempt to lose weight or to counteract weight gain. (Maloney & Klykylo, 1984; Rost et al., 1982). However, unlike anorexics, bulimics are usually of normal weight (Cooper & Fairburn, 1983; Mitchel & Pyle, 1982).

The physical features of bulimia include gastric disorders and sometimes acute gastric dilation (Pyle et al., 1981); oedema (Bruche, 1978); menstrual irregularity (Pyle et al., 1981); electrolyte imbalance and potassium deficiency (Selvini-Palazoli, 1974); rectal bleeding due to laxative abuse, and erosion of dental enamel due to regular contact with gastric acids (Brady, 1980; Hurst et al., 1977).

Cognitive and behavioural features include a 'morbid' fear of weight .

gain along with disturbed attitudes to food, eating, body shape and weight (Fairburn, 1983, 1984); low impulse control (Strober, 1980) with alcohol and substance abuse in approximately 18% of cases (Brisman & Seigal, 1984; Hatsukami et al., 1984a); and in some cases kleptomania (Casper et al., 1980).

Although bulimia was first addressed in the psychological literature in the mid 1970's (Boskind-Lodahl, 1976), the first working criteria were not developed until 1979 by Russell. The American Psychological Association (A. P. A.) have included distinct diagnostic criteria in DSM III since 1980. Current DSM III (R) (A. P. A., 1987) criteria for bulimia are as follows:

- A. Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).
- B. A feeling of lack of control over eating behaviour during the eating binges.
- C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.
- D. Persistent overconcern with body shape and weight.

However, the previous criteria for bulimia nervosa are of note - if only for the clear clinical picture of the syndrome that these present. The previous criteria (A. P. A., 1980) were as follows:

- 1. Recurrent episodes of binge eating.
- 2. At least three of the following:
 - i) consumption of high calorie, easily ingested food during a binge.
 - ii) Inconspicuous eating during the binge.
 - iii) Termination of such episodes by abdominal pain, self-induced vomiting, social interruption, or pain.

- iv) Repeated attempts to lose weight by severely restricted diets, self induced vomiting, or use of cathartics and/or diuretics.
3. Frequent weight changes greater than 10lbs due to alternative binges and fasts.
4. Awareness that eating pattern is abnormal and fear of not being able to stop voluntarily.
5. Depressed mood and self-depreciating thoughts following a binge.
6. The bulimic episodes are not due to anorexia nervosa or any other psychological disorder.

While these older DSM-III criteria appear stricter than the more recent DSM-III R criteria; it has been found that bulimics diagnosed according to the latter criteria are more emotionally disturbed than patients diagnosed according to the older criteria (Lancelot et al., 1991).

2.5 Issues Surrounding The Diagnostic Criteria Of Eating Disorders.

In keeping with the diagnostic separation of anorexia nervosa and bulimia nervosa, the two disorders have been presented separately. This division will be maintained for the duration of this thesis. However, it should be noted that there are several diagnostic issues surrounding the disorders - and certain unresolved questions - which have distinct ramifications in terms of research and of prevalence estimates.

Three central issues have been outlined by Fairburn and Cooper (1984). Firstly, there is the question of diagnostic exclusivity of anorexia nervosa and bulimia nervosa. there is a widely reported overlap between the two disorders, with an estimated 45% - 47% of anorexics displaying periods of bulimic behaviour (Casper et al. 1980; Hsu et al. 1979). Also, it has been noted that a large percentage of bulimic patients have a history of

anorexia nervosa (Russell, 1979). Efforts have been made to exclude patients with such a history from research projects (Lacey, 1972), though this is not widely practised. Moreover, there is evidence of cognitive similarities between the two disorders (Garner et al., 1985a, 1985b). Indeed, the dichotomous DSM III (R) criteria have been strongly questioned (Welch et al., 1990).

The second issue/question concerns the different purging (weight control) methods utilised by diagnosed bulimic patients. Presently, both vomiters and laxative abusers (and indeed, extreme exercisers) fulfil the diagnostic criteria (see above). However, it is possible that bulimics who vomit, bulimics who abuse laxatives, and bulimics who excessively exercise are qualitatively different from each other. Therefore, there is insufficient evidence to justify such a diagnostic amalgamation (Fairburn & Cooper, 1984b). Moreover, there have been recent calls to define non-purging binge eaters as a distinct clinical group. There is evidence that this group is distinct and reach a severity of pathology which constitutes a clinical disorder (McCanne et al., 1991); and the proposed diagnostic criteria have been presented (Spitzer et al., 1991; Wilson & Walsh, 1991).

Thirdly, there is an issue/question surrounding the *frequency* of vomiting/laxative abuse required to merit diagnosis of bulimia nervosa. Different criteria are evident across the research literature. Some authors have set the criteria at patients having vomited/purged at least once in the past two months (Fairburn & Cooper, 1982; Cooper & Fairburn, 1983). Other researchers have set more stringent criteria, requiring that patients vomit/purge at least once a week (Pyle et al., 1983). Such marked differences in the severity and frequency of bulimic behaviours across research studies has obvious ramifications in terms of (a) generalisation

to different patient groups, and (b) comparison between studies.

Such issues/questions evidently require further research in order to provide tighter diagnostic criteria and research criteria. Further, any shared diagnostic features require exploration. However, such work is yet to be undertaken, no doubt due to the fact "existing patient series are too small to permit the necessary comparisons" (Fairburn & Cooper, 1984b, pp. 402). Nevertheless, present research must, despite the inadequacies, adhere to the currently available criteria in order to ensure that research is maintained within clinical populations.

2.6 Overview Of Aetiological Theories Of Primary Eating Disorders.

The early theories of eating disorders have been outlined above (2.1 The Historical Perspective of Primary Eating Disorders). The very early observations of disordered eating precipitated tentative theoretical suggestions of a cognitive/emotional basis (Morton, 1694) compounded by family interactions (Leseague, 1873). However, the development of a cognitive psychological explanation of eating disorders was interrupted by the notion of Simmonds Disease - an interruption which lasted over a decade. Consequently, until this century there was no attempt to apply a psychological, theoretical explanation to the expression of eating disorders.

The first theory emanated from the Freudian School in the 1930's when the medical and psychological profession began to realise the erroneous assumptions that anorexia nervosa was a form of Simmonds Disease. The Freudian theory of anorexia, attempts to explain anorexia in psychosexual terms, concentrating on fear of sexuality (the adult female body), and fear of eating which represented fear of impregnation or penis fear (Thöma,

1961). Refusal to eat enabled the avoidance of attaining the female form and maintaining oral purity - hence the guilt after eating (Janet, 1957). Bulimia was interpreted as a subconscious desire to be pregnant, as ingestion of such large amounts of food leads to the swollen abdomen associated with pregnancy (Wulff, 1945).

In the 1960's, with the rise of behaviourism, the Freudian theory of eating disorders lost credibility and gave way to the rise of a behavioural interpretation. Eating disorders began to be explained in terms of reinforcement (Slade, 1982). The self-starvation associated with anorexia nervosa was seen as either self-reinforcing due to the resulting weight loss, or as being reinforced by the attention it attracted from the patient's family (Russell, 1970). Concerning bulimia, the relief brought about by the purging process was seen as becoming the primary reinforcer in the binge-purge cycle (Johnson & Larson, 1982; Rosen & Leitenburg, 1982). However, this theory led to treatment models based on the token system (Geller et al., 1978) or negative reinforcement (Blue, 1979), which has now been widely condemned as both overcontrolling, and as treating the symptom rather than the underlying cause (Bruch, 1974; Spector, 1975). However, the behavioural treatment of bulimia nervosa has been claimed to be successful (Rosen & Leitenburg, 1982; Rossiter & Wilson, 1985).

The 1970's saw the rise of more sociocultural and sociopolitical theories - in accordance with the development of the Women's Movement. The first exponent of feminist-sociocultural theory was Boskind-Lodahl (1976) who claimed that eating disorders were a female's response to increasing social control over women, especially in terms of appearance. Being slim, and thereby socially defined as attractive, females were able to attain a sense of control in a controlling environment (Boskind-White &

White, 1986). Lawrence (1979) took this theory further by claiming that eating disordered women were trying to attain social acceptance by being achievers while also dysfunctionally attempting to reach society's feminine ideal - a thin body. These ideas have since been expanded to include issues of female socialisation to a submissive, appearance-conscious role (Striegel-Moore et al., 1984, 1986). Later in the decade there came a growing recognition in clinical settings that there was an increasing emphasis on female slimness in the fashion industry (Bruch, 1978), the media (Fallon & Rozin, 1985; Kurman, 1978); in female 'ideal models' (Garner & Garfinkel, 1980), along with a significant increase in the female diet industry (Garner et al., 1985c; Mirkin & Shore, 1981). Consequently, though less feminist in their approach, some clinicians did begin to recognise the role of sociocultural pressures on young women in the expression of eating disorders (Bruch, 1978; Garner & Garfinkel, 1980; Selvini-Palazoli, 1978). However, this theory did not address the issue of male eating disorders and has yet to be adequately, empirically tested. Thus far, the evidence is limited to qualitative assessment of size changes in female ideals (Garner et al., 1980); and to comparisons of women within and outwith appearance orientated occupations (Garner & Garfinkel, 1980).

In the 1980's, Crisp (1980) presented the developmental theory of eating disorders, describing them as an a response to an 'existential crisis' as the young girl reaches adolescence and the associated changes in physical and emotional development. Faced with the threat of physical and sexual maturation, along with the concomitant responsibilities, autonomy, and expectations, an eating disorder becomes a means of 'regressing' into the safety of childhood and avoiding the threatening prospect of adulthood. While this theory does address the feature of weight phobia seen in many

anorexics and bulimics (Russell, 1979), it fails to explain the fact that both eating disorders can start in adulthood (20 years plus) (Casper et al., 1980; Halmi, 1974), and even in post menopausal women (Kellest et al., 1976). In addition, it does not address the claims of many other clinicians that eating disorders are a means of attaining control rather than avoiding it (Bruch, 1978; Selvini-Palazoli, 1978).

Also popular in the 1980's was the theory of family psychopathology. The most extensive work in this area was presented by Minuchin et al. (1978) and colleagues (Rosman et al., 1975, 1977) who described the anorexic family as 'enmeshed', over controlling and overprotective of the child. The failure to establish personal boundaries within the family prevented the natural development of the child's autonomy and self-control. There has been a considerable amount of supportive observational and empirical data which indicates that these families are hostile to self-assertion (Johnson & Flach, 1985); less encouraging of independence (Williams et al., 1990); child orientated (Bruch, 1973, 1978); parentally controlling to the point of being intrusive (Humphrey, 1983); and lacking in internal boundaries and subsequently the child's sense of autonomy (Goldstein, 1981; Selvini-Palazoli, 1974; Sours, 1980). The child's response to this environment is to attempt extreme control in the only area she can - her body. Unfortunately, the bulk of the data on which this theory is based is observational and anecdotal reports (Bruch, 1973, 1978; Minuchin et al, 1978; Selvini-Palazoli, 1974). However, there is a growing amount of empirical data. Nevertheless, opinions are contradictory, with some researchers claiming to find significant pathological differences in eating disorder families (Humphrey, 1983); while others suggest that this family pathology may be a sequelae of the illness (Garfinkel et al., 1983).

Another theory, which has been in existence since the early 1970's, but not adequately investigated nor established, is the idea that eating disorders are not distinct psychological disorders but actually represent the extreme manifestation of dietary restraint. Some have gone as far as to claim that this dietary restraint is on a continuum, ranging from normal dieters, through extreme dieters to anorexia or bulimia (Nylander, 1971; Garfinkel & Garner, 1982; Polivy & Herman, 1987). These claims are indirectly supported by evidence of subclinical eating disorders (Button & Whitehouse, 1981; Bruch, 1973), with claims that up to 5% of women in private education and up to 6.8% of women in the general population display subclinical symptomatology (Button & Whitehouse, 1981; Meadows et al., 1986; Strober et al., 1984) However, the points along this continuum, or the levels of general dietary restraint vis à vis clinical eating disorder have never been established. To date, this theory has yet to be empirically validated.

In contradiction, the more notable theorists claim that primary eating disorder patients display cognitive/emotional features not shared with other dietary/weight groups, which are components of an eating disorder personality (Bruch, 1973; Crisp, 1965; Selvini-Palazoli, 1974). However, the evidence that features associated with primary eating disorder are also found in non-clinical dietary/weight groups (which may or may not be on a continuum) weakens this argument. The differentiation between primary eating disorders and non-clinical dietary/weight groups on certain cognitive/emotional characteristics is in question.

This question stands as the starting point of the present study.

CHAPTER THREE

ISSUES BEHIND THE PRESENT STUDY:

DO PRIMARY EATING DISORDER PATIENTS FEEL MORE CONTROLLED, LESS ASSERTIVE,
LOWER IN SELF ESTEEM, AND MORE HOSTILE TO THE SELF
THAN DIETARY/WEIGHT GROUPS?

3.1 Definitions.

Before embarking on the theoretical issues, it is important to define a number of variables which will emerge in this chapter and be central to the following reviews.

Dietary/behavioural features - refer to behaviours and actions associated with the eating habits of the subject. Assessment of these features refers to and measures *actual* behaviours and actions that the subject has or has not displayed.

Cognitive/emotional features - refer to feelings and attitudes held by the subject. Assessment of these variables refers to and measures cognitive features and not displayed behaviours. Cognitive/emotional features also refers to variables which have both cognitive and behavioural components, but which are assessed on a hypothetical level, such that the subject must imagine a situation and report the belief of the feeling or behaviour which would be displayed. This is in contrast to the dietary/behavioural features, where the subject reports behaviours which have been undertaken. Within the context of this thesis, the concept of personal assertiveness is labeled a cognitive/emotional variable.

Perceived external control - refers to the "belief that reward (and life events) are outside personal control, and determined by luck, chance, or as under the control of powerful others" (Rotter, 1966, pp. 1).

Assertiveness - refers to "behaviour which enables a person to act in his own best interests, or stand up for himself without undue anxiety, to express his rights without denying the rights of others" (Alberti & Emmons, 1970, pp. 15).

Self-esteem - refers to cognitive beliefs such that "a person respects himself, considers himself worthy; he does not necessarily consider himself

better than others, but he definitely does not consider himself worse; he does not consider himself the ultimate in perfection, but on the contrary recognises his limitations and expects to grow and improve (Rosenburg, 1965, pp. 31).

Self-directed hostility - refers to negative attitudes directed at the self. These cognitions entail self-critical beliefs, feelings of guilt, self-punitive feelings and actual aggression towards the self (Caine et al., 1967).

Dietary/weight concern groups - refers to any non-clinical groups characterised by dietary or weight features which are of concern (discomfort) to the individual, irrespective of the severity of dietary/weight related behaviours displayed by the individual or the severity of weight status.

As a final note, as 94% of anorexic patients are female (Bemis, 1978) and approximately 90% of bulimics are female (Streigal-Moore et al., 1986), eating disorder patients will be referred to in the female index throughout this thesis.

3.2 The Claimed Components Of A Primary Eating Disorder Personality.

As noted in Chapter One, in the early 1970's, clinicians began to note the cognitive/emotional aspects of primary eating disorders. Theories were formulated to the effect that the dietary/behavioural symptomatology displayed by these patients was underpinned by cognitive/emotional issues. The initial cognitive/emotional issues highlighted were ego deficits in terms of distorted body image, ineffectiveness, and lack of internal perception (Bruch, 1973); perceptual abnormalities (Selvini-Palazoli, 1974); maturity fear and weight phobia (Crisp, 1980). Such notions were

then based on largely anecdotal reports. However, over the past decade there has been increasing empirical evidence which has not only supported these contentions but also identified further cognitive/emotional characteristics such as negative self-perception (Hawkins & Clement, 1980), anxiety (Fairburn, 1984), and general psychopathology (Cooper et al., 1984; Garner et al., 1990). It has been claimed that eating disorder patients are characterised by features so extreme as to differentiate them from all other groups; and that these characteristics constitute an eating disorder personality (Bruch, 1973, 1978; Selvini-Palazoli, 1974, 1978; Crisp, 1965; 1980). This notion has received empirical back-up (Duchman, 1989).

Throughout the anecdotal literature, there are four cognitive/emotional characteristics which are consistently noted as important components of this eating disorder personality - perceived external control, low assertiveness, low self-esteem, and self-directed hostility. It is these four characteristics which will be central to the present thesis.

Concerning perceived external control - it is claimed that eating disorder patients have a deficient sense of control over the self and over life events (Bruch, 1978, 1980). Several researchers have claimed that this characteristic is not only important but also precipitates the behavioural aspects of eating disorders, as these patients are attempting to attain a perception of personal control in reaction to perceived control by external forces (Bruch, 1978). As stated by Bruch, (1978):

"they experience themselves as not being in control of their behaviour, needs and impulses; as not owning their own bodies, as not having a sense of gravity within themselves. Instead, they feel under the influence and direction of external forces." (pp. 55).

The two sources of this perceived external control are consistently named as the family (Bruch, 1973, 1978; Conrad, 1977; Kog & Vandereyken, 1985; Minuchin et al., 1978; Selvini-Palazoli, 1974) and sociocultural pressure on women (Garner et al., 1983a; Streigal-Moore et al., 1986; Schwarz et al., 1982, 1983).

The eating disorder family has been portrayed as overcontrolling and restrictive, leading the person to be deficient in her sense of self-control, autonomy and even identity (Kog et al., 1986; Minuchin et al., 1978; Selvini-Palazoli, 1978). This over-control leads the person to see her body as the only arena in which to exert personal effect, and hence, she starves her body in a "maladaptive struggle for control" (Bruch, 1978).

Other researchers have pinpointed the sociocultural pressure on women to achieve a socially defined physical ideal of slenderness (Garner et al., 1980, 1983a; Streigal-Moore et al., 1986). These pressures lead women to perceive themselves as deficient in personal control and social effectiveness. The reaction is a maladaptive attempt to achieve a sense of personal control and social effectiveness by attaining the social requirement of thinness (Boskind-Lodahl, 1976; Lawrence, 1979)

Concerning low assertiveness - in eating disorder literature, the descriptions of deficient levels of self-assertion are frequent. Patients have been described as suffering from a "paralysing sense of ineffectiveness" towards others (Bruch, 1978, pp. 12); as responding to the desires of others rather than personal wishes; as constantly avoiding the disapproval or disappointment of others (Bruch, 1978); and being unable to express personal feelings (Selvini-Palazoli, 1978). All of this leads to "oversubmissiveness, abnormal considerateness, and lack of self-assertion" (Bruch, 1978, pp. 56). These claims have been supported by others who have

described eating disorder patients as socialised to be "non-assertive and deferential" (Schwarz et al., 1985, pp. 284); and as responding to the belief that assertiveness is unfeminine and unacceptable (Orbach, 1978). Indeed, Bruch (1978) has identified this over submissive behaviour as an important characteristic of her patients which both promotes and sustains the clinical disorder.

Concerning low self-esteem - extreme deficits has been noted in all major writings in the area (Bruch, 1973, 1978; Crisp, 1980; Selvini-Palazoli, 1974); and has been pinpointed as a contributory factor in the presenting disorder. Bruch (1973) has stated that refusal to eat is related to "doubts about personal adequacy and self-respect" (pp. 270). Moreover, deficits of self-esteem have been reported in eating disorders, even in the absence of other psychological problems such as depression (Silverstone, 1990). This suggests that low self-esteem is an important characteristic of the eating disorder personality, and not merely a secondary consequence of disordered eating.

Concerning self-directed hostility - the negative and hostile feelings that eating disorder patients feel towards themselves is well documented in theoretical literature (Bruch, 1978; Selvini-Palazoli, 1974). Eating disorder patients have been described as living in a hostile and self-derogative inner-world (Orbach, 1985). Further, such feelings are reflected in the level of depression noted in these groups (Cantwell et al., 1977); and also the elevated frequency of self-mutilation and suicide (Garfinkel et al., 1980). This evidence suggests that self-directed hostility is an important characteristic of eating disorder patient personality.

However, the claims that these four characteristics are important aspects of the eating disorder personality, which may precipitate the

dietary-behaviour, are weakened by more recent research in the field of non-clinical dietary/weight concern. This research has indicated that non-clinical groups may display certain characteristics previously attributed to primary eating disorder patients.

3.3 Links Between Primary Eating Disorders And Dietary/Weight Concern.

Investigation of many non-clinical dietary/weight concern groups has indicated that they not only display weight orientated behaviours which are associated with primary eating disorders, but also display cognitive/emotional characteristics which have been associated with anorexia nervosa and bulimia nervosa. This suggests that characteristics attributed to eating disorder patients may also be attributed to non-clinical groups which display dietary/weight concern. However, the research is somewhat sparse. These dietary/weight concern groups include:

1. Obese
 2. Obese dieters
 3. Obese bingers
 4. Binge eaters
 5. Compulsive eaters
 6. Weight preoccupied
 7. Restrained eaters
 8. Physique orientated occupations, notably athletes and dancers.
1. The obese can display the cognitive restraint noted in bulimic patients, while not displaying the behavioural manifestations of fasting and bingeing (Ruderman, 1985a). Likewise, there is evidence that the obese eat in response to negative emotions, which has also been claimed of bulimic patients (Ganley, 1989). Stunkard (1985) has stated that negative body image, as in the case of eating disorder patients, is a central feature of

obese people. Brone & Fisher (1988) have found that obese adolescents are comparable with anorexic patients in terms of coming from dysfunctional families which inhibit the persons sense of identity and effectiveness. Further, obese subjects have been noted as displaying low self-esteem and ineffectiveness (Brownell & Stunkard, 1978); social withdrawal (Bruch, 1973); unrealistically high goal setting (Werkman & Greenberg, 1967); and elevated Minnesota Multiphasic Personality Inventory (MMPI) scores (Held & Snow, 1972), which in one study has been shown to be comparable with anorexic and bulimic patients (Scott & Barroffio, 1986). Further, this group has been noted as being characterised by self-directed hostility as defined for this project (Wolman, 1982; Wooley & Wooley, 1980, 1985); and as more passive and emotionally dependent than non-obese, as shown by elevated scores on the masculinity/femininity scale of the MMPI (Levitt & Fellner, 1965; Pommerantz et al., 1977). However, other evidence has indicated that obese patients are equally or even more psychologically functional than controls (see McReynolds, 1982).

2. Obese dieters have been noted as displaying very disordered eating patterns, such as Night Eating Syndrome, although they do not meet DSM-III for bulimia nervosa (Kuldau & Rand, 1986). These subjects are reported as having even higher body dissatisfaction than anorexic patients on the validation of the Eating Disorder Inventory (Garner et al., 1983d) and elevated scores on the MMPI (Prather & Williamson, 1988; Werkman & Greenberg, 1967). In addition, they have been found to be similar to bulimics in terms of impulsivity and guilt (Williamson et al., 1985). Finally, depression has been noted in obese dieters, though there is evidence that this depression is a function of weight loss (see Smoller, Wadden & Stunkard, 1987).

3. Obese patients who also display the bingeing behaviour associated with bulimia have been noted as negative thinking and depressed (Hudson et al., 1988). Further, these subjects have been shown to score more highly than non-bingeing obese on the Borderline Syndrome Index (BSI; Conte et al., 1980) and general psychopathology (Fitzgibbon & Kirschenbaum, 1990). Further, obese binge eaters have been noted as displaying more elevated levels of disordered eating, depression, and psychiatric symptomatology than controls (Marcus et al., 1988, 1990). Indeed, it has been suggested that obese binge eaters constitute a distinct clinical group (Hudson et al., 1988; Brone & Fisher, 1988)

4. Binge Eaters not only show the restraint and the bingeing behaviour displayed by bulimic patients (Katzman & Wolchic, 1984), but may also display negative body image and self-image (Wolf & Crowther, 1983); weight dissatisfaction, low self esteem, and maladaptive eating attitudes (Crowther & Chernynk, 1986); and negative thought patterns, anxiety, hostility and depression (Lingsweiler et al., 1987). More severe cases have been found to display more guilt, worry and obsessionality than controls (Kolotkin et al., 1987). Moreover, severe binge eaters have been shown to be comparable with bulimics on a measure of negative self-image (Vanderheyden & Boland, 1987); and a study using factor analysis has associated binge eating with social dysfunction and psychopathology (Vanderheyden et al., 1988).

5. Compulsive eating, is characterised by persistent eating irrespective of hunger. This is seen as problematic by the eater and is associated with anxiety, perceived loneliness and covert anger (Ondercin, 1979); low perceived self-control, instability, and need for approval (Dunn & Ondercin, 1981); and compulsive behaviour, passivity, and negative self-

image (Brice, 1981). Further, compulsive eaters have been noted as displaying the stress, lack of confidence and hostility which is associated with primary eating disorder patients (Kagan & Squires, 1984a, 1984b)

6. Weight preoccupied women have been shown to be comparable with anorexic patients in terms of body dissatisfaction, bulimia, perfectionism, and maturity fear as measured by the Eating Disorder Inventory (Garner et al, 1984). Also, those with extreme weight preoccupation have been described as women who "display psychopathology quite similar to anorexia nervosa" (Garner et al., 1983a, pp. 11).

7. Restrained eating has been defined as a subclinical eating disorder, marked by chronic dietary consciousness, food deprivation and bingeing (Herman & Mack, 1975; Neimeyer & Khouzam, 1985; Wardle, 1980, 1987a). These subjects have been found to have the constricted self-schemas noted in eating disordered patients (Neimeyer & Khouzam, 1985); and lower self-esteem than controls (Heatherton et al., 1986, 1988), especially after eating as in the case of bulimics (Polivy et al., 1988). Further, restrained eating has been related to a general tendency to hold rigid, perfectionistic and irrational cognitions (Ruderman, 1986b).

8. Runners and weight lifters have been shown to have greater eating disturbance than controls (Pasman & Thompson, 1988). Athletes have been shown to be higher than controls on the Eating Disorder Inventory (EDI; Garner et al., 1983d) scales of bulimia, drive for thinness, ineffectiveness, interoceptive awareness, and perfectionism (Cassell, 1991); and also on measures of covert food activity, low perceived control, and weight preoccupation (Burckes et al., 1988; Yates et al., 1983). Likewise ballet dancers have been shown to show many of both the behavioural and cognitive characteristics of anorexia as measured by the Eating Attitudes

Test - 40 (EAT-40; Garner & Garfinkel, 1979) (Braisted et al., 1986).

On the behavioural level, it has been noted that eating disorder characteristics are found at a subclinical level. There is evidence of mild anorexic symptomatology in non-clinical groups (Garner & Garfinkel, 1980; Thompson & Schwarz, 1982); subclinical anorexia nervosa and bulimia nervosa (Button & Whitehouse, 1981; Bunnell et al., 1990; Strober et al., 1984); partial syndrome (Szmukler, 1983); women with eating disorder symptomatology without weight loss - the thin-fat syndrome (Bruch, 1973); women with anorexic attitudes, weight loss and amenhorea which is below diagnostic criteria (Fries, 1977); severe binge eaters who fail to reach DSM-III diagnostic criteria for bulimia nervosa (Katzman & Wolchik, 1984); and non-clinical samples of women who vomit for weight control (Olmstead & Garner, 1986).

It has also been suggested that dietary/weight concern is on a continuum of pathology anchored at the severe end by anorexia nervosa and bulimia nervosa, and anchored at the opposite end by normal dietary behaviour (Nylander, 1971); or that there is a general 'eating-weight pathology' of which eating disorders are the extreme manifestation (Herman & Polivy, 1987). Detailed arguments have been presented, combining sociocultural and psychological evidence for this continuum or general 'eating-weight pathology', (Polivy et al., 1981; Polivy & Herman, 1983; Rodin et al., 1984; Silverstein et al., 1986; Wooley & Wooley, 1980, 1982).

However, the "continuum hypothesis" has very little supportive evidence from empirical research. Thus far, the points along the continuum have yet to be defined. There is no set criteria to define groups along the continuum, and no attempts to order groups in terms of severity. Consequently, research which attempts to assess a continuum must rely on

arbitrary, and potentially invalid grouping (Garner et al., 1983c, 1984; King, 1989a, 1989b). Moreover, the notion of 'Normal Eating' has been strongly questioned elsewhere, calling to question the definition of this anchor point of the hypothesised continuum. Recent, considerable increases in preference towards a thin physique, along with consequent dieting has led to the claim that 'Normal Eating' is, in fact, dietary restraint (Herman & Polivy, 1987). Likewise, the notion of a general 'eating-weight pathology' is weakened by the fact that there are no working criteria for the concept. There is no indication as to the severity or range of severity implied; and hence, there is no means by which groups within that pathology can be defined.

Consequently, while the continuum hypothesis and the notion of a general eating-weight pathology are both interesting, and potentially valid view of dietary/weight concern groups, these concepts cannot be adequately tested. However, this does not detract from the fact, as shown above, that there are groups characterised by dietary/weight concern which have been reported as displaying many of the characteristics previously associated with primary eating disorder patients. This has ramifications for the empirical investigation of characteristics noted as important features of primary eating disorders.

3.4 Implications For The Investigation Of Primary Eating Disorder Characteristics.

To draw the above evidence together, some theorists claim that primary eating disorders are qualitatively different from other groups in terms of their psychopathology and that there is an eating disorder personality. Four features which have been frequently noted as important characteristics of this eating disorder personality are: perceived external control, low

assertiveness, low self-esteem, and self-directed hostility. However, there is a considerable body of evidence that many features associated with primary eating disorder patients may also characterize some non-clinical dietary/weight concern groups. It is reasonable to suggest that characteristics which are common to both clinical eating disorders and also non-clinical dietary/weight concern groups are likely to be general characteristics of all dietary groups, and not specifically important characteristics of a primary eating disorder group. Consequently, any claim that a given feature is characteristic of primary eating disorder patient personality must be verified by establishing that the characteristic differentiates between primary eating disorder and non-clinical dietary/weight concern groups. In the light of possible non-differentiation between primary eating disorder and dietary/weight concern, simple comparison between eating disorder patients and normal control subjects is insufficient for establishing characteristics of primary eating disorder personality. In terms of the present research this leads to two broad conclusions:

1. Any cognitive/emotional characteristics can only be noted as representative of an eating disorder personality if they are found to be severe enough to differentiate eating disorder groups from other groups associated with an dietary/weight concern.
2. Further investigation is required to establish as to whether anorexia nervosa and bulimia nervosa are characterised by perceived external control, low assertiveness, low self-esteem, and self-directed hostility severe enough to distinguish them from other dietary/weight concern groups.

If these characteristics fail to differentiate, it must be assumed that these are general features of dietary groups rather, than important characteristics of a primary eating disorder personality.

This approach to establishing characteristics of primary eating disorder patients has recently been promoted elsewhere:

" (there is) importance of including a restrained control group in attempts to isolate the variables that differentiate individuals with the clinical eating disorder from their peers who demonstrate normative discontent about body weight and shape"

(Rossiter, Wilson & Goldstein, 1989, pp. 465)

"To fully understand the similarities and differences between anorectic bulimic, obese, and weight-preoccupied subjects, it is necessary to examine all of these groups in the same experiment."

(Sunday et al., 1992, pp. 135)

In short, perceived control, low assertiveness, low self-esteem and self-directed hostility can only be noted as important characteristics of primary eating disorder patients if shown to differentiate eating disorder groups from dietary/weight concern groups, as well as normal control subjects. Previous research by the author has gone some way towards addressing this problem.

3.5 Research Background To The Present Project.

In a previous study by Williams et al. (1990) anorexic and bulimic patients were compared with a group of dieting women, non-dieting normal control women, and a group of women who displayed a range of psychological disorders. The groups were administered measures of: 1) eating disorder, 2) locus of control, 3) assertiveness, 4) inwardly and outwardly directed hostility, and 5) the family environment.

Results revealed significant differences between the groups on all measures except family control and outwardly directed hostility. On the cognitive/emotional measures of perceived control, assertiveness, and self-directed hostility there was a consistent pattern of scores. The primary eating disorder group was significantly different, in the pathological direction, from the dieting and non-dieting control groups but not different from the psychologically disordered group. Further analysis of the item content within the measures, indicated that the eating disorder and psychiatric groups were also deficient in self-esteem, though this was not measured directly. There were no significant differences between the dieters and normal controls.

These results suggested that primary eating disorder patients can be differentiated from dietary/weight concerned individuals in terms of their perception of being controlled externally, their inability to be assertive, their perception of self-worth and the degree of hostility they feel towards the self. This would indicate that these characteristics are of a severity in primary eating disorders, which differentiates them from non-clinical forms of dietary/weight concern; and, therefore, they are important features of a primary eating disorder personality. Further, the fact that the eating disorder group could not be differentiated from the

psychologically disordered group on any cognitive/emotional measure suggests that eating disorders are closer, in these four areas, to other clinical, psychological groups than to groups displaying dietary/weight concern.

However, there were several methodological flaws in the Williams et al. (1990) study which prevents firm conclusion. Firstly, the group inclusion criteria were severely lacking. The primary eating disorder group comprised both anorexic, bulimic, and mixed syndrome, and even one subclinical patient. Moreover, the patients were not diagnosed to DSM-III R criteria. Instead, the patients were diagnosed according to a rarely used criteria by Garrow et al., (1974), and there was no check for uniformity of diagnosis across clinicians. The dieter group comprised women who self-reported calorie restriction. There was no strict inclusion criteria concerning the level or duration of dietary behaviour, and no further criteria which would substantiate the self-report - such as membership of a weight-loss class. The psychiatric control group, was also heterogenous, comprising patients with various psychological disorders. The diagnostic criteria used for these patients was not uniform, and at the discretion of the clinician. Secondly, patients and dieters were not fully assured of anonymity, which may have influenced the responses they gave.

Consequently, the results of Williams et al. (1990) are insufficient to answer the question whether these four characteristics are important features of primary eating disorder, which are of a severity that differentiates these patients from dietary/weight concerned individuals. The findings of Williams et al., (1990) and the methodological flaws which compromise them, raise three main issues for future research.

3.6 Issues For Further Research.

1. There is a need to further assess the importance of perceived control, low assertiveness, low self-esteem, and self-directed hostility as characteristics which can differentiate primary eating disorders from non-clinical dietary/weight concern. This should be conducted through a strictly controlled study which compares adequately diagnosed anorexic and bulimic patients, not only with normal controls, but also with other, non-clinical dietary/weight concern groups.
2. If perceived external control, assertiveness, self-esteem, and self-directed hostility differentiate primary eating disorders from both normal controls and dietary/weight concern, indicating that these are features of a primary eating disorder personality, there are far reaching ramifications for the assessment of eating disordered patients. Of the many eating disorder assessment measures currently in use, few adequately address cognitive/emotional characteristics, and only two (Eating Disorder Inventory - Garner et al, 1983d; Screening for Anorexia Schedule, Slade & Dewey, 1986) address these four cognitive/emotional features. The corollary of this assessment deficit is that patients who are likely to display perceived external control, low assertiveness, low self-esteem, and self-directed hostility as central features of their disorders, cannot be assessed in these areas. Consequently, the cognitive treatment they receive for such central dysfunctions, cannot be adequately monitored. There is a need to develop an assessment measure which not only addresses the dietary/behavioural aspects of eating disorders, but also the cognitive/emotional aspects not covered by other measures - namely those identified in the above study.

3. The results suggest that there are links between primary eating disorders and other psychological disorders, rather than between eating disorder and dietary/weight concern. These links are in the areas of perceived control, low assertiveness, low self-esteem, and self-directed hostility. However, the methodological flaws again prevent any firm conclusions. Further research is required to establish the similarities and differences between anorexia nervosa and bulimia nervosa and other psychological disorders. Review of the literature shows that such links have been suggested before, though not in the cognitive/emotional areas addressed by the above study. Consequently, there is a need for controlled comparison between primary eating disorder patients and other psychological disorder groups in order to fully investigate the suggested links.

This research project is designed to address these three issues .

3.7 Overall Aims Of This Project.

This research project comprises four, interrelated studies designed to address the following four aims;

1. (STUDY ONE) Investigation of the suggestion that eating disorders have a cognitive/emotional basis which differentiates them from other groups which may be behaviourally similar. This will be addressed by the comparison of two eating disorder groups - anorexic and bulimic - with other dietary/weight concern groups on measures of dietary behaviours, perceived control, assertiveness, self-esteem, self-directed hostility, and psychiatric caseness.

2. (STUDY TWO) Development of a new, comprehensive assessment measure for eating disorders, designed to assess both the dietary/behavioural and above mentioned cognitive/emotional aspects of anorexia and bulimia, tested for validity and reliability - the Stirling Eating Disorder Scales (SEDS).

3. (STUDY THREE) Assessment of the sensitivity of the new assessment measure (SEDS) by evaluating its ability to detect change in patient's dietary/behaviours and cognitions/emotions over treatment time.

4. (STUDY FOUR) Further investigation of the criterion validity of the SEDS and investigation of links between eating disorders and other psychological disorders, by comparison on the SEDS.

CHAPTER FOUR

REVIEW OF LITERATURE ASSESSING PERCEIVED CONTROL, ASSERTIVENESS, SELF-ESTEEM, AND SELF-DIRECTED HOSTILITY IN EATING DISORDER PATIENTS AND OTHER DIETARY/WEIGHT CONCERN GROUPS, EACH ALONE AND IN COMPARISON.

4.1 Overview Of Chapter.

In Chapter Three it was noted that it has been claimed that perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important cognitive/emotional characteristics of a primary eating disorder personality, which differentiate anorexic and bulimic patients from other groups. However, in the light of possible links between eating disorders and dietary/weight concern, this must be established by comparison of eating disorders, not only with normal controls, but also with other groups characterised by dietary/weight concern. Williams et al. (1990) went some way towards this but was inconclusive due to methodological flaws. Further empirical research is required. However, it is necessary to assess other research which may address this issue as to whether eating disorders can be differentiated from dietary/weight concern, and also from normal controls on the four central characteristics; or if those characteristics are simply common to dietary groups, irrespective of clinical status.

This chapter reviews all relevant past research. Each of the four characteristics is addressed separately; and for each characteristic, three areas of investigation will be reviewed:

1. Assessment of the given characteristic in eating disorders in comparison with normal controls.
2. Assessment of the given characteristic in other dietary/weight concern groups in comparison with normal controls to assess whether the characteristics is also a feature of these groups.
3. Assessment of eating disorder patients in comparison with other dietary/weight concern groups on the given characteristic, to assess whether eating disorder patients can be differentiated from dietary/weight

concerned individuals by their severity on the characteristic.

In order to ensure a comprehensive literature review, articles employing indirect or associated measures of the above characteristics will be reviewed. It should be noted that, as several of the reviewed articles employed a multi-measurement approach, then some results are pertinent to more than one section. Consequently, there will ensue some unavoidable repetition within this chapter. Also note that, due to international variations in disorder terminology, bulimia nervosa may be referred to as bulimia or as bulimarexia. All the reviewed studies are presented in summary form in Table 4.1 at the end of this chapter. Finally, all available articles were assessed in detail resulting in a lengthy review. This was considered necessary, as no review papers have previously been written in any of the four areas under examination.

4.2 Research Assessing Eating Disorder Groups. And Dietary/Weight Concern Groups On Measures Of Perceived Control. Each Alone And In Comparison.

Perceived control is generally measured by the concept of Locus of Control developed from the expectancy variable of social learning theory (Rotter, 1954, 1960, 1966, 1975). This variable was developed into a personality variable which could differentiate between people with an internal as opposed to an external locus of control (Mohanna, 1977). The two belief types are defined as:

Internal Locus of Control = belief that reward is contingent upon
behaviour or personal characteristics and
thereby is under personal control.

External Locus of Control = belief that reward is outside personal control and determined by luck, chance, or as under the control of powerful others.

(Rotter, 1966, pp. 1)

4.2(1) Research Assessing Eating Disorder Groups On Measures Of Perceived Control.

There is a considerable amount of anecdotal data concerning the claim that eating disorder patients are characterised by perceived external control. That literature was presented in Chapter Three.

Over the past decade there have also been several attempts to gain empirical evidence of perceived control in eating disorders, as against normal controls, using the concept of Locus of Control. However, close inspection of the ten published articles reveals a variety of methodological flaws, and contradictory results, making any firm conclusions difficult to extrapolate.

Allerdissen, Florin & Rost (1981) were the first to assess locus of control in eating disordered women compared with normal controls only. They compared bulimarectic women (n = 28) with female normal controls (n = 28) on the Levenson Internal, Powerful Others and Chance Scales (IPC; Levenson, 1974). Results supported the above theoretical observations by indicating that bulimarectic women perceived more external control by powerful others. There were no differences between the groups in terms of control by chance or internal control. However, the findings were compromised by the fact that the bulimarectic subjects were self-diagnosed and not clinically diagnosed according to DSM III criteria. Also, no indication was given as to whether the normal control group was subject to any strict inclusion

criteria, or if they were screened for past eating or psychological disorder. No methodology was provided, making replication impossible.

Hood, Moore & Garner (1982) improved on Allerdissen et al. (1981) by recruiting clinically diagnosed eating disordered patients; and also by age-band matching with control subjects. They employed the Reid & Ware Internal/External Scale (Reid & Ware, 1973, 1974) to compare a group of clinically diagnosed anorexics (n = 54), divided into 'internals' and 'externals' and then by American high school grade, with female norms (n = 425) and female undergraduate students (n = 44). Results indicated that the younger anorexics were more internal than female norms for that age while the older anorexics were more external (though not significantly) than undergraduates. Again, these results were weakened by inadequate screening of comparison groups which calls the inclusion criteria into question. It was not stated as to whether the female norms were screened for eating disorder or psychological disorder. Likewise, the failure to collect even basic demographic data for the undergraduates indicates that there was no screening for eating disorder or other psychological disorder in the control group.

Rost, Neuhaus & Florin (1982) investigated a more specific facet of perceived control which has been noted as a problematic area in eating disorder patients. They investigated sex-role related Locus of Control in bulimic (n = 34) and non-bulimic women (n = 34). Results indicated that the bulimic women were significantly more external in their Locus of Control. However, both groups were affected by a selection bias in that both were derived from university students. The 'bulimic group' were self-diagnosed and not clinically diagnosed according to DSM-III criteria and the control group was a mixture of non-dieters and some 'restrained eaters'. The

inclusion of these restrained eaters may have affected the group mean score. Moreover, the measure of sex-role related Locus of Control was inadequate in that it was not standardised and only had face validity from a panel of three judges.

Another claim that anorexic patients display more externality than other groups was put forward by Strober (1982). Clinically diagnosed anorexics (n = 30) were compared with depressed (n = 30) and conduct disordered (n = 30) groups on a multi-dimensional measure of Locus of Control (Nowicki & Strickland, 1973). In this study group criteria was strong as all groups were in treatment for the given disorder at the time of testing. Unfortunately, no normal control group was recruited - female standardisation norms were used instead. Anorexics were found to be significantly more external than all three sets of comparison data. However, this result was somewhat weakened by the lack of an adequate normal control comparison group, screened for eating disorders and other psychological problems. Also there was no indication that the conduct disordered and depressed groups were screened for eating disorders, suggesting that exclusion criteria was not as stringent as the inclusion criteria.

The same multi-dimensional Locus of Control measure was employed by Weiss & Ebert (1983) in a well controlled study. Closely matched, tightly criterioned groups of normal weight bulimics (n = 15) and normal weight controls (n = 15) were compared. Unfortunately, in the case of this study the measure was inappropriate as it was designed for children and the subject age range in this study was 20 - 35. Also, the reporting of results was inadequate. Claims that the bulimic group was more external on two of the three subscales was not backed up with statistical evidence, nor were

scale scores reported. Another weakness lay in the small group sizes with only 15 in each group.

Very different results were reported by Fisher-McCanne (1985), who compared bulimic patients (n = 23), therapy patients (n = 13) and normal controls (n = 18) on a unidimensional Locus of Control Scale (Rotter, 1966). Grouping of the bulimic and therapy groups was strong, being based on clinical diagnosis according to DSM-III criteria. Moreover, the therapy patients were referred for non-eating related problems. However, it was not clearly stated whether the therapy control group were screened for eating disorders though the clinical diagnosis precludes this. It was claimed, in the paper, that no differences were found between the groups, though this claim was based on an overall Analysis of Variance (ANOVA) which can only give a general indication of differences between the three groups. The absence of between-group comparison-tests makes it impossible to discern whether the bulimic group was, in fact, different from either of the two control groups.

Grace, Jacobson, & Fullager (1985) claimed to show that both purging (n = 26) and non-purging bulimics (n = 24) were significantly more external on a unidimensional Locus of Control Scale (Rotter, 1966) than a group of normal controls (n = 24). However, the selection criteria were highly questionable. Subjects were post-hoc grouped by their responses to self-report questionnaires with no clinical diagnosis. The result was that 17.7% of the the total sample was catagorised as eating disordered - a proportion well above any prevalence study (Cooper & Fairburn, 1984) and thereby calling to question the criteria for the 'bulimic' group. Also, insufficient demographic data was collected and there was no screening for psychological disorder in any group.

McLaughlin, Karp & Herzog (1985) presented a well controlled study which assessed another aspect of perceived personal control - autonomy. Further, this study overcame the restriction of other studies by including eating disorder patients of both diagnostic types, and normal controls. Anorexic (n = 25) and bulimic patients (n = 25), who met DSM-III criteria were compared with normal control females (n = 25) who had been screened for eating problems. All subjects completed the Adjective Checklist (Gough & Heilbrun, 1965), which is a test of perceived personal autonomy. Statistical analysis across started correctly by calculating F ratios to assess differences across the groups. No significant differences were found across the three groups, though, the anorexic group did attain a lower mean than the bulimic and normal control groups. Unfortunately, no further between-group comparisons were calculated to assess potential differences between the individual groups.

More recently, Wagner, Halmi & Maguire (1987) attempted to extend and broaden the assessment of perceived control by measuring multidimensional Locus of Control, 'field dependence' and eating self-efficacy in a group of eating disorder patients (n = 18) and normal controls (n = 18). Such comprehensive measurement suggested that 'control' would be broadly assessed. Group numbers were somewhat low. The patient group reported a significantly more external Locus of Control but were not different in the level of field dependence. However, both anorexic and bulimic subjects were combined into the 'patient group' with no statistical rationale for doing so. Also, no demographic data, excepting age, appears to have been collected from the subjects. Concerning the eating self-efficacy measure, this was researcher-developed and thereby non-standardised. Finally, the researchers did not report analysis of the Locus of Control subscales.

Finally, the latest investigation is that of Holloran, Pascale & Fraley (1988) who used odds ratios to show that externality was not a statistically significant predictor of bulimia. The researchers certainly overcame the problem of low group numbers as a total sample of 209 student subjects were tested. However, the grouping in this study was post-hoc and based on responses to a self-report questionnaire rather than clinical diagnosis. No group-comparison statistics were employed to support the claims.

4.2 (ii) Research Assessing Dietary/Weight Concern Groups On Measures Of Perceived Control.

The issue of perceived control has also been noted, though less frequently, in discussions of dietary/weight concern groups. It has been claimed that obesity is a self-comforting response to perceived 'uncontrollable emotional states' (Slochower, 1983) and an underdeveloped sense of self-control due to a failure to attain developmental differentiation from the mother (Bruch, 1973). Others have observed that obese dieters and overeaters have an externalised perception of control (Brice, 1981); while more feminist writers claim that female obesity and compulsive eating is a dysfunctional attempt to attain a feeling of power and control in a controlling social environment (Brown, 1985; Orbach, 1978).

However, the empirical investigation of perceived control in dietary/weight concern groups is heavily biased towards assessing the predictive ability of locus of control measures for weight loss programs (Kincey, 1980; Tobias & MacDonald, 1977). There are only six comparative studies of weight/dietary problem and control groups, five of which are

methodologically weak.

Held & Snow (1972) were the first to address perceived control in non-primary eating disorder subjects. They compared obese (n = 23) and normal control (n = 23) subjects on the unidimensional Rotter Locus of Control scale (Rotter, 1966). Groups were selected according to strict criteria and were adequately described. The one drawback was the apparent failure to screen either group for past or present primary eating disorder, though this might be explained by the fact that eating disorder had not been widely recognised in obesity in 1972. No differences were found between the groups; though the obese group did attain a higher (more external) mean.

Hawkins and Clement (1980) administered a binge scale and the Rotter Locus of Control Scale (Rotter, 1966) to a large group of students (n = 247) and a group of overweight females (n = 26). However, the definition of overweight was inaccurate, as the mean percentage overweight was 40%, which is well into the realms of morbid obesity. Results were not clearly presented. The authors claimed that bingeing and restraint were related to external Locus of Control. However, the correlations presented were of extremely low order (r's = .22 and .12) and appeared to be non-significant. No comparative statistics were reported for the Locus of Control Scale. In addition, no group criteria were presented, and no screening of the 'control' group was reported.

Dunn & Ondercin (1981) were the first to address perceived control in compulsive eaters. They compared women displaying a high degree of compulsive eating with women displaying a low degree of compulsive eating on an unidimensional Locus of Control Scale (Rotter, 1966). Group sizes were reasonable (n's = 24 in each group). Results indicated that severe compulsive eaters perceived significantly more external control than the

low-degree compulsive eaters. Also regression analysis indicated that Locus of Control was highly related to compulsive eating. Unfortunately, these apparently strong results were weakened by the grouping methods. No criteria were given for compulsive eating; no demographic data appears to have been collected or utilised for grouping or analysis; also grouping was on the basis of a self-report questionnaire rather than clinical diagnosis. Finally, there appeared to be no screening for bulimia or other psychological disorder.

A study by Thomason (1983) compared obese (n = 20) and non-obese (n = 42) males and females on a three dimensional measure of Locus of Control (Reid & Ware, 1974). Group inclusion criteria (obese/non-obese) were strong, and sample sizes reasonable. Moreover, an exclusion criterion of 'past history of obesity' was employed with the non-obese control group. The obese group was significantly more external than the control group on the measures of self-control and socio-political control. Unfortunately, no data were collected on demographics, weight or medical history, indicating that there was no group-exclusion variables such as eating disorder, diabetes, or medication related obesity employed. Also there was no information given as to whether the obese subjects were actively dieting as no eating behaviour questionnaire was administered. As a result, conclusions are limited.

Two more recent papers have compared obese and non-obese subjects on Locus of Control (Davis, Wheeler & Willy, 1987) and Health Locus of Control (Jacobs & Wagner, 1984). However, one employed the Locus of Control measure as a grouping variable rather than a comparative measure (Davis et al, 1987); the other failed to report Locus of Control results (Jacobs & Wagner, 1984).

4.2 (iii) Research Comparing Eating Disorder And Dietary/Weight Concern Groups On Measures Of Perceived Control.

Review of the literature revealed six articles comparing eating disorder and dietary/weight concern groups on measures of perceived control. Again, the results are varied and the methodologies flawed.

Garner et al. (1976) were the first researchers to employ a measure of Locus of Control on eating disorder groups. They compared anorexics (n = 18) and obese (n = 16) with three other control groups on a multidimensional Locus of Control Scale (Reid & Ware, 1974). No measure of eating behaviour was employed. Group criteria was strong, with diagnostic criteria used for the anorexic and obese groups; and past history of eating disorder used as an exclusion variable in the control groups. However, group numbers were rather low. Results were inadequately reported. They claimed to find that the anorexics were more internal than obese on the self-control subscale. No other comparisons are reported even though one scale of the measure employed was a measure of social control which has been noted as close to a perception of control by other people (Levenson, 1974). Failure to report these comparisons make any clear interpretation of group differences impossible.

Wolf & Crowther (1983) attempted to assess a range of eating disorder severity. They grouped 120 normal weight and overweight women into four categories of binge eating: 'no binge', 'mild binge', 'moderate binge', 'high binge' (bulimia), with an n of 30 in each group. An unidimensional Locus of Control measure (Rotter, 1966) was administered. Results of correlations indicated that Locus of Control was not significantly related to binge behaviour, and regression analysis indicated that Locus of Control was not a predictor of binge eating. However, in this

study the criteria of binge eating and consequently, the grouping was highly questionable, being based on just two questions on a self-report questionnaire and not clinical diagnosis.

Woods & Heretick (1983/84) compared anorexic, obese and normal subjects on the perceived self-control scale of a Multidimensional Locus of Control Scale (Reid & Ware, 1973, 1974). In this study, grouping criteria was strong, and the control group were screened for past eating problems; though group numbers were low with only 10 subjects in each group. Unfortunately, the results are very difficult to interpret, despite appropriate statistics, due to the author's misinterpretation of the the scale aim and scoring direction. However, differences were found between the anorexic and obese subjects, and reinterpretation indicates that the anorexics attained a higher, more external score than the obese group.

Basseches & Karp (1984) assessed another aspect of perceived control. These authors measured field dependence by standardised test in anorexic (n = 16), obese (n = 16) and normal control subjects (n = 16). Again, these authors overcame the problems of questionable grouping. Group criteria was strict for the anorexic and obese groups; and 55% of the normal control group had been screened as a normal control by a research institution. Group sizes were somewhat low with only 16 subjects in each group. It was shown that the anorexic and obese groups were not different from each other but both displayed more field dependence than the normal controls. The one drawback to this study was that the obese group were apparently not screened for eating disorders or other psychological disorders.

A far larger and more comprehensive study was recently reported by King (1989a, 1989b). In line with the notion of the continuum theory of eating disorder, he grouped a very large sample of women along a continuum of

dietary behaviour from normal, through a range of severity to full blown bulimia; though as noted in Chapter Three, this grouping is arbitrary. Grouping was strict, being based on self-report questionnaire and interview; and the full range of eating behaviour severity was covered. However, with the exception of the normal controls and the normal dieters, group n's were very low - with only 3 obese, and 7 bulimic patients. Unfortunately, the assessment measure employed was designed to assess anorexia not bulimia. The groups were compared on a Locus of Control of Behaviour measure. Results were not adequately covered. We are told that full and partial syndrome bulimics were more external than normal dieters and normal controls; but statistical comparisons with the other dietary/weight concern groups, notably obsessional dieters and obese, were not presented. Therefore, in the light of the claim that normal dieting is normal behaviour in western females (Polivy & Herman, 1987) these results do not throw any light on the basic issue - are eating disordered females different in their perception of control to other weight/dietary problem groups.

Finally, Shisslak, Pazda & Crago (1990) reported a very broad study, assessing several categories of eating disorder and a dietary/weight concern group. They compared overweight bulimics (n = 22), normal weight bulimics (n = 31), and underweight bulimics (n = 20) with restricting anorexics (n = 20), obese (n = 22) and normal controls (n = 32). It was claimed that all bulimic and anorexic patients met DSM-III criteria. All subjects completed the Rotter Locus of Control Scale (Rotter, 1966). Unfortunately, results were inadequately reported, with no means or F ratios presented; though it was claimed that all three bulimic groups were significantly more external than the three comparison groups. Moreover,

underweight and overweight bulimics were significantly more external than normal-weight bulimics. Apparently, the anorexic group were not significantly different from obese or normal controls, although this was not clearly stated. Further drawbacks to this study were the failure to report the criteria of the non-clinical groups and the method of diagnosis in the clinical groups (questionnaire or clinical interview).

4.2 (iv) Summary Of Research Assessing Eating Disorder Groups, And Dietary/Weight Concern Groups On Measures Of Perceived Control, Each Alone And In Comparison.

The above three sections have reviewed research into perceived control in eating disordered subjects, dietary/weight concern groups, and eating disorder-dietary/weight concern group combinations.

Ten articles have been found to assess perceived control in eating disorder patients and normal controls. Six claimed to show that eating disorder patients perceive more control by external forces than do normal control groups (Allerdissen et al., 1981; Rost et al., 1982; Strober, 1982; Weiss & Ebert, 1983; Grace et al., 1985; Wagner et al., 1987); one produced mixed results (Hood et al., 1982); while three found no differences between the groups in externality (Fischer-McCanne, 1985), and perceived autonomy (McLaughlin et al. (1985), or that externality was not predictive of bulimia (Holloran et al., 1988).

Only six articles were found to investigate perceived control in dietary/weight concern groups. One found no significant differences between obese patients and normal controls (Held & Snow, 1972); one found compulsive eaters to be more external than controls (Dunn & Ondercin, 1981); one found obese subjects to be more external than normal controls (Thomason, 1983); another claimed to find a relationship between

externality and bingeing or restraint, though reported correlations do not support this (Hawkins & Clement, 1980). Two failed to report results (Davis et al., 1987; Jacobs & Wagner, 1984).

Six articles assessed eating disorder groups, and dietary/weight concern groups together and should address the key question whether eating disorder patients can be differentiated by their severity of perceived external control. Results are mixed. Two articles claimed to show that eating disorder patients were more external than dieters (King, 1989) and obese (Woods & Heretick, 1983/4); one found no differences between eating disorder and obese subjects (Basseches & Karp, 1984); while another found anorexic patients to be more internal in terms of self-control than obese patients (Garner et al., 1976). Two further contradictory findings were presented by Wolf & Crowther (1983) who claimed that Locus of Control was not a predictor of binge eating; and Shisslak et al. (1990) who claimed that bulimics, but not anorexics, were more external than obese subjects.

In addition to such contradictory results the above review has also revealed considerable flaws throughout the studies. The most notable flaws are group criteria and allocation; failure to carry out adequate subject screening for other disorders; use of inappropriate measures; and inadequacy in the reporting of results. Another notable point is that many of the above studies employed the Rotter (1966) unidimensional Locus of Control Scale which has been widely criticised as too broad and inaccurate (Mirrels, 1973; Reid & Ware, 1974).

Therefore, it is apparent that the questions raised by Williams et al. (1990) - whether eating disorder patients may be differentiated from other dietary/weight concern groups, as well as from non-concerned individuals, in terms of perceived control cannot be addressed from existing literature.

Therefore, it cannot be assumed that perceived control is an important characteristic of primary eating disorders. Consequently, there remains a need to conduct a strictly controlled study to investigate the role of perceived control in eating disordered patients vis à vis other dietary/weight concern groups and normal controls.

4.3 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Assertiveness. Each Alone And In Comparison.

Assertiveness has been defined as:

"behaviour which enables a person to act in his own best interests, or stand up for himself without undue anxiety, to express his rights without denying the rights of others"

(Alberti & Emmons, 1970, pp.15)

4.3 (1) Research Assessing Eating Disorder Groups On Measures Of Assertiveness.

As presented in Chapter Three, there are frequent claims in anecdotal literature regarding the un-assertiveness of primary eating disorder patients. Concerning the empirical data - four articles were found to assess eating disorder patients against controls on direct and indirect measures of assertiveness.

In 1980 Strober compared anorexic patients (n = 22) with two control groups of depressed (n = 22) and conduct disordered (n = 22) patients. Female normative data were also used. Group inclusion was according to strict criteria and clinical diagnosis. However, no real normal control group was used. Groups were compared on indirect measures of assertiveness, namely the interpersonal sensitivity and sociability scales of the Hopkins Symptom Checklist - 90 (HSLC-90; Derogatis et al., 1977). Results indicated

that there were no differences between the three clinical groups on the measure of interpersonal-sensitivity, but the anorexics were less sociable than the conduct disordered patients - though this was not an unexpected result. However, comparison with female norms was not reported. Also the criteria of the control groups were somewhat weakened as no indication was given as to whether either were screened for past or present eating disorder; nor was a measure of eating behaviour used as an exclusion variable.

Weiss & Ebert (1983) compared normal weight bulimics with normal weight controls on a scale of interpersonal sensitivity from the HSCL-90. In this study, which was well controlled with strict grouping criteria, it was found that the bulimic group reported significantly greater pathology. The only criticism of this study is the low group numbers, with only 15 in each group.

Fischer-McCanne (1985) compared bulimics (n = 23) who met DSM-III criteria with therapy patients (n = 13) and normal controls (n = 18) on a standardised measure of assertiveness (College Self-Expression Scale; Galassie et al., 1974). Again, inclusion criteria for the bulimia and therapy groups were strict. Unfortunately, it was not clear if the inclusion criteria for the normal control group was as stringent as the bulimic group as no screening for past or present eating disorder was reported. Also, neither the therapy group nor the normal control groups was screened for obesity or psychological disorder. The claimed results that the bulimics were less assertive, were weakened by the fact that only group means were presented but no levels of statistical significance.

Finally, Holleran (1988) administered a standardised assertiveness scale (Gambrill & Richey, 1975) to a group of 209 female students, who were then

post-hoc grouped into bulimic and non-bulimic on the basis of a standardised self-report bulimia measure. No clinical diagnosis was used to back up allocation to the 'bulimic' group. Also there was no reported screening for anorexia nervosa, obesity or psychological disorder in either group. The result of this weak grouping method was a rather high proportion of 'bulimics' (7.8%) within the total group. Results were confused with no indication given as to whether the 'bulimics' were more, less or equally assertive to the 'normal' group. Though the authors did report a low but significant negative correlation between bingeing and assertiveness and odds ratios indicated that low assertiveness was predictive of high scores on the bulimia scale.

4.3 (ii) Research Assessing Dietary/Weight Concern Groups On Measures Of Assertiveness.

The obese have been described as unassertive (Brice, 1981), and as reacting to social stress (Laskowitz, 1982). Review of the literature produced four published articles which could be included in this section, though three of the studies did involve large subject samples.

Hawkins & Clement (1980) attained a very high sample number in a study which assessed a group of 247 male and female students and a group of dieting overweight females ($n = 26$). Again, the definition of 'overweight' was questionable as the mean percentage overweight was 40% which is well into the realms of obesity. Also the subjects did not appear to have been screened for past or present eating disorder or other psychological disorder. All subjects were administered a standardised assertiveness scale and a researcher-constructed binge scale. However, as this study was a concurrent validity study for this binge scale, it cannot be deemed

standardised at the time of testing. Results appeared to show that there was a very low negative correlation between bingeing and assertiveness, though no indication was provided as to the significance level of the correlation, making interpretation difficult. No comparisons were conducted between overweight and normal/underweight subjects, or between bingers and non-bingers.

Wolf & Crowther (1983) grouped 120 normal weight and overweight female students into four, 30-subject binge groups: no binge, mild binge, moderate binge, and high binge. However, while group numbers were high, allocation in terms of binge/no binge were made on the basis of just one question on a self-report questionnaire. Also the weight-category definitions were weak. While the definition of 'overweight' was used and given a criteria of 10% over norm for height, the average for all subjects was 15.3% over norm for height, indicating that a considerable proportion of the subjects met the criteria of obesity. Furthermore, the working criteria for bingeing or the level of bingeing were not presented. There was no reported screening for eating disorder or other psychological disorder. Although the Beck Depression Inventory (Beck, 1967) was administered, it does not appear to have been used as an elimination variable. Subjects were administered, amongst others, a standardised assertiveness scale (Gambrill & Richey, 1975) and an eating behaviour questionnaire (Garner & Garfinkel, 1979). Nevertheless, the eating behaviour questionnaire was inappropriate as it was designed to assess anorexic behaviour. All analyses were correlational with no group comparisons. Results indicated that neither probability of an assertive response nor discomfort with assertiveness was a statistically significant predictor of eating behaviour. However, this may have been due to the fact that binge eaters would not be expected to score high on an

anorexia scale leading to clustering at the low end of both scales - hence no correlation.

Klesges (1984) administered a behaviour-specific measure of eating related assertiveness to 104 male and 128 female students, grouped into overweight and normal weight. Group numbers were not presented. All subjects completed a standardised measure of assertiveness (Gambrill & Richey, 1975), and an author constructed measure of food assertiveness. Klesges claimed to show that overweight subjects were significantly less assertive on the global measure and less food-assertive than normal controls. However, this study was seriously flawed. Grouping was post-hoc on the basis of weight only. The definition of 'overweight' appears questionable as the mean percentage overweight in the male group was 15% and in the female group was 12%. This suggests that a considerable proportion of the overweight group met the criteria of obesity while the remainder did not. The subjects were not asked to provide demographic data which may affect scores and there appears to have been no screening for eating disorder or any other psychological disorder. The measure employed was constructed by the researcher and not validated or checked for reliability. Moreover, attention to the items reveal that they may have been conceptually confused as some address restraint and control rather than assertiveness.

Finally, Mehrabian et al. (1985/86) overcame the frequent problem of low group numbers by allocating a large group of 498 male and female students into three groups: predisposed to anorexia, predisposed to obesity, and normal control. Individual group numbers were not presented. However, groups were allocated on the basis of a non-standardised questionnaire constructed by the researchers, making group criteria questionable and

weak. Group criteria were not provided. Also, inadequate demographic data were collected, with subjects asked only to report height, weight and sex. As no medical data were collected there was no indication as to whether each 'predisposition' group contained any actual cases; or if any group contained any subjects suffering any other psychological disorder. Subjects completed a questionnaire which assessed dominance/submissiveness (Mehrabian & Hines, 1978). No statistical analysis was carried out to compare the groups. The researchers claimed that submissiveness was correlated with predisposition to anorexia, binge eating and obesity, though in the light of such questionable grouping this claim is weak.

4.3 (iii) Research Comparing Eating Disorder And Dietary/Weight Concern Groups On Measures Of Assertiveness.

Four articles were found to assess eating disorder and other dietary/weight concern groups on measures of assertiveness and associated measures.

Garner et al. (1984) grouped women into three groups: anorexia nervosa, weight preoccupied, non-weight preoccupied. In this study, grouping was based on self-report questionnaire and interview resulting in tight group criteria. Unfortunately, numbers were very low, with only 12 subjects in each group. Assessment comprised only one measure though this did include eating behaviour and a scale of interpersonal distrust (Eating Disorder Inventory, Garner et al., 1983d). Results indicated that anorexic patients displayed significantly greater interpersonal distrust than both comparison groups, which, in turn, were not different from each other.

Greenburg (1986) assessed 177 female students and allocated a proportion of them to three groups: bulimic (n = 12), non-clinical binge eaters (n =

11), and normal control (n = 14). The bulimic group comprised students who were receiving counselling for eating disorders, though the diagnostic method or criteria were not presented. The allocation method of the non-clinical binge eaters and normal controls was even more questionable; subjects were asked to write an open ended essay about dietary and eating habits. Binge eating or non-binge eating was inferred from these essays. These methods resulted in three small groups (n < 14 in each), though 177 students were screened. The reason for excluding the other 140 students was not reported. All subjects completed the College Self-Expression Scale (Galassi et al., 1974). No significant differences were found between the groups, though the 'clinical' bulimic group did attain the lowest mean. Further, regression analysis did not show assertiveness to be predictive of bulimia.

Prather & Williamson (1988) extended the range of comparison groups and effectively assessed, not only different eating behaviour groups, but also different severities within those groups. They compared five groups, with 16 subjects in each: bulimics, binge eaters, treatment obese, non-treatment obese, and normal controls. Grouping was tightly controlled, being based on standardised questionnaire and interview. However, there was one drawback, in that there was no indication as to whether the non-bulimic groups were screened for past eating disorder or any other psychological disorder. While no direct measure of assertiveness was utilised, groups were measured on two associated measures of social introversion (MMPI) and interpersonal sensitivity (HSCL-90). Analysis across the groups showed that while there were no significant differences on the measure of social introversion; there were significant differences on interpersonal sensitivity: with bulimics attaining the highest mean. However, failure to report between

group statistics makes it impossible to compare the individual groups. Consequently, this study failed to address fully the issue of differences/similarities between eating disorder groups and other dietary/weight concern groups in terms of assertiveness.

Finally, Rossiter, Wilson and Goldstein (1989) compared bulimics (n = 10), restrained eaters and normal controls on a well standardised assertiveness scale (Rathus, 1973). Grouping was acceptable, with the bulimic patients diagnosed according to established criteria; and the restrained eater and control groups selected through a fairly rigorous two-stage selection process. Group criteria were well defined for each group, though group n's for the restrained eating and normal control groups were not reported. Unfortunately, results on the assertiveness scale were not clearly presented. However, by the wording it appears that there were no differences between the groups in terms of assertiveness.

4.3 (iv) Summary Of The Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Assertiveness. Each Alone And In Comparison.

The above three sections have reviewed research into assertiveness in eating disorder groups, dietary/weight concern groups, and research comparing both.

Only four articles were found to assess eating disorder groups on measures of assertiveness. Two claimed to show that bulimics were less assertive than controls (Weiss & Ebert, 1983; Fischer-McCanne, 1985); one claimed to show that low assertiveness scores were predictive of a high binge score (Holloran, 1988); while the fourth failed to adequately report comparisons between anorexic and normative data, making interpretation

impossible (Strober, 1980).

Four articles assessed dietary/weight concern groups on measures of assertiveness. Of these, two, using correlational analyses, claimed to show that higher restraint was associated with lower assertiveness (Hawkins & Clement, 1980); and low assertiveness (submissiveness) to be linked with predisposition to obesity and anorexia (Mehrabian et al., 1985/6). One found that overweight subjects were both significantly less assertive and less food-assertive than controls (Klesges, 1984). The fourth found no link between assertiveness and eating behaviour or attitude (Wolf & Crowther, 1983).

Four articles compared eating disorder and dietary/weight concern groups on measures of assertiveness. One found that anorexic subjects were significantly higher in terms of interpersonal distrust than a group of weight preoccupied women (Garner et al., 1984); one claimed to show that bulimics were more interpersonally sensitive than binge eaters and obese, though failed to report statistical back-up (Prather & Williamson, 1988). One reported that there were no differences in assertiveness between bulimics, non-clinical binge eaters and controls (Greenburg, 1986). The fourth failed to report results (Rossiter et al., 1989).

Again, in addition to these mixed results, the review has also revealed considerable methodological flaws throughout the studies. As in the review of Locus of Control literature, the most notable flaws are group criteria and allocation, use of indirect measures, and inadequate reporting of results.

Therefore, it seems that there is a gap in the literature. The question raised by Williams et al. (1990) - that eating disorder patients may be differentiated from other dietary/weight concern groups, as well as from

non-concerned controls, in terms of low assertiveness is not addressed by presently existing literature. Therefore, the claim that low assertiveness is an important component of a primary eating disorder personality has yet to be established. Consequently, there is a need to conduct a strictly controlled study to investigate the role of assertiveness in eating disorders vis à vis other dietary/weight concern groups.

4.4 Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Self-Esteem. Each Alone And In Comparison.

Rosenburg (1965) has defined a person with self-esteem, as a person who "respects himself, considers himself worthy; he does not necessarily consider himself better than others, but he definitely does not consider himself worse; he does not consider himself the ultimate in perfection but, on the contrary, recognises his limitations and expects to grow and improve" (Rosenburg, 1965, pp. 31).

4.4 (1) Research Assessing Eating Disorder Groups On Measures Of Self-Esteem.

As presented in Chapter Three, there are frequent claims in the anecdotal literature, that primary eating disorder patients are characterised by extreme deficiencies in self-esteem. However, there are only six published studies empirically assessing self-esteem in eating disorder groups and normal controls.

Strober (1980) compared anorexic patients (n = 22) with female norms and two control groups of depressed (n = 22) and conduct disordered (n = 22) females. The inclusion criteria for the groups was strong. All three groups were clinically diagnosed according to DSM-III criteria. Group sizes were reasonable. However, the two clinical control groups were not screened

for past or present eating disorder. In addition, there was no real control group. The measure employed was the self-acceptance scale of the California Personality Inventory (CPI; Gough, 1957). Results were inadequately reported. While there were no significant differences between the three comparison groups, statistical comparisons with female norms were not reported. Consequently, it is impossible to assess the significance of self-esteem in eating disorders in comparison with the 'norm'.

Weiss & Ebert (1983), in a well controlled study, compared normal weight bulimics and normal weight controls on a standardised measure of self-esteem (Piers & Harris, 1969). It was found that the bulimic group reported significantly lower levels of self-esteem on all six scales of the measure. However, the scale used was designed to be used with children. The researchers report a subject age range of 20 - 35, with a high average IQ score, rendering the chosen scale inappropriate. Another drawback to this study was the low group numbers with only 15 in each group.

Katzman & Wolchick (1984) compared bulimics (n = 30), non-purge bulimics (n = 22), and normal controls (n = 28) on a widely used, standardised measure of self-esteem (Rosenberg, 1965). Group criteria were strict and clearly presented, with the bulimic subjects reaching DSM-III criteria. Nevertheless, the researchers relied on self-report questionnaire rather than clinical diagnosis. Also, it appears that the control groups were not screened for other psychological disorder. Results indicated that the bulimic group was significantly lower in reported self-esteem than both the binger and normal control groups. Unfortunately, the binge-eater/normal control comparison was not clearly stated - the means were presented but not the statistical comparison.

In the same year, Nagelberg et al. (1984) compared purging binge eaters

(n = 10), no-purge binge eaters (n = 14), and normal controls (n = 7) on a standardised self-concept scale (Tennessee Self Concept Scale; Fitts, 1965). Subjects were a selected sample from a large scale screening. Consequently, group allocation was based on a self-report restraint questionnaire and not clinical diagnosis. Group criteria were not presented and numbers were low, with 14 or less in each group. Additionally, no screening for other psychological disorders seems to have been conducted. Results indicated that, at least on overall self-concept, purgers reported significantly lower levels (ie. in the problematic direction) than binge eaters and normal controls. Binge eaters and normal controls were not different from each other. However, subscale scores could not be interpreted as they appeared to be incorrectly reported - the subscale means presented were not conducive (too high) to being subscale scores.

Grace et al. (1985) overcame the problem of low sample numbers. Further, they divided the eating disorder patients according to severity. They compared 200 females grouped a proportion of that sample into purging bulimics (n = 26), non-purging bulimics (n = 24) and normal controls (n = 24) on a standardised measure of self-esteem (Coopersmith, 1967). Again, the grouping was post-hoc and based on responses to a self-report questionnaire rather than clinical diagnosis. The inadequacy of this method was exemplified by the fact that 17.7% of the total sample were categorised bulimic - a proportion which exceeds any prevalence estimate. Results indicated that both purging and non-purging bulimics were lower in self-esteem than the normal controls. The two bulimic groups were not different from each other. However, the inadequate grouping calls these results into question.

Finally in this section, Post and Crowther (1985) compared two large samples (n's = 71) categorised into bulimic and non-bulimic controls. All subjects completed a well standardised self-esteem scale (Rosenburg, 1965). Results of t-tests indicated that the bulimic group was significantly lower in self-esteem than the normal control group. However, a discriminant function analysis suggested that self-esteem was not a significant predictor of group. The main drawback to this study was that the bulimic were diagnosed by an unpublished self-report questionnaire, the standardisation status of which was not reported. Group criteria were not presented for either group. Also, it appears that the normal control group were not screened for any psychological disorder.

4.4 (ii) Research Assessing Dietary/Weight Concern Groups On Measures Of Self-Esteem.

Only three articles could be found which assessed self-esteem in dietary/weight concern groups.

Wolf & Crowther (1983) attempted to attain high sample numbers and also to assess a range of dietary/weight concern severity. They allocated 120 female students into two categories - bingers and non-bingers; and then subdivided them into four, 30-subject binge eating categories - no binge, mild binge, moderate binge, high binge. All subjects completed the Tennessee Self-Concept Scale (Fitts, 1965). Results showed that, in the case of all three self-esteem subscores, low self-esteem was a predictor of binge eating. However, this claim was made on the basis of correlational analysis only - no between group comparisons were presented to support this contention. Further drawbacks to that study were that allocation to the binge/no binge categories was on the basis of the subjects' response to one

question on a self-report questionnaire. Also, there was no indication that even weight history data were collected or that the subjects were screened for psychological disorder.

Jacobs & Wagner (1984) compared 99 males and females who were obese, previously obese, and always normal weight. However, subjects were not assessed for primary eating disorder, even by an eating disorder measure, and there was no screening for psychological disorder. Further, the n's in each category were not reported. All subjects completed the same multidimensional self-concept scale as that utilised by Wolf and Crowther (1983): (Tennessee Self Concept Scale; Fitts, 1965). However, in this study, only one of the relevant scales was reported (physical self-esteem). The researchers claimed to show significant differences between the groups, and the obese group did attain the lowest mean. Unfortunately, the statistical analysis was not sufficient to back this claim. Only overall Analysis of Variance was calculated - not between group comparisons which would enable assessment of the obese group vis à vis the other two groups.

Davis et al. (1987) compared an obese group (n = 30) with a normal control group (n = 30) using the Q Technique (Stephenson, 1954) in which subjects were asked to select self-descriptive statements from a pool of statements, balanced for positive and negative self-esteem. There was no indication given that the normal control group were screened for past obesity or that either group was screened for psychological disorder. Results showed that there was a negative correlation between self-esteem and weight, suggesting that obese subjects were more likely to display low self-esteem. However, no further extrapolation could be made as no group comparisons were made. Results were therefore inadequate in showing that obese subjects were lower than 'normals' in self-esteem.

4.4 (iii) Research Comparing Eating Disorder And Dietary/Weight Concern Groups On Measures Of Self-Esteem.

Only three published articles have compared an eating disorder group with other dietary/weight concern groups on measures of self-esteem, though one of these did assess a very wide range of dietary/weight concern. (Mintz & Betz, 1988).

In 1986, Crowther and Chernynk assessed three levels of severity of dietary/weight concern in a largely well controlled study. They compared bulimics (n = 17), severe bingers (n = 16), mild bingers (n = 16) and normal controls (n = 17). All subjects completed a well standardised self-esteem measure (Rosenburg, 1965). Results indicated that both bulimics and severe bingers were significantly lower in self-esteem than the mild bingers and controls. There were no differences between the bulimics and severe bingers. The one drawback to this study was that, while the three non-clinical groups were allocated according to acceptable criteria, the bulimics were allocated (diagnosed) according to self-report questionnaire. This calls into question, whether this study does assess clinical and non-clinical dietary/weight concern.

Two years later Mintz and Betz (1988) reported a study which assessed an even wider range of dietary/weight concern than Crowther and Chernynk (1986). This was a large scale study with a considerable number of dietary/weight comparison groups. The researchers recruited 682 females and grouped them along a 'continuum' of dietary behaviour which ranged from non-dieters to full blown bulimia. There were seven groups in total; and all were of acceptable size, with the smallest group comprising 20 subjects. Unfortunately, grouping was post-hoc and based on responses to a self-report questionnaire and not clinical diagnosis, even in the case of

the bulimic group. The groups do not appear to have been screened for psychological disorder. Furthermore, excepting the bulimic group no group criteria were presented. Consequently, the rigour of group criteria were called into question. Subjects were administered a standardised self-esteem scale and questions assessing sources of self-esteem. Reporting of results was inadequate and unclear. Results indicated that the bulimic group scored significantly lower than all other groups on the measure of self-esteem, though the level of significance was not stated. The six non-bulimic groups appeared to score very closely. Concerning sources of self-esteem, there appeared to be very little variation across the groups, except in the area of appearance, where the bulimic group again scored significantly lower.

Finally in this section, Shisslak, Pazda and Crago (1990) reported on a study which not only included groups representing the two eating disorders, but also another dietary/weight concern group. These researchers allocated 166 women to six groups: underweight bulimic (n = 20), normal-weight bulimic (n = 31), overweight bulimic (n = 22), anorexic (n = 20), obese (n = 22), and normal control (n = 32). All subjects completed a well standardised self-esteem measure (Rosenburg, 1965). Unfortunately, results were inadequately reported. It was claimed that all three bulimic groups were lower in self-esteem than the three comparison groups. Moreover, the underweight and overweight bulimics were significantly lower in self-esteem than the normal-weight bulimics. It is not reported as to whether the anorexic group were different/similar to the obese and control groups. Further drawbacks to this study lie in the failure to present either the clinical group criteria or the method of allocation (clinical diagnosis or self-report). Also, no screening for eating/psychological disorder was reported for the non-clinical groups. With such drawbacks in results and

group criteria, the study failed to address the question of self-esteem in eating disorders vis à vis other dietary/weight concern groups.

4.4 (iv) Summary Of Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Self-Esteem. Each Alone And In Comparison.

The above three sections have reviewed the literature investigating self-esteem in eating disorder patients, dietary/weight concern groups, and literature investigating self-esteem in both eating disorder and dietary/weight concern groups concurrently.

Six articles were found to investigate this characteristic in eating disorder groups. Three reported bulimics to be lower in self-esteem than normal controls (Weiss & Ebert, 1983; Grace et al., 1985; Post & Crowther, 1985); two reported purging bulimics to be lower in self-esteem than both non-purger bulimic and normal controls (Katzman & Wolchick, 1984; Nagelberg et al., 1988). The fifth failed to report the results of comparing anorexic patients with female norms (Strober, 1980).

Three articles assessed self-esteem in dietary/weight concern groups. One claimed to show that low self-esteem was a predictor of binge eating (Wolf & Crowther, 1983). The second claimed that presently-obese subjects were lower in self-esteem than previously-obese and never-obese subjects (Jacobs & Wagner, 1984). The third indicated that a negative correlation between weight and self-esteem suggested that obese subjects were lower in self-esteem than normal weight subjects (Davis et al., 1987).

Three articles compared eating disorder and dietary/weight concern groups on measures of self-esteem; which should address the question whether eating disorder patients can be differentiated from other dietary

groups by their severity of low self-esteem. One claimed to show that both bulimics and severe bingers were lower in self-esteem than mild bingers and controls (Crowther & Chernynk, 1986); while another claimed that a bulimic group was significantly lower in self-esteem than non-clinical bingers, purgers and subthreshold bulimic (Mintz & Betz, 1988). The third found bulimics lower in self-esteem than obese and controls, but failed to report such comparisons for the anorexic group (Shisslak et al., 1990).

Again, as well as contradictory results, the above review has also revealed methodological flaws which call to question the claims made within the studies. As in the articles assessing perceived control and assertiveness the most commonly found drawbacks were in the areas of group criteria and allocation, inadequate reporting of results and making claims without statistical basis.

As in the case of perceived control and assertiveness, the question raised by Williams et al. (1990) - that eating disorder patients may be differentiated from other dietary/weight concern groups, as well as from normal controls, in terms of low self-esteem, cannot be addressed through existing literature. There is insufficient support for the claim that low self-esteem is an important component of a primary eating disorder personality. Therefore, it is apparent that there remains a need to investigate the role of self-esteem in eating disorders vis à vis other dietary/weight concern groups, through a strictly controlled study.

4.5 The Research Assessing Eating Disorder Groups And Dietary/Weight Concern Groups On Measures Of Self-Directed Hostility. Each Alone And In Comparison.

For the purpose of this study self-directed hostility will be defined as covert negative self-directed cognitions in terms of self-criticism, guilt, and actual self-directed aggression/self-punitiveness.

4.5 (1) Research Assessing Eating Disorder Groups On Measures Of Self-Directed Hostility.

As presented in Chapter Three, there are anecdotal claims that primary eating disorder patients are characterised by hostility towards the self. However, thorough search of the literature revealed only one article which assessed anorexic and/or bulimic patients on self-directed hostility as in the above definition. Two articles were found to assess outwardly directed hostility:

Frank (1991) sent out over 800 questionnaire packages, and from the 400 responses, compiled three groups: female eating disorder (n = 30), depressed (n = 33), and normal control (n = 31) subjects. No reason was given as to why the remaining 306 were unacceptable. Groups were compared on a measure of shame and guilt (Harder & Lewis, 1987). Results indicated that the eating disorder group was significantly more troubled by shame and guilt than either of the two comparison groups. However, the researcher failed to report subscale scores or group comparisons on those subscales. Hence, it is impossible to discern whether one or both of the concepts differentiated the groups. Further, grouping was extremely weak - all subjects were allocated on the basis of self-report questionnaire, no screening for other psychological disorder was conducted, and no demographic data collection was reported.

Strober (1980) compared anorexic, depressed, conduct disordered and female norms on the HSLC-90 hostility scale. While it was claimed that anorexics were less hostile than conduct disorder patients, no comparisons were reported between anorexics and female norms. Hence the article shed no light on whether anorexics are more or less hostile than non-disordered populations.

Weiss & Ebert, (1983), in a well controlled study, compared bulimics (n = 15) and normal controls (n = 15) on the same HSLC-90 hostility scale. Results indicated that bulimics were significantly more hostile. The one drawback to this study was the low group numbers, with only 15 in each group.

4.5 (ii) Research Assessing Dietary/Weight Concern Groups On Measures Of Self-Directed Hostility.

Self-directed hostility, as defined for this project, has been noted in the obese (Wolman, 1982; Wooley & Wooley, 1980, 1985). Only two articles could be found to assess self-directed hostility in weight/dietary problem groups. In both cases this was only in terms of guilt. A third article assessed guilt - but outwardly directed.

Dunn & Ondercin (1981) conducted a large screening of 252 female students and selected 47 on the basis of high and low compulsive eating. However, this grouping was on the basis of a researcher constructed measure which was not standardised at the time of testing. Subjects also completed the 16 Personality Factor Questionnaire (16 PF: Cattell et al., 1970) scales which includes a measure of guilt proneness. Results indicated that the high compulsive eaters were more prone to guilt than low compulsive eaters; and regression analysis indicated that guilt proneness was a predictor of compulsive eating. However, the results of this study are much

weakened by the inadequate grouping and the failure to present the criteria of compulsive eating. Hence, it is impossible to discern the nature of the dietary/weight concern addressed and its relationship to primary eating disorders.

Kagan & Squires (1984) administered a hostility scale containing a guilt subscale (Buss & Durkee, 1957) and two eating behaviour questionnaires. Sample numbers were very high with 300 female students participating. The subject pool was split, with some responding to one eating behaviour questionnaire, the remainder responding to the second eating behaviour questionnaire. The ratio was not reported. The authors claimed to show that guilt was related to compulsive eating and bingeing. However, these generalisations were made on the basis of very low order correlations which may have been a result of the high subject numbers rather than actual effect. Another flaw in this study was the very loose and informal definition of binge eating, as admitted by the authors.

Another article assessed hostility, but again it was outwardly directed (Lingsweiller et al., 1987). In this third article, 56 obese and normal weight subjects were grouped by weight category and then subgrouped into bingers and non-bingers. While the weight categorisation was according to acceptable criteria, the binge group allocation was on the basis of self-report questionnaire, not clinical diagnosis. Also the criteria for binge eating were not presented. Subjects completed The Multiple Affect Adjective Checklist (Zuckerman et al., 1964), every day for 14 days. The authors claimed that the results indicated that there were no differences between the four binge/weight categories. However, this claim was made on the basis of across-group Analysis of Variance not between-group comparisons. It was also claimed that the obese bingers and non-binger groups displayed greater

variability, though this was based on an Analysis of Variance on the group standard deviations - a procedure which has no statistical rationale.

4.5 (iii) Research Comparing Eating Disorder And Dietary/Weight Concern Groups On Measures Of Self-Directed Hostility.

Only two articles could be found which assessed hostility in eating disorder groups and dietary/weight concern groups. However, the hostility measured was outwardly directed.

Thompson and Schwarz (1982) compared anorexic (n = 26), anorexic-like (n = 25), and normal controls (n = 26) on the hostility scale of the HSLC-90. Anorexic subjects reported significantly more hostility than both control groups. However, the grouping criteria in that study were highly questionable. Thirty-five percent of the anorexic group reported severe bingeing, suggesting mixed syndrome. Also results were inadequately reported.

Prather and Williamson (1988) conducted a more broad ranging study. They assessed hostility in a broad range of severity of dietary/weight concern groups, with equal (though rather low) numbers in each group (n's = 16). Bulimics, binge eaters, treatment obese, non-treatment obese, and normal controls were compared on the hostility scale of the HSLC-90. While the bulimics and binge eaters were diagnosed by both self-report questionnaire and clinical interview, grouping appears to have been less stringent for the other groups. Also there was no indication as to whether the groups were screened for other psychological disorders. Results were confusing. It appears that the bulimics, bingers, and treatment obese were clustered and more hostile than the other two groups. However, group comparisons were impossible to interpret as the author referred to means being significant rather than differences between the means.

4.5 (iv) Summary Of The Research Assessing Eating Disorder And Dietary/Weight Concern Groups On Measures Of Self-Directed Hostility. Each Alone And In Comparison.

The above three sections have attempted to review the literature addressing self-directed hostility in eating disorders, dietary/weight concern groups and in eating disorders and dietary/weight concern groups concurrently. The overall finding of this review is that the issue of self-directed hostility has yet to be investigated in the area of eating problems.

Despite considerable anecdotal data on self-criticism, guilt and even self-injury, only one article was found to assess self-directed hostility in eating disorder subjects. Results indicated that eating disorder subjects have higher levels of shame and guilt than controls (Frank, 1991), though group selection criteria were weak. The only other articles in this area, investigated outwardly directed hostility (Strober, 1980; Weiss & Ebert, 1983)

Two articles were found to assess guilt in dietary/weight concern groups (Kagan & Squires, 1981; Dunn & Ondercin, 1981). Both claimed to show that dietary/weight concern groups reported higher levels of guilt; but in both articles these claims were tempered by inadequate group criteria/allocation, and insufficient/inadequate analysis of results.

Concerning concurrent assessment of eating disorder and dietary/weight concern groups - no article was found to address any aspect of self-directed hostility. The two articles found in this area, addressed outwardly directed hostility only (Thompson & Schwarz, 1982; Prather & Williamson, 1988).

The obvious conclusion is that the evidence of self-directed hostility

in eating disorders alone, or vis à vis other dietary/weight concern groups, remains in the realm of anecdotal claims. Consequently, the question raised by Williams et al. (1990) that eating disorders may be differentiated from other dietary/weight concerns, as well as normal control by their self-directed hostility, has not been addressed by the empirical literature thus far. Hence the claim that this is an important component of an eating disorder personality is unsubstantiated. There is a definite need to conduct a strictly controlled study to address this gap in the literature.

4.6 Conclusions.

This review has attempted to address the first issue raised in Chapter Three, and which has been partly addressed by Williams et al. (1990). Are perceived external control, low assertiveness, low self-esteem and self-directed hostility important characteristics of primary eating disorder patients, which differentiate these patients from dietary/weight concern groups, and not just from normal controls?

Concerning perceived external control, as measured by Locus of Control, there was considerably more relevant research than in the areas of assertiveness, self-esteem, and self-directed hostility. Nevertheless, results were inconclusive. Of the ten studies comparing primary eating disorder groups with normal controls, six claimed to show that the eating disorder subjects reported more control by external forces. This supported the claim that primary eating disorder patients display this characteristic. However, in the few articles which addressed perceived control in dietary/weight concern groups, three of the four articles claimed to show that these groups also perceive more external control than

normal controls. Such trends could be taken to suggest that both primary eating disorder patients and dietary/weight concerned individuals feel externally controlled; therefore, this characteristic does not differentiate primary eating disorder patient from dietary/weight concerned individuals. However, when this issue was addressed by reviewing the studies which have compared primary eating disorder with dietary/weight concern groups, no conclusion could be made. Only four studies reported direct statistical group comparisons; with contradictory results. Two indicated that anorexic and bulimic subjects are more external than obese (Woods & Heretick, 1983/4; Shisslak et al., 1990); one claimed that bulimics were more external than partial syndrome (King, 1989); while the fourth found both anorexics and obese to be more external than controls but failed to compare the two (Basseches & Karp, 1984). Not only were the results contradictory, and based on different groups, but all were considerably weakened by inadequate grouping and reporting of results. Consequently, though the apparent trend is that primary eating disorder patients are more external than other dietary/weight concern groups, this is by no means established. No study has, thus far, conducted a well controlled, comparative investigation, incorporating well criterioned primary eating disorder and dietary/weight concern groups on a measure of perceived control.

Concerning assertiveness, the general trend of results in studies comparing eating disorder and normal controls, is that primary eating disorders are characterised by low self-esteem. These findings are apparent whether in correlational studies (Holleran et al., 1988) or by direct between group comparison (Weiss & Ebert, 1983; Fischer-McCanne, 1985); though all studies employed weak grouping and analysis. This supports the

contention that primary eating disorder patients are characterised by low assertiveness (Bruch, 1978; Selvini-Palazoli, 1974). However, low assertiveness has been shown to be associated with other dietary/weight concern groups in three of four relevant studies (Hawkins & Clement, 1980; Klesges, 1984; Mehrabian et al., 1985/6), though all were methodologically weak. This suggests that both primary eating disorder and dietary/weight concern groups are characterised by low assertiveness; and that this feature does not differentiate anorexic and bulimic patients from other individuals with non-clinical, dietary/weight concern. Again, the existing literature was unable to confirm this suggestion. The only relevant articles were; one which found anorexics to be more interpersonally distrustful than weight-preoccupied women (Garner et al., 1984); one which reported bulimics to be more interpersonally sensitive than obese controls (Prather & Williamson, 1988); and a third which found no differences between 'clinical' and non-clinical bulimics (Greenburg, 1986). Thus far, no study has adequately compared diagnosed anorexic and bulimic patients with other dietary/weight concern groups on a measure of assertiveness. A well controlled study, employing properly criterioned groups and standardised measures is necessary to fill this gap.

Concerning self-esteem, review of the six relevant articles has revealed a consistent finding that bulimic subjects are lower in self-esteem than normal controls. Anorexics have yet to be adequately assessed. However, the contention that primary eating disorder patients are characterised by deficits in self-esteem was supported. Though, this feature has also been attributed to dietary/weight concern groups (Wolf & Crowther, 1983; Jacobs & Wagner, 1984; Davis et al., 1987). However, interpretation of these results should be cautious in the light of general weaknesses in grouping,

methods and statistics. Nevertheless, the similarities in the findings would suggest that primary eating disorder groups and dietary/weight concern groups both report low self-esteem; and that this characteristic does not differentiate primary eating disorder from dietary/weight concern groups. When this suggestion was addressed, only three relevant studies could be found. All three employed only bulimic eating disorder groups. However, these studies were, at least, broad in that they incorporated clinical groups and a range of non-clinical dietary/weight concern groups. The overall trend was that clinical eating disorder subjects are lower in self-esteem than other dietary/weight concern groups (Mintz & Betz, 1988; Shisslak et al., 1990); though one study did indicate that bulimics and severe bingers were comparable (Crowther & Chernynk, 1986). Unfortunately, in all three studies, the grouping was weak and none incorporated anorexic patients. Therefore, if the question is to be addressed as to whether low self-esteem differentiates primary eating disorders from non-clinical dietary/weight concern, a properly controlled study comparing criterioned groups of anorexic, bulimic and other dietary/weight concern groups on a measure of self-esteem is necessary.

Concerning self-directed hostility in terms of self-criticism, guilt and covert aggression/self-punitiveness, the literature was markedly sparse. Only one study compared primary eating disorder and controls and found the primary eating disorder group more pathological on a measure of shame and guilt (Frank, 1991). Two rather weak studies have indicated that dietary/weight concern groups report higher levels of guilt than controls (Dunn & Ondercin, 1981; Kagan & Squires, 1984). A very tentative suggestion is that primary eating disorder and non-clinical dietary/weight concern groups both display self-directed hostility (at least in terms of guilt);

and that eating disorder patients cannot be differentiated from other dietary/weight groups by their level of self-directed hostility. However, no study has, thus far, addressed this suggestion. There is a need to compare anorexic and bulimic patients with criterioned groups of non-clinical dietary/weight concern, and normal controls, on measures of self-directed hostility.

In short, the above review and summary have indicated that the issue raised in Chapter Three and by Williams et al (1990) has yet to be properly addressed. Available research fails to establish whether perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important component characteristics of a primary eating disorder personality; and if they differentiate primary eating disorder patients from dietary/weight concern, as well as from normal controls. Hence, no further conclusion could be drawn on the importance of these four characteristics in primary eating disorder personality. This brings us to the first research implication for the present Project;

4.7: Research Implications For The Present Project.

The first research implication for this project is that there is a need to conduct a strictly controlled study to assess the role of perceived control, assertiveness, self-esteem and self-directed hostility in anorexic and bulimic patients, compared with two other dietary/weight concern groups - namely obese dieters and non-obese dieters; and also normal controls.

TABLE 4.1: SUMMARY OF LITERATURE ASSESSING PERCEIVED CONTROL, ASSERTIVENESS, SELF-ESTEEM, AND SELF-DIRECTED HOSTILITY IN EATING DISORDER GROUPS AND OTHER DIETARY/WEIGHT GROUPS, BOTH ALONE AND IN COMPARISON.

COMPARISON OF EATING DISORDER GROUPS WITH NORMAL CONTROLS - LOCUS OF CONTROL.

AUTHOR/DATE	SUBJECTS (n)	LOC. MEASURE	RESULTS	COMMENTS
Allerdissen et al, 1981	Bulimics (28) Normal controls (28)	(1) Levenson LOC scales	Bulimics significantly more external on the powerful others scale. No differences on chance or internality scales.	Bulimics self-diagnosed - non DSM III. No indication of severity given. No normal control criteria given. No methodology presented.
Hood et al. 1982	Anorexic subdivided into internal and externals (54) Student controls (44) School Children Norms (425)	(1) Reid & Ware LOC scales	Young patients significantly more internal than norms Social System and Fate scale. No difference on Self-Control. No Differences between older patients and students on any scale.	Grouping unclear. Use of statistical norms inadequate. No demographic data on student group - indicates lack of controlled comparison.
Rost et al. 1982	Bulimic (34) Non-Bulimic Controls (34)	(1) Author constructed Sex LOC scale	Bulimics signif. more external in terms of sex-related LOC.	Bulimic group = self-diagnosed. Control subjects reported restrained eating - suggests mixed aetiology. Measure unstandardised.
Strober, 1982	Anorexic (30) Depressed (30) Conduct Disordered (30) Female standardisation norms	(1) Nowicki-Strickland LOC scale	Anorexics signif. more internal than both depressed + conduct disorder + female norms. Externality related to anorexic severity.	Anorexic group met DSM III criteria. No adequate control comparison group.
Weiss & Ebert, 1983	Normal Weight Bulimics (15) Normal Controls (15)	(1) Nowicki-Strickland LOC scales	Claim to show that bulimics were external in terms of powerful other s+ chance control.	Bulimics met DSM III criteria. Controls well matched. No scores/statistics presented.
Fischer-McCanne, 1985	Bulimics (23) Therapy Patients (15) Normal Controls (18)	(1) Rotter LOC scale	No significant differences across the three groups.	No between group comparison. (ie. no t-tests employed)

Grace et al. 1985	Purging Bulimics (26) Non-Purging Bulimics (24) Normal Controls (24)	(1) Rotter LOC scale	Purging + non-purging signif. more external than controls. No differences between bulimics.	Post hoc grouping by self-report scales --> 17.7% of group classed bulimic. Much higher than prevalence estimates.
McLaughlin et al. 1987	Anorexic (25) Bulimic (25) Normal Controls (25)	(1) Adjective Checklist	No overall differences across the groups. Anorexics attained lowest mean.	Broader grouping than other studies. No between group comparisons.
Wagner et al. 1987	Eating Disorder (18) High School Controls (18)	(1) Nowicki-Strickland LOC scale. (2) Field Dependence. (3) Eating Self-Efficacy	Eating Disorder more external. No difference on field dependence. Eating disorder higher on self-efficacy scale.	Eating disorder group = mixed aetiology. Low group numbers. LOC subscales not reported. Self-efficacy scale unstandardised.
Holloran et al. 1988	Students (209) divided into: Bulimic/non-bulimic	(1) Nowicki-Strickland LOC scales	Odds Ratios indicated no differences.	Post-hoc grouping by self-report questionnaire. No criteria presented. Statistics very unclear.

COMPARISON OF WEIGHT/DIETARY CONCERN GROUPS WITH CONTROLS - LOCUS OF CONTROL.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>LOC. MEASURES</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Held & Snow, 1972	Obese (23) Normal Controls (23)	(1) Rotter LOC scale	No significant differences.	Group criteria well described. No apparent screening for eating disorder.
Hawkins & Clement 1980	Student Group (247) (male n = 65, fem n = 182) overweight females (26)	(1) Rotter LOC scale	External LOC positively correlated with bingeing and restraint score	Correlations only - no comparative statistics. No significance levels given.
Dunn & Ondercin, 1981	High Compulsive Eaters (23) Low Compulsive Eaters (23)	(1) Rotter LOC scale	High compulsive eaters significantly more external. Externality correlated with compulsive eating.	Grouping by self-report questionnaire. No criteria for compulsive eating presented.

Thomason, 1983	Obese (20) Normal Control (42) (male:female = 50:50)	(1) Reid & Ware LOC scales	No sex differences. Obese signif. more external on self control + social system scales. No differences on fate scale.	Obesity criteria strong. Ex-obese excluded.
Jacobs & Wagner, 1984	Male/female group (99) split into: Obese/ Previously obese/ Always Normal Weight	(1) Health LOC scale	Not reported	
Davis et al. 1987	Obese (30) Normal Control (20)	(1) Rotter LOC scale	No comparative analysis. LOC used as grouping variable.	

COMPARISON OF EATING DISORDER AND WEIGHT/DIETARY CONCERN GROUPS - LOCUS OF CONTROL.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>LOC. MEASURES</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Garner et al. 1976	Anorexic (18) Obese (16) Thin Normal (16) Normal Control (16) Psychiatric Control (16)	(1) Reid & Ware LOC scale (Self-control scale only)	Obese more external than normal control, not thins or psychiatric. No differences between anorexics, thins, normal or psychiatrics. No anorexic/obese comparisons.	No subscale scores presented. No Anorexic/obese comparisons.
Wolf & Crowther, 1983	Normal Weight (60) Overweight (60) Subdivided into: No Binge (30) Mild Binge (30) Moderate Binge (30) High Binge (30)	(1) Rotter LOC scale	Regression analysis - LOC not a predictor of binge group. No between group comparisons. No correlation between LOC + binge behaviour.	Grouping unclear. Grouping based on 2 questions within a self-report questionnaire.
Woods & Heretick, 1983/84	Anorexic (10) Obese (10) Normal Control (10)	(1) Reid & Ware LOC scale. (Self-control scale only)	Differences between all three groups. Anorexic signif. more external than obese.	Very low group numbers. Scores and scale aim misinterpreted by the author --> hard to interpret results.

Basseches & Karp, 1984	Anorexic (16) Obese (16) Normal Control (16)	(1) Field dependence (embedded figures test)	Anorexic and obese more field dependant than controls. No anorexic/obese differences.	Group criteria strong. Unclear if obese group screened for eating disorder.
King, 1989	Bulimic (7) Partial Syndrome (15) Obsessional Dieter (13) Normal Dieter (27) Obese (3) Disturbed (4) Normal Control (32)	(1) LOC of Behaviour scale	Bulimic + partial syndrome more external than normal dieters + normal control. No bulimic/partial syndrome/obese comparison reported. Discriminant function --> LOCB not a significant predictor of group.	Group numbers small in all but control group. Grouped by interview - strong criteria. Statistics not fully reported.
Shisslak et al. 1990	Underweight Bulimic (20) Normal weight bulimic (31) Overweight Bulimic (22) Anorexic (20) Obese (22) Normal Control (32)	(1) Rotter LOC scale	All 3 bulimic groups signif. more external than other 3 groups. Overweight + underweight bulimics signif more external than underweight bulimics. No anorexic/obese diffs reported.	Result sparcely reported. No non-clinical group criteria given. Diagnostic method not presented.

COMPARISON OF EATING DISORDER GROUPS WITH NORMAL CONTROLS - ASSERTTIVENESS.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>ASS. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Strober, 1980	Anorexic (22) Depressed (22) Conduct Disorder (22) Female norms (?)	(1) Hopkins SCL 90 Interpersonal sensitivity (2) CPI - Sociability scale	No diffs. on interpersonal sensitivity. Anorexics signif less sociable than conduct disorder. Anorexic/norms comparison.	Comparison to norms not reported. No screening of conduct disorder group for eating disorder.
Weiss & Ebert, 1983	Normal Weight Bulimics (15) Normal Weight Controls (15)	(1) SLC 90 - interpersonal sensitivity scale.	Bulimics significantly higher in interpersonal sensitivity.	Low group numbers. Well controlled study.
Fischer McCanne, 1985	Bulimics (23) Therapy Patients (22) Normal Controls (18)	(1) College Self-Expression scale	Bulimics reported as less assertive. No signif. level.	Therapy group not screened for eating disorder. Only group means presented.

Holleran et al.
1988

Student Group (209)
Subdivided: bulimic/
non-bulimic (?’s)

(1) Gambrell & Richey
Assertiveness
Inventory

Odds ratios used. Claim that
low assertiveness predicts
high binge score (group)

Grouping by self-report questionnaire.
No group criteria presented.
No comparative statistics.

COMPARISON OF WEIGHT/DIETARY CONCERN GROUPS WITH NORMAL CONTROLS - ASSERTIVENESS.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>ASS. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Hawkins & Clement, 1980	Male/female Students (male=65, fem=182) Grouped binge/no binge Overweight females (26)	(1) College Self- Expression scale	Assertiveness negatively correlated with measure of restraint. (no signif. level) No group comparison.	Grouping by self-report questionnaire. No group comparisons. Correlations very low order. Significance not presented.
Wolf & Crowther 1983	Normal Weight (60) Overweight (60) Subdivided: No Binge (30) Mild Binge (30) Moderate Binge (30) High binge (30)	(1) Gambrell & Richey Assertiveness Inventory	Neither probability of assertive response nor discomfort with assertiveness predicted eating behaviour. No correlation between eating attitudes and assertiveness.	Grouping unclear. Grouping based on self-report question. No comparative statistics. Just correlations.
Kiesges, 1984	Student Group (232) (males=104, fems=128) Subdivided: overweight/ normal weight (?’s)	(1) Author constructed measure of food assertiveness (2) Gambrell & Richey Assertiveness scale	Overweight signif. less assertive on global measure (G&R scale). Overweight less food assertive.	No group criteria presented. No weight-group n’s. Author measure unstandardised conceptually confused. No group screening for eating disorder.
Mehrabian et al. 1985-86	Student Group (?) Subdivided: Predisposed Anorexia Predisposed Obese Normal Control	(1) Dominance/ Submissiveness Questionnaire	Lower dominance correlated with predisposition to obesity + anorexia + binge eating.	Grouping questionable. No n’s. No group criteria presented. Questionnaire not validated. No comparative statistics.

COMPARISON OF EATING DISORDER AND WEIGHT/DIETARY CONCERN GROUPS - ASSERTTIVENESS

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>ASS. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Garner et al. 1984	Anorexic (50) Weight Preoccupied (66) Normal Control (237)	(1) EDI - Interpersonal Distrust Scale	Anorexic group significantly higher than non-weight-preoccupied. No differences between anorexics and weight-preoccupied.	Weight preoccupation criteria = arbitrary No screening of eating disorder reported for weight-preoccupied or control groups
Greenburg, 1986	Bulimic (12) Non-clinical Bingers (11) Normal Controls (14)	(1) College Self- Expression Scale	No differences between groups. Regression analysis --> assertiveness not predictive of bulimia.	Group criteria not presented. Group allocation unacceptable.
Prather & Williamson, 1988	Bulimics (16) Binge Eaters (16) Treatment Obese (16) No Treatment Obese (16) Normal Controls (16)	(1) MMP1 - social introversion scale (2) SCL 90 - interpersonal sensitivity	No significant differences between the groups on introversion scale. Just significant difference between the groups on interpersonal sensitivity.	Bulimic and bingers = DSM III criteria. No screening reported for other groups. No between group statistics --> comparison impossible.
Rossiter et al. 1989	Bulimic (10) Restrained Eaters (?) Normal Controls (?) (Restrained+Control = 20)	(1) Rathus Assertiveness Schedule.	Not reported. Wording indicates no differences	Well criterioned groups. No results reported for assertiveness.

COMPARISON OF EATING DISORDER GROUPS WITH NORMAL CONTROLS - SELF-ESTEEM.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>SE. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Strober, 1980	Anorexic (22) Depressed (22) Conduct Disorder (22) Female Norms (?)	(1) CPI - Self acceptance Scale	No signif. differences between anorexic and control groups. No comparison with fem. norms.	Anorexic diagnosed by DSM III. No screening of other groups for E.D. No comparison with norms --> unable to establish anorexics 'lower' in esteem.
Weiss & Ebert, 1983	Normal Weight Bulimics (15) Normal Weight Controls (15)	(1) Piers-Harris Self-esteem Scale	Bulimic group significantly lower on all six scales of the PHSES.	Well controlled study. Bulimics = DSM III Low group numbers. Measure developed for use with children

Katzman & Wolchik, 1984	Bulimics (30) Binge Non-purgers (22) Normal Controls (28)	(1) Rosenberg Self-Esteem Scale	Bulimic significantly lower in in self-esteem than non-purgers + normal controls. Appears no differences between non-purgers and controls.	Both Bulimic groups diagnosed according to operationalised DSM III. Grouping clear. Screening for e.d. in control group not reported. Non-purger/control comparison unclear.
Nagelburg et al, 1984	Purger Bulimic (10) Non-purge Bulimic (14) Normal Controls (7)	(1) Tennessee Self- Concept Scale.	Purgers significantly lower than normal controls. No difference between non- purgers and normal controls. No difference purgers/non-purgers.	Grouping by questionnaire + interview. However, no criteria presented. Subscale score appear incorrectly reported --> not interpreted. Group n's low.
Grace et al, 1985	Purger Bulimic (26) Non-purger Bulimic (24) Normal Control (24)	(1) Coopersmith Self-Esteem Scale	Purger bulimic significantly lower than controls. Non-purge bulimic significantly lower than controls. Purger /non-purger no differences.	Post-hoc grouping by self-report questionnaire --> 17.7% of sample classified bulimic. (Higher than any prevalence estimate). Therefore, criteria highly questionable.
Post & Crowther, 1985	Bulimic (71) Normal Control (71)	(1) Rosenberg Self-Esteem Scale	Discriminant function --> self- esteem not a significant predictor of group. T-tests showed that bulimics were significantly lower in self esteem.	Bulimics diagnosed by unpublished (unstandardised) questionnaire. Group criteria not presented.

COMPARISON OF WEIGHT/DIETARY CONCERN GROUPS TO NORMAL CONTROLS - SELF-ESTEEM.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>SE. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Wolf & Crowther, 1983	Normal Weight (60) Overweight (60) Subdivided : No Binge (30) Mild Binge(30) Moderate Binge (30) High binge (30)	(1) Tennessee Self- Concept Scale	Claim that low self-esteem is predictive of binge eating.	Grouping Unclear. Based on 2 questions on a self-report measure. No screening for e.d. reported. No comparative statistics.

Jacobs & Wagner, 1984	Student Group (99) Subdivided: obese/ previously obese/ always normal	(1) Tennessee Self- Concept Scale	Only physical self-concept scale reported. Significant differences across the 3 groups. Means suggest obese may be lower.	Group criteria not presented. Group n's not reported. Inadequate analysis - no between group comparison.
Davis et al. 1987	Obese (30) Normal Control (20)	(1) Stephensen's Q Technique.	Significant negative correlation between self esteem + overweight.	Screening for e.d. not reported. No comparative statistics.

COMPARISON OF EATING DISORDER AND WEIGHT/DIETARY CONCERN GROUPS- SELF-ESTEEM

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>SE. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Crowther & Chernynk, 1986	Bulimic (17) Severe Bingers (16) Mild Bingers (16) Normal Control (17)	(1) Rosenberg Self- Esteem Scale	No significant difference between bulimics and severe bingers. Bulimics and severe bingers significantly lower than mild bingers and controls.	Diagnosis of bulimia claimed - though based on self-report questionnaire. Criteria of other groups = acceptable.
Mintz & Betz, 1988	Student Group (682) Subdivided: Bulimic (20) Purgers (66) Bingers (100) Subthreshold Overweight (173) Chronic Dieter (73) Normal Control (211)	(1) Rosenberg Self- Esteem Scale.	Claimed that bulimics significantly lower than bingers + subthreshold. Bingers + subthresholds lower than controls. No differences between dieters + purgers + controls. (Based on MANOVA)	Grouping confusing. Group allocation by self-report measure. No diagnosis of 'bulimics'. No criteria presented. No between group statistics. Only group means reported.
Shisslak et al. 1990	Underweight Bulimic (20) Normal weight Bulimic (31) Overweight Bulimic (22) Anorexic (20) Obese (22) Normal Control (32)	(1) Rosenberg Self- Esteem Scale.	All 3 bulimic groups lower in self -esteem than other 3 groups. Overweight + underweight bulimic signif. lower than normal weight. Anorexics no different to controls?	Results sparse + inadequate. No non-clinical group criteria. Diagnostic method not presented. Anorexic/control comparison not reported.

COMPARISON OF EATING DISORDER GROUPS WITH NORMAL CONTROLS - HOSTILITY.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>H. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Strober, 1980	Anorexic (22) Depressed (22) Conduct Disorder (22) Female Norms (?)	(1) SCL 90 - hostility scale	Anorexics not different to depressed. Anorexics less hostile than disorder group. No comparison to norms.	Unclear if depressed + conduct disorder group screened for e.d. No comparison to norms --> unclear if anorexics are less hostile.
Weiss & Ebert, 1983	Normal Weight Bulimics (15) Normal Weight Controls (15)	(1) SCL 90 - hostility scale	Bulimics significantly more hostile than control subjects.	Well controlled study. Low group numbers.
Frank, 1991	Eating Disorder (30) Depressed (33) Normal Control (31)	(1) Harder & Zalma Shame and Guilt Scales.	Eating Disorder group signif. higher in shame/guilt than 2 comparison groups. No subscale scores reported.	Grouping by self-report measure. No demographics collected. No screening for other disorder. Results sparse - no subscales reported.

COMPARISON OF WEIGHT/DIETARY CONCERN GROUPS WITH NORMAL CONTROLS - HOSTILITY.

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>H. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Dunn & Ondercin, 1981	High Compulsive Eaters (23) Low Compulsive Eaters (24)	(1) 16PF - guilt proneness scale	High Compulsive Eaters more guilt prone than low compulsive eaters. Regression analysis indicated that guilt proneness highly related to compulsive eating.	All grouping by self-report measure. No criteria for compulsive eating presented.
Kagan & Squires, 1984	Student Group (300)	(1) Items from Buss-Durkee hostility scale	Compulsive eating significantly correlated with all hostility scales. No connection between dieting and hostility.	Group definitions very loose. No demographic data collected. Subjects completed different eating behaviour measures. Correlations of very low order - may be due to high group n.

Lingsweiler et al. 1978

Normal Weight Bingers (12)
 Normal Weight Non-binge (13)
 Obese Bingers (17)
 Obese Non-binge (14)

(1) Multiple Affect Adjective Checklist

No significant differences between the groups on overall scores. Obese (bingers and on-binge) reported greater fluctuation in hostility levels.

Grouping by self-report measure. Group criteria not presented.

COMPARISON OF EATING DISORDER AND WEIGHT/DIETARY CONCERN GROUPS - HOSTILITY

<u>AUTHOR/DATE</u>	<u>SUBJECTS (n)</u>	<u>H. MEASURE</u>	<u>RESULTS</u>	<u>COMMENTS</u>
Thompson & Schwarz 1982	Anorexic (26) Anorexic-like (25) Normal Controls (26)	(1) SCL 90 - hostility scale	Anorexics significantly more hostile than anorexic-like + controls. No differences anorexic-like and controls	Diagnosis of Anorexic group highly questionable - 35% reported severe bingeing. Results inadequately reported. No anorexic/control comparison.
Prather & Williamson 1988	Bulimic (16) Bingers (16) Treatment Obese (16) Non-Treatment Obese (16) Normal Control (16)	(1) SLC 90 - hostility scale	Significant differences across the groups. Means indicate that bulimic + bingers + treatment obese are clustered and higher than other two groups.	Bulimic and bingers = DSM III. Screening of other groups for e.d. not reported. No between group statistics --> comparisons impossible.

CHAPTER FIVE

REVIEW OF EATING DISORDER ASSESSMENT MEASURES.

AND THE CASE FOR A NEW MEASURE.

5.1 Overview Of Chapter.

Chapter Three raised the issue, based on anecdotal claims and the results of Williams et al. (1990), that it is important for perceived external control, low assertiveness, low self-esteem and self-directed hostility to be adequately assessed in primary eating disorder patients. However, dietary/behavioural features of these patient should also be addressed. This chapter presents the results of Williams et al. (1990) and other relevant research/theory to compile five key requirements for a comprehensive assessment measure, for use with primary eating disorder patients in treatment. All currently available eating disorder assessment measures will then be reviewed, to establish the extent to which those five requirements are met. Based on the conclusions of that review, it will be argued that there is a need to develop a new comprehensive assessment measure for use with anorexic and bulimic patients. As noted in the preface, lack of appraisal elsewhere necessitated a lengthy review section in this chapter.

5.2 The Move Towards Addressing Cognitive Issues In The Treatment Of Primary Eating Disorders.

The treatment of anorexia and bulimia have been the subject of ongoing debate and change throughout the present century. The first approach was, as might be expected, classical psychoanalysis (Nicolle, 1939; Meyer, 1971; Lorand 1943). In the late 1960's and early 1970's this was replaced with models from object relations theory and developmental theories (Crisp, 1965; Goodsit, 1969; Masterson, 1977; Storly, 1976); and then the advent of behaviour therapy which enjoyed considerable popularity (Geller et al, 1978; Halmi et al., 1975; Herson & Detre, 1980; Kenny & Solyom, 1971; Rosen

& Leitenburg, 1982; Russell, 1970; Vandereyken & Pieters, 1978). However, behaviour therapy has been strongly criticised as enforcing a regime of extreme control over the patient which may exacerbate her perception of feeling controlled; and also as addressing the symptom rather than the underlying cause (Bruch, 1974; Spector, 1975).

In the later 1970's the treatment of eating disorders began to diversify and therapists increasingly explored more cognitive approaches such as group therapy (Boskind-Lodahl & White, 1978; Huon & Brown, 1985; Johnson et al, 1983; Schneider & Agras, 1985); direct information feedback (Wilson et al, 1985); relaxation (Mizes & Fleece, 1984); psychoeducational therapy (Garner et al., 1985c); family therapy (Gross, 1986; Leibman et al., 1986; Minuchin et al., 1978; Schwarz et al., 1985); and therapy aimed at sociocultural awareness (Boskind-Lodahl, 1976; Boskind-Lodahl & Sirlin, 1977). Another major development was the entry of drug therapy into the field of eating disorders (Goldberg et al., 1980a; Pope & Hudson, 1982; Walsh et al., 1982; see Mizes, 1985 or Yager, 1985 for reviews). But the most notable development in the move towards addressing the cognitive aspects of anorexia nervosa and bulimia was the advent of cognitive-behaviour therapy (See Beck, 1976, for description). The main tenet of this therapy is that it employs techniques to modify the dysfunctional thought patterns held by these patients as well as alter their behaviour. Cognitions and behaviour are not viewed as mutually exclusive, but as inter-causal (Fairburn, 1981, 1983; Freeman et al., 1985; Garner, 1986a, 1986b; Grinc, 1982, Linden, 1980; Long & Cordle, 1982; Rossiter & Wilson, 1985). Therapists, early in the 1980's recognised the necessity of

addressing cognitions. As stated by Fairburn (1983, 1985a):

"...beliefs and values appear to be of primary importance in the maintenance of the condition. It is therefore likely that change in this specific psychopathology is a prerequisite of full recovery." (1985, pp.161).

Moreover, it was quickly recognised that cognitive-behavioural therapy, by addressing the underlying psychopathology, was more effective in achieving positive change in patients with bulimia (Fairburn, 1981; Freeman et al., 1985) and anorexia (Garner & Bemis, 1982, 1985).

It has been suggested that perceived external control, low assertiveness, low self-esteem and self-directed hostility are characteristics of the psychopathology of both anorexia nervosa and bulimia. Examination of the treatment literature has revealed repeated recommendations, not only that treatment is cognitively orientated, but also that these four cognitive/emotional factors are addressed within therapy/treatment.

5.3 Recommendations For The Treatment Of Perceived Control, Assertiveness, Self-Esteem, And Self-Directed Hostility In Eating Disorder Patients.

Review of the literature has indicated that the four cognitive/emotional features highlighted by Williams et al. (1990) warrant treatment attention.

In the area of *perceived control*, several therapists/researchers involved in eating disorder treatment have stressed the need to develop the perception of personal control by increasing feelings of personal effectiveness (Crisp et al., 1985; Sours, 1980; Wagner et al., 1987; Yager, 1985); developing personal autonomy (Bruch 1973, 1978; Casper, 1982; Selvini-Palazzoli, 1974; Strober & Bowen, 1986); developing a sense of

control over life events and within the family/personal relationships (Boskind-White & White, 1983; Crisp, 1980; Crisp et al., 1985); developing techniques for countering control by others (Lawrence, 1984); and developing a perception of control over internal feelings/emotions (Bruch, 1973, 1978; Johnson et al., 1987; Selvini-Palazzoli, 1974). More pertinent to bulimic patients is the need to develop a sense of physical and cognitive/emotional control over bingeing and purgeing (Fairburn, 1981; 1985a, 1985b; Johnson et al., 1983; Schneider et al., 1987).

In the area of *low assertiveness* many writers in the area have noted the need to develop techniques for counteracting subjugation by significant others (Allerdissen et al., 1981; Bruch, 1973, 1978; Hawkins, 1982; Loro & Orleans, 1981); and inappropriate (submissive) behaviour within interpersonal relationships (Leon et al., 1985), and within the family (Selvini-Palazzoli, 1978; Yager, 1981, 1985). Others have extended this to developing personal effectiveness in relationships (Boskind-Lodahl, 1976; Boskind-Lodahl & Sirlin, 1977; Fischer-McCanne, 1985; White and Boskind-White, 1981); and redressing feelings of personal inadequacy (Dunn & Ondercin, 1981; Rost et al., 1982).

In the area of *low self-esteem* therapists have recognised the importance of addressing negative self-image (Hawkins & Clement, 1981; Kagan & Squires, 1983); of counteracting thwarted impulses and unrealistic expectations of the self which are manifested by an 'impoverished' self-esteem (Crisp et al., 1985); of developing self-worth within relationships (White & Boskind-White, 1981); of developing an age appropriate self-image (Martin, 1985); and, most specifically, of addressing the issue of low self-esteem (Freeman et al., 1985; Garner et al., 1982a).

In the area of *self-directed hostility* it has been widely noted that

distorted irrational thinking about the self requires specific therapeutic attention in the areas of guilt (Bruch, 1962, 1973, 1978; Dunn & Ondercin, 1981; Hawkins, 1982; Pyle et al., 1981; Russell, 1979); irrational, self-critical beliefs about the self (Fischer-McCanne, 1985; Dickstein, 1985); lack of self-acceptance (Weber & Gilligham, 1984; Wilson, 1976); negative self-appraisal (Garner, 1985); and self-directed anger (Crisp, 1983).

The above two sections have illustrated that therapeutic attention to the cognitive/emotional aspects of anorexia nervosa and bulimia, as well as the dietary/behavioural aspects, are currently seen as essential. Moreover, perceived external control, low assertiveness, low self-esteem, and self-directed hostility have been specifically noted as warranting therapy. If these features are of clinical importance and require treatment as such, it is important that they can be adequately measured in eating disorder patients. An assessment measure is required that will enable clinicians to assess eating disorder patients on the four aforementioned cognitive/emotional features.

However, this is not to say that the dietary/behavioural aspects of anorexia and bulimia can be ignored.

5.4 The Importance Of Addressing Dietary/Weight Issues In The Treatment Of Primary Eating Disorders.

The physical implications of the dietary/weight behaviours of anorexic and bulimic patients has been widely recognised. It is these dysfunctional, and sometimes life-threatening, features which are the most readily apparent features of the disorder; whether it be the self-starvation of the anorexic or the gross bingeing and purging of the bulimic. As such, it is these dietary/behavioural dysfunctions which initially propel the patient

into treatment - voluntarily or enforced. Moreover, the importance of these dietary behaviours are reflected in the fact that they constitute the bulk of the diagnostic criteria which labels these patients. There is no doubt that the therapeutic importance of addressing dietary/weight issues, lies in the fact there are both physical and cognitive consequences of disordered eating behaviour. Review of the literature indicates that these consequences have implications for both the expression and the maintenance of the disorders.

Concerning anorexic patients, the physical consequences of severe self-starvation are well documented. Zinc deficiency not only endangers proper muscle function, but alters taste perception, leading to bizarre food combining (Casper et al, 1980). Starvation induced nausea, bloating, and delayed gastric dilation exacerbate and reinforce the anorexic's caloric restriction (Garfinkel et al., 1978; Dubois et al., 1984). The hypometabolic state has cardiovascular consequences of reduced pulse rate, low blood pressure, hypothermia, and even cardiac arrhythmias leading to sudden death (Bhanji & Mattingly, 1988; Crisp, 1980). Emaciation has also been shown to have cognitive/emotional consequences which heighten/or distort the anorexics perception. The famous study by Keys et al. (1950) illustrated that starvation induces food preoccupation, mood lability, distorted perception of hunger, and obsessionality. Moreover, from the point of view of chronicity, starvation has serious effects on a persons interpersonal functioning, irrational thinking (Garfinkel & Garner, 1983, and ability to engage in treatment (Garner, 1985; Bruch, 1973).

Concerning, bulimic patients, the physical consequences of ingestion of large amounts of food followed by severe purgation methods have a number of physical consequences. On-going vomiting has an eroding effect on the teeth

and gums of the bulimic, which is often in conjunction with enlargement of the parotid gland (Halimi, 1987). More seriously, ingestion of such large amount of food puts the patient in danger of esophageal tears and fatal gastric rupture (Mitchell et al., 1982). Overuse of ipecac (emetine) to induce vomiting, has been reported as causal of cardiac failure in these patients (Freidman, 1984). Also, severe electrolyte imbalances have dangerous consequences for muscle function and the cardiac system (Mitchell et al., 1983). The binge-purge cycle also has a direct effect on the cognitive/emotional status of these patients, with feelings of self-depreciation, loss of control, fear, and depression (Mintz, 1982). Moreover, there is a more recently developed theory, that the binge-purge cycle and its emotional consequences is self-sustaining. It is claimed that dietary restraint propels the patient toward bingeing. The physical and emotional consequences of this binge are counteracted by another period of restraint, which, in turn, induces another period of bingeing. This theory has been formulated from a variety of research into restrained eating, laboratory studies of preloaded eating and physiological implications of dieting, which is discussed in detail elsewhere (Polivy & Herman, 1985; Wardle & Beinart, 1981).

These physical and cognitive/emotional implications have led clinicians to state that the normalisation of the dietary/weight issues in anorexia nervosa and bulimia nervosa, is an essential component of treatment. Concerning anorexic patients, Bruch (1973, 1982) has maintained that patients must attain a weight of 90 - 95 pounds before psychotherapy can

have any positive effect. This has been supported by other researchers who claim that

"It is of little value to search for the dynamic roots of experience that is grossly distorted as a direct result of starvation"

(Garner et al., 1982; pp. 32)

Consequently, detailed reports and recommendations for the therapy/treatment of anorexic patients emphasise that the normalisation of weight and eating, taking hereditary and metabolic factors into account is essential (Garner & Bemis, 1985), and must be "a non-negotiable part of treatment" (Garfinkel & Garner, 1983).

Likewise, in reports and recommendations on the treatment of bulimic patients, it has been maintained that the control and reduction of the binge-purge cycle is an essential requirement if these patients are to respond to psychotherapy (Fairburn, 1985b); and at very least, self-induced vomiting must stop (Lacey, 1983). Without such regulation, the patient remains within the self-maintaining cycle, and the physical and emotional consequences cannot be adequately addressed (Wardle & Beinhart, 1981).

Consequently, as dietary/behavioural issues are of clinical and medical importance, and require treatment as such, it is important that these features can be adequately assessed in eating disorder patients.

The above two sections have detailed the emergence of the recognition of the dual importance of both cognitive/emotional and dietary/behavioural features in the treatment of eating disorders. As might be expected, the recognition of dietary/behavioural issues as well as cognitive/emotional issues has had distinct ramifications in the development of modern treatment programs.

5.5 The Development Of Multidimensional Treatment Approaches.

The recognition of the dual nature of eating disorders has led to the development and increasing promotion of cognitive-behavioural treatments. Articles have been presented giving detailed descriptions of cognitive-behavioural approaches to bulimia nervosa (Fairburn, 1985b; Ordman & Kirschenbaum, 1985) and also anorexia nervosa (Garner & Bemis, 1982, 1985; Garfinkel, 1983). However, it is notable that there are more outcome studies for bulimic patients than for anorexics. This is, no doubt, due to the fact that such therapy takes longer with anorexic patients as a consequence of their lower motivation to change (Fairburn, 1985b), and their need for deeper psychotherapy of the cognitive/emotional aspects (Garner, 1985).

In keeping with the evidence stated above, these treatment studies are characterised by the two stage treatment modality, in which dietary/weight issues are tackled first with behavioural techniques, followed by the addressing of the cognitive/emotional issues with cognitive techniques (Fairburn, 1981, 1985; Garner, 1986a, 1986b; Garner & Bemis, 1982, 1985; Long & Cordle, 1982; Rossiter & Wilson, 1984; Lacey, 1983).

The need for a 'two-track' approach, incorporating dietary/weight issues and the cognitive/emotional characteristics highlighted above has been clearly stated by Garner (1986b):

"Throughout the course of treatment, a "two-track" approach is necessary. The first track pertains to the patient's eating behaviour and physical condition; specific CB (cognitive-behavioural) interventions aimed at their normalisation must be emphasised early in treatment since starvation symptoms and chaotic eating patterns interfere with the

more accurate assessment of more basic personality features. The second track involves the complex task of assessing and modifying misconceptions reflected in self-concept deficiencies, perfection, separation or autonomy fears, and disturbed interpersonal relationships" (pp. 37).

As noted by Garner (1986b), assessment is an integral part of developing cognitive-behavioural treatment regimes. The above sections have noted that both cognitive/emotional and dietary/behavioural features of eating disorder patients require treatment attention. Modern cognitive-behavioural treatment approaches have been developed to reflect this necessity. Therefore, if assessment is to be applicable to modern treatment approaches, it is important that the assessment is comprehensive in its measurement of both cognitive/emotional and dietary/behavioural features. Any measure must incorporate scales which assess both the dietary/behavioural and also the cognitive/emotional aspect of primary eating disorder patients, which are addressed in modern treatment programmes.

In turn, assessment should be as applicable as possible to the population in treatment

5.6 The Homogeneity/Heterogeneity Of Primary Eating Disorders And The Ramifications For Assessment.

Questions concerning the homogeneity or heterogeneity of eating disorders began in the same year that the American Psychological Association (APA) clinically distinguished anorexia nervosa from bulimia nervosa (APA., 1980). There was emerging evidence of a behavioural overlap between the diagnoses. Casper et al. (1980) had found that 47% of an anorexic sample displayed bulimic-like behaviour; and Russell (1979) had

reported that 80% of his bulimic patients had a history of anorexia nervosa. Moreover, evidence was presented to show that some patients wavered between the two diagnoses (Vandereyken & Meermann, 1984).

Attention turned to the question of further links between the disorders. Some researchers claimed to show that bulimics were diagnostically distinct on the basis of demographic background, social and sexual activity and behavioural impulse control (Garfinkel et al., 1980); that bulimics were more extreme in terms of depression, anxiety, impulsivity, and schizoid as measured by the MMPI (Casper et al., 1980; Pyle et al., 1981. see also Norman & Herzog, 1983). However, there was a growing dissent. In a discussion on the terminology and criteria of bulimia, Russell (1985), who coined the term bulimia nervosa stated:

"..the qualification 'nervosa' was added to indicate that in bulimia nervosa the patient's psychopathology is identical with that present in anorexia nervosa". (pp. 680).

This stance has also been adopted by other leading theorists. Fairburn & Garner (1986) have stated that the view of anorexia nervosa and bulimia nervosa as separate and distinct disorders is "unwarranted and misleading" (pp. 411), and that anorexic and bulimic patients are similar on "virtually all psychometric dimensions that have been measured" (pp. 412) (Fairburn & Cooper, 1984a, 1984b; Garner et al., 1983b, 1985a, 1985b).

The corollary of the behavioural overlap, and the cognitive/emotional similarities between anorexia nervosa and bulimia nervosa has obvious ramifications in the area of assessment. It appears important that assessment measures, as well as assessing both behavioural and cognitive features, and being applicable to modern treatments, should also be appropriate for use with patients of both diagnostic groups and those

patients who display features of both groups. If patients can display features of both diagnostic types, or even waver between the two extremes, such breadth of measurement is the only means by which adequate and comprehensive assessment of the patient can be ensured.

5.7 Summary Of The Requirements For A Primary Eating Disorder Measure.

The above sections have presented evidence to show that four cognitive/emotional variables have been claimed to characterise and distinguish eating disorder patients - perceived external control, low assertiveness, low self-esteem, and self-directed hostility. Recent developments in therapy have emphasised the need to address such cognitive/emotional features, and these four features have been specified as worthy of therapeutic attention. However, it has also been shown that the addressing of the dietary/behavioural aspects of the two disorders is also essential in treatment. If these four cognitive/emotional features and also dietary/behavioural features are characteristic of eating disorders and require treatment, then it is important that they all can be measured in these patients. In addition, in the light of behavioural and cognitive overlap between the eating disorders, a measure could only be considered comprehensive if designed to be applicable to both anorexia nervosa and bulimia nervosa.

However, these theoretical justifications for measurement content should not detract from the necessity of adequate statistical development, and standardisation of the assessment measure. Further, the standardisation, in order to ensure that the measure is appropriate for use with modern treatments, should be checked for sensitivity to detect patient change over treatment time. In short, such a measure would need to reach five basic requirements:

- (1) Ability to provide assessment of the cognitive/emotional features of primary eating disorders highlighted by Williams et al., (1990), and in Chapter Four, notably, perceived control, low assertiveness, low self-esteem, and self-directed hostility.
- (2) Ability to provide comprehensive assessment by also measuring the dietary/behavioural characteristics of both anorexia nervosa and bulimia nervosa.
- (3) Constructed according to an acceptable development method.
- (4) Statistically standardised according to established methods.
- (5) Assessed for sensitivity to detect change in the patients' emotions/cognitions and dietary behaviours, over treatment time in order to establish applicability to treatment monitoring.

The following section reviews currently available eating disorder assessment measures with a view to their ability to meet the above five requirements. This review is limited to 'pen to paper' tests, be those self-report or interview. This serves to exclude certain measures of body-image, such as the caliper test (Slade & Russell, 1973), silhouette selection tests (Williamson et al., 1985, 1989), or rating of mirror images (Manley et al., 1988). These latter tests are fundamentally different forms of assessment, in that they assess visual perception rather than cognitive/emotional perception or behaviour. Furthermore, the review is restricted to assessment measures designed specifically for use with eating disorder patients; though other related measures will be noted at the end of the review.

As in Chapter Four, the measures reviewed will be summarised in Table 5.1 at the end of the chapter.

5.8 Review Of Primary Eating Disorder Assessment Measures.

The first person to recognise the need for objective assessment of eating disorders was Slade (1973). The Short Anorexic Behaviour Scale (SABS) comprises 22 items and three subscales measuring resistance to eating, food disposing, and overactivity. Scale items are scored by staff while observing inpatient anorexics. While of obvious value at the time, the SABS is very limited in its scope of measurement. The items are designed to assess the behavioural pointers which staff would note as indicative of improvement in the patients. Consequently, the items are purely behavioural. Moreover, only three behavioural features are measured. no cognitive/emotional feature, and certainly none of the four highlighted by Williams et al. (1990) (ie., perceived external control, low assertiveness, low self-esteem, self-directed hostility) are assessed by this scale. Further, the scale is applicable to anorexic patients only. The development method was somewhat rudimentary; and entailed constructing the scale items on the basis of behaviours observed by nursing staff. No face validity check was reported. The only statistical testing of the scale was a comparison of small groups of anorexics and psychiatric controls, though the nature of these psychiatric controls were not presented. Inter-rater reliability was high ($r = .9$) as was group discriminant validity ($p < .001$). The criticism of lack of concurrent validity is not reasonable as no comparison measure was available at the time. Though the SABS was an important first step in the recognition of a need for eating disorder assessment, it is limited in that it can only be used with inpatients; it does not have a strong development method; it is limited to behavioural manifestations of the disorder; and though intended to assess inpatient progress, no empirical investigation was reported as to the sensitivity of

the scale to detect change over treatment time.

In the following year another behavioural scale was developed in Canada - the Hunger/Satiety Scale (HSS) (Garfinkel, 1974). The HSS comprises 16 self-report items with two scales - hunger and satiety. The scales names indicate that the HSS measures only two very specific aspects of eating disorder. No general dietary/behavioural features or cognitive/emotional features are assessed by the HSS. Though not stated, it is presumable that the scale is targeted at anorexic patients only. Although the scales are made up of a combination of both dietary/behavioural and also cognitive/emotional items; there is no justification for amalgamating behavioural items with cognitive items which pertain to that behaviour within the same scale. The developmental method is not presented except to report that these scales are a modification of previous scales by Monello et al. (1965). The only statistical testing of the scales was a comparison of small groups (n = 11) of anorexics and an unstated number of controls - though in this case the normal control group had strict inclusion criteria and screening. As expected the groups differed significantly on satiety. No other validity or reliability check was reported. To summarise, though useful in the assessment of one aspect of anorexic behaviour - eating control, these scales are limited in that they do not have a strong developmental/statistical background; they are behaviourally orientated with only two items addressing cognitive aspects. No sensitivity to change was reported.

The following year, Morgan and Russell (1975) presented an outcome assessment schedule. This structured interview does not constitute a measure in the usual sense. It provides a means of assessing the post-treatment patient in terms of nutritional status, menses, mental state,

sexual adjustment, and socio-economic status. The schedule does not assess any of the four cognitive/emotional features highlighted by Williams et al. (1990), and is applicable to anorexic patients only (though this reflects the fact that bulimia nervosa did not have defined criteria at the time). No development method has been presented, except a statement that items were 'drawn up' by the authors. Statistical checks of the measure were minimal and confusing. However, it has been shown that the scales are consistent (ϕ 's = .46 to .77); and are reliable when correlated with other measures of outcome (weight and menstruation) ($p < .05$) (Morgan & Russell, 1978). However, despite further claims of utility (Morgan & Hayward, 1988), no data has been presented to show that the schedule measures clinically significant change at treatment outcome.

In 1979 a team in Canada presented a measure of anorexic attitudes and behaviour: the Eating Attitudes Test - 40 (EAT-40; Garner & Garfinkel, 1979), which has gone on to be one of the most widely used and accredited scales both in comparative research, treatment research, and development of other assessment measures (concurrent validity). Though there is more recent evidence that the EAT-40 may be biased towards middle class respondents (Eisler & Szukler, 1985). The EAT-40 has 40 self-report items designed to test the symptoms, both dietary/behavioural and cognitive/emotional, of anorexia. The one main drawback to the EAT-40 is that there is no differentiation between behavioural and cognitive/emotional items, and a bias (28/40) towards behavioural symptoms. The items constitute a mixture of dietary/behavioural, cognitive/emotional attitudes appertaining to those dietary behaviours, and also cognitive/emotional features which do not pertain to dietary/behavioural features. As with the HSS (Garfinkel, 1974), there is no justification for

combining such conceptually different items within a single scale, as there is no way of discerning whether the score is due to cognitive or behavioural pathology. None of the four cognitive/emotional characteristics highlighted by Williams et al. (1990) are addressed by the EAT-40. The development method in terms of item selection is acceptable. Thirty-seven items were soundly selected over two studies on the basis of ability to discriminate between anorexics and a group of normal controls. Three non-discriminators were retained on the basis of measuring important symptoms. Further statistical analysis was performed on the items to show that they provided good predictive validity ($r = .85$, $p < .001$); discriminant validity between an anorexic group, and groups of normal control, male and obese subjects ($p < .001$); and that they provided good internal consistency/reliability ($\alpha = .94$). They did not have concurrent validity with a scale of restrained eating, though this was only calculated on normal control data and may be explained by the fact that the restrained eating scale was developed for use with non-clinical dieters. No other comparison scale was currently available. Later evidence reversed this one drawback (Garner et al., 1983d). In addition to the fairly extensive scale tests, the authors assessed the scale sensitivity to change by comparing current patients and recovered patients, showing that the EAT-40 scores are able to detect changes associated with improvement.

Three years later the EAT-40 was reassessed with a view to reduction, resulting in the EAT-26 (Garner et al., 1982). Again items were self-report on a 6 point Likert scale. Factor analysis was utilised to define three main factors - dieting, bulimia/food preoccupation, and oral control. It was found the the EAT-26 was highly correlated with the EAT-40, though this would be expected as the same items constituted both measures. Also the

bulimia/food preoccupation and oral control factors discriminated between anorexic and bulimic patients. However, while the EAT-26 was put forward as an improvement on the EAT-40, closer inspection of the factors developed through factor analysis reveals considerable conceptual variation within the factors, suggesting that the wide range of items in the EAT-40 were not clearly conducive to being put into post-hoc scales.

Goldberg et al. (1977, 1980) developed the Goldberg Anorexic Attitude Scale (GAAS). This is a 63 item, self-report questionnaire designed to assess a variety of attitudinal dimensions in anorexic inpatients. The scale is not applicable to bulimic patients. The attitudinal dimensions of the GAAS are rather difficult to assess as the dimensions described in the final article are different from those published in an earlier article (Goldberg et al., 1977) which presented the scale items. Presumably, the dimensions of the GAAS were reanalysed post-publication. This review is based on the final analysis and reported dimensions. The GASS assesses fear of staff, denial, hunger, fear of fat, hypothermia, bloating, self-care, effort to achieve, food sickens me, problems - mental or physical, helpful authority, physical problems, hobby cooking, and heterosexual disinterest. All dimensions are cognitive/emotional. None measure dietary/behavioural issues - though this was not an original aim. Reference to the items indicate that some do appertain to control by others - but in all cases hospital staff. None appertain to the more general perception of external control highlighted by Williams et al (1990). Likewise, none of the other three characteristics - low assertiveness, low self-esteem and self-directed hostility are assessed by this measure. The development method was equally difficult to discern, due to the evolvement over three articles. However, in the final article, it is stated that nine original dimensions

were devised and items constructed which 'hopefully' assessed the dimension. No face validity check was reported to improve on 'hopefully'. Items were put on a four point Likert response scale and presented to 105 anorexic inpatients involved in a treatment comparison study. Factor analysis was performed to define the aforementioned dimensions. Statistical tests were calculated to assess internal reliability which was found to range from $r = .23$ to $r = .95$, though the majority of scales were deemed reliable, having reliability coefficients $> .6$. No test-retest or concurrent validity was assessed. However, the scales were checked for sensitivity to change over treatment. Significant changes were reported, though the different treatments led to changes on different scales. Moreover, significant scale changes were found in a non-treatment group, indicating that the dimensions may be unstable and unreliable. A test-retest is the only means by which this suggestion can be affirmed.

Hawkins & Clement (1980) presented an assessment measure directed specifically at binge eaters. The binge scale is a 9 item self-report scale. Response format is not presented. Attention to the items reveal that, while binge behaviour is covered, only 3/9 are cognitive. Like the EAT-40, this binge scale comprises both dietary/behavioural items and cognitive/emotional items which appertain to those dietary behaviours; yet there is no scale differentiation between the two item types. None of these address the four cognitive/motional characteristics highlighted by Williams et al. (1990). Also the scale is applicable to binge eaters only. The authors failed to present the development method by which they selected items except to state that the nine items were selected from another scale giving no indication as to the validity of the item selection. Likewise, a test-retest reliability was reported as high, but no methods or time scale

were presented. Concurrent validity with a restraint scale was of low order. In a criterion validity test, the overweight group did attain a significantly higher score, though group criteria were not presented, again making appraisal impossible. No assessment of sensitivity to detect change in patients over treatment time was conducted.

The Canadian group behind the EAT-40 went on to develop the Eating Disorder Inventory, which to date, is the most comprehensive measure of eating disorder symptomatology and the first specifically developed to assess cognitive/emotional aspects of both anorexia nervosa and bulimia nervosa (Garner et al., 1983d). The EDI comprises 64 items, making eight subscales - drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, and maturity fear. The items are wide ranging, but can be criticised in the context of this review. Firstly, there is an imbalance between the two pathology scales. The bulimia scale is behavioural whereas the anorexia (drive for thinness) is directed at cognitive/emotional features related to dietary restriction. There is no equivalent scale assessing cognitive/emotional features related to binge eating. Likewise, there is no scale of anorexic dietary behaviour. These weaknesses are reflected in the fact that it has been shown that the EDI fails to correlate with behavioural eating disorder measures, indicating that it must be used in conjunction with direct measure of the patients behaviour (Gross et al., 1986). All other items, excepting those on the bulimia scale are cognitive/emotional in nature. Nevertheless, none of the scales cover the characteristics shown by Williams et al. (1990) to be important characteristics of eating disorders, despite the fact that the name of one scale (ineffectiveness) suggests a measure of assertiveness. Reference to

the items of this scale indicate that they are an amalgum of items including self-esteem, control, loneliness and emotional emptiness. As such it could not be considered a measure of assertiveness. Further, the scale was not validated against an assertiveness scale. The development method was strong and comprehensive in terms of statistical checks on the scales. For item selection a large pool of items was generated to cover 11 original constructs and put on the same 6 point Likert scale as the EAT-40. All items were administered to a group of restrictor and bulimic/anorexic patients (numbers of subgroups not presented) and a group of normal controls. Item selection criteria was stringent as (i) the item had to discriminate between patients and controls, (ii) the item had to correlate more highly with the construct scale than the overall scale and (iii) internal consistency had to reach a minimum of item-scale coefficient = $\alpha < .40$. The authors then went on to conduct a comprehensive batch of statistical tests on the eight final scales. Results showed that the scales had good internal consistency (average $r = .63$), low response bias (r 's = .76 to .63), significant correlations with clinical ratings ($p < .001$), and predictive ability on a group of anorexia/bulimia patients and a group of normal control subjects. Also, further data were collected on groups of DSM-III criteria bulimics, obese, formerly obese, and males in order to assess criterion validity. All scales discriminated between anorexics and controls at the $p < .001$ level of significance. Research elsewhere has indicated that the EDI also differentiates bulimics from controls (Gross et al., 1986). Concurrent validity correlations with five other measures were, generally, not high or significant, except on the two pathology scales. Finally, a group of recovered anorexic patients were tested to assess sensitivity to change. Recovered anorexics scored lower on all scales

($p < .001$). Such results suggest that the EDI is an acceptable and fairly comprehensive measure of eating disorders, except for the scale deficiencies noted above. However, there were some drawbacks in that the anorexic group on which the cross validation and criterion validation checks were performed were of mixed aetiology and numbers were not presented; no screening or exclusion criteria was presented for the comparison groups; obese subjects actually scored higher on one scale (body dissatisfaction); across group comparisons are not clearly presented for full appraisal; and concurrent validity was, on the whole non-significant though this could be an effect of clustering or type-one error. However, the EDI does provide a means of assessing a wide range of cognitive/emotional symptomatology associated with both anorexia and bulimia. Nevertheless, Eberly and Eberly (1985), in a review of the EDI manual, state that further assessment of the EDI validity, reliability and norms are required before it can be promoted as a clinical instrument.

Johnstone et al. (1982) reported an Eating Problems Questionnaire. There are six subscales designed to measure bulimia, purging, anorexia, habits and miscellaneous behaviours, medical information, and psychological aspects. Analysis of the items indicate that the three pathology scales (bulimia, purging, anorexia) are on the whole behavioural, though the bulimia and purging scale do contain cognitive/emotional items. The psychological aspects scale contains 5 items relating to depression. Therefore, though the dietary/behavioural aspect of both eating disorders are addressed by this scale, none of the cognitive/emotional characteristics highlighted by Williams et al. (1990) are assessed. Nevertheless, the measure is comprehensive in that it is applicable for use with both anorexic and bulimic patients. No development method has been

presented. Further, though the items were developed from the DSM-III criteria (1980), the measure has not been empirically validated as a clinical and diagnostic instrument (Stuckey, 1991, personal communication.).

Carter and Eason (1982) presented a measure designed to measure six aspects of eating disorder: vomiting, eating concern, health habits, relationships, feelings about the self, and feelings about parents. Analysis of the items indicate that the eating concern and vomiting scales do assess a range of dietary/behaviours associated with bulimia. Though as noted in previous measures, the scales also contain cognitive/emotional items with no justification for combining the two item-types within one scale. The feelings about the self and feelings about parents scales contain some items which address personal control, interpersonal relationships and even guilt. However, as they are amalgamated they cannot be seen as measures of assertiveness, self-esteem and self-directed hostility as highlighted by Williams et al. (1990). The scales were designed to detect bulimic symptomatology only, and are not applicable to anorexic subjects. The method by which the items were developed was not reported. The items were presented to and completed by 93 females, divided into vomiters and non-vomiters. The allocation method was not reported, though can be assumed to be self-report as the responses were anonymous. Kruksal Wallace tests on the individual items indicated that 25% did not discriminate between the group. However, all those noted above to address the characteristics highlighted by Williams et al. (1990) did discriminate between the groups. No further statistical checks were performed. Overall, the results indicate that this measure is weak in terms of development method, ability to measure the target features, and do not address the

cognitive/emotional characteristics highlighted by Williams et al., (1990).

In 1984, Smith & Thelen presented the first well constructed measure of bulimia - The Bulimia Test (BULIT). The BULIT is a 32 item, self-report scale. All items are based on DSM-III criteria and are scored on a five point Likert scale. Attention to the items reveals that the BULIT has a strong bias towards assessing only the behavioural aspects of bulimia, making it somewhat limited in terms of application. Cognitive/emotional features are assessed in terms of post-binge feelings, which factor analysis grouped into a separate subscale. However, the authors did not recommend that this scale was scored separately. Consequently, the BULIT, like other measures reviewed, combine behavioural and cognitive items into one scale with no theoretical justification for doing so. None of the four cognitive/emotional characteristics highlighted by Williams et al., (1990) are assessed. The scale has no relevance to anorexic patients, though it is a strong measure of bulimia. The development method was strong in terms of item selection in that the authors developed a pool of 75 items and administered them to a group of bulimic patients and a group of normal controls. All but six items were selected on the basis of ability to significantly discriminate between the two groups. These remaining six items comprised two added to cover vomiting behaviour, and four non-discriminating items retained in order to cover all symptoms. Further statistical tests were performed on the BULIT to assess discriminant validity between bulimic, anorexic and normal control groups; test-retest reliability over two months; concurrent validity with the EAT-40 and a binge scale; and clinical rating validity (comparing BULIT score and interview rating of group membership). Results showed the BULIT to have high cross group validity ($p < .0001$), reliability ($r = .87$), concurrent

validity with the EAT ($r = .69$) and the binge scale ($r = .93$), and clinical rating validity ($r = .54$). Factor analysis was also performed to define 5 factors. Such data suggests that the BULIT is a well developed and validated measure. The only weakness in the results was a failure to discriminate between anorexics and bulimics, though this was adequately explained by the fact that a proportion of the anorexic patients, displayed bulimic symptoms. Finally, no investigation was made into the scales' sensitivity to detect change/improvement in the eating pathology of patients over treatment time.

In the following year Grace et al. (1985) compiled the Eating Attitudes and Behaviours Questionnaire (EABQ). The EABQ is a 17 item self-report questionnaire with two scales; one measures feelings about food, eating, and weight control; the other measures the presence/absence of self-induced vomiting. Appraisal of the items has indicated that these scales improve on other measures by dividing dietary/behavioural and cognitive/emotional features. The authors, therefore, distinguished between actual dietary behaviours and the cognitive/emotions appertaining to those behaviours. However, none of the four cognitive/emotional characteristics highlighted by Williams et al. (1990) are assessed by the EABQ. In addition, the scales were targeted at bulimic and not anorexic patients. The developmental method was not presented, except for a statement that the items were based on a Compulsive Eating Scale developed by Dunn & Ondercin (1981) for a non-clinical group. It is claimed that the scales successfully allocated 280 females into non-bulimics and bulimics, who were then sub-allocated into three subgroups of vomiters, laxative abusers and both. However, the method of allocation or any other methods were not presented.

In the same year Goldfarb (1985) constructed the Fear Of Fat Scale

(FOFS) for use with eating disordered patients. The FOFS scale comprises 10 self-report items on a four point Likert scale, which are intended to assess the cognitive/emotional fear of body fat. Obviously, while this measure is highly applicable to a well noted feature of both eating disorders - fear of body fat/weight, it is also limited. No dietary/behavioural assessment is made; and none of the four cognitive/emotional characteristics highlighted by Williams et al. (1990) are addressed. However, the items are conceptually pure in that they are all cognitive/behavioural. The items were author developed, and no further face validity or item selection method was reported. However, subsequent tests were performed on the scale to determine discriminant validity between anorexics and controls, test-retest reliability, and discriminant validity between bulimics, repeat dieters and normal controls. Results indicated that the FOF scale had criterion group validity between anorexics and controls ($t = 9.8, p < .01$); was reliable over one week ($r = .88$); and had discriminant validity between bulimics, dieters and controls ($F = 28.7, p < .01$). While such results provided initial support for the FOF scale, there were certain drawbacks to its development and testing in that no justification was presented for the choice of items; no criteria or description was presented on the groups used to validate the scale; the test-retest period was rather short; and no concurrent validity was assessed using an eating pathology comparison measure - the concurrent validity measures were depression, self-esteem and family environment, the relevance of which is dubious. Finally, no assessment has been made as to whether the scale is sensitive to improvement in the patients eating pathology over treatment time.

Shulman et al. (1986) developed the Cognitive Distortions in Bulimia Scale (CDBS), in an attempt to assess a broad range of dysfunctional thinking displayed by bulimic patients. The CDBS is a 25 item self-report scale, with items rated 1 - 5. Items measure cognitions surrounding weight, dieting, weight control, and appearance. Factor analysis, has revealed two factor scales: one refers mainly to the emotions which cause binges, and the post binge feelings; the second scale addresses dysfunctional beliefs about appearance and weight. Though bulimic dietary cognitions are fairly well covered by this measure, none of the cognitive/emotional characteristics highlighted by Williams et al. (1990) are assessed. Also, the scale is non-comprehensive as no dietary/behavioural features of eating disorders are assessed, nor are the scales relevant to anorexic patients. The development method was claimed to follow the Thurstone Method of scale development, though the statistical steps reported fell far short of the full development method. A pool of 90 items was generated on the basis of patient interview and subjected to a face validity check by a panel of three professionals, which is a low number. Items were then rated by a panel of 12 bulimic patients into categories of agreement with the item wording - always, sometimes, or never agree. Final items were then selected on the basis of at least 8/12 patients putting the item into the 'always' or 'sometimes' agree categories. No further selection criteria were imposed. These items were then administered to two groups: bulimics and normal controls. Both groups were allocated according to fairly strict inclusion criteria, though it is unclear as to whether the bulimic group subjects were in treatment at the point of testing which is crucial if the findings are to be generalised to bulimic patients. It was found that the CDBS had good internal consistency ($\alpha = .97$); and between group

validity ($F = 262.9, p < .001$). Also, factor analysis revealed two clear factors. Such results suggested that the scale was a promising measure. However, the scale was not checked in terms of test-retest reliability or sensitivity to detect change over treatment time. In addition, though a concurrent validity check was performed, the comparison measures comprised various scales of depression, approval demand, and bizarre sensory experiences. No comparison measure which included known eating disorder cognitions, such as the EDI, EAT-40 or the BULIT were included, nor were any measures of eating behaviour. Consequently, it is impossible to discern as to whether the scale measures bulimia-specific cognitions. In addition, no change over time data was collected to assess the scales sensitivity to change.

In the same year Slade & Dewey (1986) presented the Setting Conditions for Anorexia Scale (SCANS). The SCANS has since been computerised (Butler, Newton & Slade, 1988), and normative data presented (Slade et al., 1990). This was designed as a screening measure, derived from the functional analytic model of anorexia nervosa (Slade, 1982). It was designed to screen individuals at risk of developing anorexia nervosa in the future. This suggests that the SCANS is not applicable to those at risk of developing bulimia nervosa. It represents the first attempt to assess individuals with a potential for disorder, rather than during or after diagnosis. Consequently, it stands as the first preventative measure in the field of eating disorders. The SCANS comprises 40 self-report items within five factor scales - dissatisfaction and loss of control, social and personal anxiety, perfectionism, adolescent problems, and weight control. Items are answered on a 5 point Likert scale. Reference to the items indicate that the weight control scale comprises only two items, and these refer to

perceptions of weight and shape importance. This scale would not constitute a measure of anorexic or dietary behaviour. Only one scale has any bearing on one of the characteristics highlighted by Williams et al. (1990) - social and personal anxiety - which suggests a measure of assertiveness. The item wording indicates that this scale could be viewed as a measure of assertiveness, as these assess interpersonal communication and social confidence. However, no concurrent validity check with an assertiveness scale has been reported to back this notion. Nevertheless, it should be noted that this scale is directed at potential patients, whereas, it has been suggested (above) that such a measure is required for diagnosed patients. The developmental method was based purely on factor analysis. Forty items were generated to cover five components central to the analytic model. These were administered to 227 sixth form students and 144 college students. In a second administration the 40 items were administered to nurses, anorexic patients, and bulimic patients. Groups in both studies are well described. Again, five components were identified, but not the original concepts. However, the results of the two analyses were highly correlated. The only statistical check on the items was cross group validity, though this was based on the data of groups involved with the second item selection study. Results showed that the five scales significantly differentiated between eating disorder groups and the three non-eating disorder groups ($p < .0001$). No test-retest check was presented, or concurrent validity. The authors stated that data are available on a comparison with the EAT-40, though this is utilised to assess cut-off points and was only available for the control group. No assessment of sensitivity to detect change (i. e., development of an eating disorder) has been reported.

Cooper et al. (1987) developed the first self-report measure which dealt specifically with one central characteristic of eating disorders - distorted body image. Bruch (1973) has noted this feature as a fundamental aspect of anorexia nervosa, and it has since also become a criterion for the diagnosis of both diagnoses (American Psychological Association, 1987). The Body Shape Questionnaire (BSQ), is a 34 item, unidimensional, self-report scale. While the BSQ does address an important feature of both eating disorders, it is far from comprehensive. No aspect of the dietary/behavioural features associated with this distorted perception is assessed. Obviously, none of the four cognitive/emotional characteristics highlighted by Williams et al. (1990) are assessed by the BSQ. The development method involved interviewing a group of 28 women comprising anorexic and bulimic patients, dieters, exercisers and students. Group numbers were particularly low in the anorexic group (n = 4) and the exercise group (n = 3). On the basis of interview data 51 items were generated and put on 6 point Likert scales. The items were then administered to four groups: bulimics, family planning clinic attenders, therapy students and undergraduates. Group n's at this stage were acceptable. An anorexic group was not included, despite the fact that distorted body image is a distinct characteristic of this disorder (Bruch, 1973). Items were eliminated on the basis of high inter-correlations and non-significant t-tests between patients and non-patient groups. All statistical testing of the items was based on data collected during the item selection study. However, data collection for validity checks was somewhat patchy. Group validity was assessed by allocating the non-patient sample to two groups - weight concerned and non-weight concerned - on an unsatisfactory criteria of self-reported slimness concern. The BSQ did

differentiate the two groups ($t = 19.6, p < .001$). Further group validity was then assessed by again dividing the community sample into bulimics, probable bulimics, and normal controls on the basis of self-reported diagnostic criteria. It should be noted that the ability to divide the group in this way calls into question the homogeneity of the sample; also allocation to a clinical group (bulimic) on the basis of self-reported criteria is unsatisfactory. However, the BSQ did differentiate between normal controls and the bulimic and probable-bulimic groups. Concurrent validity check involved correlating the BSQ and EAT-40, though both measures had been completed by patients and therapy students only. Correlations were high in both groups. Data from the EDI body dissatisfaction scale were also employed in the patient group, though concurrent administration was not made clear. No test-retest reliability, or sensitivity to change was assessed.

In the same year Palmer et al. (1987) presented the Clinical Eating Disorder Rating Instrument (CEDRI). The CEDRI was the first interview style assessment measure, designed to attain detailed information on the behavioural, attitudinal and other symptoms of primary eating disorders. There are 30 aspects of eating disorders addressed within the interview; many of them not addressed by previous self-report measures. There is one item per symptom. The CEDRI does appear to be more comprehensive than other measures, in that it addresses a range of dietary/behavioural and cognitive/emotional issues. Further, it is designed for use with both anorexic and bulimic patients. Reference to the items indicates that only one assesses levels of eating-related guilt; and one assesses self-directed hostility (aggression). However, being only two items, these items could not be put forward as acceptable measures of self-directed hostility as

highlighted by Williams et al. (1990). Further, the other three features highlighted by the Williams et al. (1990) study (perceived external control, low assertiveness, low self-esteem) are not covered by the CEDRI. Unfortunately, the development method of the interview was weak. The 31 items were author generated on the basis of experience. No face validity or statistical justification is reported. The items were piloted on 8 eating disorder patients, one obese control and one normal weight control. No group criteria or description was presented. Subsequent to revision, the items were then tested again on 8 eating disorder patients and 3 psychiatric controls. Again, groups were very small and not described. The only statistical check of the items was the calculation of inter-rater agreement, which was 61% in the first edition, and 68% in the second edition. The interview was not checked in terms of concurrent validity, test-retest reliability, or sensitivity to change. As well as the weakness in the development and validation of the interview, other drawbacks include the necessity of interviewer training; and administration of the interview requires familiarity with the patient which limits its use.

Again, in 1987, another interview style assessment for primary eating disorders was presented by Cooper & Fairburn (1987), to be later validated by Cooper et al. (1989). The Eating Disorder Examination (EDE) is a 62 item structured interview, designed to assess the extent of the patients restraint, bulimia, eating concern, weight concern, and shape concern over the previous four weeks. The authors present a valid justification for the development of the interview by noting that detailed information about the patients' behaviour and attitudes can be a useful tool in treatment and clinical research. The EDE subscales suggest that this measure is comprehensive in that it covers a range of both dietary/behavioural and

cognitive/emotional aspects of both eating disorders. Detailed appraisal of the items revealed that the restraint and bulimia scales are dietary/behavioural and provided a detailed appraisal of the nature, severity, and frequency of bingeing, and restricted eating. The other scales overwhelmingly address dissatisfaction and distress with weight and shape. Therefore, while the dietary/behavioural aspects of anorexia nervosa and bulimia nervosa are well assessed by the EDE; none of the four cognitive/behavioural features highlighted by Williams et al. (1990) are assessed. The development method entailed devising a list of key attitudinal and behavioural aspects of eating disorder and then appraising all existing measures to ensure that all aspects had been covered. While such a strategy is useful in attempting to create a measure which supercedes all existing measures, it also implies that no new aspect of eating disorder are addressed. Further items were generated from responses in a series of patient interviews, the number of which is not presented. A preliminary list of unambiguous items was collated and a scoring system was devised. It should be noted that no face validity check to actually assess ambiguity was reported. The preliminary interview was then presented to four groups: anorexics, bulimics, weight-concerned controls and normal controls. No group criteria, size or description were presented. The items were reviewed and readministered ten times before the final version was reached. While this implies a rigorous testing, it is not stated whether each administration involved the same groups. The only statistical check on the EDE at this stage was inter-rater reliability, which though generally high (r 's = .69 to 1.0), was calculated on a very small sample of 12 undefined subjects and three raters. No further validity or reliability checks were reported. Group validity was reported two years later (Cooper

et al., 1989) when the EDE was found to discriminate between patients and controls ($p < .001$). However, in that study, bulimic and anorexic patients were combined into one group with no statistical justification; and Canadian patients were included within a British sample without any analysis of possible cross-cultural effects. Also in that study internal consistency was assessed and found to be generally high, though in some cases items correlated more highly with other scale totals. The weakness of development and validation method renders the EDE a potentially useful but inadequately proven measure. Further drawbacks include the necessity for interviewer training; and the fact that the interview requires 1.5 hours interview time which limits its feasibility in research. Finally, the authors (Cooper et al., 1989) present the EDE as "of particular importance, to assess the effects of specific treatments on the psychopathology of anorexia nervosa and bulimia nervosa" (pp.812). Likewise, Wilson & Smith (1989) have made the same claim on the basis of the EDE's ability to discriminate between bulimic patients and highly restrained controls. However, between-group validity is an insufficient finding on which to base such claims. No change over treatment time study has been presented which would provide justification for using the EDE as a means of treatment monitoring.

In the same year Henderson & Freeman (1987) developed the Bulimia Investigatory Test - Edinburgh (BITE) to assess both the symptoms and severity of bulimia nervosa. The BITE is a 33 item, self-report questionnaire comprising two scales (symptoms and severity). Reference to the items reveal that they are an amalgamation of both dietary/behavioural and cognitive/emotional aspects of bulimia nervosa. The items measure the actual behaviours displayed by the patient and also the feelings they

perceive in relation to those behaviours. However, the items are not divided into subscales accordingly. Like the EAT-40 and other measures reviewed above, the BITE addresses dietary/behavioural and cognitive/emotional issues as conceptually equivalent. Yet there is no theoretical justification for doing so. Further drawbacks are that the BITE is limited to bulimic patients only, and, in terms of the present review, none of the four cognitive/emotional features highlighted by Williams et al. (1990) are assessed. Nevertheless, the BITE stands as one of the stronger measures in the field of eating disorder measurement. The development method was simple, but statistically sound. A pool of 40 potential items was developed on the basis of bulimic literature. The items were then presented to a group of DSM-III diagnosed bulimia patients and a group of screened normal controls. Items were eliminated on the basis of ambiguity as defined by a face validity test and failure to discriminate between the two groups. The final measure was subjected to a comprehensive battery of statistical checks including predictive validity, item validity, between group validity, internal consistency, concurrent validity, test-retest reliability, and sensitivity to change over treatment time. Results showed that the BITE successfully grouped the subjects involved in the pilot study ($\chi^2 = 95.69, p < .00001$); and all but three items were valid discriminators at the $p < .05$ level. In a second highly controlled study, the BITE was administered to two highly criterioned groups of bulimic patients and normal controls. Further results showed that the BITE had between group validity ($t = 31.68, p < .05$); good concurrent validity when compared with the EAT-40 ($r = .679, p < .001$) and the EDI binge scale ($r = .678, p < .001$); reliability ($r = .86, p < .0001$); and was sensitive to change over treatment time. Such data render the BITE one of the strongest currently available

assessment measures, being both soundly constructed and rigorously standardised.

Also in 1987, Phelan presented the Bulimic Thoughts Questionnaire (BTQ), which is a 20 item questionnaire designed for bulimic patients only. There are three factor scales measuring: self-schema, self-efficacy, and salient beliefs. Reference to the items reveals that the self-schema scale assesses body image. The salient beliefs scale items pertain to inability to control appetite and negative self-statements. The self-efficacy scale implies a measure of perceived control. However, item content is only relevant to weight control and perceived attractiveness. None of the items address the dietary/behavioural features normally attributed to bulimic patients; nor do these items address any of the four characteristics highlighted by Williams et al. (1990). In addition, there is considerable conceptual overlap between the scales. The development method was not presented; and the only statistical check of the scales was between group validity. The scales were found to discriminate bulimic patients from controls, but not from obese patients, which puts the clinical validity of the scales into doubt. No concurrent validity or test-retest reliability was assessed. However, the scales were assessed for sensitivity to change over treatment time, and were shown to show a significant decrease. However, this significant decrease was not validated by comparison with change in any, already standardised, scale.

Two years later Coker and Roger (1990) presented the Eating Habits Questionnaire (EHQ) which is claimed to assess existing eating disorders and also the possibility of developing those disorders. There are three factor scales assessing weight and dieting, restrained eating patterns, and overeating. Reference to the items reveal that they are overwhelmingly

dietary/behavioural in nature - as suggested by the scale names. However, like previous measures, such as the EAT-40 (above), the EHQ does contain some items which pertain to cognitive/emotional features, such as guilt. These items are not categorised within a separate cognitive scale. Instead, they are amalgamated with the dietary/behavioural items, despite the conceptual differences. None of the scales assesses any of the four cognitive/emotional characteristics highlighted by Williams et al. (1990); though the measure is relatively comprehensive in that it assesses features of both anorexia nervosa and bulimia nervosa. The development method was rather weak. Items were author-developed from literature and DSM-III, and then submitted to a face validity test; though the method of that test was not presented. The remaining 80 items were put into a true/false response format, and completed by 600 students. No screening of those students, for the presence of eating disorder, was presented. Factor analysis produced the three above named factors; though these were amalgamated for all psychometric tests - with no statistical justification given. Internal consistency was high ($\alpha = .89$), as was test-retest reliability in an independent sample ($r = .95$). Further the scale showed good concurrent validity with the BITE ($r = .87$) and EAT-40 ($r = .73$). Two studies of group validity were reported - both were methodologically inadequate. In the first study, groups of anorexics, bulimics and obese, but not normal controls, completed the EHQ. The authors attempted to illustrate group validity by giving percentages of the groups in four score categories (low to high). Such analysis has no relevance to between group validity. In the second study the scale was administered to a bulimic group, and anorexic group, and a control group. No group criteria was presented. In summary, the EBQ measures a range of dietary behaviours, though the scale concepts

are confused by cognitive/emotional items. Moreover, if the scales are intended for use with eating disorder patients, then the groups on which the items were developed and statistically checked were inadequate in terms of size and criteria. Finally, there is nothing in the statistical checks to support the authors claim that the scales are for use with potential patients.

The latest assessment instrument to be presented is the Structured Interview for Anorexia and Bulimia (SIAB) by Fichter et al. (1991). The SIAB is a structured interview, designed for the assessment of "the specific as well as the general psychopathology, and of family interaction and pathology in disorders" (pp. 571). The SIAB measures body image, social integration and sexuality, depression, compulsion and anxiety, bulimic symptoms, and laxative abuse. Reference to the items indicate that, though the bulimic symptoms are covered, there is no equivalent scale for anorexic patients. This suggests that the measure does not achieve the comprehensiveness claimed. None of the four cognitive/emotional characteristics highlighted by Williams et al. (1990) are addressed by the SIAB. The development method was confusing. It is stated that a proportion of the items were selected from previously standardised measures of general psychopathology; though the derivation of remaining items was not explained. It appears that the scales were compiled through factor analysis after administering the interview to eating disorder and control subjects. The demographics or structure of the comparison groups were not described, though numbers were higher than any previous measure development study ($n = 692$). It appears that some items were included on the basis of this factor analysis, while others were retained on the authors' discretion, without statistical justification. Statistical checks of the SIAB were limited to

inter-rater reliability, between group validity, and concurrent validity. The methods of those checks were not presented and statistics were confusing. Finally, further drawbacks to the SIAB lies in the fact that its use requires specialised training through manuals and pre-rated video-tapes. In addition, the number of items would suggest that administration of the SIAB is lengthy.

Another instrument which warrants reference is the Diagnostic Survey for Eating Disorders (DSDE; Johnson, 1985). The DSDE was not designed for clinical assessment of eating disorder patients, as were the above measures. Hence the decision not to include this instrument in the above review. Instead, the DSDE was designed as a instrument which "would provide a standardized format for collecting relevant information that would enhance communication between various treatment centres regarding descriptions of different patient groups" (pp. 20). There are 12 subscales designed to evaluate demographic data, weight history, dieting behaviour, binge eating behaviour, purging behaviour, exercise, other behaviour, sexual history, menstrual history, medical and psychiatric history, life adjustment, and family history. While the dietary behaviours of both eating disorders are covered, none of the four cognitive/emotional features highlighted by Williams et al. (1990) are addressed. Further, no development method or validation studies have been presented.

Finally in this review, it should be noted that a further four measures are reported in the literature (Tobias & McDonald, 1977; Halmi et al., 1981; Nagelburg et al., 1984; Segal & Figley, 1985). However, failure to present any form of development method, item description, or statistical standardisation data renders review impossible. In addition, a self-report

edition of the EDE, named the EDE-Q, has been developed and standardised, though the information required to review this measure was refused.

In addition to the above measures designed for use with eating disorder patients, a further 11 eating related measures were located. However, as those measures were not designed for primary eating disorder patients, they were not reviewed for the sake of brevity. Those measures are: The Restraint Scale (Herman & Mack, 1975; Herman & Polivy, 1975); The Binge Scale for compulsive eaters (Ondercin, 1979; Dunn & Ondercin, 1981); the Weight Locus of Control Scale for obesity patients (Saltzer, 1982); the Binge Scale for obesity patients (Gormally et al., 1982); the Compulsive Eating Scale (Kagan & Squires, 1984a); the Eating Self-Efficacy Scale for obese patients (Glynn & Ruderman, 1985); the Three Factor Eating Questionnaire for obese patients (Stunkard & Messick., 1986); the Dutch Eating Behaviour Questionnaire (van Strein et al., 1986a, 1986b; Wardle, 1987b); Eating Habits Questionnaires for unnamed target groups (Simmons, 1987, 1989); the Dieting Beliefs Scale for obese patients (Stotland & Zuroff, 1990); and a Cognitive Distortions Scale for binge eaters (Dritschel et al., 1991).

5.9 Conclusions.

Based on the results of Williams et al. (1990) and other research, the first six sections of this chapter outlined and justified five requirements for an assessment measure for primary eating disorder patients. These requirements were summarised (section 5.7) as follows:

1. Ability to provide assessment of the cognitive/emotional aspects of primary eating disorders highlighted by Williams et al. (1990), notably,

perceived external control, low assertiveness, low self-esteem, and self-directed hostility.

2. Ability to provide comprehensive assessment by also assessing the dietary/behavioural characteristics of both anorexia nervosa and bulimia nervosa.
3. Constructed according to acceptable development methodology.
3. Statistically standardised according to established methods.
4. Assessed for sensitivity to detect change in the patients' cognitions/emotions and dietary behaviours over treatment time, in order to establish applicability to treatment monitoring.

The currently available measures were reviewed to assess the extent to which the above requirements can be met. Review was extended to all measures designed to assess primary eating disorder patients for which the methods, items and standardisation was presented. This review indicated that there are considerable shortfalls in the currently available assessment measures in all of the five requirements. These shortfalls produced the following five conclusions:

A. Failure To Assess The Four Cognitive/Emotional Characteristics of Perceived External Control, Low Assertiveness, Low Self-Esteem, and Self-Directed Hostility. (Requirement 1).

The first suggested requirement was that assessment measure should provide assessment of cognitive/emotional aspects of eating disorders, notably perceived external control, low assertiveness, low self-esteem, and self-directed hostility. Of the 23 available measures (excluding those which could not be reviewed) 17 were found to assess cognitive/emotional aspects of primary eating disorders (Goldberg et al., 1977, 1980; Garner & Garfinkel, 1979; Garner et al., 1982b; Garner et al., 1983d; Hawkins &

Clement, 1980; Carter & Eason, 1982; Gormally, 1982; Johnson et al., 1982; Goldfarb, 1985, Grace et al., 1985; Schulman, 1986; Slade & Dewey, 1986; Cooper et al., 1987; Cooper & Fairburn, 1987; Palmer et al., 1987; Phelan, 1987; Fichter et al., 1991).

However, only two were found to assess any of the four aforementioned cognitive/emotional characteristics (Garner et al., 1983d; Slade & Dewey, 1986). The Slade & Dewey (1986) SCANS measure holds a scale to measure social and personal anxiety, which may be seen as conceptually close to assertiveness. However, the construction of the scale is methodologically weak, and moreover, it is aimed at a non-clinical, pre-patient population and thereby not relevant to patient assessment.

The EDI (Garner et al., 1983d) has two scales addressing Interpersonal distrust and Ineffectiveness, which suggest measures of low assertiveness and self-esteem respectively. However, close attention to the items reveal that the interpersonal distrust scale addresses ability to communicate with others, while the ineffectiveness scale is an amalgam of self-esteem, loneliness, control and emotional emptiness. Therefore, the EDI fails to fully meet the the first recommendation.

B. Failure To Provide Comprehensive Assessment By Measuring The Dietary/Behavioural Aspects Of Both Anorexia Nervosa And Bulimia Nervosa. (Requirement 2).

In the background to this review it was noted that dietary/behavioural and the cognitive/emotional features of primary eating disorders were of equal importance. In addition, there is a certain overlap between the disorders. This suggests that measures should be comprehensive in assessing both dietary/behavioural and cognitive/emotional characteristics, and should be applicable to both anorexia nervosa and bulimia nervosa.

Ten measures assessed, or claimed to assess, both behavioural and cognitive/emotional aspects of the disorders (Hawkins & Clement, 1980; Garner & Garfinkel, 1979, Garner et al., 1982b; Garner et al., 1983d; Carter & Eason, 1983; Grace et al., 1985; Slade & Dewey, 1986; Palmer et al., 1987; Cooper & Fairburn, 1987; Coker & Rogers, 1989). However, only three of these were of a sound methodological and statistical background (EAT, Garner & Garfinkel, 1979; EDI, Garner et al., 1983d; EDE, Cooper & Fairburn, 1987).

The EAT (Garner & Garfinkel, 1979), though assessing both dietary/behavioural and cognitive/emotional characteristics of anorexia, is an unidimensional scale. Therefore, the patients score does not discern between severity of dietary/behaviour and cognitive/emotions. Also the EAT was developed for use with anorexic patients only.

Close attention to the EDI (Garner et al., 1983d) scales reveal that, of eight scales, only one (bulimia) addresses dietary/behavioural aspects. The remaining seven scales (including the pathology scale for anorexia) are purely cognitive/emotional. Therefore, the EDI is not fully comprehensive, as it does not address the dietary/behavioural features of restricting anorexics; though this is recognised by it's authors "the EDI should not be considered to represent an exhaustive sampling of the psychopathological characteristics of anorexia nervosa" (pp. 32). In addition it was not developed for use with bulimic patients as well as anorexics, despite the inclusion of a bulimia scale.

The EDE, is more comprehensive in that it assesses behavioural features, and also cognitive features which are applicable to both diagnoses (body image). However, other than various aspects of weight control and body image the EDE fails to comprehensively address cognitive/emotional aspects

of primary eating disorders. Further, the use of the EDE is severely limited. Being an interview style measure, the EDE requires training to ensure consistent administration; administration takes at least 1.5 hours of clinical time; being so long, is therefore, not conducive to the repeated measures administration required for treatment monitoring.

In short, there is a lack of an assessment measure designed to assess both dietary/behavioural and cognitive/emotional features, and which is applicable to both anorexic and bulimic patients.

C. Failure To Use Adequate Development Methods And Conduct Statistical Standardisation. (Requirements 3 + 4).

The third and fourth requirements were that any measure used for the assessment and treatment monitoring of primary eating disorder patients should reach an acceptable standard in terms of the development of items, and also the statistical checks of consistency, validity, and reliability.

Of the 23 assessment measures to have been presented over the past two decades, only five have been constructed according to acceptable development methods (EAT-40, Garner & Garfinkel, 1979; EDI, Garner et al., 1983d; BULIT, Smith & Thelen, 1984; EDE, Cooper & Fairburn, 1987; BITE, Henderson & Freeman, 1987). However, it has been shown that only four of these measures, were subjected to a full standardisation repertoire, namely group validity, concurrent validity, test-retest reliability, and internal scale stability (Garner et al., 1979; Garner et al., 1983; Smith & Thelen, 1984; Henderson & Freeman, 1987). However, as shown above, none of these met Recommendations 1 to 3.

D. Failure To Assess Sensitivity To Detect Change In The Patient Over Treatment Time. (Requirement 5).

The fifth suggested essential feature of a measure to assess characteristics that warrant treatment was sensitivity to change over treatment time. That is, the ability of a measure to assess changes in the patient's behaviour and feelings as she responds to treatment. Without this check, a measure cannot be deemed appropriate for assessing change in a patient's characteristics as they are addressed within her treatment. Of the 23 reviewable measures, only two were accordingly tested (Garner & Garfinkel, 1979; Henderson & Freeman, 1987). However, only the BITE (Henderson & Freeman, 1989) was administered to patients at different stages as they progressed through treatment. The sensitivity of the EAT-40 (Garner & Garfinkel, 1979) was tested by administration to recovered patients, with no duration of recovery reported. While this method improves on measures which have not been assessed for sensitivity to change, it does not provide the clear indication of symptom increase or decrease shown by assessing patients as they progress through a treatment programme.

E. Conceptual Confusion Within Measures.

Another consistent finding, which was not initially within the parameters of this review, was the conceptual confusion within measures. It was found in several measures, that dietary/behavioural cognitive/emotional items were amalgamated, rather than comprising separate scales.

The notion that behavioural and cognitive variables are not differentiated (Skinner, 1969) has been widely criticised and is largely discredited. Research starting in the 1960's illustrated the fact that cognitive variables are qualitatively different from behavioural outcome (McNamara et al., 1956). This notion has been developed to the point that

cognitive variables are not only seen as qualitatively different, but as crucial mediators between stimulus and response (Beck, 1976). Indeed, leading cognitive therapists have stated that therapeutic attention should be directed at dysfunctional thinking styles which underpin and maintain dysfunctional behaviours (Ellis, 1962; 1973; Ellis & Greiger, 1977).

This notion has been central to the development of cognitive behaviour therapy. This therapy, in keeping with the qualitative difference between behaviour and cognition, adopts different therapeutic approaches accordingly, leading to a two-track approach.

In discussion of scale development, the importance of ensuring that "a single scale ought to measure a single construct" (Briggs & Cheek, 1986, pp. 109) has long been recognised. The main reason for this is that "any test that measures more than one common factor to a substantial degree yields scores that are psychologically ambiguous and very difficult to interpret" (Guilford, 1954, pp. 356). In the case of the measures reviewed above, which combine behavioural and cognitive factors, it would be impossible to discern whether the patients' scores were derived from dysfunctional behaviours or dysfunctional cognitions pertaining to those behaviours. This ambiguity has distinct ramifications when assessing a patient, and also when conducting empirical comparisons between groups. As clearly stated by McNemar (1946):

"Measurement implies that one characteristic at a time is being quantified. The scores on an attitude scale are most meaningful when it is known that only one continuum is involved. Only then can it be claimed that two individuals with the same score or rank can be quantitatively and, within limits, qualitatively similar

in their attitude towards a given issue". (pp. 268).

Indeed, in the area of eating disorders the importance of recognising this difference between behaviour and cognition has also been noted through claims that cognitive dysfunction precipitates the behavioural manifestation (Bruch, 1973, 1978; Selvini-Palazoli, 1974). To quote Smith and Thelen, who statistically demonstrated this cognitive-behavioural split through factor analysis:

"of importance is the finding that a subject's feelings about herself following a binge are as essential to the bulimic syndrome as the actual bingeing behaviour" (Smith & Thelen, 1984; pp. 872)

Nevertheless, this recognised split between the dietary/behavioural and cognitive/emotional aspects of the eating behaviour was largely ignored by the assessment measures. It was a recurring pattern in these measures to combine dietary/behavioural items with cognitive/emotional items appertaining to that dietary/behaviour within a single scale. On the basis of current theories of behavioural and cognitive variables, and also the fact that these variables are addressed differently in treatment; such combining is inappropriate. From the theoretical background and also the statistical findings of Smith and Thelen (1984), it is suggested that these two features should be assessed separately.

The importance of such differentiated measurement has been well illustrated in a study by Ortega et al., (1987). In that study, bulimic patients completed different self-report measures at the start and finish of a cognitive-behavioural treatment program. At the final assessment, it was found that bingeing and purging had not decreased; though the cognitions appertaining to those behaviours had significantly decreased in severity. This finding led the researchers to state that, in treatment

measurement, as well as behavioural measures, 'investigators should consider using an appropriately validated self-report instrument that assesses attitudes about bulimia' (pp. 309).

No similar study could be located which used a similar method and measurement package with anorexic patients. However, it is reasonable to assume that the anorexic's fear and guilt about eating, and her irrational beliefs about food, do not improve in a directly linear relationship with her dietary behaviour. However, at present, there is no substantive evidence to support this suggestion.

These criticisms indicate that the five requirements, set out at the beginning of this chapter, are not met by currently available assessment measures for primary eating disorder patients. There is a significant gap in primary eating disorder measurement. There is, therefore, a need to develop a new assessment measure which will enable clinicians to assess both anorexic and bulimic patients in terms of both dietary/behavioural and also cognitive/emotional features. These cognitive/emotional scales should include those characteristics of patients, which warrant treatment, yet which cannot be assessed by current measures - namely, perceived external control, low assertiveness, low self-esteem, and self-directed hostility. However, the cognitions and emotions features appertaining to the dietary/behavioural features should also be assessed. This new measure should be developed according to an acceptable methodology; should be adequately standardised; and, also, assessed in terms of sensitivity to detect patient-change over treatment in order to establish its application to treatment monitoring. In short, there is a need to develop a new measure

to cover the five criticisms detailed above. Consequently, the research implications emerging from this argument are as follows:

5.10 Research Implications For The Present Project.

1. In response to the aforementioned need, a new assessment measure for eating disorder patients should be developed to cover the following criteria:
2. The measure should comprise scales to assess anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility.
3. Scales should be developed according to an appropriate and established methodology of scale construction.
4. Scales should be psychometrically tested to establish validity, reliability, and consistency.
5. The scales should be checked in terms of ability to detect change in the patients' dietary/behaviour and cognitions/emotions over treatment time, in order to assess the measure for its suitability for treatment monitoring. However, as such an assessment is longitudinal, it should be conducted in a distinct study.

TABLE 5.1: SUMMARY OF MEASURES FOR PRIMARY EATING DISORDER PATIENTS.

Author/Date	Measure	Dimensions	Development Method	Standardisation	Comments
Slade, 1973	Short Anorexic Behaviour Scale	(1) resistance to eating (2) food disposing (3) overactivity	Items developed on basis of discussion with nurses. No statistical development.	(1) interrater reliability (2) correlated ratings with body-size perception.	For inpatients only. Psychiatric group = mixed aetiology. Behaviour scale rating and body-size rating not concurrent
Garfinkel, 1974	Hunger/Satiety Scale	(1) Hunger (2) Satiety	Modified older scale. No description of how changed.	(1) Between group validity	Modifications unexplained. Limited usage. Hunger scale not valid. No further standardisation.
Garner & Garfinkel, 1979	EAT-40	(1) food preoccupation (2) body image (3) vomiting/laxative abuse (4) dieting (5) slow eating (6) clandestine eating (7) pressure to gain	Clearly presented Acceptable methods	(1) Predictive ability. (2) Discriminant validity (3) Concurrent validity (4) Internal consistency (5) Recovery change (6) Factor analysis	Construction acceptable. First self-report measure. Concurrent valid. disappointing No sex bias assessed. No assessment of ambiguity.

<u>Author/Date</u>	<u>Measure</u>	<u>Dimensions</u>	<u>Development Method</u>	<u>Standardisation</u>	<u>Comments</u>
Goldberg, 1980	GAAS	(1) staff (2) fear of fat (3) attitudes to parents (4) denial of hunger (5) hypothermia (6) bloating (7) self-care (8) achievement (9) food avoidance (10) helpful authority (11) physical problems (12) hobby cooking (13) mental or physical problems (14) heterosexual disinterest	Items developed by author. Factor analysis--> scales.	(1) internal reliability (2) change over treatment time	For inpatients only. Unstandardised Inadequate development method.
Hawkins & Clement, 1980	Binge Scale	(1) binge eating + feelings	not presented	(1) Concurrent validity (2) Between group validity (3) Test-retest (4) Factor analysis	No method Aim of scale not stated. Test-retest time not given. Concurrent valid. weak.
Halimi et al. 1981	not presented	(1) demographics + weight history (2) binge behaviour	Not presented	Not presented	Cannot be reviewed.

Author/Date	Measure	Dimensions	Development Method	Standardisation	Comments
Garner et al. 1982	E.D.I.	(1) drive for thinness (2) bulimia (3) ineffectiveness (4) perfectionism (5) maturity fear (6) body dissatisfaction (7) interoceptive awareness (8) interpersonal distrust	Fully presented. Acceptable methodology	(1) internal consistency (2) response bias (3) between group validity (4) predictive validity (5) correlation with clinical rating (6) concurrent validity	First extensive measure. Well developed and tested. Concurrent and between group validity checks not clearly presented. Not an exhaustive measure. Cognitively orientated - bulimia the only behavioural scale.
Garner et al. 1982	EAT-26	(1) dieting (2) bulimia/food preoccupation (3) oral control	Factor analysis of EAT-40	(1) between group validity (2) concurrent validity	Attention to scales indicates conceptual confusion - due to factor analysis.
Gormally, 1982	Binge scale	(1) binge eating (2) cognitive factors	Sparse presentation. Weak methodology	(1) construct validity	Construct validity assessed by comparison with author constructed interview.
Johnson et al. 1982	Eating Habits Questionnaire	(1) bulimia (2) purging (3) anorexia (4) habits (5) medical treatment (6) psychological aspects	Not presented.	Not presented Not calculated	Broad measure. Comprehensive measure of behaviours in both diagnoses. Unstandardised.
Carter & Eason, 1983	-----	(1) vomiting (2) eating concern (3) health habits (4) relationships (5) demographics	Not presented	(1) between group validity	Groups allocated by 1 self-report question. 23% items non-discriminatory.

<u>Author/Date</u>	<u>Measure</u>	<u>Dimensions</u>	<u>Development Method</u>	<u>Standardisation</u>	<u>Comments</u>
Nagelburg et al., 1984	Screening Questionnaire	Not presented	Not presented	Not presented	Not reviewed
Smith & Thelen, 1984	Bulimia Test (BULIT)	(1) bingeing + vomiting/purging DSM-III based	Clearly presented. Acceptable methodology Statistical item selection	(1) item discriminative ability (2) discriminant validity (3) test-retest (4) correlation with clinical rating	Strong measure. Well standardised. Criterion groups unscreened. Test-retest period very long.
Grace et al. 1985	Eating Attitudes and Behaviour Questionnaire	(1) self-induced vomiting/purging (2) feelings on food, eating, overeating, weight control	Not presented. Claim that questionnaire is based on Dunn & Oendercin (1981) Compulsive Eating scale.	(1) predictive validity.	Inadequate presentation. Predictive validity method not presented. No further standardisation.
Goldfarb, 1985	Fear of Fat Scale	(1) fear of fat	Sparse presentation. Weak methodology. No statistical item selection	(1) internal consistency (2) between group validity (3) test-retest (4) discriminant validity	Items author generated with no statistical justification. Test-retest period only 1 week. Good range of criterion groups.
Schulman et al., 1986	Cognitive Distortions in Bulimia Test	(1) cognitive distortions during automatic eating. (2) cognitive distortions about appearance	Adequately presented. Weak methodology. No statistical item selection. Factor analysis --> scales	(1) face validity (2) internal consistency (3) predictive validity (4) concurrent validity	No group criteria or n's given for standardisation studies. Comparison measures not appropriate.

<u>Author/Date</u>	<u>Measure</u>	<u>Dimensions</u>	<u>Development Method</u>	<u>Standardisation</u>	<u>Comments</u>
Slade & Dewey, 1986	SCANS	(1) dissatisfaction and loss of control (2) social/personal anxiety (3) perfectionism (4) adolescent problems (5) weight control	Clearly presented. Item selection based on factor analysis.	(1) between group validity	Aimed to assess those at risk of developing anorexia. Factor analysis/criterion groups therefore, inappropriate Factor analysis failed to reveal intended scales. No further standardisation.
Cooper et al. 1987	Body Shape Questionnaire	(1) perceived body shape	Clearly presented. Acceptable. Statistical selection of items (t-tests).	(1) between group validity (2) concurrent validity	Two items relate to bingeing. Criterion groups allocated by self-report measure. Unclear if all measures completed concurrently.
Palmer et al. 1987	CEDRI	(1) eating behaviour (2) eating attitudes (3) other symptoms	Fair presentation. Weak methodology. No statistical item selection.	(1) interrater reliability	Interview measure. Requires familiarity with patient. Documents clinical observations.
Phelan, 1987	Bulimic Thoughts Questionnaire	(1) self-Schema (2) self-Efficacy (3) salient Beliefs	Acceptable Factor Analysis --> scales	Training required. (1) between group validity (2) change over treatment time.	conceptual confusion in scales. Low group numbers in validation.

<u>Author/Date</u>	<u>Measure</u>	<u>Dimensions</u>	<u>Development Method</u>	<u>Standardisation</u>	<u>Comments</u>
Cooper & Fairburn, 1987 + Cooper, 1989	E.D.E.	(1) restraint (2) bulimia (3) eating concern (4) weight concern (5) shape concern	Unclear presentation. Items selected by interview results --> 9 revisions. No statistical selection of items.	(1) interrater reliability (2) internal consistency (3) between group validity	Interview measure. Behavioural. Requires training to use, also 1 1/2 hours to administer. Very low group numbers. No statistics presented to back claims. Some items correlated higher with wrong scale. No further standardisation.
Henderson & Freeman, 1987	BITE	(1) binge eating + purging (2) severity	Very clear presentation. Strong methodology. Statistical selection of all items. (t-tests).	(1) internal consistency (2) predictive validity (3) item predictive validity (4) between group validity (5) concurrent validity (6) test-retest (7) change over treatment	Well constructed. Well standardised.
Coker & Rogers, 1989	Eating Habits Questionnaire	(1) weight & dieting (2) restrained eating (3) overeating	Adequate. Factor analysis--> scales	(1) internal consistency (2) test-retest (3) concurrent validity (4) between group validity	Fairly comprehensive measure. Conceptual confusion in scales. Standardised on non-clinical groups. No between group validity checked on clinical & control groups.
Fichter et al. 1991.	SIAB	(1) body image (2) social integration (3) depression (4) compulsion/ anxiety (5) bulimic symptoms (6) laxative abuse	Not clearly presented Factor Analysis-->scales plus author constructed items	(1) interrater reliability (2) between group validity (3) concurrent validity	Not comprehensive - as claimed. Confusing development method. Only partially standardised. Requires training for use. Administration = lengthy.

CHAPTER SIX

LINKS BETWEEN PRIMARY EATING DISORDERS AND OTHER PSYCHOLOGICAL DISORDERS

6.1 Overview Of Chapter.

Chapter Three presented the findings of Williams et al. (1990), which raised the research issue of whether primary eating disorder patients were more similar to other clinical groups than to dietary/weight concern groups. Further, is this similarity apparent in terms of perceived external control, low assertiveness, low self-esteem, and self-directed hostility? It was suggested that further research is required. This chapter reviews the relevant research which may throw light on this issue, to present the argument that further empirical investigation is required.

For the sake of brevity, the review is restricted to four diagnostic groups - anorexia nervosa, bulimia nervosa, depression and panic disorder with or without agoraphobia. This limitation is based on the rationale that depression and panic disorder with or without agoraphobia have certain symptoms and characteristics which are also associated with primary eating disorder patients. Depression is characterised by symptoms which are also noted in primary eating disorders - such as sleep disturbance, lability, self-depreciation. Likewise, panic disorder is characterised by nervous affect and social withdrawal which is also noted in primary eating disorder patients. In addition, all four diagnoses are non-organic, and are noted for a predominance of women presenting for treatment (Bemis, 1978; Bourdon et al., 1988; Paykel, 1991).

The following review will firstly present the literature pertaining to the links between primary eating disorder and other psychological disorders. Thereafter, the literature will be examined to assess whether there is any evidence of links/differences between primary eating disorder, depression, and panic disorder with or without agoraphobia in terms of perceived control, low assertiveness, low self-esteem, and self-directed

hostility. It should be noted that, within the following review, panic disorder with or without agoraphobia may be referred to as panic disorder, or as agoraphobia. This reflects the fact that the diagnostic criteria of panic disorder with or without agoraphobia was not compiled until 1987 (American Psychological Association, 1987). Consequently, research conducted prior to that date would use the diagnostic index of agoraphobia.

6.2 General Links Between Primary Eating Disorders And Other Clinical Diagnostic Groups.

The most common link made between primary eating disorders and other diagnoses, is that between eating disorder and depression. The link is most frequently made between bulimia nervosa and depression, though links have also been consistently made between anorexia and depression. Some authors have gone as far as to present the Affective Variant Hypothesis (Hintz & Williamson, 1987) - the claim that eating disorders are a manifestation of affective disorder (Antshuller & Weiner, 1984; Cantwell et al., 1977; Winoker et al., 1980; Hudson et al., 1983a). These claims are made on the basis of evidence from several research sources. Full reviews of this literature have been presented elsewhere (Piran et al., 1985; Hatzukami et al., 1984a, 1984b; Halmi, 1985; Levy & Dixon, 1985). To summarise, there are three bodies of evidence to support the affective variant hypothesis. Firstly, it has been claimed that a percentage of eating disorder patients meet DSM-III criteria for depressive disorder (Viesselman & Roig, 1985) or score in the moderate to severe range on standardised measures of depression (Rosen et al., 1989; Wilson & Lindholm, 1987; Herzog, 1984; Hatzukami et al., 1986; Eckert et al., 1982). Evidence has been presented indicating that depression is manifest in premorbid eating disorder

(Cantwell et al., 1977; Laessle et al., 1987; Piran et al., 1985; Toner et al., 1988). Further, there is a link between eating disorder and a family history of depression (Wilson & Lindholm, 1987; Hudson et al., 1983a; Pyle et al., 1981). Secondly, there are neurendocrine abnormalities attributed to both eating disorders and depressive disorders (Gwirtzman et al., 1983; Hudson et al., 1983b). Thirdly, eating disorders have been shown to respond to antidepressant medication (Halmi et al., 1986; Pope et al., 1983; Pope & Hudson, 1987). However, there are inconsistencies across the research. Some authors have said that bulimics and patients who display features of both diagnoses are more likely to be depressed than anorexic (Piran et al., 1985; Wold, 1983); while others claim that anorexia nervosa and bulimia nervosa have equal rates (Hudson et al., 1982). Others have claimed that depression is linked to the weight status of the eating disorder patient, with low weight patients displaying greater depression (Laessle et al., 1988). Consequently, there are many dissenting arguments to the theory. It has been claimed that eating disorder depression may be a function of starvation (Toner et al., 1988; Rosen et al., 1989); that the depression reported by these patient does not reach diagnostic levels (Brouwers, 1988; Laessle et al., 1988) and that primary eating disorder patients are lower in affect than depressed patients (Eckert et al., 1982). Further, a more in-depth study by Cooper & Fairburn (1984) found that, though primary eating disorder patients had elevated depression scores, analysis of individual symptoms indicated that they were qualitatively different from depressed controls; and that these symptoms may be a function of bulimic symptoms. Finally, the broader reviews conclude that there is insufficient evidence to support the Variant Hypothesis (Strober & Katz, 1987). Further,

it has been stated that the Variant Hypothesis is of no value to management (Halmi, 1985).

Eating disorder have also been associated with phobic anxiety, as noted in patients diagnosed panic disorder with or without agoraphobia: To quote Crisp (1983b):

"...the anorexics anxiety is usually the predominant affect, although it is not always evident.....the anxiety is phobic anxiety, and is dealt with by avoidance behaviour". (pp. 22).

In keeping with this viewpoint, premorbid anxiety has been reported in 71% to 75% of anorexic patients (Halmi, 1974; Toner et al., 1988). Further, concurrent diagnosis of an anxiety disorder has been reported in over 50% of an eating disorder sample (Laessle et al., 1986; Pyle et al., 1981); and primary eating disorder patients have been shown to be more anxious than controls on standardised measures of anxiety (Fischer-McCanne, 1985; Pertshuk et al., 1986). Furthermore, an anxiety model of bulimia has been also presented (Leitenburg et al., 1984). It is notable that there is considerably less research into panic disorder in primary eating disorders and no clinical study comparing primary eating disorder patients with normal controls in terms of the features noted in panic disorder with or without agoraphobia.

The third diagnosis associated with primary eating disorder is obsessive-compulsive disorder which has been noted in 41% of an anorexic sample (Halmi, 1974). However, in a review of the evidence that eating disorders are a variant of obsessive-compulsion, Holden (1990) concludes that though eating disorder patients may display some obsessive traits premorbidly, the levels seen in patients are due to exacerbation by starvation. He also states, that to view eating disorder as obsessive

conclusion, has no benefit in terms of management. This claim is debatable.

Primary eating disorders have also been linked with personality disorder, though the evidence is sparse and contradictory. Piran et al. (1988) found that 10% of an anorexic sample and 68% of a bulimic sample fulfilled the criteria for one of 3 personality disorder subtypes. Others have reported personality disorder in bulimic patients but not in anorexics (Hudson et al., 1983b). Another study has found that this diagnosis is found in only 1.9% of eating disorders, which is no more than in depressed patients (Pope et al., 1987).

Finally, eating disorders have been presented as 'sister' disorders to substance abuse disorders or addiction (Brisman & Siegal, 1984), especially in the case of bulimic patients (Brisman & Seigal, 1984; Hatzukami et al., 1984a, 1986; Pyle et al., 1983). However, a detailed review of the literature by Wilson (1991) led to the conclusion that this association is misleading.

As can be seen, primary eating disorder have been associated with a variety of other psychological disorders. Many similarities have been noted in terms of shared symptomatology. However, the evidence is generally sparse and contradictory. Moreover, the evidence is overwhelmingly biased towards quantifying the diagnostic symptoms of other psychological disorders in primary eating disorder patients. It would seem more appropriate to compare eating disorder patients with other diagnostic groups on measures other than simple diagnostic criteria, in order to establish cognitive/emotional links between the groups - or the lack of such links.

The remainder of this review will take such an approach by examining the evidence of links between primary eating disorder, depression, and panic disorder with or without agoraphobia, on characteristics attributed to

eating disorder pathology. These characteristics are those noted by Williams et al (1990) - perceived external control, low assertiveness, low self-esteem, and self-directed hostility.

6.3 Research Assessing Eating Primary Disorder Patients, Depressed Patients, And Panic Disorder With Or Without Agoraphobia Patients On Measures Of Perceived Control, Each Alone And In Comparison.

Chapter Four has presented a full review of research assessing the perception of external control in primary eating disorder patients. Previous research generally indicates that both anorexic and bulimic patients feel a greater amount of control by external forces than non-eating disorder controls (Allerdissen et al., 1981; Rost et al., 1982; Strober, 1982; Weiss & Ebert, 1983; Grace et al., 1985; Wagner et al., 1987; see also Fischer-McCanne, 1985). In addition, primary eating disorder patients have been shown to perceive themselves as more externally controlled than other non-clinical dietary/weight concern groups (King, 1989; Shisslak et al., 1990; Woods & Heretick, 1983/4; see also Garner et al., 1976).

Concerning depressed patients, the link between this disorder and perceived control, in terms of locus of control, has been the subject of fairly extensive investigation. The overwhelming conclusion is that there is a link between depression and a perception of externalised control (Burger, 1984). In an extensive review of all relevant research between 1977 and 1986, Benassi et al. (1988) came to the conclusion that there is:

"strong support for the hypothesis that greater externality is associated with greater depression". (pp. 362).

A notable feature of this research is that the bulk of results are in the

form of correlational relationships. Several researchers have reported significant positive correlations between measures of depression and external Locus of Control. Moore & Paollilo (1984) found significant relationships between depression and measures of external control and of hopelessness. Similarly, Alagaratnam (1984) found a low but significant correlation between depression and external Locus of Control, but only in their male subjects. Becker & Lesiak (1977) administered a unidimensional Locus of Control Scale (Rotter, 1966) and a depression scale (Beck, 1967) to depressed patients and found a relationship between the degree of depression and external Locus of Control. Likewise, Priebe & Steigltz (1990) indicated that external Locus of Control in depressed patient may be predictive of outcome; it was found that those patients who externalised attributions to the therapist had a lower chance of improving. However, other reseachers have produced contradictory results. Lefevre & West (1981) administered the Beck Depression Inventory (Beck, 1967) and the Rotter Locus of Control Scale (Rotter, 1966) to a sample of students, No significant correlation was found between locus of control orientation and depression; though this may have been due to the non-clinical nature of the population. Likewise, Quinn & Norris (1986) administered a mutidimensional Health Locus of Control Scale (Wallston et al., 1978) to a heterogeneous psychiatric group, which included depressed patients, and to a group of normal controls. No relationship was found between depression and any of the 3 locus of control scales. Finally, Hoffart & Martinsen (1991) administered a multidimensional Mental Health Locus of Control Scale (Wallston & Wallston, 1981) to another mixed diagnosis group and found that regression analysis did not show externality to be a predictor of depression.

Research papers which compare depressed patients with controls on measures of perceived control are less common. However, Rosenbaum & Hadari (1985) administered Rotters Locus of Control Scale (Rotter, 1966) to depressed patients, paranoid patients and normal controls; results indicated that the depressed patients perceived a significantly greater degree of external control than both the controls and the paranoids. More recently, Hoffart & Martinsen (1990) compared depressed patients with agoraphobics and depressed agoraphobics on a multidimensional Locus of Control Scale (Levenson, 1974). Unfortunately, there was no normal control group. However, it was found that the depressed patients reported the lowest levels of external control.

Concerning the links between panic disorder with or without agoraphobia and Locus of Control, the literature is markedly more sparse. As in the case of depression, externality has been associated with panic and agoraphobia. Emmelkamp & Cohen-Kittensis (1975) found a significant, positive correlation between phobic anxiety and external Locus of Control. Likewise, Lefevre & West (1981) administered the Rotter Locus of Control Scale (Rotter, 1966) and the Social Avoidance and Distress Scale to a student sample of 36 males and females. A highly significant correlation was found between social anxiety and externality. Alagaratnam (1984) also found a significant, but low, correlation between externality and general anxiety, which is related to panic disorder, but this was limited to male subjects in the sample. Traub (1982) compared factors on a locus of control scale and a fear schedule, and found a clear linear relationship between the two. Using a multidimensional scale, Molinari & Khanna (1981) found significant correlations between anxiety and perceived control by chance and by powerful others. Finally, Hoffart & Martinsen (1991) assessed a

mixed group of agoraphobic, depressed and anxiety patients. Regression analysis indicated that external Mental Health Locus of Control was a significant predictor of agoraphobia.

In research comparing agoraphobics with controls, similar results have been found. It has been consistently found that agoraphobic patients perceived greater general external control (Brodbeck & Michelson, 1987; Quinn & Norris, 1986; van der Molen et al., 1988); and also greater external health locus of control than controls (Adler & Price, 1985; Hoffart & Martinsen, 1990). In addition a broader study by Fisher & Wilson (1985) administered a self-efficacy scale, a Locus of Control Scale and a mastery-powerlessness scale to groups of DSM-III diagnosed agoraphobics and normal controls. Comparative statistics indicated that the agoraphobic patients felt significantly less powerful, and less in control of their lives than the normal controls.

The research summarised above has indicated that perceived external control has been overwhelmingly associated with eating disorders, depression and also panic disorder with or without agoraphobia. Such evidence would suggest that the three disorders are comparable in terms of this characteristic. Van der Molen et al. (1988) has suggested that externalised control is a general feature of all 'neuroses'. However, computerised search of the literature failed to reveal any articles which compared primary eating disorder patients with depressed and/or panic disorder patients on a measure of perceived control. There is a gap in the literature concerning the perception of control by primary eating disorder patients vis à vis these other clinical diagnostic groups.

6.4 Research Assessing Eating Disorder Patients, Depressed Patients, And Panic Disorder With or Without Agoraphobia Patients On Measures Of Assertiveness, Each Alone And In Comparison.

Chapter Four presented a detailed review of studies assessing the assertiveness of primary eating disorder patients. That review revealed that the literature was inadequate with regard to assertiveness research in anorexic patients. However, bulimics have been shown to be significantly less assertive than normal controls (Weis & Ebert, 1983; Fischer-McCanne, 1985); and that low assertiveness predicts a high binge score (Holloran, 1988). In addition, low assertiveness has been shown to discriminate eating disorder patients from non-clinical dietary/weight concern groups (Garner et al., 1984; Prather & Williamson, 1988; see also Mehrabian et al., 1984/5).

Research assessing assertiveness in depression is minimal. Nevertheless, this characteristic has been noted as fundamental to depressive disorders. Herman (1983), in a detailed discussion of depression in females, states that passive behaviour may be a major contributory variable in the development of depression. She goes on to cite Zetzel (1965), a Freudian theorist, who stated that feminine passivity can lead to an exaggerated sense of helplessness, which, in turn, contributes to the development of problematic depression. Studies have been presented which illustrate that there is a statistically significant inverse relationship between assertiveness and depressive affect (Gotlib, 1984; Lea & Paquin, 1981; Lefevre & West, 1981; Packman & Foy, 1978; Sanchez & Lewinsohn, 1980; Sanchez et al., 1980). Further, a more detailed study has been conducted, which sought to investigate the type of non-assertiveness displayed in depression, (Culkin & Perotto, 1985). When the Rathus Assertiveness

Schedule (Rathus, 1973) was divided into 3 factors and correlated with measures of depression, it was found that inhibited verbal expression was significantly related to reported depression. Other assertiveness factors were not significantly related.

Research on assertiveness in the area of panic disorder with or without agoraphobia is also minimal. This is despite the fact that agoraphobic patients are generally viewed as passive, unassertive, and dependent individuals (Fodor, 1974; Goldstein & Chambliss, 1978); and that 'social fear' has been related to a lack of assertion (Hollandsworth, 1976, 1979). There is evidence that such characteristics are not apparent in these patients premorbidly (Buglass et al., 1977), which suggests that unassertiveness is a consequence of the disorder's progress, rather than a precipitating factor. This is in contradiction to the claim that low assertiveness in premorbid eating disorder patients leads to the expression of their disorder (Bruch, 1978). However, in presenting agoraphobic patients, low assertiveness has been noted. Chambless et al. (1982) compared male and female agoraphobics with normal student controls on standardised measures of assertiveness. Results indicated that the agoraphobic group were significantly less assertive. Another well controlled study by Fisher & Wilson (1985) compared diagnosed agoraphobics with normal controls on various measures including the Rathus Assertiveness Schedule (Rathus, 1973). Results again indicated that the agoraphobic patients were significantly less assertive than control subjects.

The research summarised above indicates that primary eating disorders, depression, and panic disorder with or without agoraphobia are characterised by an inability to display assertive behaviour in social situations or within relationships. This would suggest that the three

groups would be comparable on such standardised measures. However, a computerised search failed to find any study which compared primary eating disorder, with depressed, and/or panic disorder with or without agoraphobia patients on a standardised measure of assertiveness. The only relevant study compared anorexic and depressed patients on an assertiveness-related measure. No differences were found between the groups on the interpersonal sensitivity scale of the HSCL-90 (Strober, 1980). There is a gap in the literature concerning low assertiveness in primary eating disorder patients vis à vis depression and/or panic disorder with or without agoraphobia.

6.5 Research Assessing Primary Eating Disorder Patients, Depressed Patients, And Panic Disorder With Or Without Agoraphobia Patients On Measures Of Self-Esteem, Each Alone And In Comparison.

A detailed review of self-esteem research in the area of eating disorders was presented in Chapter Four. That review indicated that, though there was a lack of evidence pertaining to anorexic patients, bulimic patients have been shown to be lower in self esteem than normal controls (Weiss & Ebert, 1983; Grace et al., 1985; Katzman & Wolchik, 1984). In addition, it was suggested that primary eating disorder patients could be differentiated from other dietary/weight concern groups by their low self-esteem (Mint & Betz, 1988; Nagelburg et al., 1984). One study also suggested that bulimic patients were lower in self-esteem than anorexic patients, though the selection criteria in that study was highly questionable (Shisslak et al., 1990)

Low self-esteem has long been noted as a central component of depression (Brewin, 1986). In a discussion paper on the theories of depression in women, Herman (1983) noted that Freud regarded low self-esteem to be the

distinctive quality of depression. She goes on to cite subsequent theorists such as Bibring (1953) who saw loss of self-esteem as the primary dynamic and precipitant of depression. Such a view is also held by cognitive theorists of depression (Ellis, 1962, 1973; see also Lewinsohn et al., 1981). Despite the recognition of self-esteem being a central feature of depression, the empirical research into the relationship between self-esteem and depression is lacking. Correlational evidence has been presented, which indicates that there is an inverse relationship between depression and self-esteem (Lefevre & West, 1981; Zemare & Bretell, 1983). Other comparative studies have indicated that low self-esteem discriminates depressed subjects from controls. Altman & Wittenborn (1980) presented 134 depressive self-statements to remitted, formerly depressed and normal control females. The sixty-two items which discriminated between the groups were factor analysed, which led to the establishment of a self-esteem factor as a central component of depression. Another study (Cofer & Wittenborn, 1980) readministered these statements to further groups of remitted, depressed and control females. Again, factor analysis showed low self-esteem to be a central component factor of depression. A similar study by Pietromonaco (1985) divided a college sample into high and low depression score on the Beck Depression Inventory, and compared these groups on affective statements. Results indicated that the high depression group was more likely to express negative affect through negative self-labeling. Finally, a recent study by Roy (1990) presented a well controlled comparison of diagnosed depressed and non-depressed control subjects on a standardised measure of self-esteem. Results indicated that the depressed patients were significantly lower in self-esteem - whether in the index episode or in remission. Also, it was found that the depressed patients

were significantly lower in self-esteem, whether suffering the additional symptom of melancholia or not.

Concerning panic disorder with or without agoraphobia, an association between social anxiety and low self-esteem has also been noted, and the arguments concerning the causal direction reviewed elsewhere (Bagley et al., 1979). Nevertheless, a computer search of the literature revealed no study which had compared panic disorder with or without agoraphobia patients with normal controls on a measure of self-esteem.

The above literature summary has indicated that primary eating disorder patients and depressed patients are characterised by a deficient sense of self-worth and low self-esteem. In the absence of empirical literature, the notion that low self-esteem is a feature of panic disorder with or without agoraphobia can only be suggested. However, the fact that low self-esteem has been found to differentiate both primary eating disorder and depressed patients from normal controls suggests that these groups may be comparable in their self-esteem. Nevertheless, a full computerised literature search failed to identify any study which has addressed this question with a direct measure of self-esteem. The only relevant article was by Strober (1980). In that study anorexic and depressed patients were compared on the self-acceptance scale of the California Personality Inventory (CPI: Gough, 1957). Results indicated that there were no differences between the two groups, though no normal control group was included as comparison. There remains a gap in the literature in terms of investigating the self-esteem of primary eating disorder patients vis à vis the two other diagnostic groups of depression and panic disorder with or without agoraphobia.

6.6 Research Assessing Primary Eating Disorder Patients, Depressed Patients, And Panic Disorder With Or Without Agoraphobia Patients On Measures Of Self-Directed Hostility, Each Alone And In Comparison.

Chapter Four reviewed the literature on self-directed hostility in primary eating disorder patients. It was concluded that there was no further empirical evidence to support the findings of Williams et al (1990). Nevertheless, there is observational data stating that eating disorder patients are self-punitive, self-critical and suffer from dysfunctional guilt (Bruch, 1978; Selvini-Palazoli, 1974; Orbach, 1985); and that they show elevated levels of self-injury (Garfinkel et al., 1980).

The assessment of self-directed hostility in depression has, however, received considerable research attention. The writings of Freud clearly state that self-punitiveness and self-criticism are central features of patients presenting with depression (Herman, 1983). Factor analytical studies have consistently identified factors labelled as self-blame, guilt and self-punishment as central components of depressive disorders (Grinker et al., 1961; Paykel, 1971; Rosenthal & Gudeman, 1967; Carver & Ganellen, 1983). In addition research has noted self-criticism as a central component (Altman & Wittenborn, 1980); and depression measures have been constructed to include scales of self-critical attitude (Blatt et al., 1976). As might be expected there is a body of research which has found significant, positive correlations between depression and covert hostility but not between depression and overt hostility (Becker & Lesiak, 1977; Gershon et al., 1968; Moore & Paoillo, 1984; Selby & Neimeyer, 1986). Further, the degree of covert, self-directed hostility has been found to be related to the severity of the depression (Hayworth et al., 1980). However, contradictory findings have also been presented by authors who have found

no such significant relationship (Yesavage, 1983); or have found that depression is related to overt but not covert hostility (Johnstone et al., 1991).

The research which statistically compares depressed and non-depressed subjects, on measures of hostility, has reached similar conclusions to the correlational studies. This is well illustrated by four relatively recent studies. Biaggio & Godwin (1987), using a student sample, found that a measure of intropunitiveness discriminated between high and low scorers on the Beck Depression Inventory. Riley et al., (1989) in a well controlled and broad study, found that diagnosed depressed patients reported significantly higher covert and repressed hostility than normal controls and patients of post traumatic stress disorder. Roy (1990) compared depressed patients and normal controls on the Hostility and Direction of Hostility Questionnaire (Caine et al., 1967). It was reported that the depressed patients had significantly higher hostility scores, though the subscales were not reported. Finally, Jarrett & Weisenburger (1990) assessed another feature of self-directed hostility as defined in this thesis - dysfunctional guilt. Depressed outpatients and normal controls were compared on a measure of situational, dysfunctional guilt. Results indicated that the depressed patients reported significantly more dysfunctional guilt in all investigated situations.

Concerning panic disorder with or without agoraphobia and self-directed hostility, only one relevant study was located. Alessi et al (1987) conducted a well controlled study on adolescent inpatients, in order to quantify the prevalence of panic disorder and depressive disorder. In the course of that study, several measures were administered. One result was that the patients who were diagnosed as panic disordered could be

distinguished by their high score on a guilt scale. This suggested that self-directed hostility, in terms of guilt is also a feature of panic disorder with or without agoraphobia.

Summary of the relevant research has indicated that self-directed hostility is most certainly a feature of depression. It is also suggested that this feature is also associated with primary eating disorder and panic disorder with or without agoraphobia, though the research is considerably more sparse in these areas. It seems reasonable to suggest that primary eating disorder patients may be comparable with depressed patients and panic disorder patients in their feelings of guilt, self-criticism and self-punitiveness. However, a computerised search of the literature revealed only one study which had sought to address this question in any way. Frank (1991), noting that self-punitive shame and guilt are features of primary eating disorder patients, compared an eating disorder group with a depressed group on a recently developed measure of shame and guilt (Harder & Lewis, 1987). Results indicated that the eating disorder group were higher in shame and guilt than the depressed subjects. However, these findings were considerably tempered by the fact that selection criteria was on the basis of self-report questionnaire, and there was no means of ensuring that the groups actually represented clinical levels of the disorders under investigation. No such investigation has been conducted between primary eating disorder and panic disorder patients. Therefore, there remains a gap in the literature concerning the self-directed hostility in eating disorders vis à vis the two other clinical diagnostic groups.

6.7 Conclusions.

The findings of Williams et al. (1990) indicated that primary eating disorders can be differentiated from non-clinical dietary/weight concerns. However, it was also indicated that the eating disorder group was not different from a heterogeneous psychiatric group in terms of perceived external control, low assertiveness, low self-esteem and self-directed hostility. This suggested that there may be links between primary eating disorders and other clinical psychological groups, in these areas. However, methodological weaknesses in that study indicate the need for further research to investigate this suggestion.

The above literature review has assessed previous research which may throw light on the suggestions raised by the Williams et al. (1990) results. In short, it has been revealed that, although primary eating disorders have been associated, likened and even classified with other psychological disorder groups, the research into cognitive/emotional similarities and differences is severely lacking. Perceived external control, low assertiveness, and low self-esteem have been noted as characteristics of primary eating disorder, depressed and panic disorder with or without agoraphobia patients. This would suggest that primary eating disorder, depressed and panic disorder patients, would be comparable in their perception of being controlled by outside forces or others, their deficient ability to exercise self-assertion within social situations and relationships, and their deficient sense of self-worth and respect. A fourth cognitive/emotional feature - self-directed hostility - has been noted widely as a central characteristic of depressed patients. The claim that self-directed hostility is an important component of primary eating disorders is largely based on anecdotal data. Likewise, only one study has

reported self-directed hostility (in terms of guilt) in panic disorder with or without agoraphobia patients. Consequently, the suggestion that the three diagnostic groups are comparable in their feelings of guilt, self-criticism and self-punitiveness must remain on a more tentative level in the absence of supportive research.

The overwhelming conclusion of this review is that none of the suggestions raised by Williams et al. (1990) are addressed within currently existing research. Thus far, no study has conducted a controlled investigation, comparing primary eating disorder patients, depressed patients and panic disorder with or without agoraphobia patients on measures of perceived control, assertiveness, self-esteem and self-directed hostility.

In addition, Chapter Five has presented the argument for the development of a new assessment measure for primary eating disorder patients. This measure will assess both the cognitive and behavioural aspects of primary eating disorder behaviour; and also the cognitive/emotional features of perceived external control, low assertiveness, low self-esteem, and self-directed hostility. It would be a valid and useful investigation of that measure to assess it's ability to assess these features in other psychological disorder groups; and compare those psychological disorder groups to primary eating disorder groups. Consequently, this review leads to one research implication for the present Project with two concurrent aims.

6.8 Research Implications For The Present Project.

The main implication which emerges from the above review, is that there is a need to conduct a controlled study to compare primary eating disorder, depressed and panic disorder with or without agoraphobia patients on the

SEDS and other group-appropriate measure. This will serve to address the following two aims:

1. To fill gaps in the existing literature by addressing the question as to whether there are similarities or differences between anorexic patients, bulimic patients, depressed and panic disorder patients on measures of eating behaviour, perceived external control, low assertiveness, low self-esteem, and self-directed hostility.
2. To further investigate the criterion validity of the SEDS in terms of their ability to measure perceived external control, low assertiveness, low self-esteem, and self-directed hostility in diagnostic groups other than primary eating disorder; and also to investigate their ability to discriminate (or show similarities) between primary eating disorders and other diagnostic groups.

PART TWO: EMPIRICAL STUDIES.

CHAPTER SEVEN.

INTRODUCTION TO THE EMPIRICAL STUDIES -

SUMMARY OF RESEARCH IMPLICATIONS FOR THE PRESENT STUDY.

Chapter Three presented the background to the present project. In that chapter, arguments were presented for including dietary/weight controls in the investigation of primary eating disorder characteristics; also, previous research by Williams et al. (1990), which had employed such a control group, was outlined. That research raised three research issues. Those issues can be summarised as:

1. There is a need to investigate the importance of perceived external control, low assertiveness, low self-esteem, and self-directed hostility in primary eating disorders by assessing the ability of those characteristics to differentiate anorexic and bulimic patients from dietary/weight concern groups.
2. If these four cognitive/emotional characteristics are important features of primary eating disorder patients, then it is important that they can be assessed in those patients. However, this should not detract from the measurement of the dietary/behavioural features of the two primary eating disorders.
3. It is possible that primary eating disorder patients are more likened to other clinical groups than to dietary/weight concern groups on these four cognitive/emotional characteristics.

Chapter Four reviewed the literature appertaining to the first research issue. The research implication was:

1. There is a need to conduct a strictly controlled study which will compare primary eating disorder patients with dietary/weight concern groups - obese dieters and non-obese dieters - and normal controls on standardised measures of perceived control, assertiveness, self-esteem, and self-directed hostility. This will be addressed by Chapter Eight - Study One.

Chapter Five reviewed the literature appertaining to the second research

issue. The research implications were:

1. There is a need to develop a new assessment measure for primary eating disorder patients which will measure anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility.
2. Scales should be developed according to an appropriate and established methodology.
3. Scales should be psychometrically tested to establish validity, reliability and consistency.
4. Scales should be assessed in terms of ability to detect change in the patients dietary/behaviour and emotions/cognitions over treatment time, in order to assess suitability to treatment monitoring.

These recommendations will be addressed by Chapter Nine - Study Two (development and standardisation), and Chapter Ten - Study Three (change over treatment time).

Chapter Six reviewed the literature appertaining to the third research issue. The research implications were:

1. There is a need to conduct a strictly controlled study comparing eating disorder patients, depressed patients, and panic disorder patients on measures of perceived external control, low assertiveness, low self-esteem, and self-directed hostility.
2. To further investigate the criterion validity of the SEDS in terms of their ability to assess these cognitions/emotions in groups other than primary eating disorder, and also investigate their ability to differentiate (or show similarities) between eating disorder and other diagnostic groups. This will be addressed by Chapter Twelve - Study Four.

CHAPTER EIGHT.

STUDY ONE.

COMPARISON OF ANOREXIC PATIENTS, BULIMIC PATIENTS, OBESE DIETERS,
NON OBESE DIETERS, AND NORMAL CONTROLS ON MEASURES OF EATING BEHAVIOUR,
PERCEIVED CONTROL, ASSERTIVENESS, SELF ESTEEM, SELF DIRECTED HOSTILITY,
AND PSYCHIATRIC CASENESS.

8.1 Background Summary.

Chapter Three has raised the issue of whether perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important characteristics of primary eating disorder patients; and if these characteristics are of a severity which differentiates primary eating disorder patients from dietary/weight concern.

The literature was reviewed in order to assess the extent to which this question can be answered by past research, (Chapter Four). The overall conclusion of that review was that the above issue cannot be addressed by the literature published to date. Further, the research that was available which may contribute to our addressing of these issues was hindered by methodological flaws. Consequently, the aims of the present study are as follows:

8.2 Aims Of The Present Study.

(1) To investigate if perceived external control, low assertiveness, low self-esteem and self-directed hostility are characteristics of primary eating disorders and:

(2) to investigate if these four cognitive/emotional characteristics and also dietary behaviour are of a severity which differentiate eating disorder patients from other dietary/weight concern groups.

This will be addressed by conducting a controlled study comparing anorexia nervosa patients, bulimia nervosa patients, obese dieters, non-obese dieters, and normal controls on standardised measures of eating behaviour, the above four characteristics, and a measure of psychiatric caseness.

This chapter presents the methods, results and discussion points of this study.

SECTION 1: METHODS.

8.3 Justification Of Dietary/Weight Concern Subject Groups.

Before embarking on the group descriptions, it is important to justify the selection of obese dieters and non-obese dieters as the non-clinical dietary/weight concern groups. The principal criteria on which the groups were based were as follows:

- (a) group members restrict calorific intake - indicating dietary concern.
- (b) group members restrict this calorific intake with the aim of losing weight - indicating weight concern.

The decision to split the dietary/weight concern subjects into obese and non-obese dieters was based on the following rationale:

- (a) there is evidence that obese dieters have certain clinical features which liken them to primary eating disorder patients (Stunkard, 1985; Brone & Fisher, 1988). In keeping with this there have been suggestions that obese dieters constitute some form of clinical group (Hudson et al., 1988).
- (b) there is little research in the field of non-obese dieters, and there has been no suggestion in the literature that these dieters constitute any form of clinical group. This suggests that non-obese dieters may be fundamentally different from obese dieting individuals.
- (c) there is no research which has adequately compared obese and non-obese dieters on psychological measures. More important, no study has previously compared obese and non-obese dieters on the four cognitive/emotional features central to this study. Hence there is no empirically based justification for assuming

that obese and non-obese dieters are a homogeneous group, in terms of dietary behaviour, perceived control, assertiveness, self-esteem, or self-directed hostility.

It was also considered that, through the recruitment methods, this split grouping would serve to assess two levels of severity of dietary concern. The obese dieters were recruited through National Health Service dieticians in health centres. This group, therefore, comprised subjects whose dietary/weight concern was severe enough to warrant official medico-dietary treatment. The non-obese dieters were subjects attending private, non-medically based weight-loss classes. This suggests that, though of evident concern, their dietary/weight problems were not of sufficient severity to warrant medical referral for treatment.

However, as a final note, this grouping of dietary/weight concern was not put forward as a means of assessing a continuum of dietary/weight concern from 'normal' to clinical eating disorder. Such investigation would necessitate the inclusion of several more groups, including restrained eaters, subclinical eating disorder, and also further levels of dieting severity. While this has been attempted elsewhere (King, 1989), it was not considered within the parameters of the present study for the following reasons:

(a) While the continuum theory has received considerable attention (see Chapter Three), points along the continuum have remained theoretical. No investigation has presented working criteria for the cut-off points along the continuum from normal to clinical eating disorder.

(b) In the absence of such criteria, the inclusion of other dietary

/weight concern groups, in an attempt to represent a continuum, would necessitate reducing the strictness of criteria set for this study. Further, the central aim of the present study is to investigate the differentiation of clinical eating disorders from non-clinical dietary/weight concerns; and not to investigate the theoretical claims that this this dietary/weight concern is on a continuum of severity.

8.4 SUBJECTS.

146 females and 11 males were allocated to five groups: 1) anorexia nervosa (n = 32), 2) bulimia nervosa (n = 30), 3) non-obese dieters (n = 30), 4) obese dieters (n = 30), 5) normal controls (n = 35). The total subject group had an age range of 14 - 48 years (M = 29.8 years, SD = 8.9 years). It should be noted that all the male subjects were within the normal control group. There was no a priori sex selection procedure for any of the five groups. However, by default, no males were recruited into the eating disorder or dietary/weight concern groups. The decision to retain the male subjects was made on the basis that this would enable a statistical test to assess the effect of sex. Without this assessment, any findings would be open to the criticism that scores were a function of gender rather than the presence or absence of dietary/weight concern. Detailed group descriptions are given below.

8.4 (i) Anorexia Nervosa (ii) Bulimia Nervosa.

Anorexic and bulimic patients were diagnosed by practising clinical psychologists or psychiatrists according to DSM-III (R) criteria. Each patient was either undergoing in-patient or out-patient treatment at the time of testing. The diagnosis of all potential subjects was checked by

the recruiting clinician. Patients displaying a diagnosed secondary psychological illness, organic brain disorder, or addiction, were not recruited into the study.

8.4 (iii) Non-Obese Dieters.

The dieter subjects were non-obese women attending weight loss classes (Weight Watchers) who were consciously restricting their calorie intake with the sole aim of losing body weight. Dieters who reported undergoing treatment for any type of psychological disorder, who reported history of obesity, or a history of primary eating disorders were not included in the analysis (n = 12). Exclusion was based on information gained through the self-report Personal Details Form described below.

8.4 (iv) Obese Dieters.

This group comprised women who were on a calorie controlled diet with the aim of losing weight, but who fulfilled the medical criteria of obesity (20% overweight for height and build). All subjects in this group were currently under the supervision of Health Service dietitians at the time of testing. All potential subjects were screened by the dietitians before being approached for recruitment. Subjects whose obesity was a result of glandular imbalance (thyroid), or diabetes were not recruited. In addition, subjects who reported a past history of primary eating disorder, or who were undergoing treatment for any psychological disorder were excluded (n = 3). Again, this information was based on the self-report Personal Details Form.

8.4 (v) Normal Controls.

Normal controls were non-obese, non-dieting subjects. All respondents allocated to this group who had dieted in the last six

months, who had histories of obesity or primary eating disorder, or who reported a history of or present treatment for psychological disorder were excluded (n = 8). This information was gained from the self-report Personal Details Form.

8.5 ETHICAL APPROVAL.

Before embarking on recruitment, ethical approval was obtained from all Health Boards and/or Hospital Ethical Committees as appropriate. Ethical approval was also obtained from the University of Stirling Psychology Department Ethics Committee. Full approval was also obtained from the Weight Watchers Organisation. In addition, all those involved in recruiting subjects (clinical and non-clinical) were presented with written outlines of the study and verbally briefed as to the purpose of the study and the familiarised with the standardised inclusion/exclusion criteria.

8.6 RECRUITMENT METHODS.

8.6 (1) Eating Disorder Patients.

Primary eating disorder patients were recruited through five practising clinical psychologists and psychiatrists in hospitals in the Glasgow and Perthshire area. Patients on treatment lists at the time of testing, and who were diagnostically eligible for recruitment, were approached at therapy appointments and asked to take part in a questionnaire study into eating disorders. Patients were, at this point, verbally assured that the questionnaires would be opened and analysed by another researcher (the experimenter) and that their anonymity and confidentiality were guaranteed. Agreeing patients were then allocated to appropriate groups depending on primary diagnosis.

8.6 (ii) Non-Obese Dieters.

Subjects for the non-obese dieter group were recruited through two official weight loss classes run by the Weight Watchers Organisation. Group counsellors were first briefed on the study aims and methods by the experimenter. These counsellors then approached the class as a whole, explained the nature and aims of the study, gave assurance that the study was approved by the Weight Watchers Organisation, and also guaranteed the anonymity and confidentiality of all responses. Class members were also assured that the envelopes would be forwarded, unopened, to a researcher for analysis. The experimenter was also present at these meetings to provide back-up and answer any further questions about the study. Agreeing class members were presented with questionnaire packages. Only those packages of class members who were below the criteria of obesity were utilised. This resulted in 67% of the respondents in this group being included.

8.6 (iii) Obese Dieters.

Obese dieters were recruited through community dieticians in the Glasgow and Edinburgh areas. Patients meeting the group criteria (see above) were approached at a dietician's appointment and asked by the dietitian to assist in a study into eating behaviour conducted by researchers in Stirling University. Again, at this point, patients were assured that their responses were voluntary, anonymous, and confidential. Agreeing patients were presented with questionnaire packages.

8.6 (iv) Normal Controls.

Subjects for this group were recruited by the experimenter using three main methods: 1) approaching non-dieters known to the

experimenter, 2) acquaintances in all parts of Britain were asked to recruit non-dieters in their social circles and work-places, and 3) the Department of Psychology Subject Panel system which enables the recruitment of 1st and 2nd year students to act as subjects as part of course requirement. Again, all recruits, whether approached by the experimenter or acquaintances were told that participation in the study was voluntary, anonymous, and confidential.

8.7 MEASURES.

8.7 (i) Eating Attitudes Test - 40 (Garner & Garfinkel, 1979).

(see Appendix A)

The EAT-40 is a 40 item, self-report questionnaire designed to assess and quantify the whole range of anorexic behaviours. Items are in statement form and the responses are in Likert-scale format, mutually exclusive and exhaustive. Subjects are required to indicate whether each item statement applies to them 'Always', 'Usually', 'Often', 'Sometimes', 'Rarely', or 'Never'.

A score of 3 is given to the extreme response in the 'anorexic' direction, with the two adjacent response alternatives scored 2 and 1 respectively. No score is given for the three 'non-anorexic' response alternatives. (Maximum score = 120). Garner & Garfinkel (1979) have suggested a cut-off score of 30, which they claim eliminates false negatives and allows only a 13% false pass rate.

Data have been produced which show the test to have high internal reliability ($\alpha = 0.79$) and validity ($r = 0.87$).

8.7 (ii) Bulimia Test (Smith & Thelen, 1984). (Appendix B)

The Bulimia Test (BULIT) is a 32 item, self-report questionnaire designed to assess the symptoms of bulimia nervosa as defined by DSM-III

(A.P.A., 1980). Items are in statement format followed by a multiple choice response section. Though the scale has five factor scales - binges, feelings, vomiting, food, and weight - it is recommended by the authors that the items are pooled to give a total score.

The most extreme response in the 'bulimic' direction is always scored 5, with adjacent alternatives scored 4, 3, 2, 1 sequentially. The subjects score is then the sum of all items (except items 7, 33, 34, 36). The score range is 32 - 160 with higher scores indicating severity of bulimic symptoms. The instrument has a cut off score of 102 for bulimia nervosa and 88 for bulimic symptoms.

Smith & Thelen (1984) have provided data to show that the measure has excellent test-retest reliability ($r = 0.87$), concurrent validity ($r = .93$), 'known groups' validity ($p < .001$), and clinical rating validity ($r = .54$).

8.7 (iii) I. P. C. Scales (Levenson, 1974). (see Appendix C)

The I.P.C. Scales comprise a 24 item, self-report measure, developed to assess three dimensions of perceived control; I - beliefs in internal, personal control, P - control by powerful others, C - control by chance or fate. The questionnaire comprises three, 8-item subscales with a 7 point (0 - 6) Likert-type response format. Respondents are required to indicate their degree of agreement or disagreement with each item-statement from 'strongly agree' to 'strongly disagree'.

In the original scoring system items are scored from -3 (strongly disagree) to +3 (strongly agree) with a mid point of 0. Total scale score is determined by the sum of these scores plus a constant of 24 to eliminate negative responses. The score range for each scale is 0 - 48.

For both the 'chance' and the 'powerful others' scales, high scores indicate high expectations of control by the source designated, while a high score on the internal scale must be interpreted in the opposite direction and indicates a perception of personal control. However, for the purpose of this study the scoring system was modified to score from 1 to 6 in the direction of externality on all three scales. This maintained a range of scores but ensured that all three scale scores could be interpreted in terms of pathology. In the case of both systems, each subject obtains three scale scores, not an overall score.

Levenson (1974) has presented data to show that the scales have good internal consistency (I = 0.64, P = 0.77, C = 0.78), and test-retest reliability (range = 0.60 - 0.79) over a two week period. In addition, correlating the scales with Rotter's (1966) I-E Scale showed adequate concurrent validity (I - r = -0.41, P - r = +0.25, C - r = +0.56).

8.7 (iv) Rathus Assertiveness Schedule. (Rathus, 1973). (see Appendix D)

The Rathus Assertiveness Schedule (RAS) is a 30 item, self-report, unidimensional scale designed to assess the degree of the respondents assertiveness in a variety of social situations and in terms of self expression.

The schedule consists of statements of assertive and unassertive behaviours. Respondents are required to rate how closely these statements apply to themselves on a scale of 1 (very uncharacteristic) to 6 (very characteristic). The total score is the sum of these numbers and is one of assertiveness. The higher the score, the greater the subject's assertiveness (maximum score = 180).

Rathus has established high test-retest reliability ($r = 0.78$), and split-half reliability ($r = 0.77$). Validity was established in terms

of correlations with other measures ($r = 0.70$, $p < 0.01$) and ratings of respondents by other people ($0.33 \{ r's \} 0.62$, $p's < 0.01$). Such data led to the publication of the RAS as a clinical instrument which allows reliable and valid assessment of assertiveness.

8.7 (v) Rosenberg Self-Esteem Scale (Primary reference - Rosenberg, 1965). (see Appendix E)

The Rosenberg Self-Esteem Scale (RSE) is a ten item, self-report questionnaire, originally developed to assess self-esteem in adolescents but now widely used with adult subjects. Items are in statement form, and respondents are asked to rate their degree of agreement on a four point Guttman Scale (strongly agree to strongly disagree).

Rosenberg (1965) proposed a very complex scoring system, though this has since been simplified to totalling the four-point items after reverse scoring of the negatively worded items (Corcoran & Fischer, 1987). This leads to a score range of 4 to 40 with higher scores indicating a lack of self-esteem.

Data have been presented to show that the RSE is stable as shown by an excellent test-retest reliability ($r = 0.85$) over a two week period, has very good concurrent validity ($r = 0.83$), and correlates with clinical ratings ($r = 0.56$).

8.7 (vi) Hostility and Direction of Hostility Questionnaire. (Caine, Foulds, and Hope, 1967). (see Appendix F)

The Hostility and Direction of Hostility Questionnaire (HDHQ) is a 51 item, self-report, multi-scale measurement designed to assess the degree of overall hostility felt by the subject as well as the direction of that hostility.

The HDHQ consists of 5 subscales measuring: (1) Urge to act out

hostility, (2) Criticism of others, (3) Projected delusional (ie. paranoid) hostility, (4) Self-Criticism and (5) Guilt.

The questionnaire has a forced choice format where respondents must answer 'True' or 'False' to each item. A score of 1 is given to each response in the 'hostile' direction (maximum score = 51). While originally designed to give 2 scores, Hostility and Direction of Hostility, factor analysis by Philips (1973) revealed two major factors - Ingoing (self-directed) Hostility and Outgoing (externally-directed) Hostility. He suggested that, as well as an overall score, In-going Hostility should be measured by the sum of the Self-Criticism and Guilt subscales, while Out-going Hostility is measured by the sum of the Urge to Act out Hostility, Criticism of Others and Projected Hostility subscales. This is the strategy adopted in the present study.

Caine et al. (1967) have presented data to show that the scale is both reliable on test-retest studies ($r = 0.75$, $p < 0.01$) and valid ($F = 10.36$, $p < 0.001$).

8.7 (vii) General Health Questionnaire - 28 (Goldberg & Hillier, 1979). (see Appendix G)

The General Health Questionnaire - 28 is a shortened version of the original GHQ-60 (Goldberg, 1972). This is a 28 item questionnaire designed as a measure of psychiatric caseness. There are four 7 item scales corresponding to depression, social dysfunction, anxiety and insomnia, and somatic dysfunction. Each item has a fixed response format with four response alternatives - two pathological and two non-pathological.

Two methods of scoring are applicable to the GHQ. Either a 0 - 3 Likert scale or the original GHQ bimodal response scale by which the two

pathological items are scored 1, and the two non-pathological responses are scored 0. The bimodal response scale was employed in this study.

Several cut off points of psychiatric caseness have been established and collated (Goldberg & Williams, 1988). In order to ensure the avoidance of false positives the higher cut off point of 12 was utilised in this study.

The GHQ-28 has been shown to be valid ($r = .76$) in terms of concurrence with other psychiatric ratings (Goldberg & Hillier, 1979) and also reliable ($r = .90$) (Robinson & Price, 1982).

8.7 (viii) Personal Details Forms. (see Appendix H)

For the purpose of investigating the effect of demographic factors on the above measures, data concerning age, height, weight, marital status, and social class were collected from all subjects by means of a self-report Personal Details Form devised by the author. Further information was collected from members of the eating disorder group concerning the duration and type of disorder, severity, number and duration of hospitalisations, length of treatment, and weight position (gaining, losing, stable, fluctuating), plus any prescribed medication. Non-obese dieters were required to report the duration and present status of dieting, any history of eating disorder or psychological disorder, and prescribed medication. Obese dieters reported method of referral to the dietician (self-requested or doctors referral), weight and dieting history, past history of eating disorder or psychological disorder. Control subjects were required to give information on dieting, past psychological illness or past eating disorder. All subjects were asked to report any prescribed medication.

Collection of this data enabled the researcher to exclude respondents

who did not reach group criteria (see above), and statistically control for demographic variables. It would have been desirable to screen all subjects by clinical interview. However, this was not viewed as a valid option as (1) subjects could not be assured of anonymity, (2) it was considered likely that non-clinical subjects would be more likely to disclose such information in a guaranteed anonymous questionnaire, (3) the non-clinical sample would be biased towards those willing to take part in a screening process which involved asking personal questions, and (4) some institutions, the assistance of which was crucial in recruiting subjects of adequate criteria (e.g., Weight Watchers), refused to endorse this practice.

8.7 (ix) Clinicians Checklist. (see Appendix I)

All clinicians recruiting primary eating disorder patients completed with a two-page patient checklist for each patient. On the first page of these checklists clinicians were required to state primary diagnosis and a secondary clinical diagnosis if applicable. The following section listed the recruitment and return procedure in stages, to be ticked off as completed, in order to ensure uniformity of methods between clinicians. Page Two of the checklist presented the clinician with all DSM-III (R) criteria for both disorders. Clinicians were required to indicate all symptoms displayed by the patient even if this revealed symptom cross-over between the disorders.

8.8 PROCEDURE.

Having been recruited and asked to participate in a study investigating eating disorders which involved comparing various groups on their answers to seven questionnaires, subjects were given a package comprising:

- a) Instructions
- b) Personal Details Form
- c) Seven Questionnaires
- d) One unmarked envelope

The Instructions, PDF, and questionnaires were presented in booklet form. In the Instructions subjects were asked to complete the Personal Form Sheet and all questionnaires while alone (to prevent inter-subject conferring) and in whichever order they pleased. This was to avoid order effects, but, as an additional precaution, the questionnaires were assembled in random order.

Subjects then sealed the completed questionnaires in the envelope, leaving it unmarked to preserve anonymity, and returned it to the distributors. In the case of clinical groups (eating disorder and obese dieters) return of the questionnaires was arranged for the following appointment with their clinician. Upon return of eating disorder packages, the completed Clinicians Checklist was then affixed to the envelope and both returned to University of Stirling for analysis. In the case of non-obese dieters, respondents were asked to return the questionnaires at the next dieting class. The normal control subjects questionnaires were returned by three methods; 1) post, 2) University mailing system and 3) in the case of University of Stirling subject panel students, handing the envelope directly to the experimenter.

8.9 ANALYSIS.

All data were analysed using the SPSS-X computer statistics package (Copyright, 1983).

As noted above, it was necessary to ensure that the measures used in the present study were not affected by a gender effect. Therefore, as an

initial analysis the normal control group was divided by sex and these two subgroups compared on all measures. This was to ensure that any differences found were a function of weight problem psychology as opposed to being a function of gender.

Before analysing between group scores, demographic group-differences in terms of marital status and socioeconomic class were investigated by the Chi Squared Method; and between group differences in terms of mean age were assessed by Analysis of Variance. Where significant differences were found, the Multivariate Analysis of Covariance method was utilised to assess the effect of age on group mean differences; and any possible effect of non-parametric variables (Social-class, Marital Status) was assessed by correlating the ranks with scale scores. It was understood that any factor which was shown to significantly affect between group differences at the $P = 0.05$ level would thereafter be used as a covariate or necessitate the use of non-parametric statistics.

Subsequent to significant univariate F tests calculated by the Mutivariate Analysis of Variance, group differences were tested by the Oneway Analysis of Variance method, to find broad differences between the five groups. Subsequent to statistically significant F ratios at the $P = 0.01$ level, post-hoc Sheffe Tests were calculated to assess differences between individual groups.

The correlations were calculated using the raw score data of all subjects together, in order to investigate general relationships between the factors measured by the seven questionnaires and the respective subscales.

SECTION 2: RESULTS.

8.10 Analysis Of Demographic Variables.

Table 8.1 presents a breakdown of the demographic data for the five groups. Table 8.2 presents the statistical results of the analysis of these demographic variables.

Concerning age, Table 8.1 shows that while the two eating disorder groups and the normal controls are comparable in age, the two weight/dietary problem groups have a mean age five years higher than the other three groups. Oneway Analysis of Variance revealed that these differences were significant across the five groups ($F = 12.2$, $p < .01$, $df = 4, 152$). Multivariate Analysis of Covariance indicated that age did not have a significant effect on group differences on the seven measures ($F = .273$, $p = .96$, $df = 4, 152$).

Concerning, marital status frequencies also revealed a different pattern across the groups, with the older, weight/dietary problem groups comprising a majority of married subjects while the other three, younger groups comprised a majority of single subjects. Calculation of Chi Squared revealed that these differences were significant across the groups ($X^2 = 61.6$, $p < .01$, $df = 8$). Correlating the marital status ranks with the seven scale scores produced no significant results, indicating that marital status had no significant effect on scores.

Table 8.1 also shows that the anorexic, bulimic, non-obese dieters and normal controls have a comparable socioeconomic spread, with greater representation in socioeconomic classes one and two. The obese dieter group has a preponderance of subjects in socioeconomic classes three to five. Chi Squared indicated that these differences were significant (X^2

= 35.4, $p < .01$, $df = 16$). Correlating socio-economic class ranks with the seven measure scores produced one significant correlation. However, as this was with a subscale not central to this study (outwardy-directed hostility), non-parametric analysis was deemed unnecessary.

Mean height across the groups was highly comparable, and not significantly different across the groups. Distribution of mean weights was as expected, and was significantly different across the groups ($F = 9.8$, $p < .01$, $df = 4, 152$). This result was due to the fact that the anorexic group reported a significantly lower mean weight. The bulimic and normal control mean weight was comparable and only different by 0.3 kg. Non-obese dieters were slightly heavier than the normal controls; and the obese dieters, as expected, displayed the highest mean weight. As the pattern of mean weight was as expected and a direct function of subject selection criteria, across group comparisons were not seen to be necessary.

Based on the above results incorporation of covariates and use of non-parametric analysis were deemed unnecessary and all subsequent across group comparisons were calculated by means of Oneway Analysis of Variance. Post hoc Scheffe tests were calculated, contingent on significant F ratios at the $p < .01$ level.

TABLE 8.1: SUMMARY OF DEMOGRAPHIC DATA FOR THE EATING DISORDER, OBESE DIETER, NON-OBESE DIETER, AND NORMAL CONTROL GROUPS.

<u>VARIABLE</u>	<u>GROUPS</u>				
	ANOREXIC	BULIMIC	OBESE DIETERS	NON-OBESE DIETERS	NORMAL CONTROL
<u>Age</u>					
Mean	25.1	26.0	32.7	32.2	26.9
SD	06.3	0 6.9	06.6	07.1	08.4
<u>Height (cm)</u>					
Mean	160.5	162.5	160.5	162.4	165.5
SD	005.7	006.2	006.7	007.5	006.8
<u>Weight (kg)</u>					
Mean	43.8	61.4	87.3	66.8	61.7
SD	8.5	11.5	13.7	07.4	08.4
<u>Marital Status</u>					
Single	28	21	04	05	20
Married	03	05	23	22	12
Divorced/ Seperated	01	04	03	03	03
<u>Socio-Economic Class</u>					
1	11	08	01	06	10
2	12	10	08	18	15
3	05	05	11	04	06
4	03	06	06	01	02
5	01	01	03	01	02

TABLE 8.2: RESULTS OF STATISTICAL COMPARISONS BETWEEN THE EATING DISORDER, OBESE DIETER, NON-OBESE DIETER, AND NORMAL CONTROL GROUP ON DEMOGRAPHIC VARIABLES.

VARIABLE	F	df	p
Age	12.2	4,152	<.01
Height	3.1	4,152	ns
Weight	9.8	4,152	<.01

Variable	x²	df	p
Marital Status	61.6	4	<.01
Socio-Economic Class	35.4	4	<.01

8.11 Analysis Of Measures Of Eating Behaviour, Psychological Measures, And The Measure Of Psychiatric Caseness.

Table 8.3 presents a breakdown of group means and the across and between group comparisons on the seven measures of eating behaviour, psychological characteristics, and psychiatric caseness.

8.11 (i) Overall Analysis.

Multivariate Analysis of Variance indicated highly significant Pillais F ($F = 1.52, p < .001, df = 4, 152$), indicating that there were differences across the groups on the seven measures. Consequently, Oneway Analysis of Variance was employed on the individual measures and subscales to analyse differences across the groups.

TABLE 8.3: GROUP MEANS, SD. AND STATISTICAL COMPARISONS ON MEASURES OF EATING BEHAVIOUR, PERCEIVED CONTROL, ASSERTIVENESS, SELF-ESTEEM, SELF-DIRECTED HOSTILITY AND PSYCHIATRIC CASENESS.

MEASURE	GROUPS					COMPARISONS					
<u>Measure</u>	<u>Anorexic</u>	<u>Bulimic</u>	<u>Obese Dieter</u>	<u>N/Obese Dieters</u>	<u>Control</u>	<u>F</u>	<u>df</u>	<u>Scheffe</u>			
<u>Anorexia</u>	66.3 (17.3)	52.4 (13.4)	18.2 (11.2)	11.6 (8.6)	7.7 (7.1)	149.6	4,152	1-2 2-3 3-5	1-3 2-4	1-4 2-5	1-5
<u>Bulimia</u>	81.3 (21.6)	126.2 (18.0)	64.7 (22.4)	52.7 (15.2)	51.4 (14.5)	88.0	4,152	1-2 2-3 3-5	1-3 2-4	1-4 2-5	1-5
<u>Control</u>											
<u>Internal</u>	26.5 (5.7)	24.3 (6.7)	17.1 (4.9)	16.1 (4.1)	17.7 (3.8)	24.9	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Powerful others</u>	29.4 (5.6)	27.9 (5.9)	16.9 (4.2)	18.6 (5.9)	19.3 (4.7)	36.4	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Chance</u>	31.1 (5.6)	30.1 (7.0)	21.6 (5.8)	24.9 (5.1)	23.9 (5.9)	13.7	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Assertion</u>	68.1 (12.2)	70.6 (15.0)	111.7 (17.0)	116.5 (16.8)	120.3 (17.3)	54.3	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Self-Esteem</u>	32.4 (5.7)	31.7 (5.9)	19.8 (5.1)	18.2 (7.5)	17.6 (4.9)	89.2	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Self-Directed Hostility</u>											
<u>Overall</u>	13.7 (2.7)	13.0 (3.2)	6.4 (2.9)	4.9 (3.6)	4.6 (2.7)	63.2	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Guilt</u>	5.2 (1.4)	5.1 (1.6)	1.9 (1.6)	1.4 (1.6)	1.2 (1.2)	57.5	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>Self-criticism</u>	8.5 (1.7)	7.9 (2.1)	4.5 (1.7)	3.5 (2.5)	3.4 (1.9)	44.4	4,152	1-3 2-3	1-4 2-4	1-5 2-5	
<u>GHQ</u>	17.5 (2.6)	18.5 (3.1)	4.3 (3.5)	1.5 (4.0)	3.3 (3.0)	24.0	4,152	1-3 2-3	1-4 2-4	1-5 2-5	

SDs are printed in brackets below the group mean score.

Key: Post-hoc Scheffe group comparisons: 1 = anorexic, 2 = bulimic, 3 = obese dieters, 4 = non-obese dieters, 5 = normal controls.

Note: Groups separated by a hyphen differ significantly from each other $p < 0.01$.

All F ratios are significant at the $p < .001$ level.

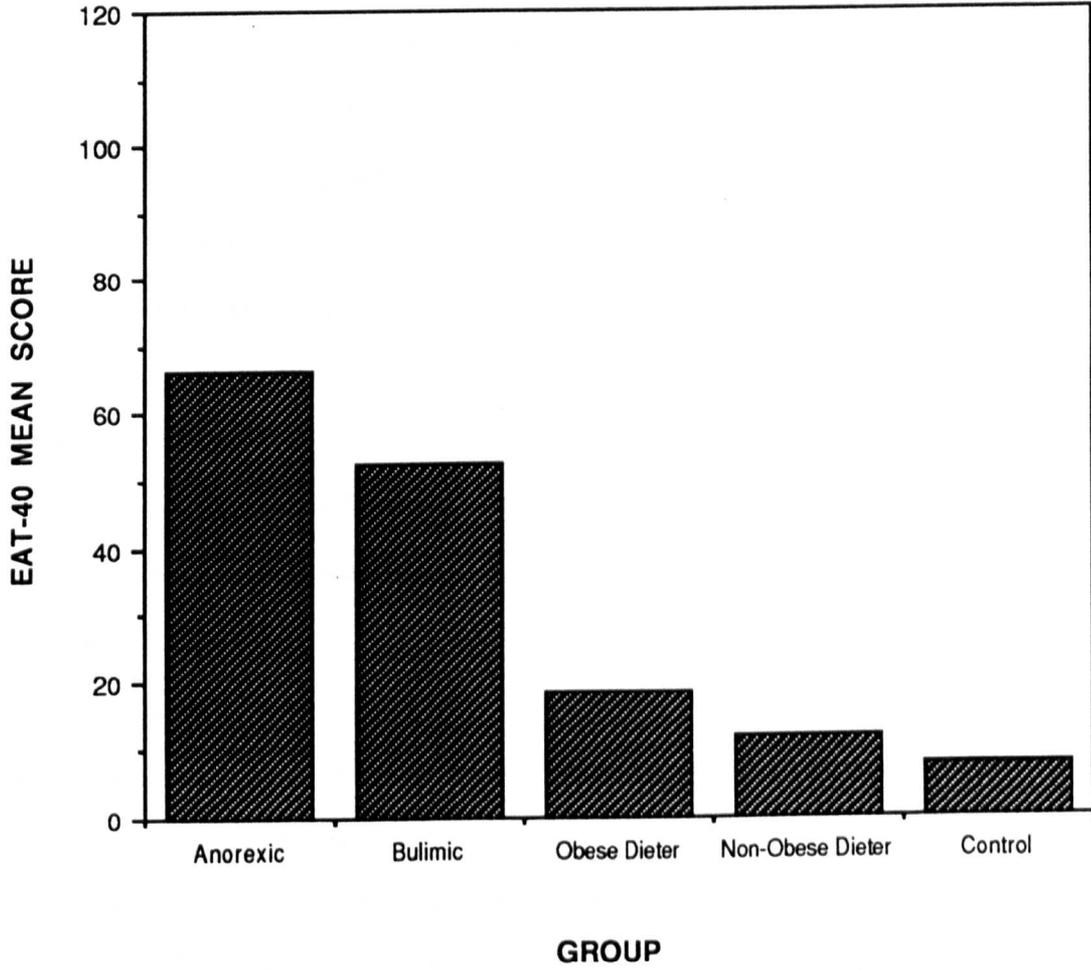
8.11 (ii) Anorexic Eating Behaviour (EAT-40).

Oneway Analysis of Variance showed highly significant differences across the five groups on responses to the EAT-40 measure of anorexic eating behaviour. Reference to the means revealed that, as expected the anorexic group attained the highest mean, indicating the highest degree of anorexic attitudes and behaviours. The bulimic group attained the second highest mean, and was notable in that this was 22.4 points above the cut off point for anorexia as denoted by Garner & Garfinkel (1979). Reference to individual scores indicated that 27 (90%) of the bulimic group were above this point. The three non-clinical group subjects were all below the cut-off point. Of these three groups, the obese dieters attained the highest mean, followed by non-obese dieters and then the normal controls with a very low mean.

Post-hoc Scheffe Tests showed that the anorexic group mean was significantly higher than all four comparison groups. The bulimic group was, in turn, significantly higher than the three non-clinical groups. The obese dieters attained a significantly higher mean than the non-obese and normal control group. There were no differences between non-obese dieters and normal controls.

Figure 8.1 illustrates the pattern of group means across the five groups and significant differences between the groups.

FIGURE 8.1: GROUP MEAN SCORES ON EAT-40



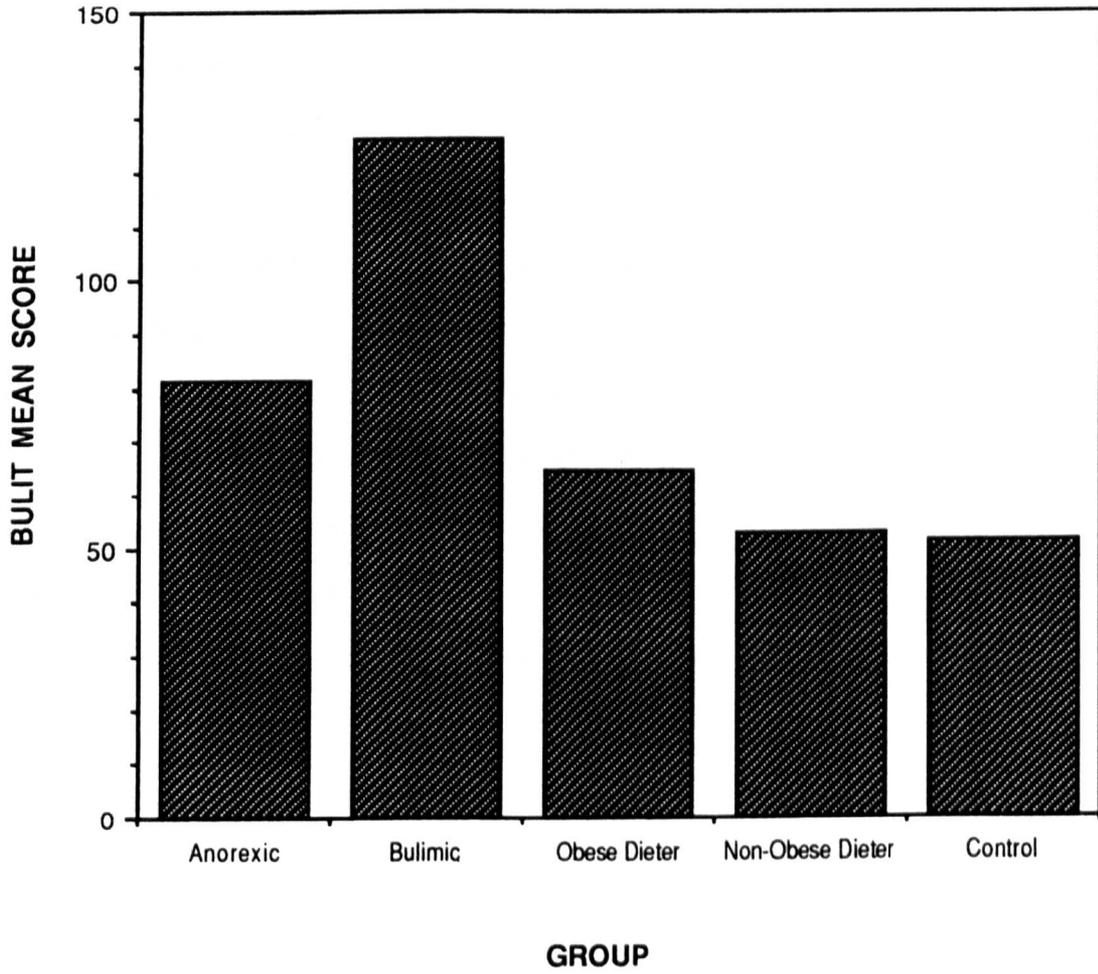
8.11 (iii) Bulimic Eating Behaviour (BULIT).

Oneway Analysis of Variance showed highly significant differences across the five groups on responses to the BULIT measure of bulimic eating behaviour. Reference to the means revealed that, as expected, the bulimic group attained the highest mean score, indicating the highest degree of bulimic behaviours. The anorexic group attained the second highest mean score and, again, the scores of the clinical groups were notable as 7 (23%) of the anorexic group were in the range for bulimic problems (88-101); and 6 (19%) were on or above the cut-off point for bulimia (102) as denoted by Smith & Thelen (1984). The three non-clinical groups displayed the same score pattern as in the EAT-40 scores, with the obese dieters attaining the third highest mean, followed by non-obese dieters, and normal controls attaining the lowest mean score.

Post-hoc Scheffe Tests of between group differences indicated that the bulimic group mean was significantly higher than all four comparison groups. The anorexic group mean score was significantly lower than the bulimic group mean, but significantly higher than the three non-clinical groups. There were no significant differences between the mean scores of the obese dieters, non-obese dieters, and the normal controls.

Figure 8.2 illustrates the pattern of group means across the five groups and the significant differences between the groups.

FIGURE 8.2: GROUP MEAN SCORES ON BULIT



8.11 (iv) Perceived Control (I.P.C. Scales).

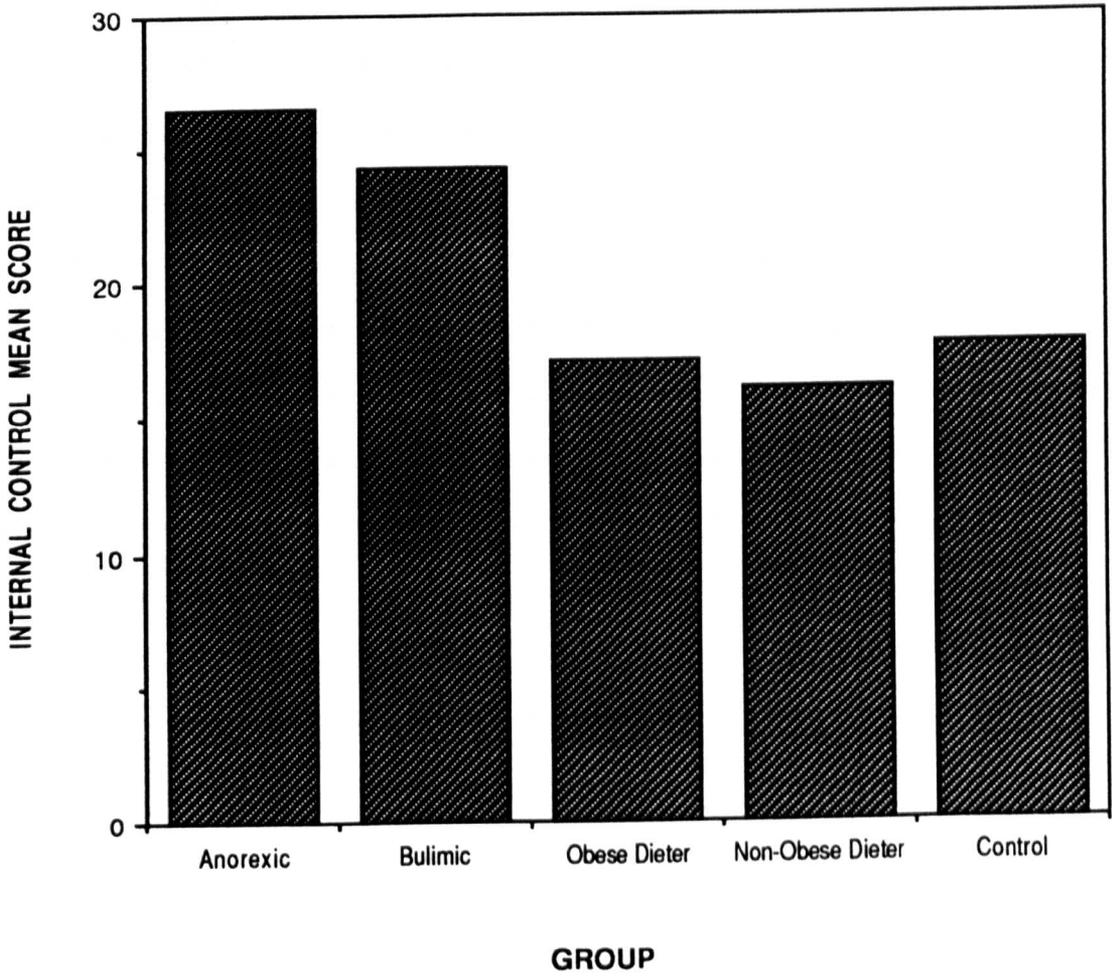
(a) Internal Control Scale of the I.P.C..

Oneway Analysis of Variance showed significant differences across the five groups on responses to the scale of internal Locus of Control. Reference to the means revealed that the anorexic group attained the highest mean, indicating the highest degree of external control of the self. The anorexic group mean was closely followed by the bulimic group mean. The mean scores of the three non-clinical groups were very close, with the normal control group attaining the highest mean, then the obese dieters, and the non-obese dieters attaining the lowest mean.

Post-hoc Scheffe Tests indicated that the clinical and non-clinical groups were clustered. There were no significant differences between the anorexic and bulimic groups, though both attained significantly higher means than the obese dieters, non-obese dieters and normal controls. The obese dieters, non-obese dieters and normal controls were not significantly different.

Figure 8.3 illustrates the pattern of mean scores across the groups and the significant differences found.

FIGURE 8.3: GROUP MEAN SCORES ON INTERNAL CONTROL SCALE



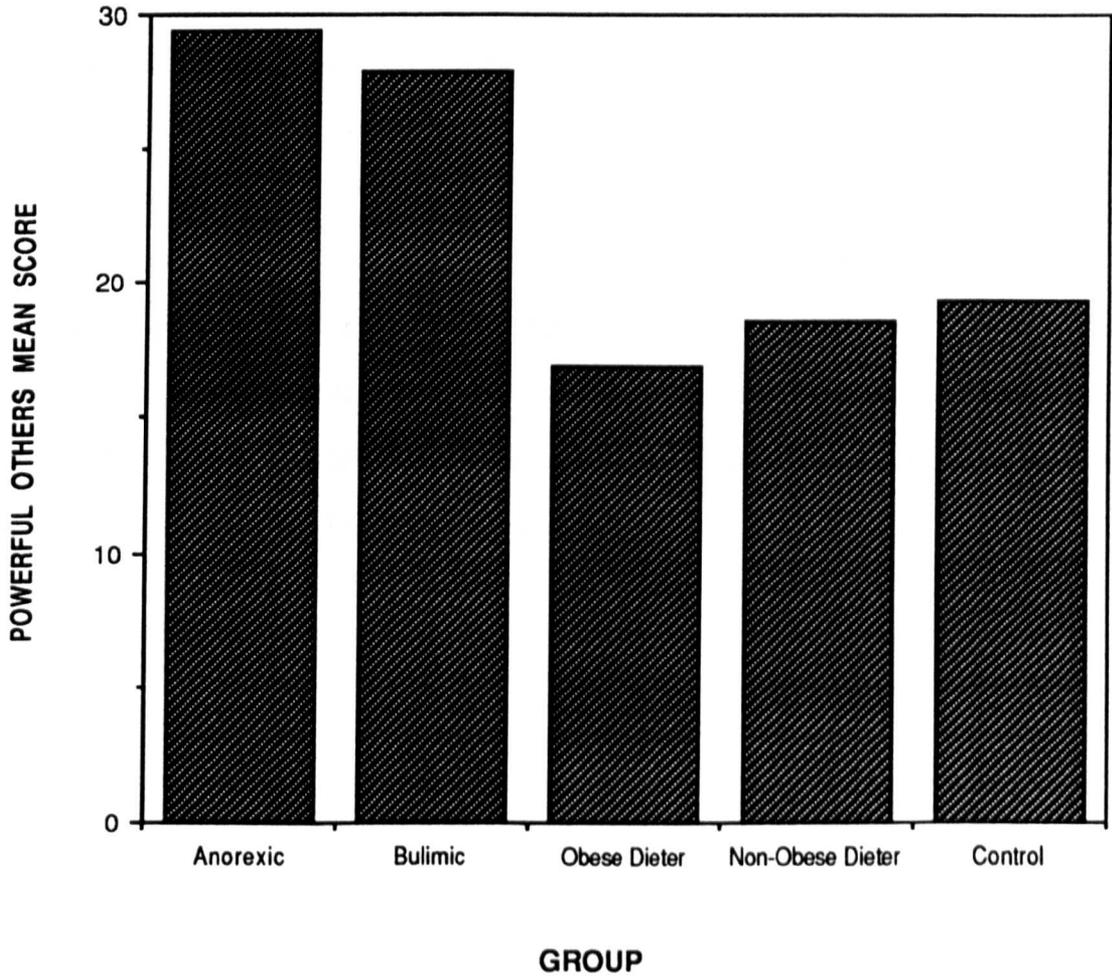
(b) Powerful Others Scale Of The I.P.C.

Oneway Analysis of Variance showed highly significant differences between the groups on responses to the scale of control by powerful others. Reference to the means revealed that, again the anorexic group attained the highest mean, indicating the highest degree of perceived control by other people. The anorexic group mean was closely followed by the bulimic group mean. Again, the three non-clinical group means were close. Of the three, the normal control group attained the highest mean, followed by the non-obese dieters, and the obese dieters attaining the lowest mean score.

Post-hoc Scheffe Tests indicated that the same pattern of clustering was evident. Both the anorexic and bulimic groups were significantly higher than all three non-clinical groups, but were not significantly different from each other. In turn, no significant differences were found between the obese dieters, non-obese dieters and the normal control group.

Figure 8.4 illustrates the pattern of mean scores and the differences found between the groups.

FIGURE 8.4: GROUP MEAN SCORES ON POWERFUL OTHERS SCALE



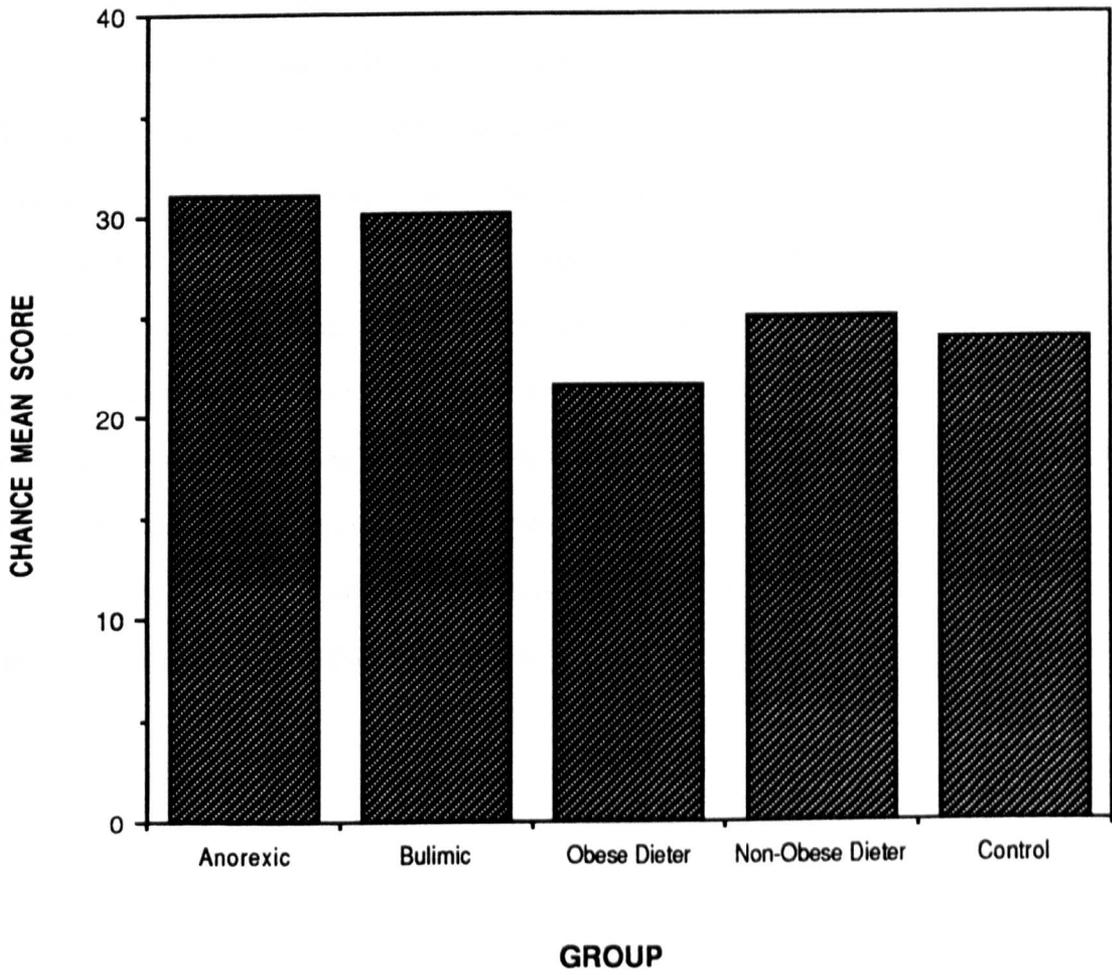
(c) Chance Scale Of The I.P.C.

Oneway Analysis of Variance showed highly significant differences across the groups on responses to the scale of control by chance. Reference to the means revealed that the anorexic group attained the highest mean, indicating the greatest perceived control by chance. The anorexic group mean was closely followed by the bulimic group mean. Of the three non-clinical groups, the non-obese dieters attained the highest mean, followed by normal controls and finally the obese dieters attained the lowest mean.

Post-hoc Scheffe Tests indicated the same pattern of clustering. The two clinical groups were significantly higher than the three non-clinical groups, but not significantly different from each other. There were no significant differences between the three non-clinical groups.

Figure 8.5 illustrates the pattern of means scores across the groups and the differences found between the groups.

FIGURE 8.5: GROUP MEAN SCORES ON CHANCE CONTROL SCALE



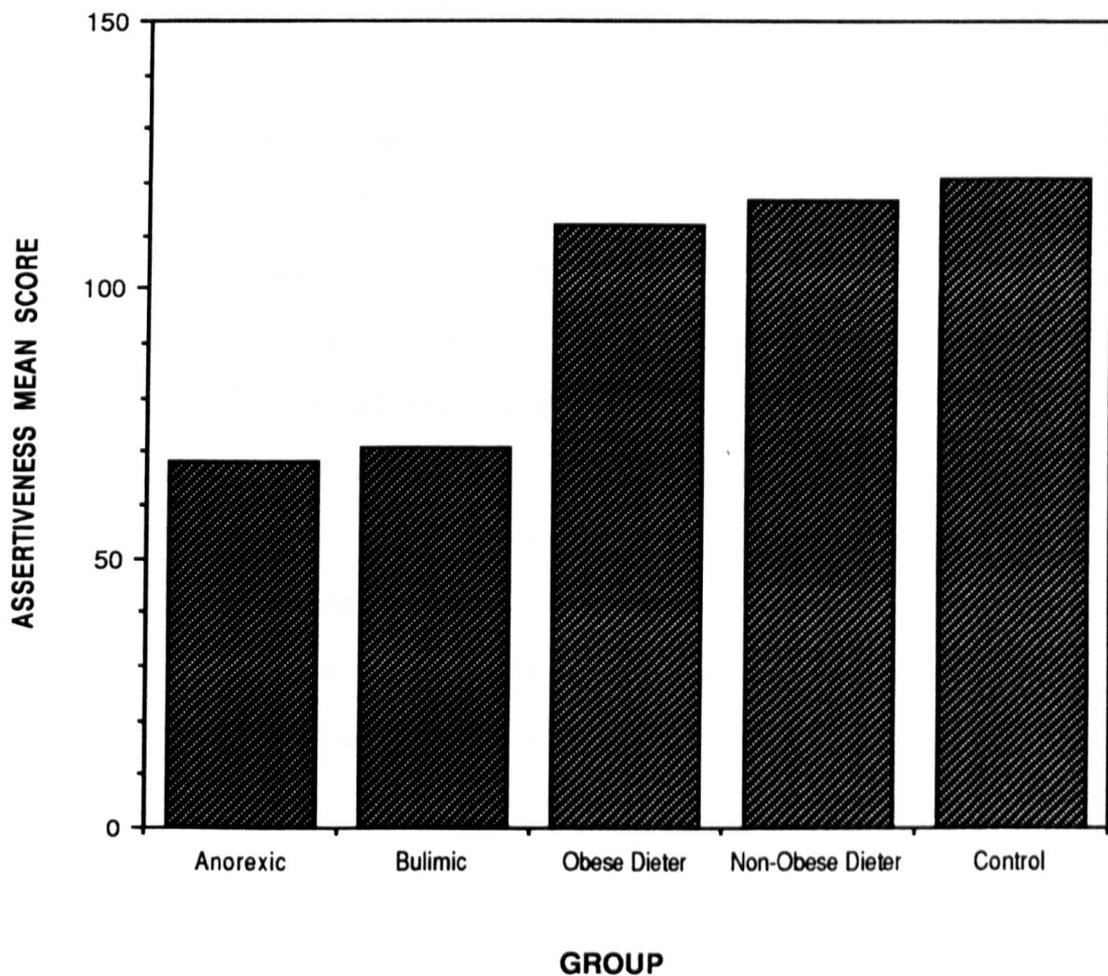
8.11 (v) Assertiveness (RAS).

Oneway Analysis of Variance showed that there were highly significant differences across the group on the measure of assertiveness. Reference to the means reveals that the anorexic group attained the lowest mean, indicating the lowest degree of assertiveness; though the bulimic group were only 1.5 points higher. The obese dieters, non-obese dieters and normal control means were close and considerably higher than the two clinical groups. Of the three non-clinical groups the obese dieters attained the lowest mean, followed by non-obese dieters, and the normal controls attained the highest mean.

Post-hoc Scheffe Tests indicated that the same pattern of between group differences was apparent on this measure. Again, both clinical groups were significantly lower than the three non-clinical groups but not different from each other. No significant differences were found between the three non-clinical groups.

Figure 8.6 illustrates the pattern of mean scores across the groups and the differences found between the groups.

FIGURE 8.6: GROUP MEANS ON ASSERTIVENESS INVENTORY



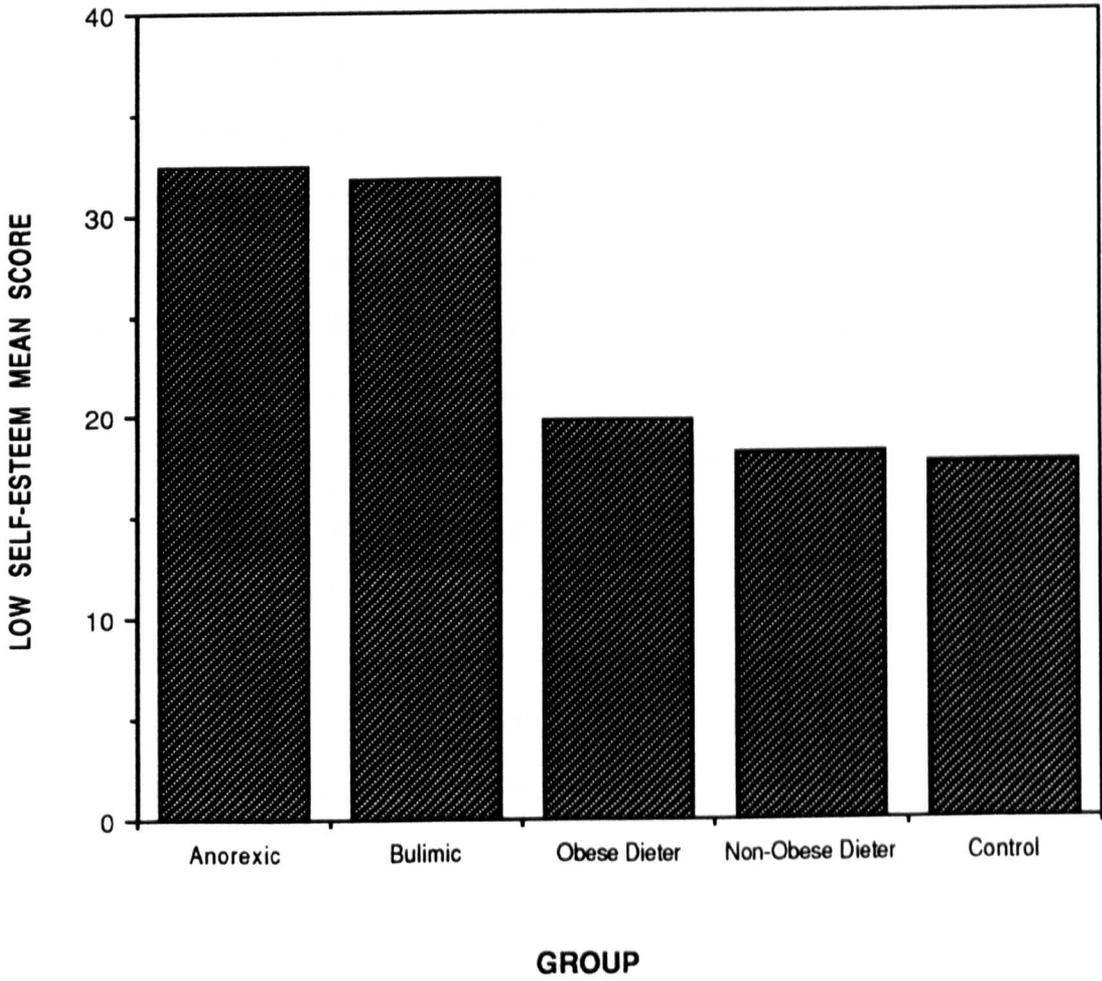
8.11 (vi) Self-Esteem (RSES).

Oneway Analysis of Variance on the group scores on the self-esteem scale showed highly significant differences across the five groups. Reference to the means revealed that the anorexic group attained the highest mean, which indicated the lowest degree of self-esteem; though this was only 0.5 of a point higher than the bulimic group. The means of the three non-clinical groups were considerably lower. Of these three groups the obese dieters attained the highest mean, followed by the non-obese dieters. The normal control group attained the lowest mean.

Post-hoc Scheffe Tests indicated exactly the same group clustering found in the results of the other measures. The anorexic and bulimic groups were both significantly higher than the obese dieters, non-obese dieters, and the normal control group. There was no significant difference between the anorexic and bulimic groups. Likewise, there were no significant differences between the obese dieters, non-obese dieters and the normal control groups.

Figure 8.7 illustrates the pattern of means across the groups and the significant differences found between the groups.

FIGURE 8.7: GROUP MEAN SCORES ON LOW SELF-ESTEEM SCALE



8.11 (vii) Self-Directed Hostility (HDHQ).

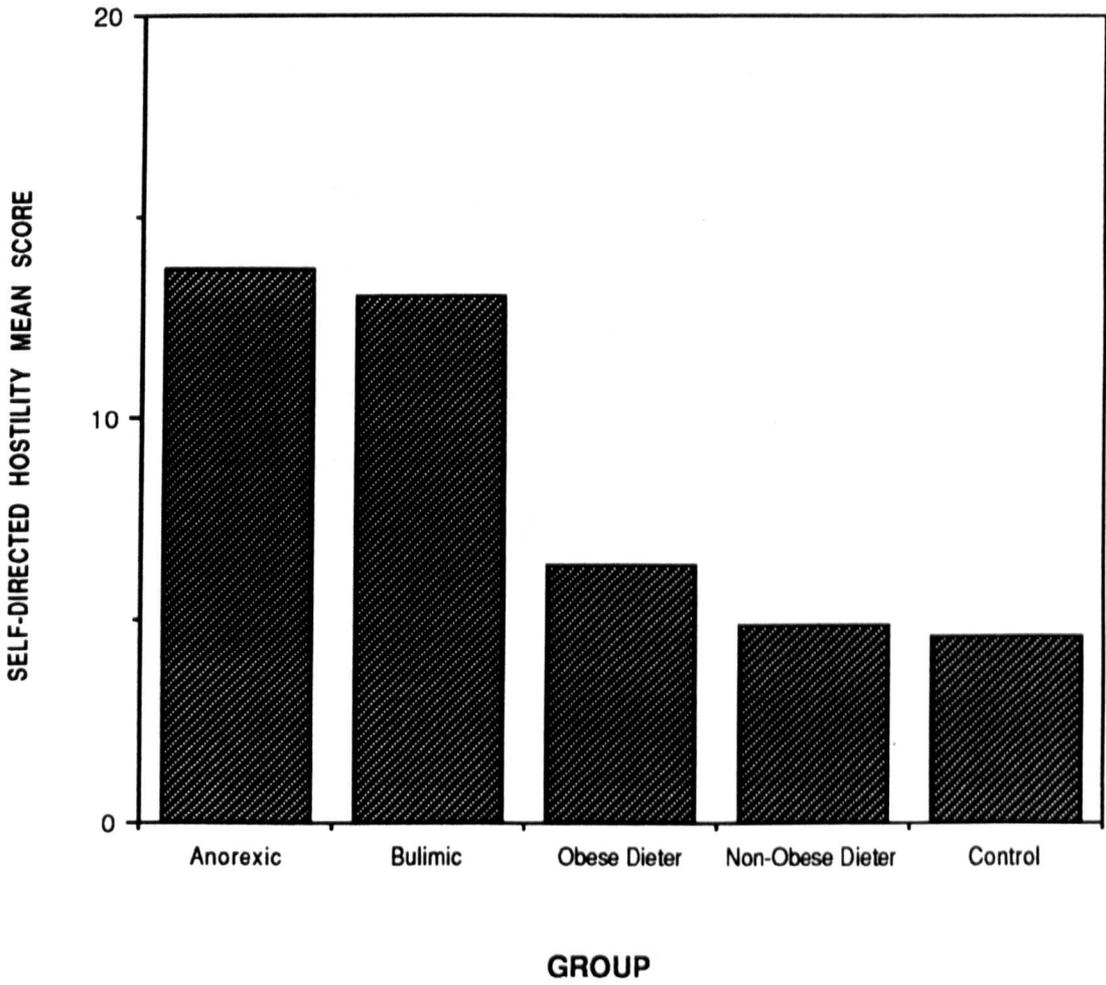
(a) Overall Self-Directed Hostility (Guilt And Self-Criticism Combined).

Oneway Analysis of Variance on the combined self-directed hostility subscale scores showed that there were highly significant differences across the five groups. The anorexic group attained the highest mean score, indicating the highest degree of self-directed hostility; though this was only 0.7 higher than the bulimic group. The obese dieters, non-obese dieters and normal controls all attained considerably lower scores than the clinical groups. Of the three non-clinical groups the obese dieters attained the highest score. The non-obese dieters and normal controls differed by only 0.1 point.

Post-hoc Scheffe Tests indicated that the same pattern was apparent across the groups as for the other measures. The anorexic and bulimic groups both attained significantly higher means than all three non-clinical groups, but were not significantly different from each other. The three non-clinical groups were, in turn, not significantly different from each other.

Figure 8.8 illustrates the pattern of means across the groups and the differences found between the groups.

FIGURE 8.8: GROUP MEAN SCORES ON SELF-DIRECTED HOSTILITY



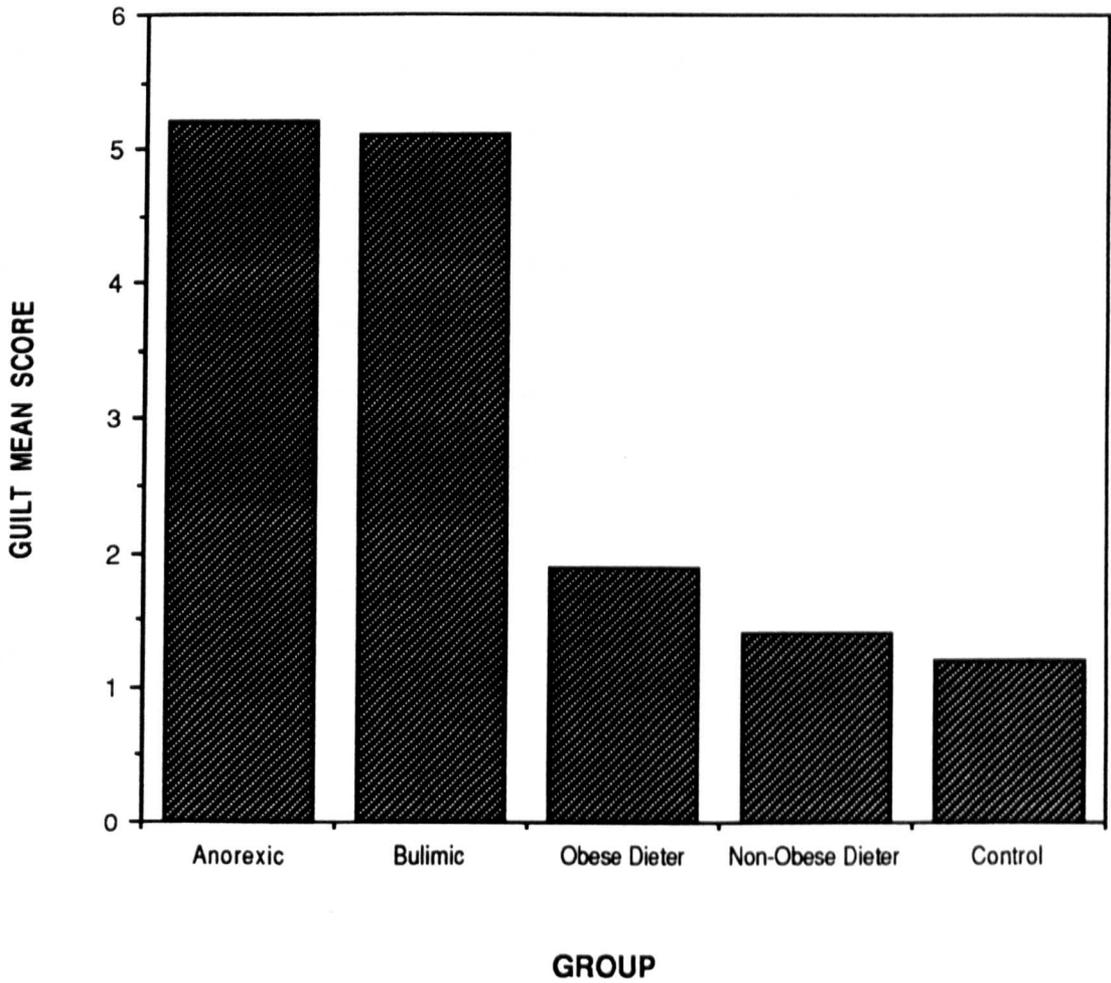
(b) Guilt Scale Of The HDHQ.

Oneway Analysis of Variance on the scores for the guilt subscale of self-directed hostility showed highly significant differences across the five groups. Reference to the means reveals that the anorexic group again attained the highest mean, indicating the highest degree of guilt; though this was only 0.1 higher than the bulimic group. The obese dieters, non-obese dieters and the normal control group all attained very low mean scores with only 0.7 of a point between the lowest and highest.

Post-hoc Scheffe Tests indicated that the same pattern of scores was displayed. The anorexic and bulimic groups attained significantly higher mean scores than all three non-clinical groups, but were not different from each other. In turn, there were no significant differences found between the three non-clinical groups.

Figure 8.9 illustrates the pattern of mean scores across the groups and the significant differences found between the groups.

FIGURE 8.9: GROUP MEAN SCORES ON GUILT SUBSCALE



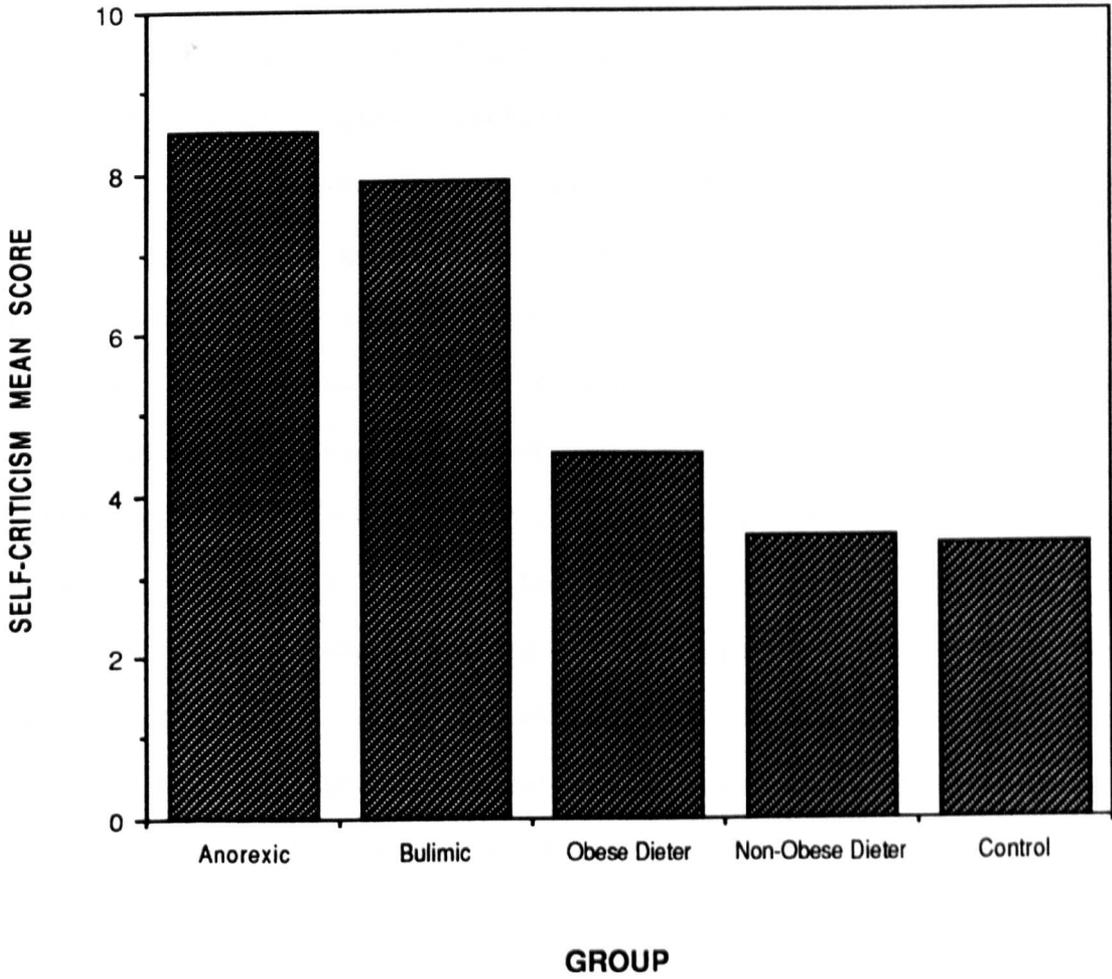
(c) Self-Criticism Scale Of The HDHQ.

Oneway Analysis of Variance on the scores for the self-criticism subscale of self-directed hostility showed that there were highly significant differences between the groups. Reference to the means revealed that the anorexic group attained the highest mean score, indicating the highest degree of self-criticism; though this was only 0.6 of a point above the bulimic group. Of the three non-clinical groups the obese dieters attained the highest mean score. The non-obese dieters and normal control groups were lower and only 0.1 of a point apart.

Post-hoc Scheffe Tests indicted exactly the same pattern of between group differences. Again, the anorexic and bulimic groups had significantly higher mean scores than all three non-clinical groups, though were not different from each other. The obese dieters, non-obese dieters and the normal control groups were not significantly different from each other.

Figure 8.10 illustrates the pattern of groups mean scores and the significant differences between the five groups.

FIGURE 8.10: GROUP MEAN SCORES ON SELF-CRITICISM SUBSCALE



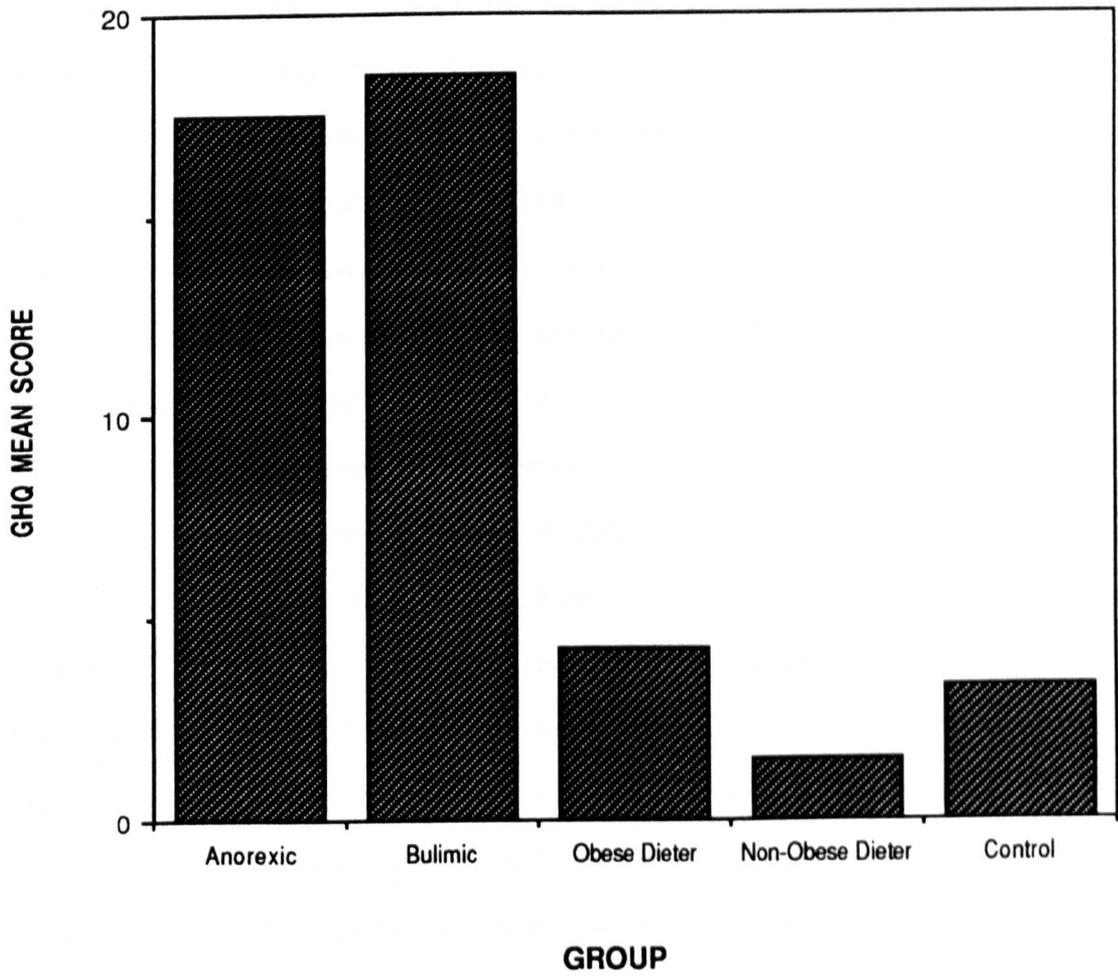
8.11 (viii) General Health Questionnaire.

Oneway Analysis of Variance on the scores for the General Health Questionnaire showed highly significant differences across the five groups. Reference to the means revealed that the bulimic group attained the highest mean, indicating the highest degree of psychiatric dysfunction; though this was only one point above the anorexic group. The means of the three non-clinical groups were considerably lower, with the non-obese dieters attaining the lowest mean.

Post hoc Scheffe tests illustrated the same pattern of group clustering found in the cases of the other psychological measures. The anorexic and bulimic groups significantly higher than the obese dieters, non-obese dieters, and normal controls. There was no significant difference between the anorexic and bulimic groups. Likewise there were no significant differences between the three non-clinical groups. Further analysis of individual scores revealed that 17 (53%) of the anorexic group and 19 (63%) of the bulimic group scored above the cut-off point for psychiatric caseness. This compared with 0 (0%) of the obese dieter group, non-obese dieters, or normal controls.

Figure 8.11 illustrates the pattern of means across the groups and the significant differences between the groups.

FIGURE 8.11: GROUP MEAN SCORES ON THE GENERAL HEALTH QUESTIONNAIRE



8.12 Correlations Between All Measures.

To further examine the variables under investigation, in terms of association rather than difference, the measures of eating behaviour were correlated with the cognitive measures and the measure of psychiatric caseness (GHQ). These calculations were made using the combined data of all five groups.

Table 8.4 presents the correlations between the measures for all subjects. Table Six shows that all correlations were significant at the $P < 0.001$. Also the correlations were overwhelmingly high order correlations, with only 12/55 (22%) below $r = .5$.

Both eating behaviour measures were highly correlated with all cognitive/emotional measures in the expected direction. Both anorexic and bulimic eating behaviour were highly, positively correlated with perceived external control in terms of the self and powerful others; also between eating behaviour and chance control, though this correlation was of lower order. Anorexic and bulimic behaviour was also highly positively correlated with low self-esteem, self-directed hostility in terms of guilt and self-criticism, and psychiatric caseness; and highly negatively correlated with assertiveness.

In addition, there were high order significant correlations between the four cognitive/emotional measures and between these four measures and psychiatric caseness. Again, the lowest order correlations, though still significant, were between perceived external control by chance and the other measures and subscales.

SECTION 3: DISCUSSION.

8.13 Summary Of Aims.

Chapter Three presented the claims that perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important characteristics of primary eating disorder patients. However, these claims are weakened by evidence of cognitive/emotional and dietary/behavioural links between primary eating disorder and dietary/weight concern groups, suggesting that many features may be simply common to dietary groups rather than important features of a primary eating disorder personality. It was argued that these four characteristics can only be established as important components of a primary eating disorder personality if they are of a severity which differentiates primary eating disorder patients from dietary/weight concerned individuals. A flawed study by Williams et al. (1990) went some way towards this, though was inconclusive. Review of relevant literature (Chapter Four), indicated that the issue had yet to be addressed.

In response, the main aims of this study were to:

- (1) Investigate whether anorexia nervosa and bulimia nervosa are characterised by perceived external control, low assertiveness, low self-esteem and self-directed hostility (in terms of guilt, self-criticism and covert aggression), and
- (2) Investigate whether these four characteristics differentiate clinical eating disorders from other non-clinical dietary/weight concern groups, which would indicate their importance in a primary eating disorder personality.

In line with these aims, clinically diagnosed anorexic and bulimic

patients were compared with two groups representative of dietary/weight concern - obese dieters and non-obese dieters - and a group of normal control subjects. Groups were compared on seven standardised measures: anorexia, bulimia, perceived external control, assertiveness, low self-esteem, self-directed hostility, and psychiatric caseness.

8.14 Summary Of Results.

The results indicated that the two primary eating disorder groups were significantly different from the three non-clinical control groups on all measures. The two primary eating disorder groups reported significantly more disordered eating, more perceived external control, lower assertiveness, lower self-esteem, and greater self-directed hostility than the two dietary/weight concern groups and the controls. Further, these two eating disorder groups were different from each other, in the expected direction, on the measures of anorexia and bulimia. However, they were not different from each other on the measures of perceived control, assertiveness, self-esteem and self-directed hostility.

In the three non-clinical groups only one significant difference was found. The obese dieter group attained a significantly higher mean on the measure of anorexia. However, there were no significant differences across these three groups on any of the other six measures.

Concerning psychiatric caseness (GHQ score), the means of the two primary eating disorder groups were significantly higher than the three non-clinical groups. The three non-clinical group means were low and not significantly different from each other. Analysis of the individual scores indicated that 17 (53%) of the anorexic group and 19 (63%) of

the bulimic group were above the chosen cut-off point for caseness. This compared with 0 (0%) of the obese-dieters, non-obese dieters or normal control subjects. Finally, highly significant correlations were found between all measures.

8.15 Anorexic Eating Behaviour And Attitudes.

As might be expected, the anorexic group attained the highest mean on the EAT-40 measure, indicating that these patients have higher levels of the behaviour and attitudes noted as characteristic of anorexia nervosa than other groups. The bulimic group attained the second highest mean on this measure. Moreover, 27 (90%) of the bulimic group scored above the cut off point of 30 set by Garner and Garfinkel (1979). This finding suggests that the majority of the bulimic group displayed behaviour and attitudes, generally associated with anorexia nervosa; or this may indicate that the cut-off point is far too low. However, there are three other possible reasons for this result. Firstly, the EAT-40 was initially developed for use with anorexia nervosa patients - no doubt, due to the fact that bulimia nervosa had yet to be officially recognised as a distinct clinical disorder. In keeping with this lack of official differentiation, bulimia items were included in the measure, in recognition of the large numbers of 'anorexic' patients who binged. It is likely that high scores on this bulimia component have elevated diagnosed bulimic patients above the cut-off point for anorexia. Alternatively, it is possible, and more likely, that the other cognitive and behavioural features measured by the EAT-40, notably body dissatisfaction and dysfunctional attitudes to food, are common to both diagnostic groups.

Also of interest in the results of the EAT-40, was the fact that the obese-dieter group obtained a significantly higher mean than the non-obese dieters and the normal controls. This indicates that obese dieters have a greater degree of 'anorexic' attitudes and behaviour patterns than other dieters and non-dieters. However, the scores of the obese dieters were not above the cut-off point for anorexia. This suggests that while a more severe weight pathology may be associated with an elevated score on the EAT-40; this elevation is not to the point of indicating clinical disorder.

In short, the finding that the primary eating disorder groups attained considerably and significantly higher means, indicates that primary eating disorder patients are differentiated from obese dieters and non-obese dieters in terms of the severity of behaviours and attitudes associated with anorexia nervosa.

8.16 Bulimic Eating Behaviour And Attitudes.

Scores on the bulimia test (BULIT) were in the expected pattern and direction. The bulimic group attained the highest mean, which was significantly higher than the other four groups. This indicated that, as expected, diagnosed bulimic patients display higher levels of behaviours and attitudes attributed to bulimia nervosa. The anorexic patient group attained the second highest mean, which was also significantly higher than the three non-clinical groups. The severity of behaviour reported by both primary eating disorder groups was sufficient to differentiate these groups from both normal controls and also individuals who displayed dietary/weight concern.

As with the EAT-40 6 (19%) of the anorexic group attained scores which were above the cut-off point for bulimia nervosa. Moreover, a further 7

(23%) scored in the range indicative of bulimic symptoms. This finding may indicate that the cut-off point set by Smith and Thelen (1984) is too low, and thereby allows false, positive diagnosis. Alternatively, it may suggest that, though diagnosed anorexic according to DSM-III-R criteria, a proportion of these patients display bulimic symptomatology. This notion is supported by other research which has indicated that up to 47% of anorexic patients display bingeing behaviour and/or go through periodic bulimia (Casper et al., 1980; Hsu et al., 1979). The finding that 42% of the patients in the present study score in the bulimic range is in keeping with the results of Casper et al., (1980).

The two dietary/weight concern groups and the normal controls all attained significantly lower mean scores than the eating disorder group, and were not significantly different from each other. Such a finding is in contradiction to other studies such as Jackson and Ormiston (1977) which claimed that 27% of a sample of 52 obese reported binge eating 2-7 times per week; also, Marcus and Wing (1986) found that 46% of applicants to a weight-loss clinic reported *problematic* binge eating. The fact that the obese dieters did not attain a significantly higher mean than the other two control groups, as they did on the EAT-40 measure, may be a function of the items within the BULIT. The items of the BULIT assess more extreme behaviours and attitudes than those measured by the EAT-40. Therefore, it is more likely to illustrate extreme differentiations between clinical and non-clinical groups, than the more subtle differences between non-clinical dietary/weight concern groups. This conclusion is in line with the fact that the BULIT items were generated around the DSM-III criteria of the time (see Chapter Two) and was specifically designed as a diagnostic instrument.

In short, the findings on the BULIT have indicated that primary eating disorder patients display significantly more severity of bulimic behaviour than non-clinical dietary/weight concern groups of obese dieters and non-obese dieters; and also normal controls. Therefore, they are differentiated from these groups by their severity in this dietary behaviour.

8.17 Perceived External Control.

Overall, the results of the locus of control scales indicated that both the anorexic and bulimic groups perceive a significantly greater degree of control by external forces than do non-clinical dietary/weight concern groups and normal controls. This result was consistent across the three subscales, indicating that anorexic and bulimic patients perceive less internal (personal) control; perceive more control of their lives emanating from powerful (significant) other people; and have a more fatalistic outlook in that they perceive more control by fate or chance. In addition, the lack of significant differences between the anorexic and bulimic group indicates that these two patient types are very similar in their perception of control being external to themselves. Moreover, these results indicate that anorexic and bulimic patients can be differentiated from non-clinical dietary/weight concern groups, as well as from normal controls; and they are distinguished by their perception of external control.

The obese-dieters, non-obese dieters, and the normal control perceived significantly less external control than the two clinical groups; and reference to the means indicated that these means were very close. There were no significant differences between these three groups.

The finding that the anorexic and bulimic groups perceived an elevated degree of control by external forces, supports the observational data of Bruch (1973, 1978) and Selvini-Palazoli (1974). Bruch has described these patients as failing to appropriately discern internal cues, due to a failure to develop differentiation from the mother. This claim is supported by the results of the 'internal control' scale, which has illustrated these patients externality of feelings.

Likewise, primary eating disorder patients have often been described as being and also feeling highly controlled by significant others, notably the family (Selvini-Palazoli, 1976; Minuchin et al., 1978) and the mother (Bruch, 1978). The findings of the 'powerful others' scale supports these claims by illustrating the patients' perception of external control by other people rather than reporting a sense of personal control over life-events.

Concerning empirical data, the present study supports the five previous studies which have indicated that eating disorder patients are more external than normal controls in their perception of control (Allerdissen et al., 1981; Rost et al., 1982; Weiss & Ebert, 1983; Grace et al., 1985; Wagner et al., 1987). The two studies which failed to find an association between eating disorder and externality (Fischer-McCanne, 1985; Holleran et al., 1988), were not supported. However, it should be noted that one of these studies employed an unidimensional locus of control scale (Rotter, 1966), which has been widely criticised for lack of sensitivity (Mirrels, 1973; Reid & Ware, 1974); and the other (Holloran et al., 1988) used unsatisfactory grouping methods and statistics, which may explain the different results.

More pertinent to the crux of this study is the comparison of primary

eating disorders with two non-clinical dietary/weight concern groups. This area has been expanded by the present study. Unfortunately, no previous, similar study has employed the same measure, or the same strict grouping methods. Nevertheless, the present study has supported two larger, well controlled studies. Woods and Heretick (1983/4) reported results which indicated that anorexic patients are more external than obese subjects; and King (1989) has reported results which indicate that bulimic patients are more external than dieters. The present study, being broader, both supports and amalgamates the findings of those two studies, by showing that both anorexics and bulimics are more external than both obese and non-obese dieters, and normal controls.

Alternatively, the present study contradicts other previous studies. Shisslak et al. (1990) suggested that bulimic patients were more external than anorexic patients. The present study found these two groups statistically comparable on three scales of perceived control. However, the grouping methods of Shisslak et al. (1990) were questionable, and the much criticised Rotter (1966) scale was employed, which may explain the differences in results. Basseches and Karp (1984), in a well controlled study, compared anorexics and obese on a measure of field dependence and found the two groups to be comparable. This is in contradiction of the present study. However, it is arguable that, while field dependence is analagous to perceived control, it is a conceptually different perception with a very different form of measurement, which would explain the differences in results.

The findings of the present study also contradict those of Garner et al. (1976) who found that anorexic patient were more internal on a scale of self-control than a group of obese patients. The present study found

primary eating disorder patients to attain a more external score on a scale of internal control. Again, this contradiction may be explained by the qualitative differences in the measures employed. The Reid and Ware (1974) scales used in that study contain items which are far broader in nature than the I.P.C. scales. For example, items included views of politicians and social institutions. It is also possible, that if the authors had reported the results of the chance and social system control scales, the picture of results would have been quite different.

In summary, the main conclusion is that primary eating disorders can be differentiated from two non-clinical dietary/weight concern groups and normal controls by their perception of being controlled by outside forces. As noted in Section One (Methods), the present study does not assess a continuum of dietary/weight concern, as the points along that continuum are yet to be defined. However, the present results clearly indicate that the level of perceived external control reported by primary eating disorder patients is severe enough to differentiate them from two groups of women who display non-clinical concern over dieting and weight, as well as from non-dietary/weight concerned controls.

8.18 Assertiveness.

Overall, the results of the present study indicate that both anorexic and bulimic patients are significantly less assertive than obese dieters, non-obese dieters and normal controls. That is, they perceive themselves as having greater difficulty in terms of interpersonal communication and personal relationships. Moreover, these two patient groups are comparable, indicating that both anorexic and bulimic patients are characterised by this cognitive/emotional feature.

Concerning the non-clinical groups, all three were significantly more assertive than the two eating disorder groups; and were not significantly different from each other.

The finding that the primary eating disorder groups were less assertive than control comparisons supports the observations that these patients suffer a 'paralysing sense of ineffectiveness' (Bruch, 1978); are non-assertive and deferential' (Schwarz et al., 1985); and are responding to the view that assertiveness is unfeminine and, therefore, unacceptable (Orbach, 1985).

Concerning the previous empirical research comparing eating disorder subjects with normal controls, the present study has expanded the research literature. The most consistent finding in this field is, as in the present study, that eating disorder subjects are less assertive than normal controls. The present study supports the three studies which have indicated that bulimics are less assertive than controls (Fischer-McCanne, 1985; Weiss & Ebert, 1983); and that a low assertive score is predictive of binge score (Holloran et al., 1988). In addition, the present study has broadened the findings to anorexic patients in showing that anorexic patients are comparable with bulimic patients in also being less assertive than normal controls.

Central to this study are the significant differences found between the primary eating disorder groups and the other dietary/weight concern groups - obese dieters and non-obese dieters. Previous research in this area is contradictory, and direct comparison with the present study is difficult due to differences in methodology and comparison groups. However, the present study does support a well controlled study conducted by Garner et al. (1984). In that study, it was found that

weight-preoccupied women were significantly less pathological than anorexic patients on a measure of interpersonal distrust - a measure which is conceptually close to low assertiveness. More pertinently, the present study supports a study by Prather and Williamson (1988), which also compared eating disorder patients with a range of dietary/weight concern groups. The findings of that study were that the bulimic patients were less assertive than all comparison groups, though supportive statistics were not presented.

The findings of the present study contradicts the claims of Mehrabian et al., (1984/5), that low assertiveness was equally predictive of both predisposition to anorexia and also predisposition to obesity. However, the grouping in that study was less rigorous than the present study. No group criteria were presented, and no indication as to the severity implied by the definition 'predisposition to...'. Consequently, it is likely that, unlike the present study, Mehrabian et al. (1984/5), compared three non-clinical groups rather than clinical versus non-clinical dietary/weight concern.

Another contradictory result to the present study was put forward by Wolf and Crowther (1983), who claimed to show that low assertiveness was not predictive of binge eating. However, that study failed to employ rigorous grouping criteria, and the measure employed to assess binge eating was actually designed for use with anorexic patients. Such drawbacks render the results of that study, and thereby the contradiction of the present study, very weak.

In summary, the results of the present study have indicated that primary eating disorder patients are significantly less assertive than obese dieters, non-obese dieters and normal controls. As noted above,

the results of the present study cannot be generalised out to comment on the theoretical continuum of dietary/weight concern. However, the significantly lower scores of the anorexic and bulimic groups indicate that they can be differentiated from two non-clinical dietary/weight concern groups and normal controls by their low degree of assertiveness within social situations and interpersonal relationships. The fact that the primary eating disorder patients could be differentiated from dietary/weight concern gives greater support to the notion that low assertiveness is an important component feature of primary eating disorder personality, than would a simple comparison with non-dietary/weight concerned controls.

8.19 Self-Esteem.

The results have indicated that both anorexic and bulimic patients report a lower level of self esteem than obese dieters, non-obese dieters, and normal controls. That is, these patients perceive themselves as having less self-worth and self-respect than do non-clinical dietary/weight concern groups and controls.

The obese dieters, non-obese dieters, and normal controls were significantly higher in self-esteem than the two primary eating disorder groups; and were not significantly different from each other.

The finding of such low self-esteem in these patients support the observed lack of self-worth in these patients (Bruch, 1973, 1978; Selvini-Palazoli, 1974; Crisp, 1980).

Past research comparing eating disorder patients with normal controls has consistently concluded that bulimic patients are lower in self esteem. This conclusion is also that of the present study. In addition,

the present study expands this conclusion to anorexic patients who have been shown to be comparable with bulimic patients in their difference from normal controls. Further, the present study presents more concrete evidence, by overcoming the drawbacks of previous research, notably inappropriate measures (Weiss & Ebert, 1983) and failure to employ clinical diagnosis of the eating disorder groups (Katzman & Wolchik, 1984; Nagelburg et al., 1984; Grace et al., 1985).

Central to this study is the question as to whether primary eating disorder patients can also be differentiated from other groups characterised by dietary/weight concern. Only two previous studies have been found to address this issue. The first, and most comprehensive study was conducted by Mintz and Betz (1988). They compared bulimics with six comparison groups representative of increasing severity of dietary/weight concern. Though not well reported, the results of that study were in keeping with the present study. The bulimic group were significantly lower in self-esteem than all comparison groups, which, in turn, appeared to be similar to each other. While supporting the findings of that study, the present study also improves on that study by ensuring clinical diagnosis of the patient groups, and by extending the investigation to include anorexic patients.

The present study also supports, at least in part, the findings of Shisslak et al. (1990). That study found that underweight, normal weight, and overweight bulimics to be significantly lower in self-esteem than obese subjects. The present study supports that finding. However, the second finding of Shisslak et al. (1990) was that the three bulimic categories were also lower in self-esteem than a group of restricting anorexic subjects. This is a more significant contradiction, as Shisslak

et al. (1990) employed the same measure of self-esteem as used in this study. Nevertheless, Shisslak et al. (1990) did not report the group criteria nor the grouping methods. Consequently, it is possible that Shisslak et al. (1990) were comparing different (less severe) clinical groups than those recruited for the present study.

In summary, the results of the present study indicate that primary eating disorder patients are significantly lower in self-esteem than obese dieters, non-obese dieters and normal controls. Again, these findings cannot be generalised to comment on the theoretical continuum of dietary/weight concern. However, it has been shown that primary eating disorder patients can be differentiated from two other dietary/weight concern groups, as well as normal controls, by their deficient sense of self-worth and self-value. This indicates that low self-esteem is a characteristic of primary eating disorders; and this characteristic is of sufficient severity as to differentiate these patients from both normal controls and dietary/weight concerned individuals. This differentiation suggests that this characteristic is an important component feature of a primary eating disorder personality.

8.20 Self-Directed Hostility.

The overall findings in this area of the study, indicate that both anorexic and bulimic patients display a greater degree of self-directed hostility than obese-dieters, non-obese dieters, and normal controls. That is, these patient groups report feeling more guilt, self-criticism and negative/aggressive views towards the self.

The three non-clinical groups were all significantly lower in self-directed hostility than the two primary eating disorder groups; and were

not significantly different from each other.

As noted in Chapter Four, only one previous research study has compared eating disorder patients with normal controls on a measure of self-directed hostility as defined for this study (Frank, 1991). In that study it was found that eating disorder patients reported significantly higher levels of shame and guilt than normal controls. The present study supports the Frank (1991) study. The present study also improves on that study by extending the grouping to include clinically diagnosed anorexics and bulimics, whereas Frank (1991) recruited a mixed eating disorder group with no clinical diagnosis.

However, the crux of this study is the question of whether primary eating disorder display more self-directed hostility than other groups displaying dietary/weight concern. No previous research has compared primary eating disorder patients with other dietary/weight concern groups. The only two previous studies in this area have assessed eating disorder patients and dietary/weight groups on measures of hostility, rather than self-directed hostility. The present findings indicate that when the measure is specifically one of self-directed hostility, then a differentiation is found between primary eating disorder and non-clinical dietary/weight concern groups.

In summary, the present study has shown that eating disorder patients are significantly higher in self-directed hostility than obese dieters, non-obese dieters and normal controls. These results cannot shed light on the theoretical continuum of dietary/weight concern. However, the results do indicate that eating disorder patients can be differentiated from two non-clinical groups of dietary/weight concern as well as normal controls. This indicates that self-directed hostility is a

characteristic of primary eating disorders which is of sufficient severity to distinguish these patients from dietary/weight concerned individuals as well as non-concerned individuals. This differentiation supports the contention that self-directed hostility is an important component feature of primary eating disorder personality.

8.21 General Health Questionnaire.

The present study also compared the five groups on their responses to a measure of psychiatric caseness - the General Health Questionnaire. The pattern of score clustering was in keeping with the pattern of score clustering noted in the other six measures. The means of the anorexic and bulimic groups were significantly higher than all three non-clinical comparison groups, though they were not different from each other. Moreover, analysis of the individual scores revealed that over 50% of the patients in both eating disorder groups were above the chosen cut-off point for psychiatric caseness.; and this was despite the fact that the highest established cut-off point had been selected. Such a finding indicates that a high proportion of the primary eating disorder sample are in the realms of psychiatric dysfunction.

The bulimic group mean can be compared with previous research studies; though it is notable that the group mean attained in the present study is considerably higher than reported in those studies. Fairburn and Cooper (1982), in a magazine study to detect prevalence, found a group mean of 10.1 in their bulimic group. In a subsequent community study the bulimic group mean was 12.0. Then, the same authors reported a mean of 14.6 in a patient series (Cooper & Fairburn, 1984) - almost 4 points below the present study.

The differences in the means found in the community/magazine studies and the present study can be explained by the fact that the bulimic group in those studies was defined by self-report questionnaire, not clinical diagnosis. It is conceivable that these 'bulimic' groups comprised an amalgamation of clinical and nonclinical cases as well as an amalgamation of vomiters and purgers. Indeed, Mitchel et al, (1988) have shown that clinical patients were four times more likely to display psychiatric (depressive) symptomatology than 'symptomatic volunteers' in eating disorder research. It is, therefore, likely, that a community study would comprise such non-psychiatric subjects. The consequent reduction in general group severity would explain the lower GHQ score in those studies, in comparison with the present study.

8.22 Summary Discussion Of The Main Issue.

Prominent theorists of primary eating disorder aetiology have claimed that eating disorder patients display a personality, characterised by a feeling of being controlled by others (Minuchin et al., 1978); social and interpersonal ineffectiveness (Bruch, 1973, 1978); deficiencies in self-worth and esteem (Selvini-Palazoli, 1974); and aggression towards the self (Orbach, 1985).

However, it has been reported that these and other cognitive/emotional features associated with eating disorders have also been noted in other groups which are characterised by dietary/weight concern, yet which fail to meet clinical diagnostic criteria. What is certain is that any feature attributed to eating disorder patient's personality, must be demonstrated as such by differentiating patients from other dietary/weight concerns. Williams et al. (1990) went some way

towards this with the four characteristics in question, but methodological flaws prevented firm conclusion; and the issue remained as to whether these four characteristics are important, differentiating characteristics of primary eating disorder. The present study was designed to address that issue.

It has been found that both diagnosed anorexic and bulimic patients, are significantly different from other dietary/weight concern groups (obese dieters and non-obese dieters). These differences have been illustrated on measures of anorexia, bulimia, perceived external control, assertiveness, low self-esteem, and self-directed hostility. The primary eating disorder groups also had significantly elevated means on the measure of psychiatric caseness. The primary eating disorder/non-clinical group differences in the means were considerable, and highly, statistically significant.

Such findings indicate that, at least in the areas measured, anorexic and bulimic patients can be clinically differentiated from two other dietary/weight concern groups - obese dieters and non-obese dieters. There is no evidence in this study to suggest that these two disorders share these characteristics with non-clinical groups which are characterised by a dietary/weight concern pathology.

These findings are not put forward as a refutation of the notion that there is a dietary/weight concern pathology, which may be on a continuum. As noted in Chapter Three, this notion cannot be tested in the absence of adequate working criteria for dietary/weight concern groups along that continuum, or within the general pathology. The simple conclusion is that, in primary eating disorder patients, perceived control by external forces, low assertiveness, low self-esteem

and high self-directed hostility in terms of guilt, self-criticism and covert aggression is of a severity which renders them different from dietary/weight concern as displayed by obese and non-obese dieters. Further, from this differentiation, it can be suggested that these four cognitive/emotional features are important components of the primary eating disorder personality.

8.23 Wider Issues For Discussion.

There were no significant differences found between the obese dieters, non-obese dieters, and the normal controls on the cognitive/emotional measures. The only significant difference was between the obese dieters and the other two comparison groups on the EAT-40 measure. This indicated that subjects being treated for obesity report significantly more of the behaviours and attitudes usually attributed to anorexic patients. The lack of statistical differences between these three control groups on the other six measures suggest that those subjects who are characterised by dietary/weight concern, but who do not meet diagnostic criteria for primary eating disorder are cognitively and emotionally comparable with subjects who report no past or present dietary/weight concern. A trend towards a continuum may have been more apparent by the inclusion of a subclinical eating disorder group. However, as noted above, the testing of a 'continuum' was not an aim of this study as: (1) The criterion points along that supposed continuum have never been defined, and (2) The rigorous criteria required of this study excluded groups for which such criteria did not exist - a prime example being subclinical eating disorder.

The lack of criteria for dietary/weight concern groups is certainly

an issue for future research. The obese dieters and non-obese dieters recruited for this study were selected as viable criteria could be defined and adhered to. Many other dietary/weight concern groups have been identified, as outlined in Chapter Three; and there is considerable evidence that there is a widespread dietary pathology (Herman & Polivy, 1987). However, the research into these groups is rudimentary and defies comparison or replication as no criteria are available for these groups. If dietary/weight concern is to be fully understood, and fully investigated, working criteria must be defined for various dietary/weight concern groups. Further, if the hypothetical continuum of these groups is to be investigated, then levels of severity of dietary/weight concern must be established.

Further research is also required to compare primary eating disorder groups to dietary/weight concern groups in terms of perceived control, assertiveness, self-esteem, and self-directed hostility. Investigation is certainly required to assess the extent to which primary eating disorder groups can be differentiated from more severe dietary/weight concern groups, such as sub-clinical eating disorder. However, such investigation can only be adequately conducted if, as suggested above, the criteria of these dietary/weight concern groups are established.

The findings of the present study also have a bearing on the differentiation of the two primary eating disorders. Anorexia nervosa and bulimia nervosa have been officially recognised as diagnostically and clinically distinct since 1980 (A. P. A., DSM-III, 1980). This diagnostic differentiation was in response to the considerable and growing evidence concerning the behavioural differences within the then anorexic group (Russell, 1979); and also evidence of cognitive/emotional

differences between restrictors and purgers/vomiters (Garfinkel et al., 1980). However, there are a number of studies which have reported similarities between anorexic and bulimic patients, especially when the comparison is between bulimic and bulimic/anorexic patients (Casper et al., 1980; Pyle et al., 1981; Garner et al., 1983; Garner et al., 1986). Further, a study which analysed personality profiles with the MMPI, concluded that anorexic, bulimic and mixed syndrome patients had very similar personality profiles (Norman & Herzog, 1983). Moreover, leading theorists have stated that the view of anorexia and bulimia as distinct disorders is "unwarranted and misleading" (Fairburn & Garner, 1986, pp. 411); and that anorexics, bulimics and anorexic-bulimics have been found to be similar on "virtually all psychometric dimensions that have been measured" (Fairburn & Garner, 1986, pp. 414). Indeed, Russell (1985) who has been attributed with differentiating anorexia nervosa and bulimia nervosa within the British research field, has stated that:

"the qualification 'nervosa' was added to indicate that in bulimia nervosa the patient's psychopathology is identified with that present in anorexia nervosa" (pp. 680).

The findings of the present study support the findings of inter-diagnosis similarities, and also the theoretical claims of psychometric similarity between the patient types. Despite the dietary/behavioural differences between the groups, the results have indicated cognitive/emotional similarities. It has been shown that the two patient types are highly comparable in terms of their perception of control by external forces, their lack of assertiveness, lack of self-esteem, and high self-directed hostility in terms of guilt and self-criticism. Further, the proportion of patients in each group who attained GHQ scores

indicative of psychiatric caseness was relatively close. Such findings beg the question as to whether anorexia nervosa and bulimia nervosa are two different dietary/behavioural manifestations of the same underlying cognitive/emotional pathology. This suggestion is certainly supported by the evidence of mixed syndrome patients (Norman & Herzog, 1983), anorexics who report periodic bingeing (Casper et al., 1980), which suggests that patients of a given psychopathology can waver between two behavioural manifestations (Vandereyken & Meermann, 1984).

Such evidence, and subsequent claims, have led to tentative suggestions that the diagnostic distinction may be spurious (Garner et al., 1985; Fairburn & Garner, 1986; Fairburn, 1990).

However, it should be noted that the DSM-III and DSM-III-R criteria are orientated towards assessing the dietary/behavioural aspects of the anorexia nervosa and bulimia nervosa. Such differentiation, on a dietary/behavioural level are supported by the results of the present study. It was found that the anorexic and bulimic groups were statistically different in the appropriate direction on the standardised measures of anorexia and bulimia; though this may be due to the strict inclusion criteria of the two groups which excluded patients displaying mixed diagnosis. Further, the two disorders require somewhat different treatment approaches, which also lends support to different diagnostic criteria. Further research, especially in terms of treatment outcome would be required before diagnostic amalgamation should be clinically considered (Fairburn & Garner, 1986). However, it is certain, that further research is required to investigate the differences and similarities between the two disorder. Such investigation would have an important bearing on the understanding, treatment, and indeed, the

criteria of anorexia nervosa and bulimia nervosa.

The findings have ramifications for the treatment of primary eating disorder patients. Treatment modalities have been developing and progressing since the early psychoanalytic approaches (Wolf, 1945). The most recently developed treatment approach in the area of primary eating disorders is cognitive-behaviour therapy. This therapy is distinguished by the fact that it takes a dual-approach; addressing both the dietary/behavioural and also the cognitive/emotional aspects of anorexia (Garner & Bemis, 1985) and bulimia (Fairburn, 1981).

There have been many claims made to the effect that both aspects of primary eating disorders are equally important, as the dietary/behavioural features are underpinned by cognitive/emotional dysfunction (Bruch, 1973; Garfinkel & Garner, 1982). The present study has supported these claims by showing that primary eating disorder patients, of both diagnostic types, are characterised by both dietary/behavioural and also cognitive/emotional features. In doing this, the results endorse the utilisation of a treatment approach which gives attention to both aspects of eating disorders.

However, the results have also indicated that the four cognitive/emotional features under investigation - perceived external control, low assertiveness, low self-esteem, and self-directed hostility - are common to both diagnostic types. Nevertheless, the two diagnostic types are significantly different in terms of the behavioural manifestation of their disorder, as shown by significant differences on the anorexia and bulimia scales. The corollary of this finding, in terms of treatment, is that while the behaviours of anorexic and bulimic patients should be treated differently to reflect the differentiation in

attempted weight control, the treatment of the underlying cognitions/emotions should be similar for both patient types. That is, on the behavioural level the treatment of bulimics should address binge and vomiting/purging control, while the treatment of anorexics should address the maintenance of adequate and safe levels of caloric intake. However, on the cognitive/emotional level, the treatment of both patient types should address issues of perceived control, inability to assert oneself in relationships and interpersonal communication, low self-value and self-esteem, and also negative, hostile attitudes towards the self.

Finally, the issue of treatment brings this discussion to the issue of assessment. It is widely understood that adequate treatment monitoring rests on appropriate and reliable assessment of the characteristics being addressed within that treatment. Likewise, increasingly popular cognitive-behavioural treatments of primary eating disorders require proper and reliable assessment. Therefore, as this approach is dual-track (Garner, 1985a, 1985b), it is logical that the monitoring of those treatments must incorporate assessment of both cognitive/emotional and also dietary/behavioural features. The results of this study strongly indicate that primary eating disorder patients are characterised by dietary/behavioural features, but also by the four aforementioned cognitive/emotional features. As noted in Chapter Five, these cognitive/emotional features have been noted as worthy of treatment attention. Consequently, it is reasonable to suggest that a measure is required, which can be utilised to monitor treatment; and which measures the dietary/behavioural aspects of eating disorders, and also the cognitive/emotional features of perceived external control, low

assertiveness, low self-esteem, and self-directed hostility.

Such is the aim of Study Two of this thesis.

CHAPTER NINE

STUDY TWO

**DEVELOPMENT AND VALIDATION OF A NEW ASSESSMENT MEASURE FOR PRIMARY
EATING DISORDERS - THE STIRLING EATING DISORDER SCALES.**

9.1 Background Summary.

Chapter Five compiled the results of Williams et al. (1990) and other research to define five basic requirements for an assessment measure for primary eating disorder patients in treatment. The measurement literature was reviewed to assess the extent to which those requirements were met. It was concluded that there is no currently available assessment measure which meets the five requirements.

Consequently, the research recommendation was made that there is a need to develop a new comprehensive measure. As noted in Chapter Seven this will necessitate two development studies, of which the present study (Study Two) is the first. Hence, the aims of the present study are as follows:

9.2 Aims Of The Present Study.

- (1) To design a new comprehensive assessment measure applicable for use with both primary eating disorders and patients who manifest the dietary aspects of both diagnoses. This measure will measure anorexic dietary behaviour anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility.
- (2) To develop this measure according to appropriate and established methodology.
- (3) To psychometrically assess the eight scales to establish validity, reliability, and consistency.

9.3 Overview Of Chapter.

This chapter will describe the development, and then the stability, validation and reliability assessment of the Stirling Eating Disorder Scales. This study required a two-phase methodology. Phase One involved the actual construction of the scales. Phase Two involved assessing the stability, between-group validity, concurrent validity, and test-retest reliability of the new measure with both clinical and control groups.

SECTION ONE: METHODS

9.4 PHASE ONE - SCALE CONSTRUCTION.

The construction of the Stirling Eating Disorder Scales (SEDS) was conducted according to a slightly modified Thurstone Method (Thurstone, 1928). The reason for selecting the Thurstone scale method had five major justifications:

1. The Thurstone Scale is based on an interval scale which not only meets the requirement of many statistical methods, but also assumes intervals between adjacent points are equal (Bailey, 1978).
2. The Thurstone Scale development method utilises panels of judges, which provide effective screening for ambiguity of the items.
3. The Thurstone Scale traditionally employs a forced choice, TRUE/FALSE response format, which forces the respondent to agree or disagree.

While this may appear to lack sensitivity in terms of degree of 'severity', it does avoid the response bias associated with Likert Scales, where respondents often avoid extreme ratings. (Koksal, 1987) Moreover, as explained below, the modified item-weight scoring system described below helps to overcome the criticism of insensitivity to degree of 'severity'.

The following ten sections describe each step involved in this method of questionnaire construction. The Thurstone Method comprises a series of consecutive steps, each requiring methodological/statistical justifications; and different panels of judges. These justifications and panel descriptions will be presented within each step description for the sake of clarity. Also some additional steps were added with the intention of improving on the basic methods. Again, such additions will be noted throughout the following ten sections.

9.4 (1) Definition Of The Number And Concept Of The Intended Scales.

On the basis of the pilot work (Study One) and the review of currently available assessment measures, it was decided that there should be four scales assessing the cognitive/emotional factors shown to be characteristic of anorexia nervosa and bulimia. These four scales would assess perceived external control, low assertiveness, low self-esteem, and self-directed hostility. Subsequently, in order to ensure that the new measure provided comprehensive assessment two further scales were defined to assess the dietary/behavioural aspects of both anorexia and bulimia. Finally, in keeping with the criticisms concerning the lack of separate cognitive/emotional assessment of feelings pertaining to those dietary/behaviours, a final two scales were defined to assess dietary cognitions. Consequently, the new measure was defined as comprising eight independent scales, designed to assess the following factors:

1. Perceived External Control
2. Low Assertiveness
3. Low Self-Esteem

4. Self-Directed Hostility
5. Anorexic Dietary Behaviour
6. Anorexic Dietary Cognitions
7. Bulimic Dietary Behaviour
8. Bulimic Dietary Cognitions

9.4 (ii) Generation Of Item Pools For The Eight Intended Scales.

Pools of potential items were generated under the headings of the intended scales. All items were developed to measure the given scale concept and were based on the following four sources of information.

1. Items from each of the measures employed in Study One (excepting the GHQ) were selected. These items were selected on the basis of ability to discriminate at the $P < 0.01$ level of significance using between group t-tests on the eating disorder and normal control data from Study One.

(Note: the primary eating disorder group data was combined on the basis of no statistically significant differences between them). As the t-tests revealed a large number of individual items in each measure which significantly discriminated between patients and controls, an arbitrary decision was made to select the ten items with the highest t value. Note that in the case of the self-esteem measure this decision necessitated the selection of the whole ten-item scale, though all were checked and found to discriminate at the $p < 0.01$ level.

2. Appropriate items were selected from other standardised measures.
3. Items were constructed on the basis of responses given by diagnosed primary eating disorder patients (14 anorexic, 14 bulimic) within interviews conducted in a previous study (Williams, 1985).
4. Further items were developed by the researcher and by clinical

colleagues.

This method of item generation produced six item pools. The dietary cognition and dietary behaviour items were assimilated into two disorder-specific pools at this point. This decision was aimed at limiting the total number of items, and therefore, the amount of time required of professional judges employed in the final item selection. Further, it was considered that separation was not crucial at this point, as items were not being used to assess patients; they were simply being rated in terms of the severity implied by the wording.

9.4 (iii) Item Face Validity Check.

Though not a requirement under the original Thurstone Method, it was seen as important to include an initial face validity check at this point. The six item pools were placed under six scale headings (Perceived External Control, Assertiveness, Self-Esteem, Self-Directed Hostility, Anorexic Dietary Behaviours and Cognitions, Bulimic Dietary Behaviours and Cognitions). Each scale heading was explained by a scale concept definition in order to ensure uniformity of scale/concept definition used by the judges.

The six scales were presented to a panel of ten judges (departmental colleagues) who were asked to assess each item individually on the basis of scale appropriateness, ambiguity, and grammatical correctness. Any item consistently questioned was reappraised, changed or removed.

9.4 (iv) Calculation Of Item Reading Age.

Again, item reading age assessment was not a methodological step in the original Thurstone Method. However, as primary eating disorders have been diagnosed in children as young as 12 (Crisp et al., 1980) it was considered important to ensure that the Stirling Eating Disorder Scales

were applicable for use with all patients and not just those over sixteen (though these represent the majority). Consequently, all items were assessed for reading ability age. Reading age was calculated according to the Spache-Dale Readability Formula (Spache, 1953). Calculations were made by a qualified teacher. Any item which was considered 'difficult' would be reworded.

9.4 (v) Rating Of The Items By Judging Panel.

The amended item pools were put into questionnaire format (Appendix J). The items were again grouped under the scale headings and definitions. Each item had an adjacent 1 - 7 rating scale. Judges were required to rate each item on the *degree* of the given concept implied by the item wording. For example, for the Perceived External Control scale, judges were required to rate each item on the degree of perceived external control implied by the item from low (rating = 1) to high (rating = 7). The judging panel of 45 clinical professionals comprised clinical psychologists (n = 37) and consultant psychiatrists (n = 8) with specialist interest, experience, or knowledge in the field of eating disorders. Evidence has been provided to show that reliable scale values can be obtained with judging panels as small as 15 (Edwards, 1957). This has been supported, though a minimum n of 25 has been recommended (Black & Champion, 1976). On the basis of this recommendation, the panel n of 40 was set, which would allow for a response rate of 55% and still meet the minimum requirement. The use of specialist/professional panels rather than lay people has been advised and previously conducted (Koksal, 1987) on the rationale that specialists can give more accurate ratings due to concept familiarity (Black & Champion, 1976).

The original Thurstone Method (Thurstone, 1928) employed a 1 - 11

rating scale. However, for the purpose of this study, the length of the rating scale was modified on the basis of more recent statistical evidence which has shown that rating accuracy increases to the point of 7 and then decreases - suggesting that 7 is the optimum number of rating points. Moreover, rating scales over 7 points may make rating more difficult (Nunnally, 1978).

Though all scales would be rated in the pathological direction in the final questionnaire, two scales (assertiveness, self-esteem) were at this point rated in the non-pathological direction. For example a rating of 7 on the Assertiveness scale implied high assertiveness. This enabled the judges to rate all items in the direction of the scale name and thereby avoid the possible confusion of changing rating direction within the questionnaire. The rating direction was easily rectified at the point of scoring by scoring as the mirror rating along the scale (eg. a rating of 7 would be scored 1).

9.4 (vi) Final Item Selection.

The final selection of items to be included in the intended scales was based on two criteria:

1. Weight along the rating scale as defined by the 50th percentile rating.
2. Low ambiguity as defined by the semi-quartile deviation.

Both the item weight and the item ambiguity (semi-quartile deviation) are calculated by means of the Ogive Curve Graph. An Ogive Curve Graph is constructed by first calculating the culminative frequency of the rating of each item using all the ratings presented by the judging panel (Note: ratings were reversed at this point for the assertiveness and self-esteem scales in order to put ratings in the pathological

direction). These culminative frequencies are then plotted against a percentage scale of 1 - 100 (y axis) and the rating scale of 1 - 7 (x axis). To obtain the item weight (mean rating) a perpendicular line is dropped at the 50th percentile. To obtain the semi-quartile deviation, two perpendicular lines are dropped at the 25th and 75th percentiles. The numerical 'distance' between these two lines along the rating scale is the semi-quartile deviation, the extent of which defines the ambiguity. A low semi-quartile deviation (lines close together) implies that the item is unambiguous as at least 50% of the panel have given very close or the same ratings.

Ogive Curve Graphs were drawn up for all items and item weights and ambiguity calculated. An arbitrary decision was made to define high ambiguity as 'semi-quartile deviation > 2.0' and all items with such high ambiguity were eliminated. This decision was based on the rationale that all items in the final selection would have been rated on one of only two points along the rating scales by at least 50% of the judges. While this criteria was harsh, it did ensure that all final items were unambiguous.

Having reduced the potential selection of items on the basis of ambiguity, final items were selected on the basis of scale weight. A Thurstone Scale necessitates that scale items have different weights along the scale in order to assess the full range of state or severity of a given concept, from low to high. As there was still a large number of items eligible for inclusion further stringent criteria were defined for the purpose of final item selection. These criteria were as follows:

1. Low ambiguity.
2. Weight ie. differential weights along the 1 - 7 scale.

3. The item must not replicate any other item in the same scale.
4. As well as differential weights along the scale, the items within any given scale must cover differential aspects of the scale concept.
5. The wording of the item must be simple in order to ensure adherence to the low reading age calculated on all items.
6. The inclusion of each item required the agreement of three clinical professionals as well as the researcher.
7. In the case of anorexic and bulimic behaviour scales, items which were derived from other standardised scales were avoided.

On the basis of the above seven criteria eight ten-item scales were constructed and combined into an eighty-item questionnaire. The decision to limit each scale to ten items was based on discussions with clinical professionals experienced in assessing primary eating disorder patients. Ten items per scale was agreed as providing an acceptable score range without putting excessive demands on the patient in terms of response time.

9.4 (vii) Final Item-Scale Validity Check.

As a final check on the 80 items, each was assessed in terms of scale appropriateness or validity. The items were put into random order and presented with an adjacent forced choice eight point response format (Appendix K). The eight possible responses were headed as the eight intended scales. A third panel of judges was presented with the eight scales definitions and the eighty items. Panel members were required to allocate each item to the most appropriate scale on the basis of the scale definition and the item wording. The panel of judges at this stage comprised 30 individuals: psychiatrists, clinical psychologists and postgraduate psychology students. All efforts were made to avoid any

overlap with the judging panel recruited for the final item selection (See above). However, in the 7 cases where judges were involved in both stages, it was assumed that the eight week delay between the stages would minimise any chance of individual items being specifically remembered in connection with a given scale.

On the basis of the item-scale allocation data, allocation percentages (the percentage of the panel associated with each possible allocation) were calculated for each item. A final strict criteria was assigned to the selection process - 'that items will only be included if at least 60% of the panel have allocated that item to the correct scale'. This criteria led to two items being replaced. Replacement items were again subjected to the criteria presented above.

9.4 (viii) Definition Of Response Format And Scoring System.

The finalisation of the new assessment measure (SEDS) required the definition of an appropriate response format and scoring system.

Response Format: The forced choice TRUE/FALSE response format generally associated with Thurstone Scales was retained.

Scoring System: It was decided that two scoring systems were applicable to the SEDS:

1. Responses are scored '1' for a pathological response and '0' for a non-pathological response. This would provide each scale with a 0 - 10 score range in the direction of pathology.
2. Responses are scored according to their scale weight for a pathological response and '0' for a non-pathological response. The advantage of this scoring system is that it avoids the regression phenomenon which has been noted with the traditional Thurstone Scale, and also gives a greater degree of sensitivity by placing subject

scores along a scale. This was the scoring system utilised throughout this project.

The final version of the SEDS is presented in Appendix L.

PHASE TWO: STABILITY, GROUP VALIDITY, CONCURRENT VALIDITY AND RELIABILITY CHECK.

9.5 SUBJECTS.

A sample of 131 females and 13 males were allocated to three groups: (1) Anorexia Nervosa (n = 40), (2) bulimia nervosa (n = 36), (3) normal control (n = 68). The total subject group had an age range of 15 - 45 years (M = 24.4 years, SD = 4.9). Subjects in this study were independent of the subjects recruited for Study One. Detailed group data is presented below.

9.5 (i) Anorexia Nervosa (ii) Bulimia Nervosa.

Anorexic and bulimic subjects were patients diagnosed by practicing clinical psychologists and psychiatrists according to DSM-III (R) criteria and were undergoing either inpatient or outpatient treatment at the time of testing. For this study patients were not required to meet the full diagnostic criteria for eating disorder at the time of testing; but were required to have been given a primary diagnosis of either anorexia nervosa or bulimia, for which they were receiving treatment. This ensured that the sample represented patients with a range of disorder severity and at different stages of treatment. This was considered important in order to be able to generalise the findings connected to the SEDS to all patients, rather than just those with extreme symptomatology.

In order to ensure group purity, patients who met full DSM-III-R

criteria for any other psychological disorder (co-morbidity) were not recruited. Likewise, patients diagnosed as having a secondary major psychological illness, organic brain disorder, or addiction were not included.

9.5 (iii) Normal Controls.

Normal control subjects were males and females with no present manifestation or history of obesity, primary eating disorder, or any other psychological disorder. Any subjects found to fail this criteria in the screening process (Personal Details Form, below) were excluded (n = 2).

9.6 RECRUITMENT METHODS.

9.6 (i) Eating Disorder Patients.

Eating disorder patients were recruited through five practicing clinical psychologists and psychiatrists in the Glasgow, Edinburgh and Perthshire area. Patients on treatment lists and who met the criteria outlined above were formally contacted by a letter from the clinician. This letter explained the aim of the project, assured the patient that involvement was voluntary and confidential, gave assurance that treatment would in no way be affected by involvement, and informed them that they would be contacted by the researcher. When contacted by the researcher, those patients willing to participate were recruited and allocated to group according to primary diagnosis.

9.6 (ii) Normal Controls.

Subjects for the Normal control group were recruited by the researcher from three main sources:

1. The third year (undergraduate) Social Psychology Class, University of Stirling.

2. Non-academic clerical staff, University of Stirling.
3. Members of the general public known to the researcher.

All recruits were assured that involvement in the study was voluntary, anonymous and confidential.

9.7 MEASURES.

9.7 (1) Eating Attitudes Test - 40. (Garner and Garfinkel, 1979)

(Appendix A).

Description of the Eating Attitudes Test - 40 (EAT-40) has been presented in full in the Methods Section of Study One.

The EAT-40 was considered to be the most appropriate measure to use as a concurrent validity check against the Anorexic Dietary Behaviour scale and the Anorexic Dietary cognitions scale as:

1. It is widely recognised as a sound measure of anorexia.
2. It is one of the most widely used measures, not only in between group comparison research, but as a validity comparison.
3. It is of a reasonable length and therefore avoided overloading respondents considering the fact that seven measures are presented together.
4. None of the items selected from the EAT-40 for inclusion in the item pools (see above) were included in the Stirling Eating Disorder Scales on the basis of criteria 7 described above.

9.7 (ii-) Bulimia Investigatory Test - Edinburgh (Henderson & Freeman, 1987). (Appendix M).

The Bulimia Investigatory Test - Edinburgh (BITE) is a 37 item questionnaire designed for the detection and description of bulimia. All DSM-III criteria are covered as are the criteria presented by Russell (1979), though the BITE is not intended simply as an operationalised checklist. The BITE comprises two scales; one assesses bulimic behaviours, the other assesses the severity of bulimic behaviours.

Items in the bulimic behaviour scale have a TRUE/FALSE response format with a score of 1 given to responses in the bulimic direction. Non-bulimic responses are scored 0. Items in the severity scale have a 6 point 0 - 6 Likert scale response format, where respondents rate the frequency of the given behaviour. The scale is scored according to the scale point value in the direction of severity.

Data have been presented indicating that the BITE is valid when correlated with other measures of binge eating ($r = .67$); discriminates between bulimic and normal control groups ($t = 31.6, p < .05$); and has good test-retest reliability ($r = .86$).

The BITE was considered an acceptable measure to be used as the concurrent validity check against the Bulimic Dietary Behaviour and Bulimic Dietary Cognitions scales as:

1. The BITE has a strong statistical background which shows it to be a strong measure of bulimia.
2. It is of reasonable length and thereby avoided overloading subjects.
3. None of the items included in the BITE were repeated in the SEDS scales.

9.7 (iii) Multidimensional Health Locus of Control Scale. (Wallston et al. 1978). (Appendix N).

The Multidimensional Health Locus of Control Scale (MHLOCS) is an 18 item, self-report, three dimensional scale, designed to assess internal health locus of control, powerful medical others, and chance/health locus of control.

Items are in statement form and respondents are required to rate each item on a 1 (strongly disagree) to 6 (strongly agree) scale. Scales are scored by the summation of ratings. In the case of the powerful medical others and chance/health locus of control scales scores are in the external direction; but the internal health locus of control is scored in the internal direction. Score ranges are 6 to 36 for each scale.

Wallston et al. (1978) have presented data to show that the internal health locus of control, powerful medical others control, and chance/health locus of control scales are internally consistent (alpha's = .768, .673, .753 respectively); internally reliable, and are concurrently valid when compared with the internal, powerful others and chance scales of Levenson (1973) (r 's = .56, .27, .79, $p < .01$ respectively). None of the scales correlated with social desirability.

The Wallston et al. Multidimensional Health Locus of Control Scales were considered as appropriate comparisons for the perceived External Control Scale on SEDS as:

1. They have a strong developmental and statistical background.
2. As items are all health orientated, the scales avoid the criticism of non-specificity directed at other scales.
3. Items are health orientated and thereby more appropriate in assessing a health disorder.

3. The overall measure is of moderate length and easily completed, and thereby avoided subject overload.
4. No items in the MHLOCS were included in the SEDS.

9.7 (iv) Assertiveness Self-Report Inventory. (Herzberger, Chan, & Katz, 1984). (Appendix O).

The Assertiveness Self-Report Inventory (ASRI) is a 25 item, unidimensional, self-report questionnaire designed to overcome the general criticisms of assertiveness scales, in that it measures both behavioural and affective aspects of assertiveness and it is specific in indicating the behaviour, situation and other people involved.

Respondents are required to answer each item on a TRUE/FALSE response format. Items are scored 1 for a response in the assertive direction and 0 for a response in the unassertive direction. This provides a score which indicates the degree of assertiveness shown/perceived by the individual with higher scores indicating higher levels of assertiveness (Score range = 0 - 25).

Data have been presented to show that the ASRI has good concurrent validity ($r = .70$, $p < .001$) and good stability with a five week retest of $r = 0.81$.

The ASRI was considered a good comparison measure to assess the concurrent validity of the SEDS Assertiveness scale as:

1. It has a strong development methodology and good statistical background in terms of validity and reliability which suggests it is a strong measure of assertiveness.
2. It is of reasonable length and easily completed and thereby avoided overloading subjects.

3. None of the items in the ASRI were included in the SEDS Assertiveness scale.

9.7 (v) Index Of Self-Esteem (Hudson, 1982). (Appendix P).

The Index of Self-Esteem (ISE) is a 25 item, unidimensional, self-report questionnaire designed to assess the degree or magnitude of a problem that a person has in the area of self-esteem.

All items are in statement format. Respondents are required to rate each item on the frequency or extent to which they perceive each item statement from 'Rarely or none of the time' to 'Most or all of the time' on a 1 - 5 scale. The suggested scoring system entails scoring all items in the direction of low self-esteem which necessitates score reversal in some items, and subtracting 25 to give a score range of 0 - 100. However, for the purpose of this study, which did not require a cut off point - just a comparable mean - the subtraction of 25 was not calculated. This provided a score range of 25 - 125, with higher scores indicating a lower degree of self-esteem.

Data have been presented to show that the ISE is internally consistent ($\alpha = .93$); has good retest reliability ($r = .92$); has good known groups validity ($r_{tt} = .52$).

The ISE was considered an appropriate comparison measure to assess the concurrent validity of the Self-Esteem scale of SEDS as:

1. It has a strong development and statistical background which indicates it to be a good measure of self-esteem.
2. It is written in simple language, with a simple response format and is relatively short, which avoided the problem of subject overload.
3. No item from the ISE was included in the Self-Esteem scale of SEDS.

9.7 (vi) Personal Feelings Questionnaire. (Harder & Lewis, 1987)

(Appendix Q).

The Personal Feelings Questionnaire - Two (PFQ2) is a 22 item, self-report questionnaire. There are two subscales measuring (1) shame and (2) guilt.

Items are adjectives which describe the various cognition associated with shame and guilt. Respondents are asked to rate each item on the frequency of experiencing each feeling on a five point scale ranging from 'never experience the feeling' to 'experiencing the feeling continuously or almost continuously'. Scale score are calculated through the summation of ratings on the 0 - 4 scale in the direction of Shame or guilt.

Data have been presented (Harder & Zalma, 1990) to show that the shame and guilt scales are internally consistent ($\alpha = .78, .72$ respectively), concurrently valid when compared with a self-derogation scale ($r = .49, .46, p < .01$ respectively), and reliable over a two week test-retest period ($r = .91, .85$ respectively).

The PFQ2 questionnaire was considered a good comparison measure with which to assess the concurrent validity of the SEDS Self-Directed Hostility scale as:

1. Thorough search of the literature failed to reveal a measure which specifically assessed self-directed hostility as defined in this study. Consequently, the PFQ2 scales were selected as a good measure of one aspect of that concept.
1. It has a strong statistical background which indicates it to be a good measure of shame/guilt which are components of self-directed hostility.

2. It is relatively short with a simple response format, and thereby, avoided subject overload.
3. Items on the PFQ2 in no way resembled items on SEDS.

9.7 (vii) Automatic Thoughts Questionnaire. (Hollon & Kendall, 1980)
(Appendix R).

As the PFQ2 measures only one aspect of the SEDS concept of self-directed hostility (shame/guilt), it was considered necessary to include a measure which would tap the other noted aspect - self-criticism. Though the ATQ is designed as a measure of depression, appraisal of the items indicate that there is a self-criticism component to the scales.

The Automatic Thoughts Questionnaire (ATQ) is a 30 item, four dimensional, self-report questionnaire designed to measure the frequency of occurrence of negative self-statements. There are four scales relating to personal maladjustment and desire for change', 'negative self-concept and expectation of change', 'low self-esteem', and 'helplessness'.

Items are in statement form relating to negative self-statements. Respondents are required to report the frequency of thinking these statements on a '1' (Not at all) to '5' (All the time) Likert scale. Scores are the summation of the ratings for each item in the direction of pathology. The ATQ provides an overall score and four factor-scale scores.

Data have been presented to show that the ATQ is internally consistent and reliable as shown by split half reliability ($\alpha = .97$), and valid (r 's = .45 - .70).

The ATQ was considered an appropriate measure for use as a concurrent validity comparison for the SEDS Self-Directed Hostility

scale as:

1. Thorough review of the literature failed to reveal a good measure which directly measured self-directed hostility as defined in this study. Consequently, the ATQ was considered important to be utilised in conjunction with the PFQ2 (above) in order to cover another aspect of self-directed hostility - self-criticism.
2. Another adequate measure of self-criticism was not available.
3. The ATQ has a strong statistical background to indicate it to be a good measure of negative self-statement (a component of which was considered to be self-criticism)
4. It is relatively short and easily completed which again avoided subject overload.

9.7 (viii) Personal Details Form. (Appendix H).

For the purpose of investigating the effect of demographic factors on the above measures, data concerning age, height, weight history, marital status and socioeconomic class were collected from all subjects by means of a self-report Personal Details Form. Further information was collected from subjects in the eating disorder groups concerning the duration and type of disorder, number of hospitalisations, length of treatment, present weight position (gaining, losing, stable, fluctuating), and current prescribed medication.

Control subjects were asked to provide additional information concerning dieting history, past psychological illness or eating disorder (screening/exclusion variables), and current prescribed medication.

9.7 (ix) Clinicians Checklist. (Appendix I).

To ensure uniform diagnosis, all clinicians were required to complete a two page checklist on each of the patients they recruited. On the first page of the Checklist the clinician was required to state primary and any secondary diagnosis.

Page two of the Checklist listed the criteria of the two eating disorders according to DSM-III (R) criteria. The clinician was asked to tick *all* symptoms displayed by the patient at the time of diagnosis even if this revealed some crossover between the two disorders.

9.7 (x) Clinicians Rating Scales (Appendix S).

For the purpose of assessing the validity of the SEDS scales through correlations with clinical ratings, all clinicians were presented with a rating scale questionnaire for each patient. The rating scales were attached to the Clinicians Checklist to ensure concurrent completion. Clinicians were asked to rate each patient on the eight features assessed by the SEDS on a 1 (low/mild) to 7 (high/severe) rating scale.

9.8 PROCEDURE.

Having been recruited and asked to participate in a study which aimed to design a new questionnaire for eating disorders, subjects were presented with a package comprising:

1. Instructions
2. Personal Details Form (PDF)
3. Seven Questionnaires
4. One return envelope

The Instructions, PDF and questionnaires were presented in booklet form. In the instructions, subjects were asked to complete all questionnaires while alone (to prevent inter subject conferring) and in whatever order they pleased. This was to avoid order effect, though as an additional precaution the questionnaires were assembled in random order.

Subjects sealed the completed booklets and returned them to the researcher either directly (if completed at an arranged appointment); by post in a provided stamped addressed envelope; or via the University mailing system (normal controls only). In the case of some eating disorder patients who were recruited in groups, the booklets were collected by the researcher at the next appointment or via the recruiting clinician.

For the purpose of assessing test-retest reliability, the SEDS questionnaire was administered and collected by the same method three weeks after completion of the first questionnaire package. A three week test-retest has been noted as appropriate (Corcoran & Fischer, 1987). Retest completions were matched by a subject number in the case of eating disorder patients; and by date of birth in the case of normal controls.

9.9 ANALYSIS.

All data were analysed using the SPSS-X computer statistics package (Copyright, 1983). The following statistical procedures were utilised to fully assess the validity and reliability of the Stirling Eating Disorder Scales:

9.9 (1) Scale Consistency.

Scale consistency was assessed by the split half method and the

calculation of Cronbach's Alpha. Alpha's were calculated on the amalgamated data of the three groups and then the three individual groups.

9.9 (ii) Response Bias.

The possibility of respondents answering in a given direction as a function of the positive or negatively loaded wording of that question was assessed by correlating the scores of positively and negatively worded questions.

9.9 (iii) Gender Bias.

The possibility that the Stirling Eating Disorder Scales were actually assessing gender-related characteristics, rather than eating disorder related characteristics was assessed by comparing the scores of male and female subjects in the normal control groups. Male and female scores were compared by t-tests.

9.9 (iv) Between Group Validity.

(a) Assessment Of Demographic Factors.

As an initial analysis the demographic group differences in terms of marital status and socioeconomic class were assessed by the Chi Squared method; and between group differences in terms of mean age were assessed by Oneway Analysis of Variance. The effect of sex on all scales was assessed by means of a t-test on the normal control group data. It was understood that any significant differences would be assessed to evaluate effect on group score by correlating the ranks/age with the scale scores. Any factor found to have a significant association at the $p < .05$ level would be used as a covariate in all subsequent analyses or necessitate non-parametric analysis.

(b) Between Group Validity.

Between-group differences were first assessed by Multivariate Analysis of Variance. Subsequent to significant multivariate F tests at the $p < .01$ level, group differences were assessed by means of Oneway Analysis of Variance to find broad differences between the groups. Subsequent to statistically significant F ratios at the $p < .01$ level, Post-hoc Scheffe Tests were utilised to assess individual differences between the groups.

9.9 (iv) Concurrent Validity.

Pearson Product Moment Correlations were utilised to assess the level of relationship between the eight SEDS and the seven comparison scales. Concurrent validity correlation matrices were calculated for all subjects together and also for the individual groups.

9.9 (v) Test-Retest Reliability.

Stability of the eight SEDS over a three week period was assessed by calculating Pearson Product Moment Correlations on the two completions of the SEDS scales. These calculations were conducted on the amalgamated data of the three groups and also on the three individual groups.

9.9 (vi) Clinical Validity.

The clinical validity of the eight SEDS was calculated by Pearson Product Moment Correlations between the patients scale score and the rating provided by the clinician on the Clinicians Rating Scales questionnaire.

SECTION 2: RESULTS.

9.10 Overview Of Chapter.

Results for Study Two will be presented in a two phase format in keeping with the methodology section. The first phase will present the results of the various steps involved in the development of the Stirling Eating Disorder Scales (SEDS). The second phase will present the results of the statistical testing of the scales in terms of scale stability, between group validity, concurrent validity, and test-retest reliability.

PHASE ONE: SCALE CONSTRUCTION.

9.11 Face Validity.

When the original 240 items were presented to the panel of ten judges comments were obtained and collected. These comments led to five items being deleted on the basis of repetition, and 14 being changed. Reasons for change were ambiguity in eight cases, behavioural bias in five cases and item length in one case. This resulted in a total of 235 items in the pools to be presented to judges in the item selection stage.

9.12 Reading Age Of The Items.

Calculation of the of the overall item reading age according to the Spache-Dale Readability Formula (1957) revealed that the SEDS questionnaire items produced a readability figure of 9 years 3 months. Reference to reading ability age range scales indicated that the SEDS lay within a reading ability age range of 8 years 6 months to nine years six months.

Further analysis of individual items indicated that no item required further simplification.

9.13 Item Rating By Judging Panel And Item Selection.

9.13 (i) Judging Panel Response Rate.

Of the 45 professionals requested to complete the Item Selection Rating Questionnaire, 34 returned full completed forms and one returned an incomplete form. This constituted a 75.5% overall response rate and a 73.3% correct response rate.

9.13 (ii) Item Selection Results.

On the basis of the seven item selection criteria presented in the Methods Section, ten items were selected for each of the eight intended scales. As previously stated the two main selection criteria demanded that the selected items represented different points along the scale and had low ambiguity. Table 9.1 presents weight and ambiguity calculated for the 80 items selected on the basis of these criteria.

Reference to Table 9.1 reveals that the items in all eight scales conform to the main criteria of (1) representing different points along the scale and (2) low ambiguity. Items were selected to cover the full scale range and in all cases the semi-quartile deviation (ambiguity) is less than 2.0, indicating that 50% of the panel rated the item at one of two given points along the 7 point scale.

TABLE 9.1: SCALE WEIGHT AND AMBIGUITY OF THE 80 FINAL ITEMS IN THE SEDS.

<u>Scale Name</u>	<u>Item Number*</u>	<u>Weight</u>	<u>Ambiguity</u> (semi-quartile deviation)
Anorexic Dietary Behaviour	25	0.9	0.7
	40	1.5	1.1
	41	2.4	1.3
	06	3.8	1.5
	12	4.3	1.3
	23	4.5	1.2
	28	4.9	1.4
	32	5.2	1.4
	22	5.6	0.8
	11	6.1	1.1
Anorexic Dietary Cognitions	34	1.0	0.5
	21	2.5	1.1
	18	3.6	1.0
	36	4.3	1.5
	24	4.6	1.5
	15	5.1	1.2
	05	5.5	1.1
	13	5.8	1.3
	33	6.2	1.0
	39	6.7	0.7
Bulimic Dietary Behaviour	05	1.2	1.0
	38	2.1	0.7
	22	3.5	1.5
	26	4.2	1.3
	37	4.7	1.3
	03	5.1	1.5
	30	5.4	1.1
	(17)	5.8	1.1
	18	6.3	0.7
	04	6.7	0.5
Bulimic Dietary Cognitions	01	1.0	0.9
	36	1.4	0.9
	21	2.0	1.1
	35	3.5	1.5
	39	4.1	1.3
	13	5.3	1.3
	29	5.6	1.1
	33	5.9	1.1
	16	6.3	0.7
	34	6.7	0.9

<u>Scale Name</u>	<u>Item Number*</u>	<u>Weight</u>	<u>Ambiguity</u>
Perceived External Control	04	1.0	1.0
	09	1.6	0.5
	28	2.0	0.8
	17	3.5	0.9
	15	4.1	1.0
	34	4.5	1.1
	24	4.9	1.2
	21	5.3	1.2
	32	5.8	1.2
	22	6.5	1.0
Low Assertiveness	36	0.5	1.1
	29	1.0	1.3
	27	1.5	0.8
	23	2.1	1.9
	20	3.0	1.7
	12	3.8	0.7
	43	4.7	1.2
	09	5.1	1.3
	22	5.7	1.2
	31	6.5	1.4
Low Self-Esteem	21	1.0	0.7
	24	1.5	1.1
	09	2.0	1.2
	33	2.5	1.4
	31	2.9	1.3
	16	3.7	1.1
	17	4.5	1.1
	32	5.1	0.9
	02	5.7	1.0
	22	6.4	1.0
Self-Directed Hostility	31	0.9	1.3
	32	1.3	1.0
	33	2.5	1.5
	26	3.4	1.5
	(15)	4.2	1.5
	22	4.8	1.4
	29	5.3	1.5
	20	5.9	1.3
	17	6.2	1.3
	18	6.9	1.1

Key: * Item Number refers to the item number on the rating questionnaire (appendix J)
Numbers in parentheses were selected at later stage - see Table 9.2

9.14 Face Validity Check By Allocation Of Items To Correct Scale By Professional Panel.

9.14 (i) Professional Panel Response Rate.

Of the 30 questionnaires sent out to potential panel members, 16 were returned. All were correctly and fully completed. This represented a 55% response rate.

9.14 (ii) Allocation Of Items To Correct Scale.

Table 9.2 presents the percentage of panel members who allocated each item to the correct scale.

On the Anorexic Dietary Behaviour Scale, eight items were correctly allocated by over 80% of the panel; and one item (No. 25) was correctly allocated by 68% of the panel. The one item (No. 40) was correctly allocated by only 18% of the panel. Re-examination of the item revealed that the wording could be interpreted as cognitive. Therefore, according to the three criteria of agreement presented in Methods, the decision was made to amend the item to a clearly cognitive wording and retain it.

On the Anorexic Dietary Cognitions Scale, all items met the criteria of a minimum 60% of the panel correctly allocating the item, with eight items correctly allocated by 75% or more of the panel.

On the Bulimic Dietary Behaviour Scale, nine items were correctly allocated by over 60% of the panel. In the case of two items (No's 5, 38) the criteria was only just achieved, though reference to the items' wording revealed that both went in the non-pathological direction and were, therefore, more difficult to allocate. These items were retained. One item fell below 60% of panel correct allocation and was replaced with item No. 17.

On the Bulimic Dietary Cognitions Scale, all ten items were above the

minimum 60% of panel correct allocation. Again the three items which only just met the criteria were found to be worded in the opposite direction (non-pathological) to the scale name.

On the Perceived External Control Scale, all ten items were correctly allocated by over 80% of the panel, with five of the ten being correctly allocated by 100% of the panel.

On both the Assertiveness and Self-Esteem, scales all ten items were correctly allocated by over 87% of the panel, and on both scales, five of the ten items were correctly allocated by 100% of the panel.

On the Self-Directed Hostility Scale, eight of the ten items were correctly allocated by the minimum 60% of the panel, though in the case of three items (No's 32, 33, 26) this criteria was only just met. One item which was correctly allocated by less than 50% of the panel was replaced by item No. 15. One final item was allocated by 56% of the panel. However, reference to the allocation questionnaire revealed an error in that the direction of the question had not been indicated, rendering allocation more difficult. Therefore, on the basis of the three person agreement criteria (see Methods Section) this item was retained.

TABLE 9.2: PERCENTAGE OF PANEL ALLOCATING EACH SEDS ITEM TO THE CORRECT SCALE.

<u>SCALE</u>	<u>ITEM NUMBER ON RATING QUESTIONNAIRE</u>	<u>PERCENTAGE CORRECT ALLOCATION</u>
Anorexic Behaviours	25	68.8
	40	68.8
	41	93.8
	06	100
	23	100
	28	81.3
	32	81.3
	22	81.3
	11	100
	Anorexic Cognitions	34
21		75.0
18		100
36		87.5
24		75.0
15		62.5
05		75.0
13		100
33		93.8
39		93.8
Bulimic Behaviours	05	62.5
	38	62.5
	22	87.5
	26	100
	37	75.0
	03	100
	30	100
	17	* replacement
	18	87.5
	04	100
Bulimic Cognitions	01	62.5
	36	62.5
	21	87.5
	35	62.5
	39	87.5
	13	100
	29	93.8
	33	100
	16	93.8
	34	100
Perceived External Control	04	87.5
	09	87.5
	28	81.3
	17	93.8
	15	100
	34	100
	24	93.8
	21	100
	32	100
	22	100

<u>SCALE</u>	<u>ITEM NUMBER ON RATING QUESTIONNAIRE</u>	<u>PERCENTAGE CORRECT ALLOCATION</u>
Low Assertiveness	36	100
	29	100
	27	100
	25	75.0
	20	100
	12	87.5
	43	93.8
	09	100
	22	87.5
	31	87.5
Low Self-Esteem	21	100
	24	100
	09	93.8
	33	100
	31	100
	16	93.8
	17	93.8
	32	87.5
	02	87.5
	22	100
Self-Directed Hostility	31	56.3 (direction not indicated)
	32	62.5
	33	62.5
	26	62.5
	15	*replacement
	22	100
	29	100
	20	87.5
	17	100
	18	100

KEY: *replacement - refers to those items which were inserted due to an insufficient number of the panel allocating the original item to the correct scale.

(direction not indicated) - refers to the one item which was not clearly labeled in the validity check questionnaire. Low allocation percentage was considered to reflect this error and the item was retained.

PHASE TWO: STATISTICAL ASSESSMENT OF THE STIRLING EATING DISORDER
SCALES.

9.15 Scale Internal Reliability.

Internal Scale reliability was calculated by two methods: (1) Cronbach's Alpha and (2) the split-half correlation method, calculated on each of the eight individual scales. Results are presented in Tables 9.3 and 9.4, below.

Reference to Table 9.3 indicates that alpha was high in the case of all eight scales and split-half correlations are of high order and significant for all eight scales.

When Cronbach's Alpha was calculated for each group, results showed that alphas remained high. See Table 9.4.

TABLE 9.3: ALPHAS AND SPLIT-HALF RELIABILITY COEFFICIENTS FOR THE EIGHT SEDS.

<u>Scale Name</u>	<u>Alpha</u>	<u>Split-Half r</u>	<u>Probability</u>
Anorexic Dietary Cognitions	.89	.921	<.001
Anorexic Dietary Behaviour	.86	.880	<.001
Bulimic Dietary Cognitions	.91	.992	<.001
Bulimic Dietary Behaviour	.92	.906	<.001
Perceived External Control	.84	.727	<.001
Low Assertiveness	.83	.864	<.001
Low Self-Esteem	.86	.872	<.001
Self-Directed Hostility	.84	.896	<.001

TABLE 9.4: INTERNAL SPLIT-HALF RELIABILITY COEFFICIENTS OF THE SEDS WITHIN THE ANOREXIC, BULIMIC AND CONTROL GROUPS.

SCALE NAME	GROUP		
	<u>ANOREXIC</u>	<u>BULIMIC</u>	<u>CONTROL</u>
Anorexic Dietary Cognitions	.852	.679	.531
Anorexic Dietary Behaviours	.793	.713	.445
Bulimic Dietary Cognitions	.852	.774	.823
Bulimic Dietary Behaviours	.842	.819	.701
Perceived External Control	.766	.697	.655
Low Assertiveness	.796	.704	.642
Low Self-Esteem	.791	.691	.674
Self-Directed Hostility	.865	.692	.705

* All coefficients are significant at the $p < .001$ level.

9.16 Gender Bias

To assess the scales for bias towards one gender, notably female, the scores of males and females in the normal control group were compared by t-tests. Results indicated that there were no significant sex differences on any of the eight scales.

9.17 Response Bias.

Response Bias was assessed by correlating the scores for positively and negatively worded items. Table 9.5 presents the correlations produced.

Reference to Table 9.5 reveals that in the case of all eight scales, scores for the positively and negatively worded items are high and significant.

TABLE 9.5: RESPONSE BIAS CORRELATIONS FOR THE EIGHT SEDS

<u>SCALE NAME</u>	<u>r</u>	<u>probability</u>
Anorexic Dietary Cognitions	.840	< .001
Anorexic Dietary Behaviours	.636	< .001
Bulimic Dietary Cognitions	.739	< .001
Bulimic Dietary Behaviours	.868	< .001
Perceived External Control	.748	< .001
Low Assertiveness	.776	< .001
Low Self-Esteem	.840	< .001
Self-Directed Hostility	.662	< .001

9.18 Between Group Validity.

9.18 (1) Assessment Of Demographic Factors.

Before calculating between group differences on the eight scales (scale validity), demographic factors were assessed in terms of statistical differences which may affect scale scores. Table 9.6 presents a summary of the demographic data for each of the three groups. Table 9.7 presents the results of the statistical analysis of the demographic variables.

Oneway Analysis of Variance revealed that there were no significant differences between three groups in terms of age ($F = 0.85$, $p = .43$, $df = 2, 141$).

Oneway Analysis of Variance indicated that there were significant differences between the groups in terms of height ($F = 19.4$, $p < .001$, $df = 2, 141$). Post-hoc Scheffe tests revealed that this was due to the normal control group being significantly taller than the two eating disorder groups. This was, no doubt, due to the inclusion of male subjects in this group.

Oneway Analysis of Variance indicated significant differences between the three groups in terms of weight ($F = 41.4$, $p < .001$, $df = 2, 141$). Post-hoc Scheffe Tests revealed that this was due to the anorexic group being significantly lighter than the bulimic and normal control groups, which were not significantly different from each other. Such a result was to be expected, and thereby not indicative of the necessity of covariance.

Calculation of Chi Squared indicated that there were no significant differences between the groups in terms of marital status ($X^2 = 3.5$, $p = .46$, $df = 4$) or of socioeconomic class ($X^2 = 4.0$, $p = .64$, $df = 4$).

On the basis of these non-significant or expected between-group differences no demographic factors were considered eligible to stand as covariates, nor was there a necessity to employ non-parametric statistics.

TABLE 9.6: SUMMARY OF DEMOGRAPHIC DATA FOR THE ANOREXIC, BULIMIC AND CONTROL GROUPS.

VARIABLE	GROUP		
	<u>ANOREXIC</u>	<u>BULIMIC</u>	<u>CONTROL</u>
<u>Age</u>			
Mean	24.7	25.0	23.8
SD	05.3	06.1	04.9
<u>Height (cm)</u>			
Mean	159.5	162.8	168.5
SD	006.4	006.9	007.2
<u>Weight (kg)</u>			
Mean	45.9	62.9	62.5
SD	07.9	10.7	10.2
<u>Marital Status</u>			
Single	30	25	56
Married	09	10	09
Divorced/Seperated	01	01	03
<u>Socio-economic Class</u>			
1	14	12	28
2	19	15	33
3	03	04	02
4	03	04	04
5	01	01	01

TABLE 9.7: RESULTS OF STATISTICAL COMPARISONS BETWEEN THE ANOREXIC, BULIMIC, AND CONTROL GROUPS ON DEMOGRAPHIC VARIABLES.

variable	F	df	p.
Age	.85	2,141	ns
Height	19.4	2,141	<.001
Weight	41.4	2,141	<.001

Variable	χ^2	df	p.
Marital Status	3.5	4	ns
Socio-Economic Class	4.0	4	ns

9.18 (11) Group Differences On The Eight Stirling Eating Disorder Scales

- Between-Group Validity.

Multivariate Analysis of Variance was calculated on all scales to assess significant differences between the groups on all eight scales. Pillais test of significance indicated that there were significant differences between the groups ($F = 19.32$, $p < .001$, $df = 2, 141$). Oneway Analyses of Variance with subsequent post hoc Scheffe Tests were therefore considered appropriate to assess between group differences (validity) on each of the eight scales. Table 9.8 presents the means and between group differences.

TABLE 9.8: GROUP MEANS, SD, AND STATISTICAL COMPARISONS ON THE EIGHT SEDS.

SCALE	GROUPS			E	df	SCHEFFE
	ANOREXIC	BULIMIC	CONTROL			
Anorexic Dietary Cognitions	32.95 (12.5)	25.25 (10.9)	2.85 (5.5)	153.8	2,141	1-2 1-3 2-3
Anorexic Dietary Behaviours	22.16 (12.2)	11.51 (9.8)	1.94 (3.2)	73.7	2,141	1-2 1-3 2-3
Bulimic Dietary Cognitions	24.70 (14.8)	35.75 (7.7)	5.53 (8.8)	91.5	2,141	1-2 1-3 2-3
Bulimic Dietary Behaviour	21.57 (13.4)	34.54 (9.8)	3.79 (6.1)	92.2	2,141	1-2 1-3 2-3
Perceived External Control	23.79 (11.3)	21.38 (10.7)	5.86 (7.5)	55.7	2,141	1-3 2-3
Low Assertiveness	25.6 (7.9)	25.9 (6.5)	9.4 (7.9)	85.5	2,141	1-3 2-3
Low Self-Esteem	27.6 (7.4)	26.7 (7.2)	8.4 (8.0)	112.6	2,141	1-3 2-3
Self-Directed Hostility	32.6 (12.8)	27.2 (10.6)	5.3 (6.2)	122.4	2,141	1-3 2-3

SDs are printed in brackets below the group mean score.

KEY: On Scheffe comparisons 1 = anorexic group, 2 = bulimic group, 3 = control group

Groups separated by a hyphen are significantly different from each other.

All comparisons are significant at the $p \leq .01$ level.

All F ratios are significant at the $p < .01$ level

(a) Anorexic Dietary Behaviour Scale.

Oneway Analysis of Variance indicated highly significant differences between the groups. Reference to the means indicated that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group mean was distinctly lower. Post-hoc Scheffe Tests indicated that the anorexic group mean was significantly higher than the bulimic group mean. Both eating disorder group means were significantly higher than the normal control group mean.

(b) Anorexic Dietary Cognitions Scale.

Oneway Analysis of Variance indicated highly significant differences between the groups. Reference to the means indicated that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group mean was distinctly lower. Post-hoc Scheffe Tests indicated that the anorexic group mean was significantly higher than the bulimic group mean. Both eating disorder group means were significantly higher than the normal control group mean.

(c) Bulimic Dietary Behaviour Scale.

Oneway Analysis of Variance indicated highly significant differences between the groups. Reference to the means indicated that the bulimic group achieved the highest mean, followed by the anorexic group. The normal control group mean was distinctly lower. Post-hoc Scheffe Tests indicated that the bulimic group mean was significantly higher than the anorexic group mean. Both eating disorder group means were significantly higher than the normal control group mean.

(d) Bulimic Dietary Cognitions Scale.

Oneway Analysis of Variance indicated highly significant differences between the groups. Reference to the means indicated that the bulimic

group achieved the highest mean, followed by the anorexic group. The normal control group mean was distinctly lower. Post-hoc Scheffe Tests indicated that the bulimic group mean was significantly higher than the anorexic group mean. Both eating disorder group means were significantly higher than the normal control group mean.

(e) Perceived External Control Scale.

Oneway Analysis of Variance indicated that there were significant differences between the three groups. Reference to the means revealed that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group was distinctly lower. Post-hoc Scheffe Tests showed that there was no significant difference between the two eating disorder groups. Both eating disorder groups means were significantly higher than the normal control group mean.

(f) Low Assertiveness Scale.

Oneway Analysis of Variance indicated that there were significant differences between the three groups. Reference to the means revealed that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group was distinctly lower. Post-hoc Scheffe Tests showed that there was no significant difference between the two eating disorder groups. Both eating disorder groups means were significantly higher than the normal control group mean.

(g) Low Self-Esteem Scale.

Oneway Analysis of Variance indicated that there were significant differences between the three groups. Reference to the means revealed that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group was distinctly lower. Post-hoc Scheffe Tests showed that there was no significant difference between

the two eating disorder groups. Both eating disorder groups means were significantly higher than the normal control group mean.

(h) Self-Directed Hostility Scale.

Oneway Analysis of Variance indicated that there were significant differences between the three groups. Reference to the means revealed that the anorexic group achieved the highest mean, followed by the bulimic group. The normal control group was distinctly lower. Post-hoc Scheffe Tests showed that there was no significant difference between the two eating disorder groups. Both eating disorder groups means were significantly higher than the normal control group mean.

9.19 Concurrent Validity.

Table 9.9 presents the Pearson Product Moment Correlations calculated between the eight SEDS scales and the appropriate comparison measures. As shown, all eight scales were highly and significantly correlated with the comparison measure in the expected direction. Further analysis of the eight scales revealed that no scale correlated more highly with any comparison measure other than its direct comparison measure total. When calculated for the individual groups, results revealed that the high and significant correlations held true, except in the case of perceived control in the control group. In this group, the internal and the chance health control scales did not correlate significantly with the SED Percieved External Control Scale. The correlations between the SED Percieved External Control Scale and the chance control scale of the MHLOC yielded low order correlations across all three groups. See Table 9.10.

TABLE 9.9: CONCURRENT CORRELATIONS OF THE EIGHT SEDS WITH THE COMPARISON MEASURES.

<u>SED SCALE/COMPARISON</u>	r	p
Anorexic Dietary Cognitions/ EAT-40	.867	<.001
Anorexic Dietary Behaviour/ EAT-40	.832	<.001
Bulimic Dietary Cognitions/ BITE	.902	<.001
Bulimic Dietary Behaviour/ BITE	.901	<.001
Perceived External Control/ Health Locus of Control	.761	<.001
<i>Internal Subscale</i>	-.442	<.001
<i>Powerful Others Subscale</i>	.694	<.001
<i>Chance Subscale</i>	.370	<.01
Assertiveness/ Assertiveness Self-Report Inventory	-.829	<.001
Self-Esteem/ Index of Self-Esteem	.872	<.001
Self-Directed Hostility/ Automatic Thoughts Total	.858	<.001
<i>Negative Self Image+Expectation Subscale</i>	.809	<.001
Personal Feelings Questionnaire	.892	<.001
<i>Guilt Subscale</i>	.826	<.001
<i>Shame Subscale</i>	.887	<.001

KEY: SED Scale in bold, comparison scales and subscales in normal print and *italic*.

TABLE 9.10 : CONCURRENT VALIDITY CORRELATIONS BETWEEN SEDS AND OTHER MEASURES WITHIN THE ANOREXIC, BULIMIC AND CONTROL GROUPS.

SEDS/ <i>comparison</i>	GROUP		
	<u>ANOREXIC</u>	<u>BULIMIC</u>	<u>CONTROL</u>
Anorexic Cognitions/ <i>EAT-40</i>	.726*	.473*	.689*
Anorexic Behaviour/ <i>EAT-40</i>	.645*	.668*	.761*
Bulimic Cognitions/ <i>BITE</i>	.761*	.689*	.790*
Bulimic Behaviours/ <i>BITE</i>	.760*	.747*	.678*
Perceived External Control/ <i>Health Locus of Control</i>			
<i>Internal Subscale</i>	-.393**	-.539*	-.177 ^{ns}
<i>Powerful Others Subscale</i>	.695*	.612*	.255***
<i>Chance Subscale</i>	.246***	.370**	.044 ^{ns}
Low Assertiveness/ <i>Assertiveness Inventory</i>	-.710*	-.571*	-.711*
Low Self-Esteem/ <i>Index of Self-Esteem</i>	.840*	.611*	.674*
Self-Directed Hostility/ <i>Automatic Thoughts Total</i>	.780*	.514*	.542*
<i>Negative Self Image+ expectation</i> <i>Subscale</i>	.705*	.599*	.537*
Personal Feelings Questionnaire <i>Shame Subscale</i>	.870*	.877*	.674*
<i>Guilt Subscale</i>	.865*	.839*	.713*
	.803*	.790*	.478**

Key: SED Scale in bold, comparison scale or subscale in normal print and *italic*.

* p < .001

** p < .01

*** p < .05

9.20 Test-Retest Reliability.

Correlating the scores of the amalgamated groups on the SEDS administered on two occasions three weeks apart resulted in the test-retest correlations presented in Table 9.11.

As shown, test-retest correlations were very high and highly significant.

When the test-retest correlations were calculated separately for the three groups, results revealed that the high and significant correlations held in the case of all scales and all groups. See Table 9.12.

TABLE 9.11: TEST-RETEST CORRELATIONS FOR THE EIGHT SEDS.

<u>Scale Name</u>	<u>r</u>	<u>probability</u>
Anorexic Dietary Cognitions	.966	<.001
Anorexic Dietary Behaviour	.901	<.001
Bulimic Dietary Cognitions	.937	<.001
Bulimic Dietary Behaviour	.934	<.001
Perceived External Control	.850	<.001
Low Assertiveness	.908	<.001
Low Self-Esteem	.922	<.001
Self-Directed Hostility	.935	<.001
.....		
Overall scores	.983	<.001

TABLE 9.12 : TEST-RETEST CORRELATIONS FOR THE EIGHT SEDS WITHIN THE ANOREXIC, BULIMIC AND CONTROL GROUPS.

SCALE NAME	GROUP		
	<u>ANOREXIC</u>	<u>BULIMIC</u>	<u>CONTROL</u>
Anorexic Dietary Cognitions	.947	.855	.819
Anorexic Dietary Behaviour	.827	.804	.823
Bulimic Dietary Cognitions	.833	.825	.879
Bulimic Dietary Behaviour	.822	.898	.877
Perceived External Control	.771	.854	.637
Low Assertiveness	.829	.844	.763
Low Self-Esteem	.931	.840	.793
Self-Directed Hostility	.839	.835	.711
Overall Score	.959	.873	.939

Note: All correlations are significant at the $p < .001$ level.

9.21 Correlations Between The SEDS And Clinical Ratings - Clinical Rating Validity.

Clinical rating validity was calculated by correlating the clinical ratings for each SED Scale and the actual scale score. However, it should be noted that data were not provided for 15 patients, due to staff in one centre refusing to complete the rating forms. This refusal was part of a general decision made by those staff in reaction to a dispute unconnected to the present study. Consequently, the following correlations are based on scores for 32 anorexic patients and 28 bulimic patients.

When the data of both the clinical groups were combined, high order and significant correlations were found between clinical severity ratings and the scales of anorexic dietary behaviour ($r = .55, p < .001$); anorexic dietary cognitions ($r = .53, p < .001$); bulimic dietary behaviour ($r = .69, p < .001$); and bulimic dietary cognitions ($r = .65, p < .001$). Lower order, but significant correlations were found between the clinical ratings and the scales of low assertiveness ($r = -.23, p < .05$); low self-esteem ($r = -.29, p = .05$); and self-directed hostility ($r = .25, p < .05$). There was a non-significant correlation between clinical rating and the SED scale of perceived external control.

Calculating the ratings and scale scores of the anorexia nervosa groups alone indicated that there were again high order, significant correlations between the clinical ratings and the dietary scales of anorexic dietary behaviour ($r = .32, p < .05$); anorexic dietary cognitions ($r = .41, p = .007$); bulimic dietary behaviour ($r = .62, p < .001$); and bulimic dietary cognitions ($r = .55, p < .001$). There was also a significant correlation between the clinical ratings and scores on the

low self-esteem scores ($r = -.31, p < .05$). Correlations between clinical ratings and perceived external control, low assertiveness, and self-directed hostility were non-significant; though all correlations were in the expected direction.

Calculating the ratings and scale scores in the bulimia nervosa group alone indicated that there were significant correlations between clinical ratings and the four dietary scales of anorexic dietary behaviour ($r = .33, p < .05$); anorexic dietary cognitions ($r = .33, p < .05$); bulimic dietary behaviour ($r = .50, p < .01$); and bulimic dietary cognitions ($r = .52, p = .001$). There was also a highly significant correlation between clinical rating and low assertiveness ($r = .49, p < .01$). The correlations between clinical ratings and perceived external control, low self-esteem, and self-directed hostility were non-significant; though were in the expected direction.

SECTION 3: DISCUSSION

9.22 Background To Study Two And Aims.

Chapter Three raised the research issue that if primary eating disorder patients are characterised by perceived external control, low assertiveness, low self-esteem, and self-directed hostility, then it is important that these characteristics can be appropriately measured. Chapter Five compiled five requirements for a comprehensive assessment measure which would incorporate those characteristics along with dietary/behavioural and dietary/emotional items.

Review of the currently available assessment measures revealed that there is no such comprehensive measure available to clinicians. In addition, the standard of currently available assessment measures was found to be weak in terms of development methodology and statistical standardisation.

Consequently, the aim of this study was to develop and standardise a comprehensive measure of eating disorders. The measure would enable assessment of the dietary/behavioural aspects of both disorders and also the cognitive/emotional aspects of perceived control, low assertiveness, low self-esteem, and self-directed hostility. Also included are scales of dietary cognitions. The measure has been named The Stirling Eating Disorder Scales (SEDS).

9.23 The Development Methods Of The SEDS.

The new measure assesses eight aspects of anorexia nervosa and bulimia nervosa: anorexic dietary cognitions, anorexic dietary behaviour, bulimic dietary cognitions, bulimic dietary behaviour, perceived external control, low assertiveness, low self-esteem, and

self-directed hostility.

The scales were developed according to a modified version of the Thurstone Method (Thurstone, 1928). This involved generating pools of items appropriate for each scale, submitting these pools to a panel of judges for rating; and selecting items on the basis of different severities and low ambiguity. There is no doubt that this method is time consuming. However, the fact that items must pass through a minimum of three processes ensures that the final items are both strong and highly applicable to the characteristic under measurement.

Though the Thurstone Method, as it stands, ensures a rigorous selection process, the present development methodology furthered this by the inclusion of four modifications. Firstly, the item pools were submitted to a face validity check and were assessed for reading ability age before submission to the judging panel. This ensured that the items were more likely to be pertinent or appropriately worded for the scale construct; and were also appropriate for use with all patients irrespective of age. This is important in the light of evidence that primary eating disorders can be diagnosed in children of prepubertal age (Crisp et al., 1980).

The second modification involved the rating of the item pools. The original Thurstone Method required judges to rate each item on a 1 - 11 scale. In the present study, this scale was reduced to 1 - 7, to reflect more recent evidence that seven point rating scales give the optimum accuracy, and that larger scales are more difficult to rate (Nunnally, 1978). This suggests that SEDS items are, not only less ambiguous, but very accurately rated in terms of degree of severity.

The third modification was to the criteria for item selection. the

original method requires, only, that final items are selected on the basis of representing different weights along the scale and having low ambiguity. The present study imposed further strict criteria, such as: no repetition within the scale; no repetition of other standardised scale items; and the approval of three clinical professionals as well as the researcher. This suggests that the items of the SEDS give broad coverage of the scale concept, are qualitatively different from previous measures, and also assess aspects of the disorders deemed highly pertinent by clinical professionals.

The fourth and final modification was the addition of a final item assessment check which investigated the frequency with which each item was appropriated to the correct scale. Judges were required to assign items to the scale they thought most relevant according to the item wording. Items were only retained if 60%+ of the panel allocated the item to the correct scale. This final validity check ensured that the items within each scale have high degree of scale-relevance, and are unlikely to be conceptually ambiguous.

Another point concerning the development methods, which is worthy of note, is the response rates of the two judging panels. The first panel delivered a response rate of 75% despite the fact that the requested task took considerable time (rating 235 items on the degree of severity indicated by the wording). This response rate cannot be compared to previous studies in the area of eating disorder measurement, as none have used this methodology. However, Dillman (1979) has reviewed sociological survey literature and reported a response rate of 68% for specialised populations. This suggests that the response rate for the first panel of this study was particularly high. The second panel

delivered a lower response rate of 65%, which is more in line with the findings of Dillman (1979). Such high response rates may reflect a perception among clinicians that such a measure is required for eating disorder patients. Alternatively, the higher response rates reflect the clinical/professional nature of the panelists. Having expertise in the area of the patients in question, and knowledge of the concepts to be measured, no doubt, rendered the task a matter of time rather than intellectual endeavour. Hence, the response was more enthusiastic than would usually be expected. Such responses endorse the suggestion of Koksai & Power (1990), that expert panellists are desirable.

9.24 The Scale Items.

Concerning the actual scale items, results have indicated that all scales conform to the two criteria of the Thurstone Scale. In the case of all eight scales the item weights (degree of concept-severity) covers the full range of the seven point scale. Further, all items are low in ambiguity.

It should be noted that Koksai & Power (1990) who selected four anxiety scales by the same method, imposed a further criteria. In that study, all four scales were required to have the same ranges, and the same mean score (weight). This was to enable direct comparison across the scales. However, Koksai & Power (1990) were designing a questionnaire to assess the four aspects of anxiety - The Four Systems Anxiety Questionnaire. As the four scales addressed four different but connected aspects of the same concept (anxiety), such cross comparison was a valid and necessary requirement. The SEDS are fundamentally different. These eight scales are designed to measure eight different concepts. The

concepts are connected in that they are all characteristic of eating disorder patients. However, it is not valid to directly compare levels of different conceptual scales. For example, a high level of perceived external control does not necessarily equate with high levels of low assertiveness. The two concepts are qualitatively and cognitively different. Hence, equality of mean scores across the scales were neither required nor applicable. It is feasible, that z scores could be computed to enable some form of statistical comparison across scale scores; though in the light of qualitative differences across the scales, especially the dietary/behavioural and cognitive/emotional scales, this is not a recommendation.

More important is the low ambiguity and appropriateness of the scale items. The results of the final scale-item validity check indicated that the SEDS items are promising on two counts. Results indicated that all but three of the items were allocated to the correct concept scale by over 60% of the judging panel. In the case of 59 (73%) items, there was a correct allocation by over 80% of the panel. In addition, this final check proved to be a valuable safety net, as demonstrated by the fact that three items required changing. These replacement items were also selected according to strict criteria. Consequently, it is apparent that the items of the SEDS are not only able to provide a wide ranging measure within each scale and are unambiguous; but they are also highly relevant to the scale concept.

9.25 Statistical Standardisation Of The Eight SEDS.

The psychometric assessment of the eight scales have also provided encouraging results. Firstly, it has been shown that the SEDS are not subject to bias due to the gender of the respondent. This is surprising in the light of previous evidence that women are more likely to display dietary/weight concern behaviours and cognitions/emotions (Rosen et al., 1988). This is, no doubt, explained by the item wording. The items were generated from clinical experience, from interview responses given by diagnosed anorexic and bulimic patients in another study, and from other scales which had discriminated between eating disorder subjects and male/female controls. Consequently, the SEDS items are likely to be very relevant to eating disorder patients, and thereby somewhat more 'extreme' in nature than items incorporated into measures developed for use with the general population. It is plausible, that the items of the SEDS assess a more extreme (pathological) degree of the given concept than non-eating disorder measures, and less likely to pick up the more subtle differences that would be expected within a non-clinical group, than would be expected between this non-clinical group and clinical patients. It should also be noted that this statistical check has not been reported for other currently available scales.

In addition to a lack of gender bias, the SEDS has also been shown to be free of bias caused by the positive or negative loading of the item wording. Correlating the items of different directions within each scale produced correlations ranging from .63 to .86, all of which were highly significant. This indicated that the responses to the items were not a function of the positive or negative nature of the item. Response bias is an inherent problem of such self-report measures (Corcoran & Fischer,

1987). Again, lack of bias in the SEDS may be due to the extreme nature of the item wording, whereby the items lead the respondent to think more carefully before answering. Such increased accuracy of response would avoid response bias. However, this notion would require further research before full verification could be claimed. It should be noted that the analysis of wording direction has only been reported for one other scale - the EDI (Garner et al., 1983d). In that study, similar, though slightly weaker, results were found, with average, within-scale correlations of $r = .68$ between items of different direction.

All eight SEDS have been shown to be internally consistent and reliable. This has been statistically demonstrated by two methods - split half correlations and Cronbach's Alpha. High split-half correlations and alphas were found both when calculated for the whole sample and also for individual groups. These results, which show a significant level of agreement within each scale, indicate that the ten items within each scale are measuring the same concept.

Concerning between group validity, the SEDS have been shown to discriminate between groups of eating disorder patients (both anorexic and bulimic) and a group of normal controls. As was expected, the anorexic and bulimic groups scored higher (more pathologically) on each of the eight scales. Differences on all eight scales were significant at the $p < .001$ level. This indicates that anorexic and bulimic patients perceive more external control, feel less assertive, feel lower in self-esteem, feel more hostility towards themselves, have more dysfunctional cognitions pertaining to food, and display more disordered eating than normal controls. In the light of Study One, this finding is not surprising; and will be discussed in more detail below under 'Broader

Issues'. More importantly, these validity checks indicate that the SEDS are successful in detecting these differences to a very high level of confidence. The ability to discriminate between clinical and non-clinical groups at such a high level, renders the SEDS comparable with the four well standardised measures noted in Chapter Five. The EDI (Garner et al, 1983d, and the BULIT (Smith & Thelen, 1984) both discriminate between eating disorder and normal control groups at the $p < .001$ level; and the BITE (Henderson & Freeman, 1987) discriminates between the same groups at the $p < .05$ level. Obviously, the SEDS will require further validation studies, to assess the ability to discriminate between eating disorder and non-clinical dietary/weight concern groups. From the findings of Study One, it is reasonable to assume that the SEDS will discriminate between eating disorder patients and obese dieters and non-obese dieters. Hence, the decision not to include these groups in the present study, which would serve only to replicate Study One. However, further research is required to assess the ability of the SEDS to discriminate between clinical eating disorders and sub-clinical manifestations of the disorders, and also other dietary/weight concern groups, such as restrained eaters. As such an investigation would comprise a study in its own right, and also lower the required criteria, as discussed in Chapter Three and Study One, this investigation was not within the parameters of the present study.

The results of the between group validity checks have also illustrated differences and similarities between the two eating disorder groups. It was found that the two eating disorder groups were significantly different on the four disorder-specific scales - anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary

behaviour, and bulimic dietary cognitions. This suggests that the SEDS is not only able to detect differences between eating disorder patients and controls; the SEDS are also able to detect differences between the two diagnostic types in terms of the behaviour they manifest and the cognitions/emotions they have about those dietary-behaviours. However, these differences may be a function of the strict diagnostic criteria maintained throughout the project. It is quite likely that the inclusion of mixed syndrome patients or bulimic anorexic patients would have clouded the distinction between the groups.

No significant differences were found between the groups on the four cognitive/emotional scales - perceived external control, low assertiveness, low self-esteem, and self-directed hostility. This indicates that the SEDS also measures cognitive/emotional features which are common to both patient types. The implications of this pattern of differences and similarities between the two clinical groups will be discussed below under 'Broader Issues'.

Concerning concurrent validity, the eight SEDS have been statistically compared to seven well standardised measures of anorexic attitudes/behaviour, bulimia, perceived control, assertiveness, self-esteem, and self-directed hostility in terms of guilt, shame and self-criticism. Consistently high correlations were found between the SEDS and all comparison measures indicating a significant relationship between the measures. This suggests that the SEDS are valid in that they assess what they are purported to assess. This suggestion is further exemplified by the fact that none of the SEDS correlated more highly with a measure other than its direct comparison measure. For example, a higher order correlation was found between the SEDS low self-esteem

scale and the Index of Self-Esteem, than between the low self-esteem scale and any other measure. It was notable, that while the correlations between the perceived external control scale and the Multidimensional Health Locus of Control Scales were significant; these were of lower order than the other correlations. This may indicate a lower degree of accuracy in the SEDS perceived external control scale than is found in the other seven scales. However, the fact that the perceived external control scale did not correlate more highly with any of the six other measures does contradict this notion. It is more likely that the perceived external control scale and the Health Locus of Control Scales, though both measures of perceived control, measure fundamentally different aspects of this concept. Several theorists have postulated that the eating disorder patients deficient sense of control is rooted in a perception of external control emanating from the family and from society (Bruch, 1978; Selvini-Palazoli, 1974). The items of the SEDS were designed to reflect this. This theoretical postulation, and the consequent applicability of the SEDS items, are supported by the fact that the highest correlation between the control measures, was found between the SEDS perceived external control and the control by powerful others subscale. It is quite feasible, that the perception of external control by powerful others and society is not generalised out to a perception of control by chance or a lack of personal control over health. Hence the correlations between perceived external control scale of SEDS and the 'control by chance' and 'control of self' subscales of the WHLOC measure were of lower order. This pattern is illustrated to a greater degree when the correlations were calculated for the individual groups.

Another check of statistical standardisation was the calculation of test-retest reliability. Results indicated that the two administrations of the eight SEDS yielded correlations which were of high order and highly significant. This indicates that the the eight scales are stable and reliable measures over a three week period; and are not subject to significant change due to extraneous variables. These results render the SEDS equal with two of the four meaures noted as well developed (BITE - Henderson & Freeman, 1987, $r = .86$; BULIT - Smith & Thelen, 1984, $r = .87$). such coefficients were not reported for the EAT-40 or the EDI.

The final check of statistical standardisation was the comparison of clinical ratings with scale scores on the SEDS. A consistent pattern was found, with high correlations found between clinical ratings and the four dietary scales; but low or non-significant correlations found between clinical ratings and the four cognitive/emotional scales. The low or non-significant correlations between clinical ratings and the four cognitive/emotional scales could be seen as indicative of low validity between clinical rating and score. However, the fact that there were high and significant correlations between clinical ratings and the four dietary scales does not support this contention. It is more likely that these low correlations reflect the nature of the clinical treatment of the patients recruited. It is possible that the clinical treatment is biased towards addressing the dietary/behavioural manifestations of the two disorders. As a corollary of this bias, the cognitive/emotional features of perceived control, low assertiveness, low self-esteem, and self-directed hostility are not being adequately addressed. This would explain the clinicians greater accuracy in rating the behavioural aspects of the patient as opposed to the cognitive/emotional aspects of

the patient. This contention could only be further investigated by comparison of the treatments provided in the five treatment centres involved in the project. As these treatment centres cooperated on the understanding that no such comparison would be undertaken, such investigation was not within the parameters of the present study. However, if this low clinical validity reflects a lack of treatment attention in the cognitive/emotional areas measured by the SEDS, then the applicability of treatment must be questioned. It was noted in Chapter Five, that perceived control, low assertiveness, low self-esteem, and self-directed hostility had all be noted as necessitating treatment. It, therefore, seems reasonable to suggest that further research is required to assess the extent to which these issues are addressed in treatment modalities; and the most efficacious method by which they can be addressed. Indeed, further investigation of the SEDS could include research into how these scales can assist in the introduction of these issues into treatment programmes, and enhancing communication between patient and therapist.

9.26 Broader Issues.

The principal aim of this study was to develop a new measure for primary eating disorder patients, designed to fill the measurement gaps and improve on the methodology of currently available measures. However, the present study has also given further support to the findings of Study One. Previous research (Williams et al., 1990) had indicated that an eating disorder group may be characterised by their perception of control, assertiveness, and hostility. Items also indicated that these patients may be characterised by low self-esteem. These characteristics

may serve to differentiate eating disorder patients, not only from normal controls, but also from individuals who display dietary/weight concern. However, weaknesses in that study rendered the results inconclusive. Review of the relevant research (Chapter Four) indicated that the existing research could throw no further light on the suggestions. Study One addressed these issues by comparing two primary eating disorder groups with two dietary/weight concern groups and controls. It was found that the anorexic and bulimic groups could be differentiated from other dietary/weight concern groups on standardised measures of eating disorder, perceived control, assertiveness, and self-directed hostility. These two clinical groups were characterised by a greater perception of control by external forces; reporting themselves as less able to exert assertiveness within interpersonal communication and relationships; having less self-worth and self-respect; and feeling higher levels of guilt and self-criticism than comparison groups.

The results of the present study replicate these findings with new measures - at least in terms of the differences between primary eating disorder and normal controls. It has been found that there is a consistent significant difference, in the direction illustrated by Study One, between eating disorder and control groups on all eight scales of the new measure.

The second major issue raised by the results concerns the cognitive/emotional similarities between anorexic and bulimic patients. As noted above, results of the between group validity test has also indicated that the two primary eating disorder groups differed from each other only on the scales pertaining to dietary behaviour and dietary cognitions - anorexic dietary behaviour, anorexic dietary cognitions,

bulimic dietary behaviour and bulimic dietary cognitions. Group means were in a direction which is in keeping with the descriptions of these patients behaviour and dietary related thoughts. There were no differences found between the two primary eating disorder groups on the scales measuring perceived external control, low assertiveness, low self-esteem and self-directed hostility. Moreover, the means were very close. Again, these results replicate those of Study One which also found that these inter-disorder similarities were shown by already standardised scales.

On a broader level, the lack of differentiation between the two primary eating disorders calls to question the diagnostic and clinical distinctness of anorexia nervosa and bulimia nervosa. The two disorders have been officially recognised as two distinct disorders since 1980 (DSM-III, APA., 1980). On a behavioural level, the results of the present study support this diagnostic differentiation between the two patient types; the two eating disorder groups were found to be significantly different on the two scales of dietary behaviours and the two scales of cognitions/emotions pertaining to those behaviours. However, on the cognitive/emotional level, there were no differences found between the groups; there were no differences found on the scales of perceived external control, low assertiveness, and self-directed hostility. This indicates that the two types of patients are similar in their perception of being controlled by external sources, their perception of social ineffectiveness, their lack of self-worth and their hostile feelings towards the self. As noted in the discussion of Study One results, the behavioural differentiation between the two patient groups, coupled with the cognitive/emotional similarities, suggests that

anorexia nervosa and bulimia nervosa are different behavioural manifestations of the same underlying psychopathology. Further, the results support more recent contentions that the view of anorexia nervosa and bulimia nervosa as totally distinct from one another is "unwarranted and misleading" (Fairburn & Garner, 1986, pp. 411).

9.27 The Scope And Limitations Of The Stirling Eating Disorder Scales.

As noted above the SEDS have been presented as a new measure to assess the behavioural and cognitive characteristics of anorexia nervosa and bulimia nervosa, which are not addressed by currently available measures.

The SEDS have behavioural scales which assess the dietary-behaviours of both anorexia nervosa and bulimia nervosa; and also the specific cognitions/emotions associated with those dietary-behaviours. Consequently, the scales are applicable for use with patients of both disorder types, and also with patients displaying features of both diagnostic types - mixed syndrome patients. Clinicians may opt to exclude the dietary-behaviour and dietary-cognition scales which are deemed inapplicable to the patient's diagnosis. For example, it may be considered inappropriate to administer the scales of bulimic dietary behaviour and bulimic dietary cognitions to a patient diagnosed as a restricting anorexic. However, in the light of evidence that 40%+ of anorexic patients report bulimic episodes, and the evidence of a mixed syndrome eating disorder, this practice is not recommended.

As a self-report measure, with a TRUE/FALSE response format, the SEDS are easily and quickly administered. There are a relatively large number of items in comparison to currently available measures. However, the

items are assured as easily read due to the check of readability. In addition, the response format facilitates a quicker response than the formats in which respondents chose between six fixed response options (Garner & Garfinkel, 1979; Garner et al., 1983d), or those measure which require the respondents to read several statements and choose the most appropriate (Smith & Thelen, 1984). It would seem logical that, in terms of demand upon the patient, the ease of reading and ease of response would compensate for the elevated number of items.

Further, to the response format, the true/false option with the usual 0-1 scoring system, has been criticised for creating a gravitational effect towards the mean. The modified response format adopted for the scoring system of the SEDS avoids this. The practice of scoring the items according to the item weight, provides the clinician with a more subtle (and accurate) impression of the patient's position along the scales from mild to severe. However, it should be noted that the original 0-1 scoring system can be utilised if preferred by the clinician.

Being a self-report measure, the SEDS enables the clinician to attain a relatively rapid impression of the patient's profile in the areas measured. In addition, there is no training required to facilitate administration and scoring. However, depth and detail is not a features of self-report measures. Consequently, use of the SEDS is not appropriate for clinical situations in which very detailed information and nuances of the patient's behaviours and attitudes/perceptions are required. Such data is better obtained through interview.

As noted by Cooper and Fairburn (1987) interview measures can provide the clinician with a broad and detailed clinical impression of the

patient. Unfortunately, interview schedules such as the EDE (Cooper & Fairburn, 1987, and the CEDRI (Palmer et al, 1987) take a considerable amount of clinical time (1.5 hours in the case of the EDE) and also require specialised training of the interviewer. Thereafter, the detailed questions within the interview require detailed and lengthy coding. Such requirement of time and training render these measures as, not only specialised, but also less applicable to clinical situations which require repeated testing of the patient; such situations would include treatment monitoring.

It is suggested that as both methods of data collection have both advantages and disadvantages, they should be seen as complementary rather than in competition. That is, measures such as the SEDS should be seen as a complementary rather than an alternative method of patient assessment.

Despite such advantages of easy, rapid administration and scoring, the SEDS should also be considered subject to the major drawbacks of all paper-pencil measures. The main drawback concerns denial, bias or elaboration by the patient completing the questionnaire. The total honesty of the patient can never be fully assured (Garner et al., 1983d). However, it can also be argued that such denial may also be an inherent problem of interview schedules. It is likely that self-disclosure to a clinician, about such sensitive issues as self-worth and self-directed hostility may prove problematic to the patient. The more objective, formalised, and less personalised format of the self-report questionnaire may, indeed, enhance the patients reporting of behaviours and inner attitudes. In addition, in comparative research situations, the respondents denial or enhancement of characteristics can be

minimalised by the methods utilised in the present study. All respondents were assured of anonymity at the point of scoring, which was then demonstrated by the fact that questionnaires were presented and returned in unmarked envelopes. Also respondents were assured that none of the clinicians involved in their treatment would be privy to the responses. With such verbal and practical reassurance, it is less likely that the patients would feel the need to falsify their responses.

The SEDS are presented as relatively more comprehensive than other currently available measures as they cover the dietary/behavioural and cognitive/emotional characteristics of both anorexia nervosa and bulimia nervosa. However, this is not to claim that the SEDS provide exhaustive measurement of the two disorders. It is well noted that eating disorders are complex and multifaceted disorders (Garner & Bemis, 1985; Garfinkel & Garner, 1982). The SEDS covers eight of these aspects. Other features of anorexia nervosa and bulimia nervosa, such as body image and maturity fear, are also important characteristics of these patients. However, as these aspects are covered by previous measures (Garner et al., 1983d; Cooper, 1987), these are not integral to the SEDS. Therefore, it is necessary to echo the statement of Garner et al., (1983d)

"the EDI should not be considered to represent an exhaustive sampling of the psychopathological characteristics of anorexia nervosa" (pp. 32)

Likewise, the SEDS do not represent an exhaustive measure of all the characteristics associated with anorexia nervosa and bulimia nervosa. On the contrary, the SEDS have been developed to assess features of the disorders which have been shown to characterise the patients, but which

are not covered by currently available measures. The eight scales have been shown to be valid and reliable measure of those characteristics. Nevertheless, as in the case of other non-exhaustive measures, the SEDS should be used in conjunction with other feature-specific measures, in order to attain a broad clinical profile.

In line with this, the SEDS are not presented as a diagnostic measure. The SEDS, even in conjunction with other measures, cannot be viewed as a replacement for the detailed and more personalised clinical picture of a patient which is attained through the standard clinical interview. Firstly, the SEDS cannot assess clinical features which have a bearing on the disorder but which are not addressed by the scales. Secondly, a self-report measure cannot assess nuances within the patients behaviour and cognitions which may have an important bearing on their treatment. Such nuances can only be detected by on-going clinical discussion. Thirdly, a diagnostic measure requires the establishment of cut-off points. The definition of such points requires administering the measure to a large patient series, and also to patients of both pure and mixed syndrome. This was not within the scope of the present study.

Finally, any measure should be widely administered to a variety of criterion groups in order to establish the normative data. Again, the establishing of norms requires the testing of very high group numbers (hundreds in each), and across many groups. The SEDS will require such norms established. On the basis of findings and conclusions reached in Study One, it is suggested that the SEDS norms should be established for anorexia nervosa patients, bulimia nervosa patients, eating disorder patients displaying mixed diagnosis, subclinical patients, obese patients, dieters, normal control females and normal control males.

However, the numbers required and the criterion groups which should be targeted were not within the scope of this study. Likewise, the SEDS should be administered to American and European patients in order to establish norms for other countries, which may be different due to cultural differentiation.

To summarise, Chapter Five presented five requirements for a new measure for use with eating disorder patients in treatment. This measure was designed to measure anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility. The design method followed a modified version of the Thurstone Method of scale development, with the modifications designed to maximise the accuracy and minimise the ambiguity of the scale items. In addition, a modified scoring system has been utilised to avoid the bias towards the mean, associated with the original scoring system. The scales were administered to anorexic patients, bulimic patients, and normal controls. Psychometric testing of the scales has shown these to be consistent, valid, and reliable measures of the features addressed. As such, they are suggested to be an acceptable measure for use within comparative research and for the purpose of assessing key issues which are addressed within treatment. Nevertheless, the SEDS are not presented as an exhaustive measure of eating disorder pathology, are not intended as a replacement for clinical diagnosis, and the SEDS still requires the assessment and the establishing of normative data.

CHAPTER TEN.

STUDY THREE.

ASSESSMENT OF THE ABILITY OF THE STIRLING EATING DISORDER SCALES
TO DETECT CHANGE IN PATIENTS OVER TREATMENT TIME.

10.1 Background Summary.

Chapter Five noted that assessment measures for primary eating disorder patients should be applicable to treatment monitoring. Hence, the fifth requirement for such an instrument was that the measure was assessed in terms of ability to detect change in the patient's behaviours and cognitions over treatment time.

Review of the currently available assessment measures indicated that only two measures had been statistically checked for sensitivity to change over treatment time (EAT-40, Garner & Garfinkel, 1979; BITE, Henderson & Freeman, 1987); though neither are comprehensive in terms of assessing both disorders, nor do they assess perceived external control, low assertiveness, low self-esteem, or self-directed hostility. In response, the present study was designed to address this weakness in the currently available measures, and the consequent lack of a measure applicable to the treatment monitoring of both patient types, by further assessment of the Stirling Eating Disorder Scales. Consequently, the aim of the present study is as follows:

10.2 Aim Of The Present Study.

(1) The aim of this study is to assess the Stirling Eating Disorder Scales (SEDS) in terms of their sensitivity to detect change in the patients dietary-behaviours and cognitions/emotions over treatment time.

SECTION 1: METHODS.

10.3 SUBJECTS.

Eighty-one primary eating disorder patients were recruited and allocated to two groups on the basis of clinical diagnosis: (1) anorexia nervosa (n = 41) and (2) bulimia nervosa (40). Detailed group descriptions are presented in the results section. All patients were diagnosed by practicing clinical psychologists or psychiatrists according to DSM-III-R criteria. Each patient was undergoing either inpatient or outpatient treatment for their disorder at the times of testing. Patients at different stages of treatment were included in order to enable the generalisation of results to a broad patient group. Any patient who displayed co-morbidity, in that she met DSM-III-R criteria for another psychological disorder was not recruited. Likewise, any patient with organic brain disorder or addiction was not recruited. These recruitment criteria were imposed to ensure diagnostic purity within the groups.

10.4 RECRUITMENT METHODS.

Potential patient recruits were identified through patient treatment lists. These potential recruits were first checked in terms of diagnosis as noted above. Patients meeting the criteria were first sent letters of introduction. These letters introduced the study, gave a brief outline of the aim, stated that all research was approved by the clinician, assured the patients of confidentiality and the voluntary nature of the study. In addition, patients were assured that whatever their decision concerning participation, their treatment would not be affected. Finally, the patients were informed that the researcher (the author) would contact them within the following two weeks to explain the study

further and to ask if they were willing to take part. This initial stage led to the actual recruitment stage, which necessitated four different approaches to patients.

1. Wherever possible, patients were contacted by telephone. In that call they were given a short description of the Study and the nature of involvement which would be required. The voluntary nature of the study and the fact that involvement had no bearing on treatment was emphasised. If the patient agreed to take part, an appointment was arranged. Wherever possible, appointments were arranged to coincide with treatment appointments. When this was not possible, alternative hospital appointments were arranged and the patients travel expenses were reimbursed; or a home appointment was arranged.
2. In cases where agreeing patients were unable to make appointments, or did not wish to make appointments for reasons of privacy (2 cases), a more detailed briefing was given by telephone. Arrangements were then made for the patient to take part in the study by post.
3. Patients who could not be contacted by telephone were sent hospital appointment times with a cover letter explaining that this appointment would entail a briefing of the Study on which they could base their decision to participate in the Study. Response slips were attached to the letters which enabled the patients to indicate if they would attend the appointment, wished to make another appointment at given time, or did not wish to take part in any research. Stamped addressed envelopes were enclosed for return of these response slips.

4. Patients who were attending group therapy sessions were briefed and asked to participate in the group situation. Emphasis was put on the fact that participation was a matter of personal choice.

If a patient agreed to take part in the study, she was allocated a 'study number' which would be the identification number by which her questionnaires would be matched up over the following six months. The patient then completed a record form which gave her name, address and telephone number, hospital and clinician. Patients were assured that this information was for the use of the researcher only. Further, their telephone number would only be used if questionnaires were not returned and the researcher needed to check that these had arrived. As an extra precaution for privacy, patients were asked to asterisk the telephone number if a message was not to be left with anyone else answering the telephone (e.g. parent). In such cases the researcher would state that she was a friend from work/school calling to talk.

All participating patients then completed a standard consent form, stating that the method of the study was understood, that participation was voluntary and that they could withdraw at any point of the study. Those patients participating by post were sent the record form and consent forms and provided with a stamped addressed envelope for return.

Finally, all patients were presented with a time schedule which gave her times and the number of questionnaires she would be required to complete at each of the three stages.

10.5 MEASURES.

10.5 (i) Stirling Eating Disorder Scales (SEDS) (appendix L).

A full description of the SEDS is presented in Study Two.

10.5 (ii) Eating Attitudes Test - 40 (Garner & Garfinkel, 1979) (Appendix A).

A full description of The Eating Attitude Test - 40 (EAT-40) is presented in Study One.

The EAT-40 was selected to assess the sensitivity of the SEDS to detect change over treatment time, as it is the only measure of anorexia nervosa which has been assessed for sensitivity to clinical change over treatment time. Results indicated that the EAT-40 can discriminate between patients in treatment and patients who have been treated and deemed recovered. (See Chapter Five).

10.5 (iii) Bulimia Investigatory Test - Edinburgh (Henderson & Freeman, 1987) (Appendix M).

A full description of the Bulimic Investigatory Test - Edinburgh (BITE) is presented in Study Two.

The BITE was selected to assess the sensitivity of the SEDS to detect change over treatment time, as it is the only measure of bulimia nervosa which has been assessed for sensitivity to detect change over treatment time. Results indicated that the BITE scores reflected improvement in the patients as they progressed through a cognitive-behavioural treatment program (See chapter Five).

10.5 (iv) General Health Questionnaire - 28 (Goldberg & Hillier, 1979)

(Appendix G).

A full description of the General Health Questionnaire - 28 (GHQ-28) is presented in Study One.

10.5 (v) Personal Details Forms (Appendix H).

(a) First Assessment Stage.

For the purpose of obtaining details of demographics, eating disorder history, and treatment history all respondents completed a Personal Details Form (PDF). Questions pertained to age, height, weight, weight history, socioeconomic class, self-diagnosis, duration of disorder, duration of treatment, hospitalisations, diagnosis of any other psychological disorder, medication, and present weight position (gaining, stable, decreasing, fluctuating).

(b) Second And Third Assessment Stage.

At the second and third completions of the questionnaires, respondents were requested to give date of birth as back-up identification to the subject number; and present weight as an indication of dietary change. In addition, the respondents were asked to indicate how they felt they had responded to treatment since the last assessment stage. This rating was put on a 1 - 7 scale (much worse to much better). This rating was emphasised as voluntary.

10.5 (vi) Clinicians Checklist. (Appendix I).

In order to ensure uniformity of diagnosis, all clinicians recruiting patients were presented with two-page checklists - one for each patient approached. On the first page of these checklists, clinicians were required to state primary diagnosis. This would stand as the grouping

variable. On the second page, clinicians were required to indicate all DSM-III-R criteria met by the patient, even if this revealed symptom-cross-over between the two disorders.

10.5 (vii) Clinician Rating Checklist (Appendix S).

In order to compare any measured change in the patient with the clinicians impression of that change, clinicians were asked to complete Clinician Rating Scales (CRS) at each assessment stage. The CRS comprised the eight SEDS headings with adjacent 7 point rating scales. Clinicians were asked to indicate, on each scale, the present severity of each characteristic from 1 (low/mild) to 7 (high/severe).

10.6 PROCEDURE.

The patients were required to complete three assessment stages over six months. Consequently, each patient followed the following assessment schedule:

1. month 0 (at recruitment)
2. month 3 (3 months after recruitment)
3. month 6 (6 months after recruitment)

Detailed records were retained by the researcher in order to ensure that each patient completed each assessment stage at the correct time. In the case of non-postal respondents, appointments were made by telephone (wherever possible) or by appointment letter. These assessment stages were conducted at hospital appointment (with travel reimbursed), or at the patients home - whichever was most convenient for the respondent. In the case of postal respondents, the assessment packages were sent by post with a cover letter. This cover letter asked the patient to complete the enclosed questionnaires and return them by a given date. This date was always set 7 days ahead of the postal date. This ensured

that the patient completed the assessment package within 7 days of the 'month 3' and 'month 6' assessment dates.

At each assessment stage, the patients were presented with packages comprising:

1. Cover letter (postal subjects only)
2. Instructions
3. PDF (a) for assessment stage 1, (b) for assessment stage 2
4. Four questionnaires
5. Return envelope with subject number indicated (stamped and addressed for postal respondents).

The instructions, PDF, and questionnaires were presented in booklet form, though compiled in random sequence to avoid order effects. Respondents completed the assessment packages, sealed the return envelopes, and returned these to the researcher or the University of Stirling, as applicable.

Any postal assessment package which was not returned 5 days after the given return date was followed up by telephone or letter. These telephone calls or letters were carefully worded so as not to put undue pressure on the patient to proceed with the study when she did not wish to do so.

10.7 ANALYSIS.

All data were analysed by the SPSS-X computer statistics package (Copyright, 1983).

Any potential differences between the groups in terms of age, height, weight, duration of disorder, duration of treatment, and duration of present treatment phase was assessed by t-tests. Potential differences

between the groups on demographic variables such as marital status, socioeconomic class, and self-reported disorder were assessed by Chi Square tests. It was understood that any differences would be further analysed by correlating the discriminating variable with scale scores to assess the possibility of relationship between the two.

If a significant relationship was detected, covariance or non-parametric statistics would be proceeded with.

Sensitivity of the SEDS to change over treatment time was calculated by repeated measures ANOVA, with 'group' as the between-subjects effect and 'time' as the within-subjects effect. Group effects were further analysed by t-tests or Oneway Analysis of Variance (ANOVA), depending on the grouping methods. Time effects were further analysed by univariate F tests.

The ability of the SEDS to assess significant clinical change was assessed by calculating the number of patients in each group whose scores moved 2 standard deviations in the direction of functionality. This was in accordance with a formula promoted by Lindsay et al. (1987) and used by Power et al. (1990).

Finally, the relationship between clinical ratings and score movements over the six month assessment period was analysed. This relationship was investigated by Pearson Product Moment Correlations between the subtracted differences of clinical ratings for assessment stages 'month 0' and 'month 3'; and 'month 3' and 'month 6', with subtracted score differences for the same periods.

SECTION 2: RESULTS

10.8 Recruitment.

10.8 (i) Refusals.

A list of 85 patient names were put forward by clinicians for possible recruitment. Of these, 81 agreed to take part in the study. The four refusals were given for three different reasons. Two patients refused on the basis of 'not agreeing with research'; one refused as she was about to emigrate; and one refused as she was a public figure who used a stage name and did not wish to be identified by the researcher.

10.8 (ii) Attrition.

Table 10.1 presents the number of patients completing questionnaires across the three assessment stages. As shown, of the 81 patients recruited, 75 actually embarked on the study. Of the patients who failed to embark on the study, four had a change of mind after signing the consent forms and completing the patient record forms. Letters were sent to these patients assuring them that no further questionnaires would be administered. One patient suddenly left the country before completing the first assessment package. The sixth patient withdrew due to extreme reading and writing difficulties which were not previously known to the clinician.

Three patients withdrew before assessment at 'month 3'; all three were anorexic patients. In all three cases the patient had withdrawn from treatment, without notifying the clinician; and had left the area without leaving a forwarding address. These patients could not be traced, and were removed from the analysis.

A further two bulimic patients failed to complete assessment stage 'month 3'. Both were travelling abroad, and did not receive their

questionnaire packages. However, both patients rejoined the study by assessment stage 'month 6'.

TABLE 10.1: RECRUITMENT NUMBERS AND NUMBER OF PATIENTS COMPLETING EACH ASSESSMENT STAGE IN THE CHANGE OVER TREATMENT TIME STUDY.

<u>Assessment Stages</u>	<u>Anorexic Group</u>	<u>Bulimic Group</u>	<u>Total</u>
<u>Stage One (Month 0)</u>			
No. Recruited	41	40	81
No. Completing	39	36	75
<u>Stage Two (Month 3)</u>			
No. Completing	36	34	70
<u>Stage Three (Month 6)</u>			
No. Completing	36	36	72
Total Completing	36	36	72

10.9 Physical And Demographic Backgrounds To The Two Groups.

Table 10.2 presents the physical and demographic backgrounds to the 2 diagnostic groups.

T-tests revealed that there were no significant differences between the groups in terms of age ($t = -.25$, $p = .81$, $df = 70$) and height ($t = -1.8$, $p = .08$, $df = 70$). However, as expected the average weight of the two groups were significantly different ($t = -7.7$, $p < .001$, $df = 69$). Reference to the means indicated that the mean weights were in the expected direction; with the anorexic mean weight significantly lower than the bulimic group mean. Nevertheless, reference to the ranges indicate that there was a considerable overlap between the groups. The wide range of weight in the bulimic group rendered a proportion of that group in the anorexic weight range.

Concerning the demographics, Chi-squared tests indicated that there were no significant differences between the groups in terms of spread of marital status ($X^2 = .29$, $p = .86$, $df = 2$); or in the distribution across socio-economic class ($X^2 = 2.7$, $p = .59$, $df = 4$).

The lack of physical and demographic differences between the groups, with the exception of the expected differences in mean weight, led to the decision that further analysis of effects upon scores was unnecessary. Further, it was considered that the use of covariance or non-parametric statistics would not be required.

TABLE 10.2: SUMMARY OF DEMOGRAPHIC DATA FOR THE ANOREXIA NERVOSA AND BULIMIA NERVOSA GROUPS IN THE CHANGE OVER TREATMENT TIME STUDY.

<u>Measure</u>	<u>Anorexic</u>	<u>Bulimic</u>
<u>Age</u>		
Mean	24.7	25.0
SD	05.3	06.1
Range	16 - 43	15 - 48
<u>Height (cm)</u>		
Mean	159.9	162.8
SD	006.5	006.9
Range	150 - 173	150 - 180
<u>Weight (Kg)</u>		
Mean	45.0	62.9
SD	07.6	10.7
Range	34 - 59	42 - 86
<u>Marital Status</u>		
Married	08	10
Single	27	25
Seperated/Divorced	01	01
Widowed	00	00
<u>Socio-Economic Class</u>		
1	14	12
2	18	15
3	02	04
4	02	04
5	00	01

Note: Data is based on subjects who completed all assessment stages (ie. the groups at Month 6).

10.10 Disorder And Treatment Background Of The Two Groups.

A summary of the disorder and treatment background data for the two groups are presented in Table 10.3. Results of statistical comparisons on these variable are presented in Table 10.4

When patients were asked to give a self-diagnosis of their eating disorder there was a certain amount of disagreement with the clinical diagnosis given by the clinician using DSM-III-R criteria. The disagreement was more apparent in the anorexic group, with 45.7% of the patients disagreeing with the clinical diagnosis. Of these 13 (37.1%) claimed to display symptomology associated with both disorder types - mixed syndrome; and 3 (8.6%) claimed to be bulimic. There was more agreement within the bulimic group, with only 4 (11.2%) claiming to be anorexic or of mixed aetiology.

When asked to report the duration of their eating problems, irrespective of treatment duration, the anorexic group reported a lower mean duration than the bulimic group. However, a t-test revealed that this mean was not significantly different ($t = -1.19$, $p = .24$, $df = 70$). Reference to the ranges indicated that both groups had a very wide range of duration of eating problems, with both groups comprising patients who claimed to have had eating problems for over 15 years.

There was no difference between the groups in terms of the total duration of treatment ($t = 1.09$, $p = .28$, $df = 70$). However, reference to the ranges indicated that the range of treatment duration in the anorexic group was almost twice that of the bulimic group. Patients in the anorexic group had been in treatment (not continuous) for up to twenty years; while the longest treatment duration in the bulimic group was 8 years 10 months.

Duration of the present phase of treatment was also comparable between the two groups ($t = .01$, $p = .98$, $df = 67$).

At assesment stage 'month 0', patients were also asked to report weight status - whether weight was going up, stable, going down, or flutuating - at the first assessment stage. Chi-squared showed significantly different patterns in the groups ($X^2 = 9.12$, $p < .05$, $df = 3$). Reference to the frequencies indicated that this significant effect was due to the fact that 47% of the anorexic group were gaining weight; while there was a roughly equal distribution of weight status across the categories in the bulimic group.

History of hospitalisation revealed significantly different patterns between the groups. A significantly higher proportion of the anorexic group had been hospitalised for their disorder ($X^2 = 15.2$, $p < .001$, $df = 1$). Likewise, a higher proportion of the anorexic group were inpatients at the time of the first assessment ($X^2 = 4.9$, $p < .05$, $df = 1$). However, at the end of the testing period, the groups were comparable in that only 2 anorexics and 1 bulimic were inpatients. The results of all statistical comparisons are presented in Table 10.4.

TABLE 10.3: EATING DISORDER AND TREATMENT BACKGROUND OF THE TWO PATIENT GROUPS IN THE CHANGE OVER TREATMENT TIME STUDY.

<u>Measure</u>	<u>Anorexic</u>	<u>Bulimic</u>
<u>Self-Diagnosis</u>		
Anorexic	19 (54.3%)	02 (5.6%)
Bulimic	03 (8.6%)	32 (88.9%)
Mixed Syndrome	13 (37.1%)	02 (5.6%)
<u>Duration of Eating Problems (months)</u>		
Mean	73.8	90.3
SD	54.0	63.2
Range	05 - 216	13 - 240
<u>Overall Duration of Treatment (months)</u>		
Mean	49.7	38.5
SD	33.0	33.0
Range	02 - 204	02 - 107
<u>Duration of Present Treatment (months)</u>		
Mean	14.1	14.0
SD	13.4	15.5
Range	01 - 60	01 - 84
<u>Weight Status</u>		
Going up	17 (47.2%)	07 (20%)
Going down	04 (11.1%)	04 (22.9)
Stable	13 (36.1)	12 (34.3%)
Fluctuating	02 (5.6%)	08 (22.9%)
		1 = missing data
<u>Ever Hospitalised</u>		
Yes	22 (61.1%)	05 (13.9%)
No	14 (38.9%)	31 (86.1%)
<u>Number of Hospitalisations</u>		
1	12	02
2	02	01
3	01	00
4	01	01
5+	06	01
<u>Present Patient Status</u>		
Inpatient	10 (27.8%)	02 (5.6%)
Outpatient	26 (72.2%)	34 (94.4%)
<u>Patient Status at Assessment Stage Three</u>		
Inpatient	02 (5.6%)	01 (2.8%)
Outpatient	34 (94.4%)	35 (97.2%)

TABLE 10.4: RESULTS OF STATISTICAL COMPARISONS BETWEEN THE PATIENT GROUPS ON DISORDER AND TREATMENT BACKGROUND VARIABLES.

Variable	χ^2	df	p
Weight Status	9.12	3	<.05
Ever Hospitalised	15.2	1	<.001
Patient Status	4.9	1	<.05

Variable	t	df	p
Duration of Eating Problems	-1.19	70	ns
Duration of Total Treatment	1.09	70	ns
Duration of Present Treatment	0.01	67	ns

Note: Data for this Table and Table 10.3 is based on those patients who completed all assessment stages only, though was collected at assessment stage 'month 0'.

10.11 Relationships Between Chronicity, Duration Of Treatment And Eating Disorder Severity.

It was considered important to assess whether patients who reported greater chronicity of eating problems and longer treatment duration also displayed more severe primary eating disorder pathology. To test this, reported duration of disorder and treatment were correlated with the eight SEDS and the other three measures. The resulting correlation matrix revealed that, when all subjects were grouped, duration of eating problems correlated positively only with bulimic dietary behaviour and bulimic dietary cognitions; though the r 's were of very low order. Duration of eating problems was not significantly related to any other measure. The total duration of treatment or the duration of present treatment was not related to any measure. Correlations were also calculated for the individual groups. In the anorexic group, it was found that duration of eating problems correlated positively and more highly with bulimic dietary behaviour ($r = .40$, $p = .007$), and bulimic dietary cognitions ($r = .38$, $p = .01$). Likewise, the overall duration of treatment positively correlated with bulimic dietary behaviour ($r = .29$, $p = .05$) and bulimic dietary cognitions ($r = .27$, $p = .05$); though the correlations were of very low order. No further significant correlations were found within this group.

Within the bulimic group, the only significant correlations were found on the perceived external control scale. It was found that duration of eating problems, overall duration of treatment, and duration of present treatment phase were significantly, negatively correlated with perceived external control (r 's = $-.40$, $-.43$, $-.34$, $p < .05$ respectively).

No further significant correlations were found within the matrix, whether in the whole sample, or within the individual groups. Duration of eating problems, duration of overall treatment and duration of present treatment phase were not significantly related to anorexic dietary cognitions, anorexic dietary behaviour, low self-esteem, self-directed hostility, EAT-40 score, or the BITE score.

10.12 Cognitive/Emotional And Dietary/Behavioural Change In Patients Over Treatment Time.

It was considered that a blanket analysis of the whole group, though necessary, would not enable a detailed investigation of changes in the patients' scores over treatment time. Several variables were noted as having a possible effect on change over treatment time. Consequently, the sample was regrouped according to 7 variables, and re-analysed accordingly. The groupings were as follows:

1. Whole sample (only on SEDS total as overall indication of change).
2. Diagnostic group (anorexia nervosa/bulimia nervosa as defined by clinicians diagnosis, not self diagnosis).
3. Hospitalised and non-hospitalised patients (as indication of the physical severity reached by the patient during the disorder).
4. Duration of disorder (6 categories)
5. Duration of overall treatment (5 categories)
6. Duration of present treatment (5 categories)

The categories defined for groupings 4 - 6 were arbitrary, and designed to create groups which represented reasonable time ranges with 15 - 20 subjects in each group.

The following sections present the results of change over treatment time for all measures. Subheadings are according to the groupings noted above. With the exception of grouping 1 (whole sample), change over treatment time is analysed by repeated measures Analysis of Variance which defines any significant grouping effect, time effect and group/time interaction. The group effects are then further analysed by group mean scores and comparisons over the 3 assessment stages. The time effects were further analysed by univariate F tests which indicated the extent (significance) of change between assessment stages 'month 0' and 'month 3'; and 'month 3' and 'month 6'. This analysis is based on the subjects who completed all questionnaire packages, and therefore, does not include the data of the two bulimics who did not complete assessment stage 'month 3'.

10.12 (1) Whole Patient Sample.

Repeated measures ANOVA indicated that there was a significant effect of time on mean score changes on the SEDS ($F = 34.6, p < .001, df = 2, 134$); the EAT-40 ($F = 22.2, p < .001, df = 2, 134$); and the BITE ($F = 22.6, p < .001, df = 2, 134$). There was no significant effect of time on the GHQ. This evidence of significant change over time within the sample on all eating disorder specific measures, indicated that further analysis of the individual measures under the above groupings was valid.

10.12 (11) Patient Sample Grouped By Clinical Diagnosis.

(a) SEDS Total: (See Table 10.5/Figure 10.1).

There was no significant group effect on changes to SEDS total mean scores. However, there was a significant effect of time and group/time interaction. Analysis of the group effect indicated that both the anorexic group mean and the bulimic group mean decreased over time. The

bulimic group mean showed greater decreases between the assessment stages, such that, by assessment stage 'month 6', this group had a significantly lower mean than the anorexic group. It was notable that, though both group means decreased by more than 20 points between assessment stages 'month 0' and 'month 3', only the bulimic mean continued to show the same decrease between assessment stages 'month 3' and 'month 6'. The anorexic mean decreased by only 2.4 points between assessment stages 'month 3' and 'month 6'. This was investigated by analysing the individual scores over time. It was found that 10 (27.8%) of the anorexic group subjects, while displaying a decrease in score between assessment stages 'month 0' and 'month 3', went on to attain an increase in score between assessment stages 'month 3' and 'month 6'. These patients, thereby, had a final score which was approximately the same or higher than the score at assessment stage 'month 0'.

Analysis of time effects indicated that there was a statistically significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.5: CHANGE OVER TREATMENT TIME - SEDS TOTAL

	F	df	p
Group Effect	1.17	2,67	ns
Time Effect	39.4	4,134	<.001
Interaction	9.35	4,134	<.001

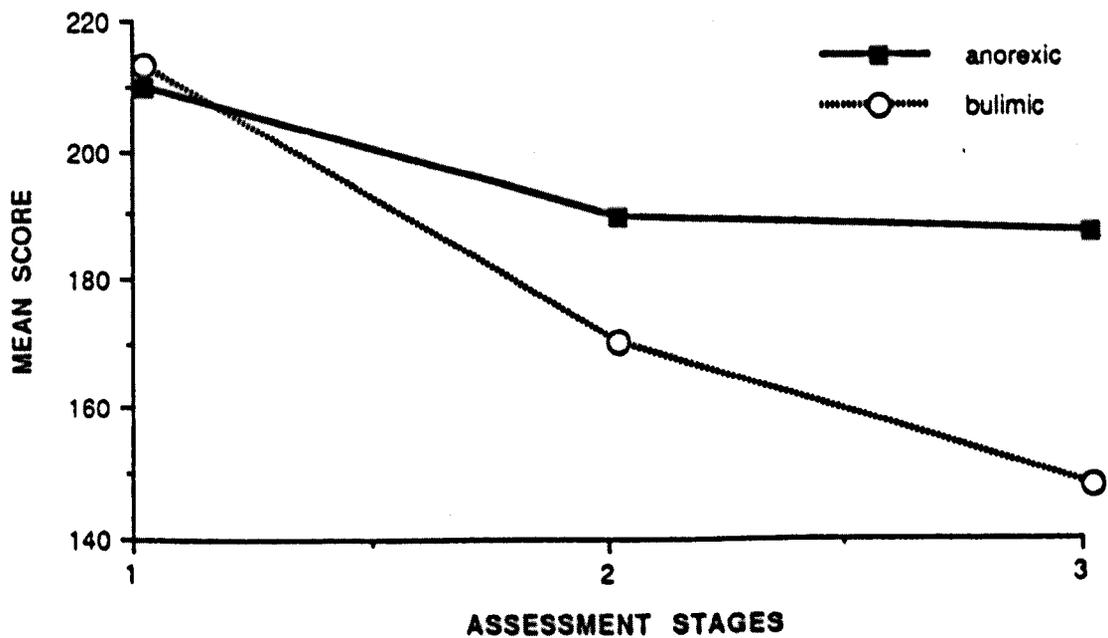
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	208.2	211.4	-.24	70	ns
Month 3	187.8	168.8	1.07	69	ns
Month 6	185.4	146.4	2.07	68	<.05

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	46.88	4,134	<.001
Month 3 v. Month 6	10.7	4,134	<.01

FIGURE 10.1: CHANGE IN GROUP MEAN SEDS SCORE OVER TIME



(b) Anorexic Dietary Cognitions Scale Of The SEDS.

(See Table 10.6/Figure 10.2).

Repeated measures ANOVA indicted that there was a significant group and time effect on the anorexic dietary cognitions scale, but no group/time interaction.

Analysis of the group effect indicated that both group mean scores decreased over treatment time, though the bulimic group had significantly lower mean scores at all assessment stages. A similar decrease pattern to the SEDS total was found. Both groups displayed a decrease between assessment stages 'month 0' and 'month 3', with the anorexic group displaying a greater fall. However, between assessment stages 'month 3' and 'month 6', the anorexic group mean decreased by less than 1 point, while the bulimic mean continued to fall a further 3.7 points. Again, analysis of the individual scores in the anorexic group indicated that 8 (22.8%) of that group attained a score decrease between assessment stages 'month 0' and 'month 3', then increased their score to the level of assessment stage 'month 6' or even higher.

Analysis of the time effect indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3'. However, there was no significant effect of time between assessment stages 'month 3' and 'month 6'.

TABLE 10.6: CHANGE OVER TREATMENT TIME - ANOREXIC DIETARY COGNITIONS SCALE.

	F	df	p
Group Effect	7.17	2,67	<.01
Time Effect	10.18	4,134	<.001
Interaction	.92	4,134	ns

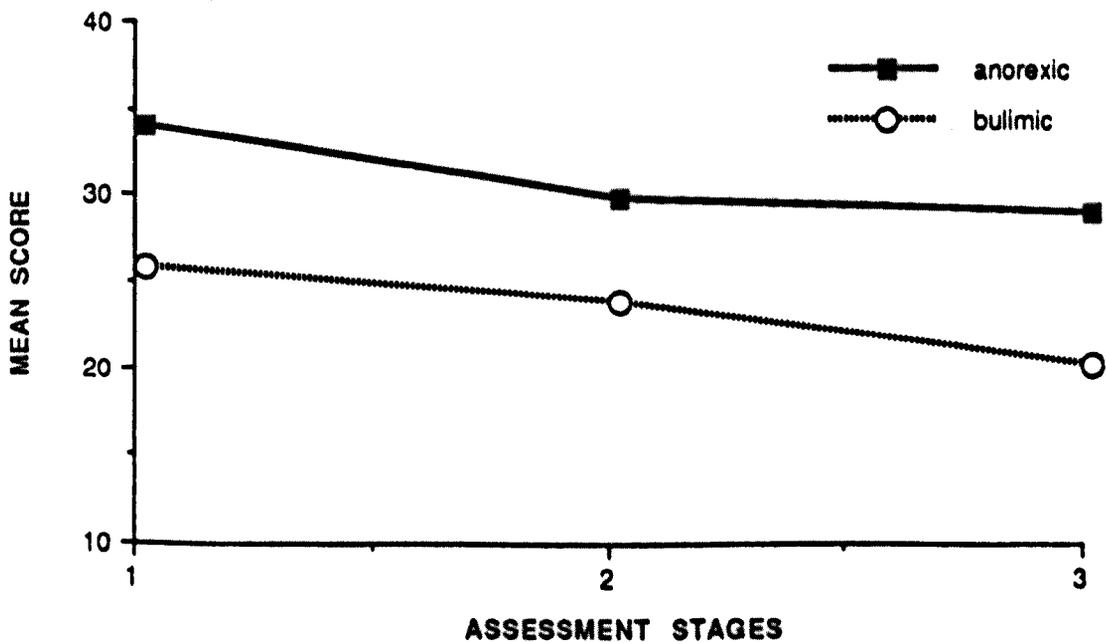
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	33.3	25.2	2.94	70	<.01
Month 3	29.24	23.3	1.9	69	.05
Month 6	28.5	19.6	2.77	68	<.01

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	15.68	4,134	<.001
Month 3 v. Month 6	0.02	4,134	ns

FIGURE 10.2: CHANGE IN GROUP MEAN ANOREXIC COGNITIONS OVER TIME



(c) Anorexic Dietary Behaviour Scale Of The SEDS.

(See Table 10.7/ Figure 10.3).

Repeated measures ANOVA indicated that there was a significant effect of group and of time, but no group/time interaction on the anorexic dietary behaviour scale.

Analysis of the group effect showed that the anorexic group mean decreased over time by 5.5 points. The bulimic group mean decreased, though only by 0.6 of a point. The bulimic group mean was significantly lower than the anorexic group mean at all 3 assessment stages, despite the decrease in the anorexic group mean. Again, the same pattern was evident in the movement of the anorexic group mean. While there was a 4.7 point decrease between assessment stages 'month 0' and 'month 3', the decrease between assessment stages 'month 3' and 'month 6' was only 0.8 of a point. Reference to the individual scores indicated that, as with the anorexic dietary cognitions scale, 8 (22.8%) of the subjects in this group showed score increase between assessment stages 'month 3' and 'month 6' such that they returned to approximately their original score or higher.

Analysis of the time effects indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', but not between assessment stages 'month 3' and 'month 6'.

TABLE 10.7: CHANGE OVER TREATMENT TIME - ANOREXIC DIETARY BEHAVIOUR SCALE.

	F	df	p
Group Effect	10.61	2,67	<.01
Time Effect	8.06	4,134	<.001
Interaction	2.28	4,134	ns

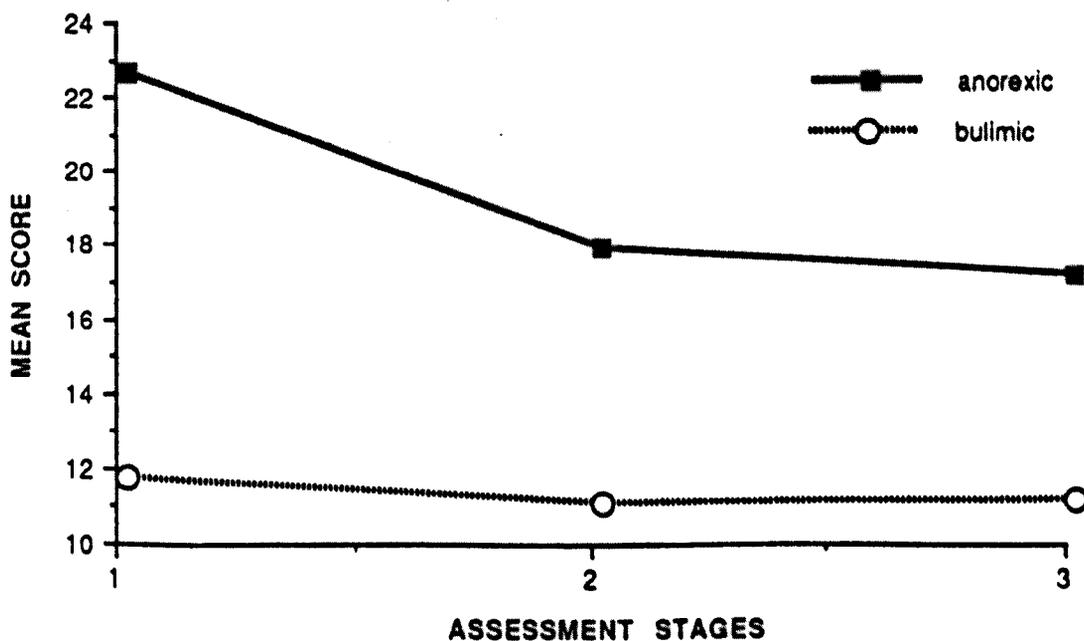
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	22.4	11.5	4.15	70	<.001
Month 3	17.7	10.8	2.38	69	<.05
Month 6	16.9	10.9	2.67	68	<.01

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	12.52	4,13	<.001
Month 3 v. Month 6	.30	4,134	ns

FIGURE 10.3: CHANGE IN GROUP MEAN ANOREXIC BEHAVIOUR OVER TIME



(d) Bulimic Dietary Cognitions Scale Of The SEDS.

(See Table 10.8/Figure 10.4).

Repeated measures ANOVA indicated that there was no significant effect of group, though this was almost statistically significant. There were significant effects of time and group/time interaction on the bulimic dietary cognitions scale.

Analysis of the group effects indicated that there were different patterns of mean changes over time. Reference to the means indicated that the anorexic group mean fluctuated by no more than 1.8 points. Individual scores were checked to ensure that this fluctuation reflected a lack of change within the group. This was not found to be the case. It was found that while 21 of the anorexic subjects showed no change or a decrease in score, 15 anorexics showed an increase in reported bulimic dietary cognitions. The bulimic group means showed a marked decrease over time, dropping 16.1 points. The decrease in the bulimic group mean was such that, though significantly higher than the anorexic mean at assessment stage 'month 0'; the bulimic group mean was not significantly higher than the anorexic group mean at stages 'month 3' and 'month 6'.

Analysis of the time effect indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.8: CHANGE OVER TREATMENT TIME - BULIMIC DIETARY COGNITIONS SCALE.

	F	df	p
Group Effect	3.63	2,67	.05
Time Effect	22.19	4,134	<.001
Interaction	27.39	4,134	<.001

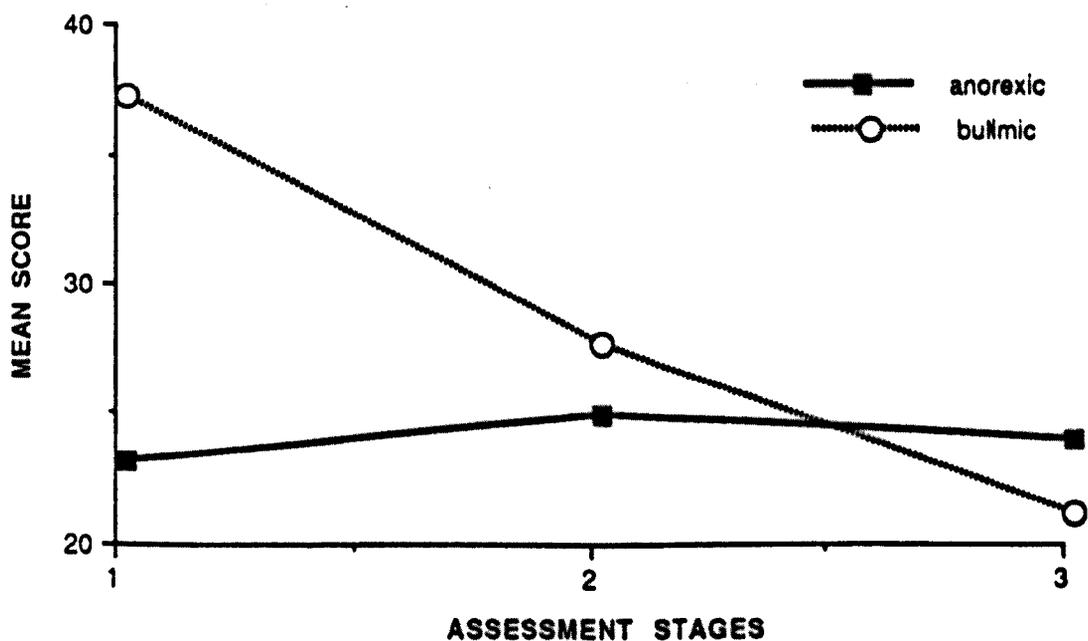
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	22.7	36.8	-5.05	70	<.001
Month 3	24.5	27.3	-1.56	69	ns
Month 6	23.6	20.7	.98	68	ns

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	29.8	4,134	<.001
Month 3 v. month 6	11.48	4,134	<.01

FIGURE 10.4: CHANGE IN GROUP MEAN BULIMIC COGNITIONS OVER TIME



(e) Bulimic Dietary Behaviours Scale Of The SEDS.

(See Table 10.9/Figure 10.5).

Repeated measures ANOVA indicated that there was no significant effect of group on the bulimic dietary behaviour scale, though there was a significant effect of time and group/time interaction.

Analysis of the group effects indicated that both group means changed over time but in different directions. The anorexic group mean increased by 3.9 points over the six months. This was further investigated by analysis of the individual scores. It was found that, in the case of 15 patients, their bulimic behaviour increased as their reported anorexic behaviour and cognitions decreased. The bulimic group mean was significantly higher than the anorexic group means at assessment stage 'month 0'. However, the bulimic group mean decreased across all 3 assessment stages, with an overall decrease of 12.1 points. As with the bulimic dietary cognitions scale, the drop in the bulimic group mean was such, that this group mean was not significantly higher than the anorexic group at assessment stages 'month 3' and 'month 6'.

Assessment of the time effects indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.9: CHANGE OVER TREATMENT TIME - BULIMIC DIETARY BEHAVIOURS SCALE.

	F	df	p
Group Effect	3.13	2,67	ns
Time Effect	6.59	4,134	<.01
Interaction	18.21	4,134	<.001

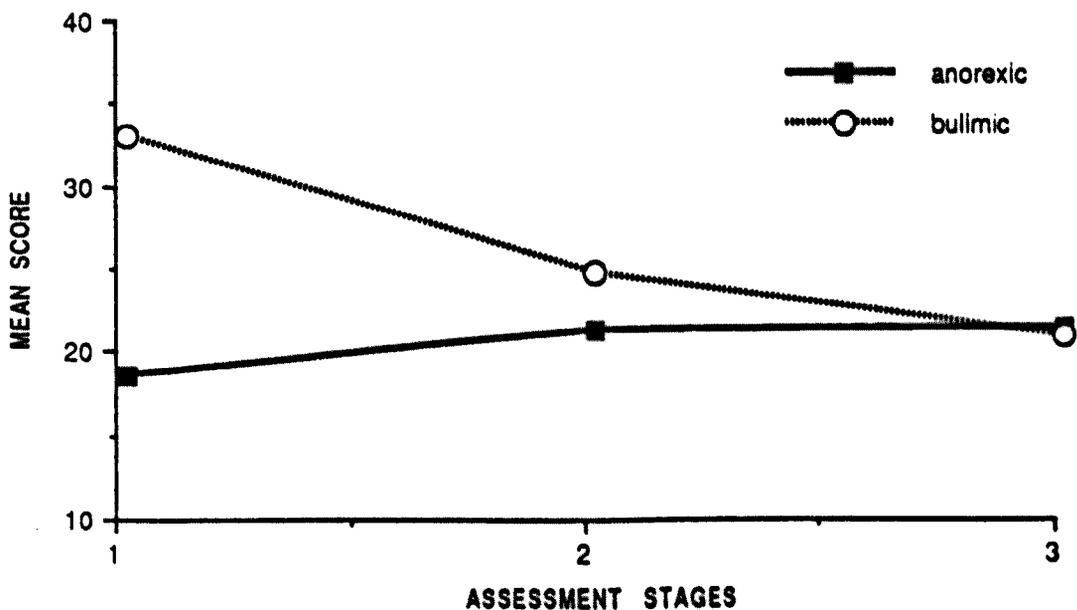
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	17.9	32.5	-5.11	70	<.001
Month 3	20.7	24.2	-.96	69	ns
Month 6	20.8	20.44	.09	68	ns

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	9.58	4,134	<.01
Month 3 v. month 6	5.54	4,134	.05

FIGURE 10.5: CHANGE IN GROUP MEAN BULIMIC BEHAVIOURS OVER TIME



(f) Perceived External Control Scale Of The SEDS.

(See Table 10.10/Figure 10.6).

Repeated measures ANOVA indicated that, on the perceived external control scale, there was a significant effect of group and of time, but no group/time interaction.

Analysis of the group effect indicated that the means of both groups changed across time, and did not differ from each other at any of the 3 assessment stages. Reference to the means revealed a similar pattern of changes over time in the 2 groups. Both group means decreased between assessment stages 'month 0' and 'month 3'. However, both group means then increased between assessment stages 'month 3' and 'month 6'; though the means did not return to the levels of assessment stage 'month 0'.

Analysis of the time effects indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.10: CHANGE OVER TREATMENT TIME - PERCEIVED EXTERNAL CONTROL SCALE.

	F	df	p
Group Effect	3.80	2,67	.05
Time Effect	19.72	4,134	<.001
Interaction	1.45	4,134	ns

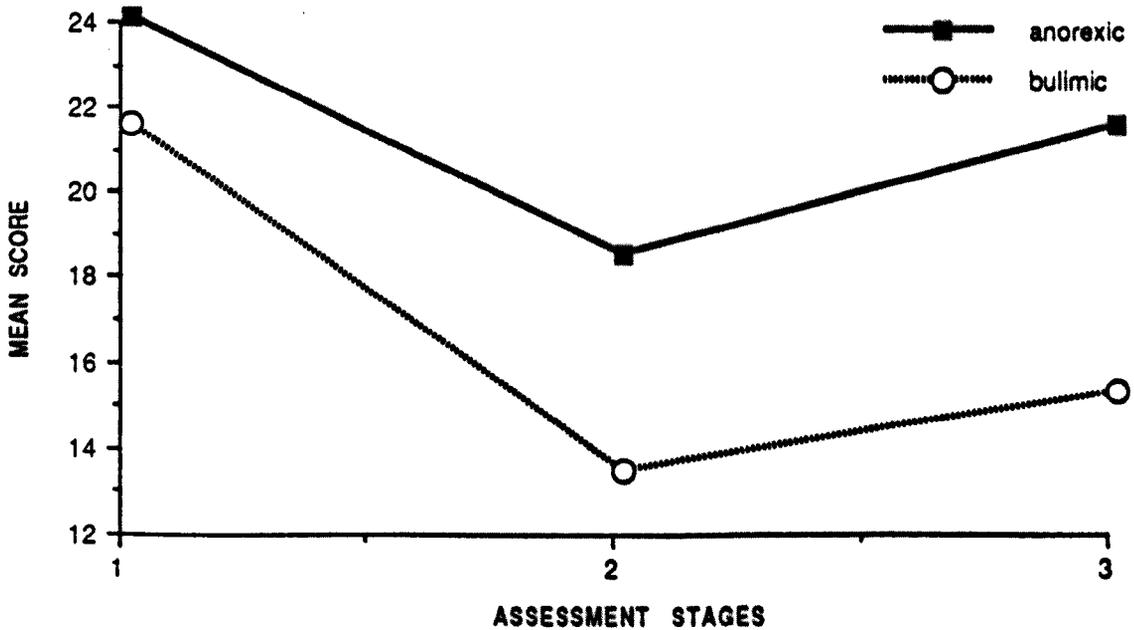
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	23.9	21.4	.92	70	ns
Month 3	18.3	13.2	2.25	69	ns
Month 6	21.4	15.1	2.25	68	ns

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	11.34	4,134	<.001
Month 3 v. Month 6	39.5	4,134	<.001

FIGURE 10.6: CHANGE IN GROUP MEAN PERCEIVED EXTERNAL CONTROL OVER TIME



(g) Low Assertiveness Scale Of The SEDS.

(See Table 10.11/Figure 10.7).

Repeated Repeated Measures ANOVA indicated that there was not a significant effect of group or group/time interaction, but a significant effect of time on the low assertiveness scale.

The group effect was not significant and the group means did not differ from each other at any of the 3 assessment stages. Reference to the group means indicated that both groups attained a decrease in mean score over the treatment time. The bulimic group displayed a greater decrease, consistently dropping approximately 2 points between each assessment stage. The anorexic group mean dropped 2.6 points between assessment stages 'month 0' and 'month 3', but showed only a 0.3 point decrease between assessment stages 'month 3' and 'month 6'.

Analysis of the significant time effects indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3'. However, there was no significant effect of time between stages 'month 3' and 'month 6'.

TABLE 10.11: CHANGE OVER TREATMENT TIME - LOW ASSERTIVENESS SCALE.

	F	df	p
Group Effect	.09	2,67	ns
Time Effect	14.08	4,134	<.001
Interaction	2.31	4,134	ns

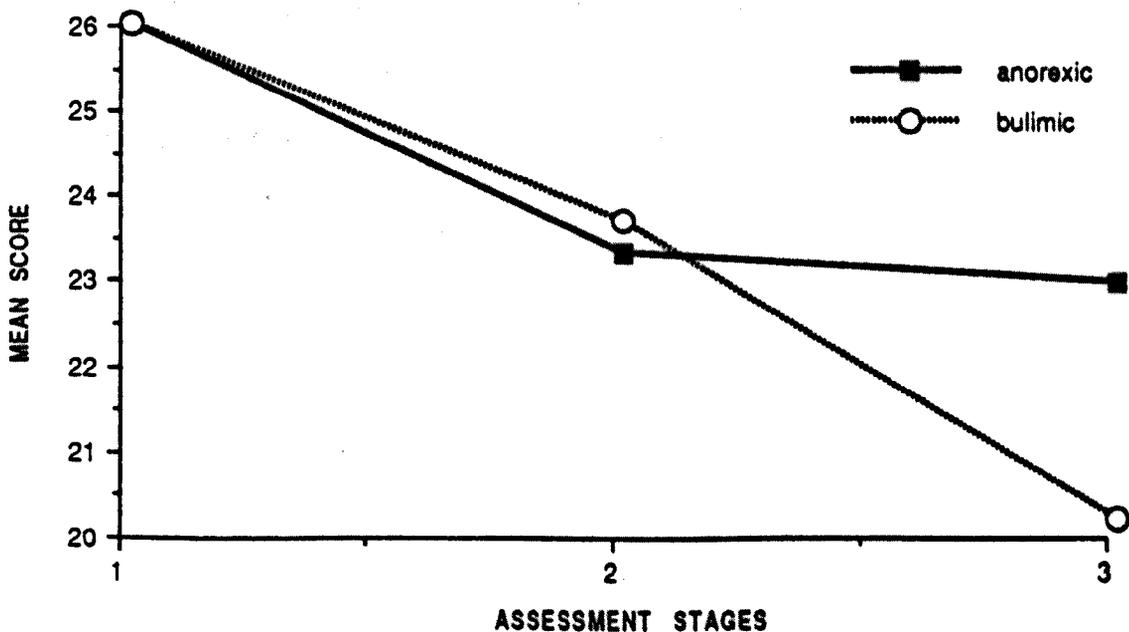
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	25.9	25.9	-.01	70	ns
Month 3	23.2	23.6	-.21	69	ns
Month 6	22.9	20.1	1.13	68	ns

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	19.71	4,134	<.001
Month 3 v. Month 6	5.3	4,134	.05

FIGURE 10.7: CHANGE IN GROUP MEAN LOW ASSERTIVENESS OVER TIME



(h) Low Self-Esteem Scale Of The SEDS.

(See Table 10.12/Figure 10.8).

Repeated measures ANOVA indicated that on the low self-esteem scale there were significant effects of group and time, but a non-significant group/time interaction.

Analysis of the group effects indicated that the means of both groups decreased over treatment time. The anorexic group mean decreased 2 points between assessment stages 'month 0' and 'month 3', though only dropped 0.5 points between assessment stages 'month 3' and 'month 6'. Reference to individual scores indicated that 10 (28.6%) anorexic subjects decreased their scores between assessment stages 'month 0' and 'month 3', only to increase these again between assessment stages 'month 3' and 'month 6'. The bulimic group, again, displayed a greater decrease in the means score, dropping 6.2 points, with a consistent drop in points between each assessment stage. The decrease in the bulimic group mean was such that, this group mean was significantly lower than the anorexic group mean at assessment stage 'month 6'.

Analysis of the time effect indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3'. There was no significant effect of time between assessment stages 'month 3' and 'month 6'.

TABLE 10.12: CHANGE OVER TREATMENT TIME - LOW SELF-ESTEEM SCALE.

	F	df	p
Group Effect	1.10	2,67	ns
Time Effect	19.48	4,134	<.001
Interaction	3.81	4,134	<.05

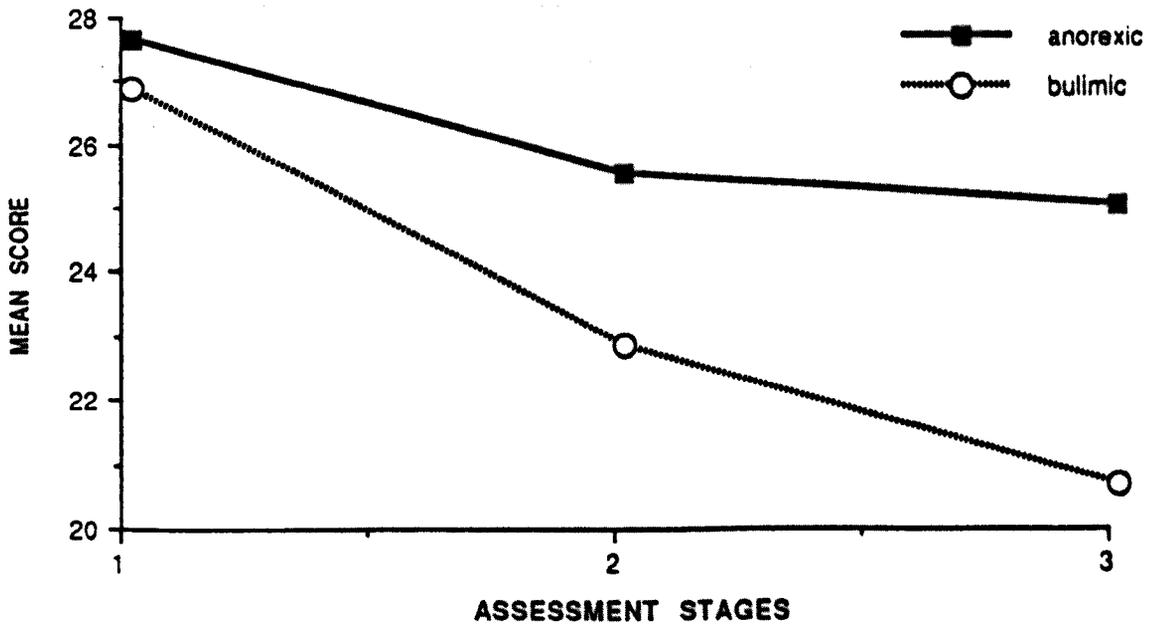
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	27.5	26.7	.45	70	ns
Month 3	25.4	22.7	1.18	69	ns
Month 6	24.9	20.5	1.77	68	.05

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	26.49	4,134	<.001
Month 3 v. Month 6	.04	4,134	ns

FIGURE 10.8: CHANGE IN GROUP MEAN LOW SELF-ESTEEM OVER TIME



(1) Self-Directed Hostility Scale Of The SEDS.

(See Table 10.13/Figure 10.9).

Repeated measures ANOVA indicated that, on the self-directed hostility scale, there were significant effects of group and of time, but no group/time interaction.

Analysis of the time effects indicated that both diagnostic group means decreased over treatment time. Reference to the means indicated that, though the anorexic group mean showed a marked decrease between assessment stages 'month 0' and 'month 3'; there was only a 0.5 point decrease between assessment stages 'month 3' and 'month 6'. The bulimic group mean showed a greater overall decrease, though again, this was attributable to the decrease between assessment stages 'month 0' and 'month 3'. The decrease in the bulimic mean between assessment stages 'month 3' and 'month 6', was only 1 point. However, the decrease in the bulimic group mean was such, that that group was significantly lower in self-directed hostility than the anorexic group by the time of assessment stage 'month 3'.

Analysis of the time effects indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.13: CHANGE OVER TREATMENT TIME - SELF-DIRECTED HOSTILITY SCALE.

	F	df	p
Group Effect	5.5	2,67	<.05
Time Effect	13.85	4,134	<.001
Interaction	.87	4,134	ns

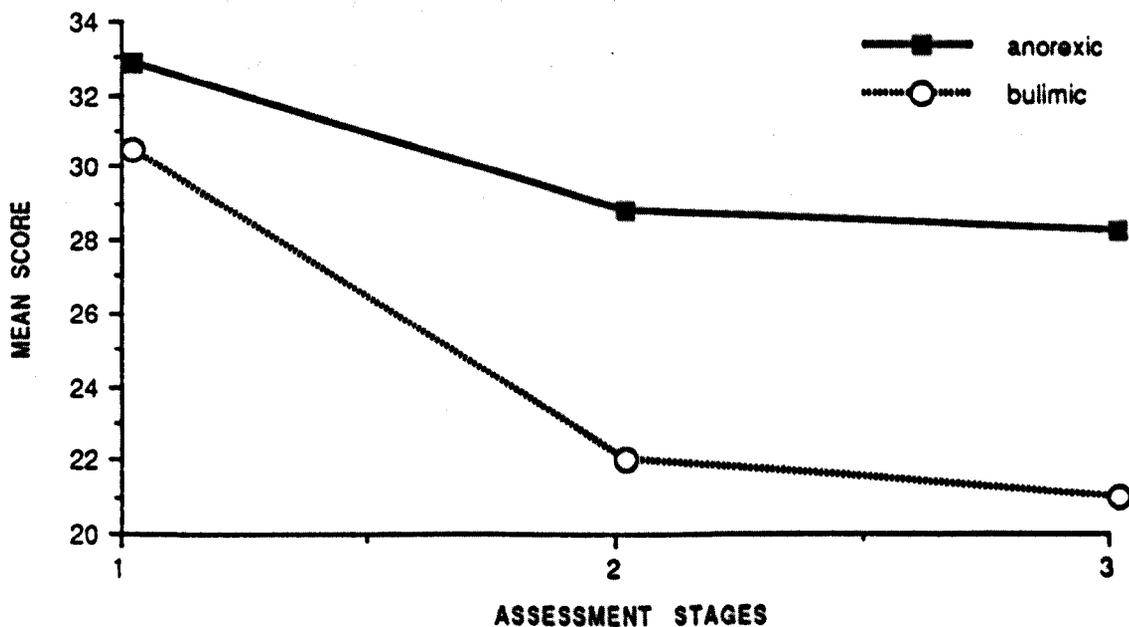
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	T	df	p
Month 0	32.6	30.2	0.98	70	ns
Month 3	28.5	21.7	2.32	69	<.05
Month 6	28.0	20.7	2.41	68	<.05

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	18.6	4,134	<.001
Month 3 v. Month 6	6.5	4,134	<.05

FIGURE 10.9: CHANGE IN GROUP MEAN SELF-DIRECTED HOSTILITY OVER TIME



(1) Eating Attitudes Test - 40. (See Table 10.14/Figure 10.10)

Repeated measures ANOVA indicated that, on the EAT-40, there were significant effects of group and of time, but no significant group/time interaction.

Analysis of the group effects indicated that both group means decreased over treatment time; though the bulimic group mean was significantly lower than the anorexic group mean at all 3 assessment stages. Reference to the anorexic group means indicated that there was an overall decrease of 11.1 points, though the bulk of this decrease was attained between assessment stages 'month 0' and 'month 3'. As in the SEDS scales, this group showed a markedly smaller decrease between assessment stages 'month 3' and 'month 6'. This was investigated through analysis of individual scores. It was found that the 8 (22.8%) anorexic subjects who increased their anorexic cognitions and behaviour scores on the SEDS between assessment stages 'month 3' and 'month 6', displayed the same score pattern on the EAT-40. The bulimic group mean score decreased by 7.9 points; though the pattern of decrease in that group was consistent across the assessment stages.

Analysis of the time effect indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3', and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.14: CHANGE OVER TREATMENT TIME - EAT-40

	F	df	p
Group Effect	9.12	2,67	<.01
Time Effect	22.14	4,134	<.001
Interaction	.49	4,134	ns

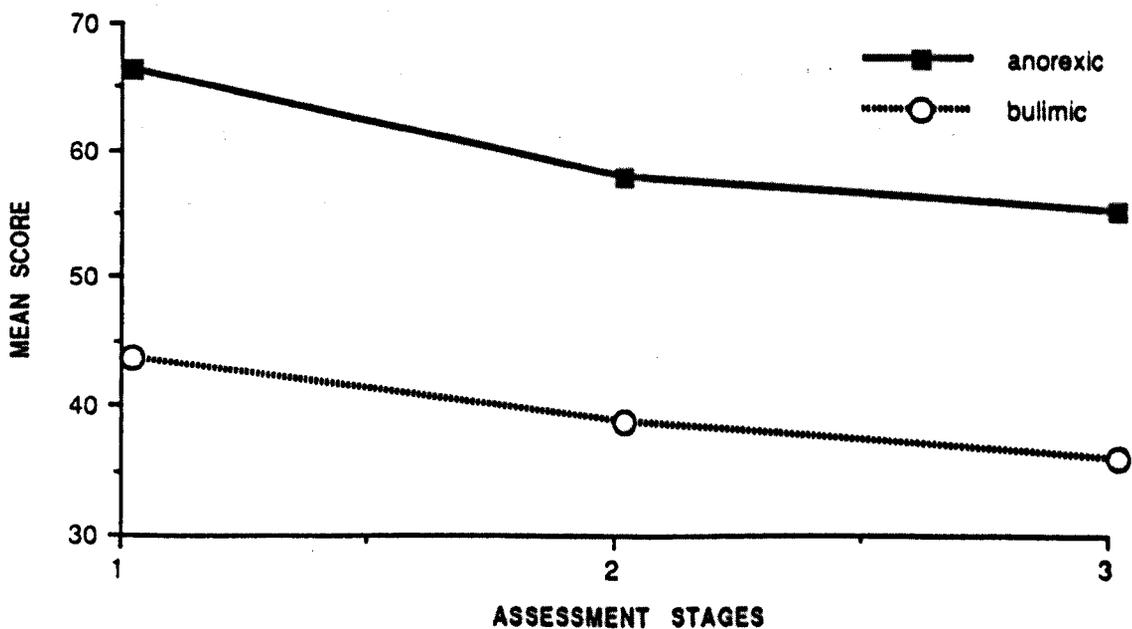
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	65.6	42.9	3.02	70	<.01
Month 3	57.11	38.05	3.06	69	<.01
Month 6	54.5	35.23	2.98	68	<.01

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	29.12	4,134	<.001
Month 3 v. Month 6	2.97	4,134	.05

FIGURE 10.10: CHANGE IN GROUP MEAN EAT-40 SCORE OVER TIME



(k) Bulimia Investigatory Test - Edinburgh. (See Table 10.15/Figure 10.11).

Repeated measures ANOVA indicated that, there was no significant effect of group, though there were significant effects of time and group/time interaction.

Analysis of the group effects indicated that both group means decreased over treatment time. The anorexic group mean decreased by only 1.3 points. Again, individual scores were analysed in this group to check the nature of the decreased mean. It was found that the 15 anorexic patients who had reported an increase in bulimic dietary cognitions and behaviour as measured by the SEDS, also showed an increase in score on the BITE. The bulimic group mean decreased by 11.6 points, and the decrease was consistent over the assessment stages. At assessment stage 'month 0', the bulimic group mean was significantly higher than the anorexic group mean. As with the SEDS bulimic dietary cognitions scale and bulimic dietary behaviour scales, the bulimic group mean decreased to the point where it was not significantly different from the anorexic group mean.

Analysis of the time effect indicated that there was a significant effect of time between assessment stages 'month 0' and 'month 3'; and also between assessment stages 'month 3' and 'month 6'.

TABLE 10.15: CHANGE OVER TREATMENT TIME - BITE

	F	df	p
Group Effect	.48	2,67	ns
Time Effect	28.07	4,134	<.001
Interaction	15.49	4,134	<.001

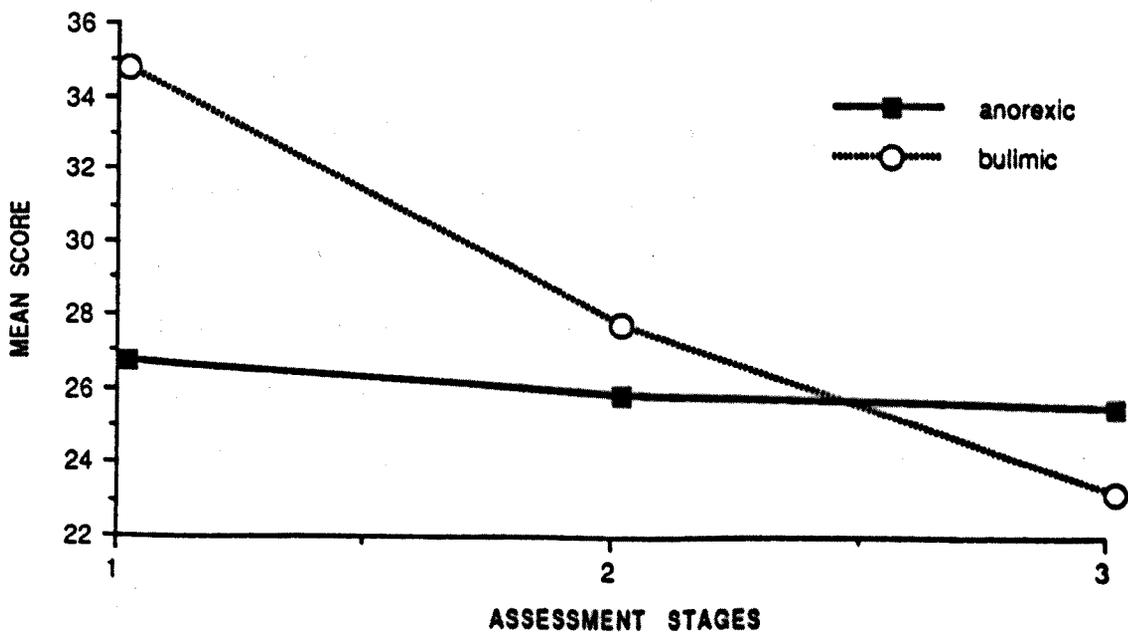
GROUP EFFECT

Assessment Stage	Anorexic Mean	Bulimic Mean	t	df	p
Month 0	26.44	34.5	-2.46	70.2	.01
Month 3	25.46	27.53	-.67	69.2	ns
Month 6	25.16	22.94	.64	68.2	ns

TIME EFFECT

Assessment Stage Comparison	F	df	p
Month 0 v. Month 3	36.58	4,134	<.001
Month 3 v. Month 6	11.75	4,134	<.01

FIGURE 10.11: CHANGE IN GROUP MEAN BITE SCORE OVER TIME



(1) General Health Questionnaire.

Repeated measures ANOVA indicated that there were significant effects of group, but no significant effects of time, or of group/time interaction

Analysis of the group effects indicated that there were no significant differences between the groups at assessment stages 'month 0' and 'month 3'; also both group means showed less than a 1 point decrease between these stages. However, the anorexic group mean increased by 3.9 points between assessment stages 'month 3' and 'month 6', such that it was significantly higher than the bulimic group mean. This was investigated by analysis of the individual scores in the anorexic group. It was found that 16 of the anorexic patients displayed an increase in GHQ scores over the six month period. Further, it was noted that 15 of these subjects were the anorexic subjects who displayed an increase in their scores on the bulimic dietary cognitions scale and bulimic dietary behaviour scale of the SEDS

10.12 (iii) Patient Sample Split By Patient Status (Inpatient/Outpatient).

Repeated measures ANOVA indicated that on the SEDS total score, there was no effect of group or of group/time interaction. The only significant effect was that of time. The same pattern was found for repeated measures analysis of the EAT-40 and the BITE. There were no significant effects of group, time or interaction on the GHQ. These results indicated that, as time was the only effect, further analysis of the scales for group and time effects under this grouping was not appropriate.

10.12 (iv) Patient Sample Split By Duration Of Eating Problems.

Repeated measures ANOVA indicated that on the SEDS total score, there was no effect of group or of group/time interaction. The only significant effect was that of time. The same pattern was found for repeated measures analysis of the EAT-40 and the BITE. There were no significant effects of group, time or interaction on the GHQ. These results indicated that, as time was the only effect, further analysis of the individual subscales and analysis of group and time effects under this grouping was not appropriate.

10.12 (v) Patient Sample Split By Duration Of Overall Treatment Time.

Repeated measures ANOVA indicated that, on the SEDS total score, there was no significant effect of group or of group/time interaction. The only significant effects was that of time. The same pattern was found for repeated measures analysis of the EAT-40 and the BITE. There were no significant effects of group, time or interaction on the GHQ. These results indicated that, as time was the only effect, further analysis of the individual subscales, and analysis of group and time effects under this grouping was not appropriate.

10.12 (vi) Patient Sample Split By Duration Of Present Treatment Phase.

Repeated measures ANOVA indicated that, on the SEDS total score there was no significant effect of group or of group/time interaction. The only significant effect was that of time. The same pattern was found in repeated measures ANOVA of the EAT-40 and the BITE. No significant effects of group, time or of group/time interaction was found on the GHQ. These results indicated that, as time was the only significant

effect, further analysis of the subscales and of group or time effects under this grouping was not appropriate.

10.13 Further Analysis Of Score Patterns Between The Three Assessment Stages.

Analysis of the eight SEDS scales and other measures, under the grouping by diagnostic group has indicated a recurring pattern. It has been noted that the magnitude of patient change between assessment stages 'month 0' and 'month 3', was not carried through into the treatment time between assessment stages 'month 3' and 'month 6'. This apparent pattern was further analysed by correlating the magnitude of change in the first 3 months of the study, to the magnitude of change in the second 3 months of the study. Again, this analysis was calculated for the whole sample, and then for the two diagnostic groups separately.

Correlations for the whole sample indicated that there were significant positive correlations between the first and second three month change on the SEDS total score. There were significant negative correlations on the anorexic dietary cognitions scale, the anorexic dietary behaviour scale, and the hostility scale. All other correlations were non-significant, and with the exception of the bulimic dietary cognitions scale and the BITE, were negative.

Correlations for the anorexic group indicated that there were significant, negative correlations between the first and second three month change on the anorexic dietary cognitions scale, the anorexic dietary behaviour scale, the bulimic dietary behaviour scale, the perceived external control scale, the hostility scale and the BITE. All other correlations were negative, but non-significant.

Correlations for the bulimic group indicated that there were significant, positive correlations between the first and second three month change on the SEDS total score, the bulimic dietary cognitions scale, the bulimic dietary behaviour scale, and the BITE. All remaining correlations were non-significant, but positive.

10.14 Ability Of The SEDS To Detect Clinically Significant Change.

Though it was not an aim of this study to assess treatment in terms of clinically significant improvement over treatment time, it was considered necessary to assess the ability of the SEDS to detect any such change. The definition of significant clinical change in patients could be based on several parameters, and several formulae have been presented (Jacobson et al., 1984). However, Lindsay et al. (1987) has proposed that the most stringent test of clinically significant change can be assessed through assessing the patient's score changes in terms of standard deviations. Clinically significant change is classified as: the patients score falls outside the range of the dysfunctional clinical population by a score change of 2 standard deviations from the pretreatment mean of that population in the direction of functionality. While this formula was designed to assess treatment outcome it would be a useful measure of the ability of the SEDS to assess clinically significant change between the first assessment and the endpoint assessment. Table 10.16 presents the frequencies and percentages of patients, in each diagnostic group, who showed clinically significant change on each of the eight SEDS and the other measures.

Table 10.16 indicates that the SEDS can detect significant improvement in patients. A total of 15 patients showed such change on at

least 6 of the 8 scales. More importantly, those changes on the SEDS were supported by change of equal magnitude in the other standardised measures of anorexia and bulimia (EAT-40, BITE).

The most prominent trend shown in the Table 10.16 is that there were considerably more bulimic patients who showed clinically significant change, than anorexic patients. At least 11 (30.6%) of the bulimic group showed clinically significant change on the two dietary scales (bulimic dietary cognitions and bulimic dietary behaviours); and at least 7 (19.8%) showed clinically significant change on the four cognitive/emotional scales (perceived external control, low assertiveness, low self-esteem, self-directed hostility). It should be noted that those bulimic patients who displayed clinically significant change on the two dietary scales were the same 7 or 8 patients who displayed clinically significant change on the four cognitive/emotional scales. There were 3 or 4 patients who displayed clinically significant change on the two dietary scales, but who did not display such magnitude of change on the four cognitive/emotional scales. It should be noted that those 3 or 4 patients did display a decrease in scores on the four cognitive/emotional scales, but the magnitude of change fell just short of 2 standard deviations.

In the anorexic group the findings of significant change were more consistent, but lower in number. Only 2 (5.6%) patients in this group showed clinically significant change. However, the significant change displayed by these patients was consistent across the 2 anorexic dietary scales (anorexic dietary cognitions, anorexic dietary behaviour) and the 4 cognitive/emotional scales. Further, these 2 patients displayed significant change on the other measure of anorexic behaviour and

attitudes - the EAT-40. It should also be noted that 3 patients in the anorexic group showed significant change on the bulimic dietary scales; though that change was in the direction of increased bulimic dietary behaviour and cognitions.

TABLE 10.16: NUMBER AND PERCENTAGE OF PATIENTS IN EACH DIAGNOSTIC GROUP SHOWING CLINICALLY SIGNIFICANT CHANGE OVER TREATMENT TIME.

Scale	Group			
	Anorexic		Bulimic	
	<u>Change</u> <u>n (%)</u>	<u>No-Change</u> <u>n (%)</u>	<u>Change</u> <u>n (%)</u>	<u>No-Change</u> <u>n (%)</u>
Anorexic Dietary Cognitions	02 (5.6%)	34 (94.4%)	03 (8.3%)	33 (91.7%)
Anorexic Dietary Behaviour	02 (5.6%)	34 (94.4%)	02 (5.6%)	34 (94.4%)
Bulimic Dietary Cognitions	02 (5.6%)	34 (94.4%)	13 (36.1%)	23 (63.9%)
Bulimic Dietary Behaviour	00	36 (100%)	11 (30.6%)	25 (69.4%)
Perceived External Control	00	36 (100%)	08 (22.2%)	28 (77.8%)
Low Assertiveness	02 (5.6%)	34 (94.4%)	08 (22.2%)	28 (77.8%)
Low Self-Esteem	02 (5.6%)	34 (94.4%)	08 (22.2%)	28 (77.8%)
Self-Directed Hostility	02 (5.6%)	34 (94.4%)	07 (19.4%)	29 (80.6%)
EAT-40	02 (5.6%)	34 (94.4%)	00	36 (100%)
BITE	00	36 (100%)	12 (33.6%)	24 (66.4%)
GHQ	00	36 (100%)	02 (5.6%)	34 (94.4%)

10.15 Comparison Of Changes In Scores And Changes In Clinical Ratings.

As there was an insufficient number of ratings (3) per patient to correlate scale scores and clinical ratings across the 6 month assessment period, a different method of comparison was necessary. It was decided that the most efficient comparison would entail the correlation of 'score-change' and 'rating-change' between assessment stages. That is, the magnitude of change in the patients scores between assessment stages was correlated with the magnitude of change in the clinicians ratings of the patient between assessment stages. This led to 2 correlation matrices for each grouping: 1 for the period between assessment stages 'month 0' and 'month 3'; and 1 for the period between assessment stages 'month 3' and 'month 6'.

10.15 (i) Whole Patient Sample.

Correlating the 'score-change' and clinical rating change between assessment stages 'month 0' and 'month 3' produced only 1 significant correlation in a matrix of 32 Pearsons r's. The significant correlation was found between the magnitude of change in scores and magnitude of change in ratings on the perceived external control scale ($r = .31$, $p = .02$). All other correlations were low and non-significant.

Correlating the magnitude of 'score-change' with the magnitude of 'rating-change' between assessment stages 'month 3' and 'month 6' again only produced 1 significant correlation in a matrix of 32 Pearsons r's. The significant correlation was between magnitude of 'score-change' and clinical 'rating-change' on the anorexic dietary cognitions scale ($r = .28$, $p = .02$). All other correlations were low and non-significant.

10.15 (ii) Patient Sample Split By Diagnostic Group.

In the anorexic group, it was found that significant, though low, correlations existed between 'score-change' and clinical 'rating-change' on the scales of bulimic dietary cognitions ($r = .37$, $p = .03$), but only for the period between assessment stages 'month 3' and 'month 6'. No other correlations were found to be significant.

In the bulimic group a significant correlation was found between 'score-change' and clinical 'rating-change' on the anorexic cognitions scale ($r = .39$, $p = .04$) in the period between assessment stages 'month 0' and 'month 3'. In the period between assessment stages 'month 3' and 'month 6', correlations were found between the 'score-change' and 'rating-change' on the scales of anorexic dietary behaviour ($r = .38$, $p = .05$) and the scale of bulimic dietary cognitions ($r = .41$, $p = .04$). No further relationships were found.

SECTION 3: DISCUSSION.

10.16 Overview Of Results

The main finding of the present study is that the SEDS are sensitive to change in the patient over treatment time. In the case of all eight scales, there were significant time effects. However, on two scales (low assertiveness, low self-esteem) this time effect was only significant for the period between assessment stages 'month 0' and 'month 3', but not between assessment stages 'month 3' and 'month 6'. This was, no doubt, due to the fact that 10 (26.8%) of the patients in the anorexic group showed a score decrease between assessment stage 'month 0' and 'month 3', only to increase those scores to the original point between assessment stages 'month 3' and 'month 6'. Also 8 (22.2%) of the anorexic group showed an increase in score on the bulimic dietary behaviour and cognitions scales over the six month period.

The changes in the SEDS scores were corroborated by similar changes in the two other well standardised measures of eating disorder (EAT-40, BITE). It was found that decreases in the SEDS scores were paralleled by decreases in the scores on these two measures. This finding was strengthened by the fact that those anorexic patients who showed a score fluctuation on the SEDS, also showed score fluctuations in the same direction on the EAT-40. Further, the 8 anorexic patients who showed an increase in bulimic dietary behaviours and cognitions as measured by the SEDS, also showed an increase in score on the BITE.

Analysis of the magnitude of change in the patient's scores has indicated that the SEDS are capable of detecting clinically significant change, as shown by the fact that change in the SEDS scores parallels a decrease of two standard deviations in two established measures known to

be sensitive to change over treatment time. However, these findings are tempered by the fact that the formula used was designed for treatment outcome studies.

However, the final analysis which investigated the relationship between SEDS 'score-change' and clinical 'rating-change' produced non-significant results. It was found that the magnitude of score change between assessment stages was not related to the magnitude of change in the clinical rating for the same periods.

10.17 Attrition And Group Characteristics.

The attrition rates in the two groups was low - only 5 (6.9%) of the total sample failed to complete all three assessment stages. Comparison with previous research has proved difficult as assessment of other measures in terms of sensitivity to detect change over treatment time has been conducted over much shorter treatment time periods (Henderson & Freeman, 1987; Phelan, 1987). However, the attrition of the present study is considerably lower than those reported in better presented treatment studies (Freeman et al., 1987). This may be due to the fact that patients were clearly informed that their assessment would have no bearing on the treatment they were receiving, and, therefore, had no expectation. However, the most likely reason, is that patients were sent periodic reports on the progress and findings of the study as a whole, which maintained the patients interest in the study, and, more importantly, gave the patients a sense of involvement.

When asked to report a self-diagnosis of the disorder they suffered 20 (27.8%) of the patients disagreed with the official clinical diagnosis. The level of disagreement was most notable in the anorexic

group where 16 (45.7%) of the group disagreed with the clinicians diagnosis by claiming they suffered bulimia or mixed syndrome. These findings support the claims of Casper et al. (1980) and Hsu et al. (1979) who claimed that up to 47% of a diagnosed anorexic patient series displayed bulimic symptomatology. The level of disagreement between clinical and self-diagnosis in the present study could be seen as reflecting inadequate diagnosis, though this is unlikely due to the diagnostic uniformity ensured by the clinicians checklists. However, this result may reflect the fact that present DSM-III R criteria are not applicable to heterogeneity of primary eating disorder patients (Mitchel et al., 1988). Alternatively, it is possible that the disagreement reflects the subjective and, possibly inaccurate, beliefs of the patients. Small amount of food (24 kcalories) can be labelled a 'binge' (Kirkley et al, 1988). It is quite possible, that an anorexic patient would label such small calorific intakes as a binge, and, without the detailed knowledge of diagnostic criteria, would label herself bulimic or mixed syndrome.

The reported duration of eating problems was found to be considerably longer in the bulimic group. This finding can be explained by the fact that the physical symptoms of bulimia are less apparent than the striking emaciation of anorexia nervosa. It is, therefore, likely that these patients enter treatment later in the progress of their disorder, which is reflected in the fact that the anorexic patient group reported a mean treatment duration which was over 10 months longer than the bulimic group, and were more likely to be hospitalised. Such findings support the claims that bulimia is a largely hidden disorder (Boskind-Lodahl, 1976).

10.18 Change Over Treatment Time Results.

The main finding of the assessment of change over treatment time was that the SEDS did reflect dietary-behavioural and cognitive/emotional change in the patients over treatment time. Moreover, the pattern of change noted in the SEDS was duplicated in the other, previously standardised, measures of anorexia and bulimia (EAT-40, BITE), both of which have been shown to be sensitive to change over treatment. The overwhelming conclusion must be that, as the same patterns were noted in the SEDS and the other two scales, then the SEDS are likely to be measuring real change. That is, the changes on the SEDS scores are not due to random fluctuation; they are consistent with changes noted in two independent, demonstrated sensitive measures.

In the bulimic group, the mean scores on the SEDS bulimic dietary behaviour and bulimic dietary cognitions scales decreased to the level of the anorexic group mean. The same pattern of change was also found in the BITE. In the anorexic group, the changes in the anorexic dietary behaviour and anorexic dietary cognitions scale was replicated in the Scores on the EAT-40. This was true for patients whose scores decreased, stayed stable, and also those patients who decreased their scores between assessment stages 'month 0' and 'month 3', only to increase the scores between assessment stages 'month 3' and 'month 6'. Further, those patients in the anorexic group who displayed an increased score on the bulimic dietary behaviours and cognitions scale of the SEDS also displayed an increase in score on the BITE. There was no case in which a patient's score changes on the SEDS was in a different direction to score changes on the EAT-40 or the BITE.

One criticism which could be levelled at the present study, is the

lack of a control group. A control group, which would serve to assess any change in the SEDS scores over non-treatment time could only comprise patients on waiting lists for the same six month period. However, the inclusion of such a group would entail conducting a clinical interview with a patient, and engaging her into the study on the understanding that she would not be entered into treatment for a six month period. The five clinicians involved in the study considered this an unethical procedure for two reasons:

(1) as waiting lists in some centres were less than six months, the maintainance of the waiting list control group could necessitate withholding treatment, and

(2) as patients are often seen immediately, on the basis of severity of symptoms, a waiting list control group would be biased towards less severe and less chronic cases.

10.19 Secondary Issues In Change Over Treatment Time Results.

It was found that 8 (22.2%) of the anorexic group displayed a score fluctuation over the six month assessment period. Rather than show a linear decrease or increase, or even stability, the scores of these patients decreased between assessment stages 'month 0' and 'month 3' only to increase to the original point or even higher by the time of assessment stage 'month 6'. This fluctuation may reflect that fact that these patients are less responsive to some treatment modalities (Fairburn, 1985; Garner & Bemis, 1985). Alternatively, it is possible that involvement in the project had some influence on these patients, which was reflected in the scores. Patients were not informed at the start of the study that the main aim was to assess the sensitivity of the SEDS. Therefore, this pattern is not likely to be reflecting these .

patient's desire to assist in reporting a positive result. Nevertheless, it is possible that recruitment into an assessment study had some subconscious, though positive, effect on the patients behaviour and attitudes. However, such a suggestion could only be investigated by direct and extensive research into the effect of research inclusion on patient symptoms.

It was also noted that 15 (40%) of the anorexic patients reported an increase in scores on the bulimic dietary behaviour and bulimic dietary cognitions scale of the SEDS and also on the BITE. These increases were sufficient to increase the group mean score. Casper et al. (1980) have reported that 47% of an anorexic patient sample reported periods of binge eating. It is possible that this feature of some anorexics has been illustrated in the score pattern of the SEDS over the six month assessment period; and that a proportion of this group entered a 'binge' period during the six month period. This is further supported by the fact that other patients displayed a decrease in the scores on the bulimic dietary behaviour and cognition scales over the six months. A tentative suggestion can be made, that the SEDS is sensitive enough to pick up behavioural and cognitive dietary changes in patients who, though diagnosed anorexic, display periodic bulimia. However, this suggestion would require further administration of the SEDS over a considerably longer assessment period, in order to assess the ability of the scales to assess periodic behavioural and cognitive fluctuation between the two diagnostic types.

Another finding was that the magnitude of change shown by the patients in the first 3 months of the assessment period, was not carried through to the second 3 months. Patients whose scores decreased in the

three months between assessment stages 'month 0' and 'month 3', did not all show a decrease in score between assessment stages 'month 3' and 'month 6'. This trend was more noticeable in the anorexic group. As noted above, a proportion of that group displayed a score increase between assessment stages 'month 3' and 'month 6', such that their scores returned to or even increased from the score at assessment stage 'month 0'. The lack of change between assessment stages 'month 3' and 'month 6' in the anorexic group was sufficient to render time effects non-significant between assessment stages 'month 3' and 'month 6' on the scales of anorexic dietary cognitions, anorexic dietary behaviour, and low self-esteem. However, it was also apparent that the bulimic group means decreased less in the second 3 months of assessment. There are several factors which explain this finding. In the anorexic group, the failure to show a mean score decrease consistent with the first 3 months is doubtless due to the effect of the patients whose scores fluctuated or increased between assessment stages 'month 3' and 'month 6'. Such fluctuations/increases would serve to confound any statistical measurement of change over time. In the bulimic group, 20 of the patients were recruited within three weeks of embarking on a structured treatment programme. It is feasible, that the the enthusiasm and novelty which would be engendered by starting such a program is reflected in the marked decrease in bulimic scores between assessment stages 'month 0' and 'month 3'. It is likely that such enthusiasm cannot be maintained over a period of 6 months - hence, the lesser decrease in mean score between assessment stages 'month 3' and 'month 6'. Finally, as noted above, there may also be an effect of recruitment into the study which may serve to increase the effect of treatment in the first 3 months.

However, this suggestion requires further specialised research.

It has also been noted that the scores on the General Health Questionnaire did not show any significant change over treatment time. However, the fact that approximately 50% of the sample displayed a decrease in scores, while 40% of the sample showed an increase in score suggests that this non-significant result is due to confounding caused by different directions of change. It was notable that those anorexic patients who displayed an increase in score on the bulimic dietary behaviour and bulimic dietary behaviour scales also showed an increase in GHQ score. This finding suggests that those anorexic patients who enter periods of bingeing, concurrently display an increase in psychiatric symptomatology. This is in keeping with the claim of Garfinkel et al. (1983) who claimed that patients suffering anorexia complicated by bulimia are more psychiatrically disturbed, and have a weaker prognosis.

10.20 Assessment Of Clinically Significant Change.

Individual patient scores were assessed to investigate the ability of the SEDS to assess clinically significant change, as shown by paralleling a decrease of 2 standard deviations in two other scales known to be sensitive to change. The main finding was that the SEDS is, indeed, sensitive to such change. It was noted that a higher number of bulimic patients showed clinically significant change than anorexic patients. This may indicate that bulimic patients are more receptive to treatment, which has been claimed by Fairburn (1985) and Garner (1985). However, this suggestion would require further research with a larger number of patients and a controlled treatment programme, in order to

assess treatment outcome between the disorders.

Alternatively, the fact that a higher number of bulimic patients showed clinically significant change may reflect differences in treatment efficacy between the treatment centres cooperating with this study. However, analysis of this suggestion would entail comparison of patients, grouped by treatment centre. As the treatment centres cooperated with the study on the understanding that there would be no inter-centre comparison, such analysis was not undertaken within the present study. Nevertheless, the differences between the diagnostic groups indicates that such investigation would be valid.

10.21 Relationship Between Score-Change And Clinical Rating-Change.

Failure to find correlations between change in the patients scores and change in the clinicians' ratings of the patients indicates that, though the SEDS scores can detect significant change, this is not reflected in the clinicians' perceptions of the patients. This was true in the case of both diagnostic groups and even when the duration of treatment was taken into account. This may indicate that the SEDS are incapable of detecting real and discernable change in eating disorder patients. However, the positive results of the change over treatment time analysis for SEDS and the comparison measures, and the findings that the SEDS can detect significant clinical change (as shown by a decrease of 2 standard deviations), which is also corroborated by equal change in other, well standardised and recognised measures, goes against this notion. It is, therefore, more likely that this lack of concordance between score-change and clinicians' rating-change is due to other factors.

It is more likely that this finding reflects a lack of communication

between the patients and clinicians, such that the clinicians were unable to gauge the change in the patients' behaviours and emotions as detected by the SEDS. Patients in the sample were in a variety of treatment programs, in terms of both approach and frequency of appointments. Only one centre provided a structured treatment programme with weekly appointments. Therefore, it is feasible, that the lack of concordance between the patients score-change and the clinicians rating-change reflects the fact that treatment for the majority of patients was insufficient to enable accurate perception of the patient by the clinicians. Again, further analysis of these results would entail treatment comparison, and in this case comparison of therapists. As this study was designed and approved on the basis of non-comparison, this analysis was not within the parameters of the present study. However, the results indicate that research is required in the area of patient-clinician communication.

In summary the results have indicated that the SEDS are not only valid and reliable measures of the dietary/behavioural and cognitive/emotional features of primary eating disorders, but are also sensitive to change in those features over treatment time. All eight of the scales have been shown to be sensitive to change in the patient, and this sensitivity has been corroborated by parallel changes in another two previously standardised scales, which are known to be sensitive to change over treatment time. Moreover, the SEDS are capable of detecting clinically significant change in patients, as shown by these two other measures, indicating that the SEDS is capable of detecting the same magnitude of change as these well established measures. The main

suggestion emanating from these findings is that the SEDS are appropriate for use in the assessment and monitoring of cognitive-behavioural treatment programs. The fact that the scales assess both the dietary-behavioural and also the cognitive/emotional features of the two eating disorders, renders them particularly appropriate to the structure of such treatment programs. Further, the sensitivity of the eight scales, renders them appropriate for monitoring the patients as they progress through the treatment, and in doing that, monitoring the effect of that treatment programme.

CHAPTER ELEVEN.

STUDY FOUR:

COMPARISON OF EATING DISORDERS WITH MAJOR DEPRESSIVE DISORDER
AND PANIC DISORDER WITH OR WITHOUT AGORAPHOBIA.

11.1 Background Summary.

Chapter Three indicated that past research by Williams et al. (1990) suggested that primary eating disorder patients are cognitively/emotionally comparable with other psychological disorder patients. The cognitive/emotional similarities were in the areas of perceived external control, low assertiveness, and self-directed hostility. It was also suggested that these groups would be similar in a deficient sense of self-esteem. Nevertheless, methodological weaknesses in that study prevented any firm conclusions other than further, controlled research was necessary to establish any links between the disorders. Hence, it was suggested that a research issue remained concerning the links between primary eating disorders and other psychological disorders on these four characteristics.

A review of the relevant research (Chapter Six), in the areas of eating disorder, depression and panic disorder, failed to shed any further light on the questions raised by the Williams et al. (1990) study. Consequently, the aims of this study are as follows:

11.2 Aims Of The Present Study.

- (1) To fill gaps in the existing literature by conducting a controlled comparison between anorexic patients, bulimic patients, depressed patients, panic disorder patients, and normal controls. The five groups will be compared on the SEDS which assess dietary behaviours and cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility. Group appropriate measures and a measure of psychiatric caseness will also be employed.
- (2) To further investigate the criterion validity of the SEDS.

SECTION 1: METHODS.

11.3 SUBJECTS.

151 females and 19 males were allocated to five groups: 1) anorexia nervosa (n = 42); 2) bulimia nervosa (n = 36); major depressive disorder (n = 30); panic disorder with or without agoraphobia (n = 30); and normal control (n = 32). The total subject group had an age range of 15 to 52 (M = 27.85, SD = 8.5). Detailed group descriptions are presented below.

11.3 (i) Anorexia Nervosa (ii) Bulimia Nervosa.

Anorexic and bulimic subjects were diagnosed by practising clinical psychologists and psychiatrists according to DSM-III (R) criteria. All patients were undergoing either inpatient or outpatient treatment at the time of testing. Patients who met DSM-III (R) criteria for any other psychological disorder (comorbidity), who suffered organic brain disorder, or addiction were not recruited into the study.

11.3 (iii) Major Depressive Disorder. (iv) Panic Disorder With Or Without Agoraphobia.

Depressed and panic disordered patients were also diagnosed by practising clinical psychologists and psychiatrists according to DSM-III (R) criteria. All patients were undergoing outpatient or inpatient treatment at the time of testing. As with the primary eating disorder patients, any patient who displayed co-morbidity, organic brain disorder, or addiction were not listed for recruitment. In addition, attempts were made with the depressed group to include the same ratio of inpatients and outpatients as found in the primary eating disorder group. This was intended to match, as closely as possible, the spread of severity between the groups. This matching was not an option with the

panic disorder group, as this disorder rarely requires inpatient treatment.

11.3 (v) Normal Control.

Normal control subjects were females and males who reported having no history of or present treatment for eating disorder, depression, panic disorder, or any other psychological disorder. Any subject who did report a psychiatric history were excluded. Normal control subjects reported disorder history or treatment through the Personal Details Form described below.

11.4 RECRUITMENT METHODS.

11.4 (i) Eating Disorder Patients.

Primary eating disorder patients were recruited through four practising clinical psychologists and psychiatrists in hospitals in the Edinburgh, Glasgow, and Perthshire areas. Patients on treatment lists, and who fulfilled the criteria outlined above, were sent letters of introduction by the clinician. These letters outlined the study, asked the patient to assist by taking part, assured the patient that responses were confidential and voluntary, and finally, informed that she would be contacted within two weeks by the researcher for her decision. Patients were then contacted by telephone or by letter. Those who agreed to take part in the study were given the option to complete the questionnaires at a fixed appointment at the hospital, at a home visit, or to receive and return the questionnaires by post. At this point the patients were again assured that their involvement was voluntary, confidential, anonymous at the point of scoring, and would have no bearing on their treatment.

11.4 (ii) Depressed Patients.

Depressed patients were recruited by one clinical psychologist and three psychiatrists in the Glasgow and Perthshire areas. As with the primary eating disorder patients, depressed patients were identified through patients lists. Those patients who fulfilled the criteria detailed above, were also sent letters of introduction which provided the same information as given in the eating disorder letter. Outpatients were, whenever possible, contacted by telephone to secure agreement or refusal to participate. Those who agreed were sent questionnaires and return envelopes. Those who could not be contacted by telephone, were sent questionnaires with explanatory cover letters and return envelopes. These respondents were informed that a code would be put on the return envelope to enable the researcher to match it to a diagnosis form completed by the clinician, though this would not be visible at the point of scoring, to ensure as much anonymity as possible. Return of the questionnaires was taken as agreement to participate. Inpatients were sent appointment letters and visited in the hospital. If agreement was secured, the patients completed the questionnaires at this appointment.

11.4 (iii) Panic Disorder Patients.

Panic disorder patients were recruited by three practising clinical psychologists. Patients who met the criteria detailed above, were approached by the psychologist and asked to complete questionnaires for a research project. Confidentiality, voluntary involvement, and anonymity were assured by the psychologist. Agreeing patients were presented with questionnaire packages. Collection was arranged for the next appointment, or, in cases where this was not possible, return envelopes were provided. Again, as with the depressed patients, postal

return respondents were informed that the return envelope would be coded.

11.4 (iv) Normal Controls.

Normal control subjects were approached and recruited by the researcher from 3 sources: 1) undergraduate psychology classes, 2) members of staff within the university, and 3) acquaintances of those students and staff members outside the university. Again, all recruits were assured that participation was voluntary, confidential, and anonymous.

11.5 MEASURES.

11.5 (i) Stirling Eating Disorder Scales (SEDS).

A full description of the Stirling Eating Disorder Scales (SEDS) and the validation statistics has been presented above in Study Two.

11.5 (ii) Clinical Anxiety Scale. (Thyer, 1986) Appendix T)

The Clinical Anxiety Scales (CAS) is a 25 item, self-report questionnaire designed to assess the amount, and degree or severity of anxiety. Items are highly relevant to patients diagnosed as panic disorder with or without agoraphobia. Items are in statement form, with responses in a Likert scale format. Respondents are required to indicate whether each statement applies to them on a scale of 1 (rarely or none of the time) to 5 (most or all of the time). The score is reached by the addition of the scale points, after reverse scoring 8 items. The original scoring system states that a constant of 25 should then be subtracted to give a 0 - 100 score range. However, as this study was one of comparison rather than diagnosis, and no cut-off point was to be utilised, this was considered unnecessary. Further, this would not

statistically affect the between-group comparisons. Therefore, the original score totals were retained, with a score range of 25 - 125.

Data have been presented to show that the CAS is internally consistent ($\alpha = .94$), and has good between group validity with only a 6.9% error rate in distinguishing patients from controls.

11.5 (iii) Beck Depression Inventory. (Beck, 1967) (Appendix U).

The Beck Depression Inventory (BDI) is a self-report measure, designed to assess the presence, motivational, vegetative, and psychomotor components of depression. The present study utilises the shorter, 13 item version. Each item relates to a particular symptom of depression. Items are in statement form, with four statements per item. The first item indicates non-depressive behaviour/belief; the following three correspond to increasing levels of symptom severity. Respondents are required to indicate the item most applicable to them. Items are scored 0-3 in the direction of depression, and the subject's score is the total of the items selected, giving a score range of 0 - 39.

The BDI is probably one of the most widely used self-report measures of depression in current use, which is a good indication of its strength. Data have been presented to show that the BDI has split-half reliabilities ranging from .78 to .93, indicating good internal consistency. The BDI has a high test-retest reliability ($r = .74$); has been shown to have acceptable between group validity ($p = .01$); and also concurrent validity ($r = .68$).

11.5 (iv) General Health Questionnaire - 28. (Goldberg & Hillier, 1979)

(Appendix G).

A full description of The General health Questionnaire - 28 (GHQ-28) is presented in Study One (Methods Section).

11.5 (v) Personal Details Form. (Appendix H).

For the purpose of investigating the effect of demographic factors, data concerning age, height, weight, marital status, and socioeconomic class were collected from all subjects by means of a self-report personal details form. In addition, all subjects, were asked to report any prescribed medication. The clinical subjects were asked to report on the duration of psychological problems, the duration of disorder, duration of present phase of treatment, and any previous diagnosis of the disorders pertaining to other groups (e.g. the depressed group were asked to report if they had ever been treated for any primary eating disorder or panic). Normal control subjects were asked to report any previous or current treatment for the disorders pertaining to the clinical groups. As noted in Studies One, Two and Three, self-report screening for confounding diagnoses is potentially less effective than a clinical screening interview. However, it was considered the most effective method within the parameters of the present study. Further, the fact that respondents were assured of anonymity should remove the risk of denial, which is an inherent problem of screening interviews, especially in the case of normal controls.

11.5 (vi) Clinician's Checklists. (Appendix I).

In order to ensure uniformity of diagnosis, all clinicians involved in the recruitment of patients were asked to complete diagnostic

checklists for each patient. On these checklists the clinician reported the primary diagnosis of the patient and any secondary dysfunction. The second part of the checklist presented all the DSM-III (R) criteria of the patients diagnosis. The clinician was asked to indicate all criteria met by the patient. As the diagnosis of panic disorder has recently undergone considerable change under DSM-III R and has similarities to generalised anxiety, a confounding of diagnosis was considered a possibility. Therefore, the diagnostic checklists for this group were checked by a clinical psychologist before the patient was allocated to the comparison group and her/his questionnaire responses were put forward for analysis.

11.6 PROCEDURE.

Having been recruited into the study, subjects were presented with a package comprising:

- a) Instructions
- b) Personal Details Form
- c) Four questionnaires
- d) Return envelope (stamped and addressed for postal returns)

The Instructions, Personal Details Form and questionnaires were presented in booklet form. Respondents were asked to complete the questionnaires alone, and in any order they pleased. The questionnaires were also compiled in random sequence to prevent order effects.

Upon completion, the respondents sealed the questionnaires into the envelope and returned the package by the methods arranged at recruitment. At this point diagnostic checklists were affixed to the questionnaires by the collecting clinician or in the case of postal returns were matched by the allocated code.

11.7 ANALYSIS.

Demographic variables were analysed to assess the level of subsequent statistical analysis (parametric or non-parametric).

Age was first assessed by Oneway Analysis of Variance (ANOVA) to assess differences across the groups, followed by Multivariate ANOVA to assess the effect of age on group scores differences.

Differences in sex, marital status, and socioeconomic class across the groups were assessed by Chi Square Tests. Subject to significant differences, any relationship between these variables on group score was assessed by correlating the ranks with scores and t-tests, as appropriate.

It was understood that any significant relationships between demographic variables and scores would lead to the use of non-parametric statistical analysis.

Differences across the groups on the 8 SEDS and other measures were analysed by Multivariate ANOVA to assess general differences across the groups. Subsequent to significant multivariate F's, individual measures were analysed by Oneway ANOVA to assess differences across the 5 groups, followed by Post-hoc Sheffe Tests to assess differences between the groups.

SECTION 2: RESULTS.

11.8 Analysis Of Demographic Variables Across The Groups.

The demographic data across the groups was analysed with a view to investigating the necessity of covariance or non-parametric statistics. Breakdown of the data is presented in Table 11.1. Results of statistical analysis are presented in Table 11.2.

Concerning age, highly significant differences were found across the groups ($F = 21.19$, $p < .001$, $df = 4, 165$). Reference to the means and post-hoc Scheffe Tests revealed that the depressed and panic disorder groups were significantly older than the anorexic, bulimic and normal control groups ($p = .01$). In addition, Product Moment correlations revealed significant relationships between age and 7 of the 12 scale scores, including 6 of the SEDS. This indicated that the covariance of age may be necessary. However, multivariate ANOVA with age as a covariate, revealed that there was a very low and non-significant effect of age on between group differences; indicating that the between group effect was due to other factors. Therefore, age was not used as a covariate in subsequent analyses.

Concerning height, there were no significant differences between the groups; though the panic disorder and normal control groups had a higher mean height due to the higher proportion of males in those groups. Concerning weight, there were significant differences between the groups ($F = 19.8$, $p < .001$, $df = 4, 165$). Reference to the means and Post-hoc Scheffe tests indicated that this was due to the anorexic group having a significantly lower mean weight than the 4 comparison groups ($p = .01$). As this effect would be expected, and was a function of diagnosis, weight was not used as a covariate.

Concerning sex, a 5 by 2 Chi Square analysis indicated significant differences in sex distribution across the groups ($X^2 = 21.47$, $p < .001$, $df = 4$). This was, no doubt, due to the fact that there were no male subjects in the 2 primary eating disorder groups. Product Moment correlations indicated a significant relationship between sex and 6 of the 12 measures, suggesting that sex may have a significant effect on score. However, these correlations also included the sex-biased primary eating disorder data. Therefore, this confounding effect was removed by calculating t-tests on all measures between male and female subjects in the 3 non-eating disorder groups. No sex differences were found on any of the 12 scale measures. Consequently, sex was not of sufficient effect to necessitate non-parametric statistics.

Concerning marital status, a 5 by 4 Chi Square indicated that there were significant differences in the frequencies across the groups ($X^2 = 15.6$, $p < .01$, $df = 4$). Reference to the cell numbers indicated that this was due to the fact that a higher proportion of the depressed and panic disorder patients were married. However, correlating the marital status ranks with scores on the measures produced no significant correlations, suggesting that there were no relationships between marital status and score. Hence, marital status was not considered as a covariate.

Finally, concerning socio-economic class, a 5 by 5 Chi Square analysis indicated that there were no significant differences across the groups in the distribution of socio-economic classes. Though it was noted that a higher proportion of the depressed and panic disorder groups were classed as socioeconomic class 3 to 5. However, the lack of significant differences indicated that non-parametric statistics were not necessary.

In short, the above results led to the conclusion that between group analysis on the 12 scale scores would be conducted with parametric statistics with no covariates.

TABLE 11.1: SUMMARY OF DEMOGRAPHIC DATA OF THE ANOREXIC, BULIMIC, DEPRESSED, PANIC DISORDER, AND CONTROL GROUPS.

Variable	Groups				
	<u>Anorexic</u>	<u>Bulimic</u>	<u>Depressed</u>	<u>Panic</u>	<u>Control</u>
Age					
Mean	24.9	25.0	34.5	34.6	24.3
SD	05.8	06.1	09.4	09.3	04.6
Range	16 - 43	15 - 48	19 - 50	20 - 52	18 - 36
Height (cm)					
Mean	159.6	162.8	159.6	165.8	167.6
SD	006.3	006.9	011.8	010.1	008.8
Range	147 - 173	150 - 180	150 - 182	145 - 185	150 - 190
Weight (kg)					
Mean	46.1	62.9	60.6	68.0	65.1
SD	07.8	10.7	10.5	17.3	13.1
Range	34 - 59	42 - 86	42 - 89	46 - 120	44 - 72
Sex					
Female	42 (100%)	36 (100%)	24(80%)	22(73.3%)	27(84.4%)
Male	00	00	06 (20%)	08 (26.7%)	05 (15.6%)
Marital Status					
Single	30 (71.4%)	25 (69.4%)	19 (63.3%)	16 (53.3%)	27 (84.4%)
Married	11 (26.2%)	10 (27.8%)	07 (23.3%)	10 (33.3%)	05 (15.6%)
Seperated/ Divorced	01 (2.4%)	01 (2.8%)	02 (6.7%)	04 (13.3%)	00
Widowed	00	00	02 (6.7%)	00	00
Socio-Economic Class					
1	15 (35.7%)	12 (33.3%)	07 (23.3%)	07(23.2%)	12(37.5%)
2	20 (47.6%)	15 (41.7%)	10 (33.3%)	08(26.7%)	12(37.5%)
3	03 (7.1%)	04 (11.1%)	06 (20.0%)	07(23.3%)	03(9.3%)
4	03 (7.1%)	04(11.1%)	04 (13.7%)	05(16.7%)	02(6.2%)
5	01 (2.4%)	01 (2.8%)	02 (6.7%)	03(10.0%)	02(6.2%)
			1=missing		1=missing

Key: figures in parentheses indicate percentage of total group number

TABLE 11.2: RESULTS OF STATISTICAL COMPARISONS BETWEEN THE EATING DISORDER, DEPRESSION, PANIC DISORDER AND CONTROL GROUPS ON DEMOGRAPHIC VARIABLES.

Variable	F	df	p
Age	21.29	4,165	<.001
Weight	19.8	4,165	<.001

Variable	χ^2	df	p
Sex	21.47	4	<.001
Marital Status	15.6	4	<.001

11.9 Analysis And Results Of Clinical And Treatment Background Data Across The Four Clinical Groups.

Table 11.3 presents a summary of the disorder and treatment background of the four clinical groups. Table 11.4 presents the statistical analysis results. Oneway ANOVA's indicated that there were no significant differences across the groups in terms of the duration of their psychological problems, the overall duration of treatment, and duration of the present phase of treatment.

A 4 by 2 Chi Square analysis indicated that there were significant differences across the groups on reported previous hospitalisation ($X^2 = 30.23$, $p < .001$, $df = 4$). Reference to the frequencies indicated that this was due to a higher proportion of the anorexic and depressed patients reporting that they had been hospitalised for their disorder. Likewise, a significant Chi Square analysis found that there were differences across the groups on the frequency of hospitalisation ($X^2 = 41.70$, $p < .01$, $df = 4$). Again, this was due to the anorexic and depressed patients, a greater proportion of whom reported more than 2 hospitalisations for their disorder. Further, a 5 by 2 Chi Square test indicated that there were significant differences across the groups on patient status at the time of testing ($X^2 = 14.7$, $p < .01$, $df = 3$). Reference to the frequencies indicated that this was due to higher proportions of the anorexic and depressed groups being inpatients at the time of testing.

Correlating the measure of chronicity (ie. duration of disorder, overall duration of treatment, duration of present treatment phase) produced no significant relationships, either for the whole sample, or within the four clinical groups.

TABLE 11.3: DISORDER AND TREATMENT BACKGROUND OF THE EATING DISORDER, DEPRESSION AND PANIC DISORDER GROUPS.

VARIABLE	GROUP			
	<u>Anorexic</u>	<u>Bulimic</u>	<u>Depressed</u>	<u>Panic</u>
<u>Duration of Psychological Problems</u>				
Mean	75.6	90.3	60.6	62.8
SD	53.7	63.2	54.7	52.2
Range	04 - 216	12 - 240	06 - 240	02 - 240
<u>Overall Duration of Treatment</u>				
Mean	48.9	38.5	37.8	42.1
SD	50.6	33.0	48.7	50.7
Range	01 - 204	02 - 107	05 - 239	02 - 150
<u>Duration of Present Treatment Phase</u>				
Mean	15.8	14.0	10.5	10.4
SD	16.2	19.5	16.4	15.4
Range	01 - 72	01 - 84	01 - 70	01 - 65
<u>Ever Hospitalised</u>				
Yes	25 (59.5%)	05 (13.9%)	15 (50%)	02 (6.7%)
No	17 (40.5%)	31 (86.1)	15 (50%)	28 (93.3%)
<u>No. of Hospitalisations</u>				
1	13	02	07	01
2	02	03	02	01
3	02	00	03	00
4	01	01	01	00
5+	07	01	02	00
<u>Patient Status at Time of Testing</u>				
Inpatient	12 (28.6%)	02 (5.6%)	07 (23.3%)	00
Outpatient	30 (71.4%)	34 (94.4%)	23 (76.7%)	30 (100%)

Note: Figures in parentheses indicate percentage of total group number.

TABLE 11.4: RESULTS OF STATISTICAL COMPARISONS BETWEEN THE EATING DISORDER, DEPRESSION, AND PANIC DISORDER GROUPS ON DISORDER AND TREATMENT VARIABLES.

Variable	χ^2	df	p
Ever Hospitalised	30.23	4	<.001
No. of Hospitalisations	41.7	4	<.01
Patient Status at Time of Testing	14.7	3	<.01

11.10 Between Group Comparisons On The Twelve Scales.

Multivariate ANOVA produced a highly significant Pillai's F ratio (approx. $F = 1.88$, $p < .001$, $df = 4, 165$), indicating that there were significant differences across the groups on the 12 scale measures. Consequently, Oneway ANOVA with subsequent Post-hoc Scheffe tests were utilised to investigate differences across and between the five groups on each of the 12 scale measures. Table 11.5 presents a summary of the group means, F ratios, and Post-hoc Scheffe comparisons on the 12 measures used in the present study.

TABLE 11.5: GROUP MEANS, SD, AND STATISTICAL COMPARISONS ON THE EIGHT SEDS AND OTHER THREE MEASURES.

Measure	Group					F	df	Scheffe
	Anorexic	Bulimic	Depressed	Panic	Control			
SEDS								
Total	201.4 (51.4)	211.4 (45.2)	100.8 (52.2)	80.6 (45.2)	49.1 (46.1)	62.8	4,165	1-3 1-4 1-5 2-3 2-4 2-5
Anorexic Dietary Cognitions	32.1 (13.4)	25.2 (10.9)	6.8 (9.8)	6.0 (7.0)	4.7 (7.8)	53.2	4,165	1-2 1-3 1-4 1-5 2-3 2-4 2-5
Anorexic Dietary Behaviour	21.3 (12.5)	11.5 (9.8)	4.7 (8.5)	3.6 (4.9)	3.3 (3.9)	26.8	4,165	1-2 1-3 1-4 1-5 2-3 2-4 2-5
Bulimic Dietary Cognitions	21.6 (12.0)	36.8 (7.7)	6.8 (8.3)	5.5 (8.5)	4.1 (7.8)	63.8	4,165	2-1 2-3 2-4 2-5 1-3 1-4 1-5
Bulimic Dietary Behaviour	19.1 (15.4)	37.2 (11.3)	6.2 (8.3)	6.1 (8.0)	4.3 (7.2)	54.9	4,165	2-1 2-3 2-4 2-5 1-3 1-4 1-5
Perceived External Control	23.2 (10.8)	21.4 (10.7)	16.3 (10.4)	14.8 (8.4)	7.5 (9.0)	12.2	4,165	1-4 1-5 2-4 2-5
Low Assert- iveness	25.6 (8.3)	25.9 (7.2)	20.3 (8.2)	19.4 (8.1)	10.8 (8.9)	19.7	4,165	1-4 1-5 2-4 2-5
Low Self-Esteem	27.3 (8.2)	26.7 (7.5)	21.1 (9.0)	15.3 (9.3)	9.3 (8.1)	23.8	4,165	1-4 1-5 2-4 2-5 3-5
Self- Directed Hostility	31.8 (10.8)	27.2 (11.8)	18.9 (12.0)	10.6 (8.4)	5.7 (7.1)	33.2	4,165	1-3 1-4 1-5 2-3 2-4 2-5 3-4 3-5
BDI	16.4 (8.4)	13.2 (8.5)	20.4 (4.8)	7.2 (6.8)	3.6 (3.5)	28.7	4,165	3-1 3-2 3-4 3-5 1-4 1-4 2-4 2-5
CAQ	72.5 (18.8)	65.0 (17.5)	64.4 (14.7)	81.5 (17.8)	37.8 (12.4)	32.2	4,165	4-1 4-2 4-3 4-5 1-5 2-5 3-5
GHQ	12.5 (9.0)	10.2 (8.4)	11.8 (9.0)	9.8 (8.3)	3.5 (3.9)	6.6	4,165	1-5 2-5 3-5 4-5

SDs are printed in brackets below the group mean score.

Note: All F ratios are significant at the $p < .001$ level

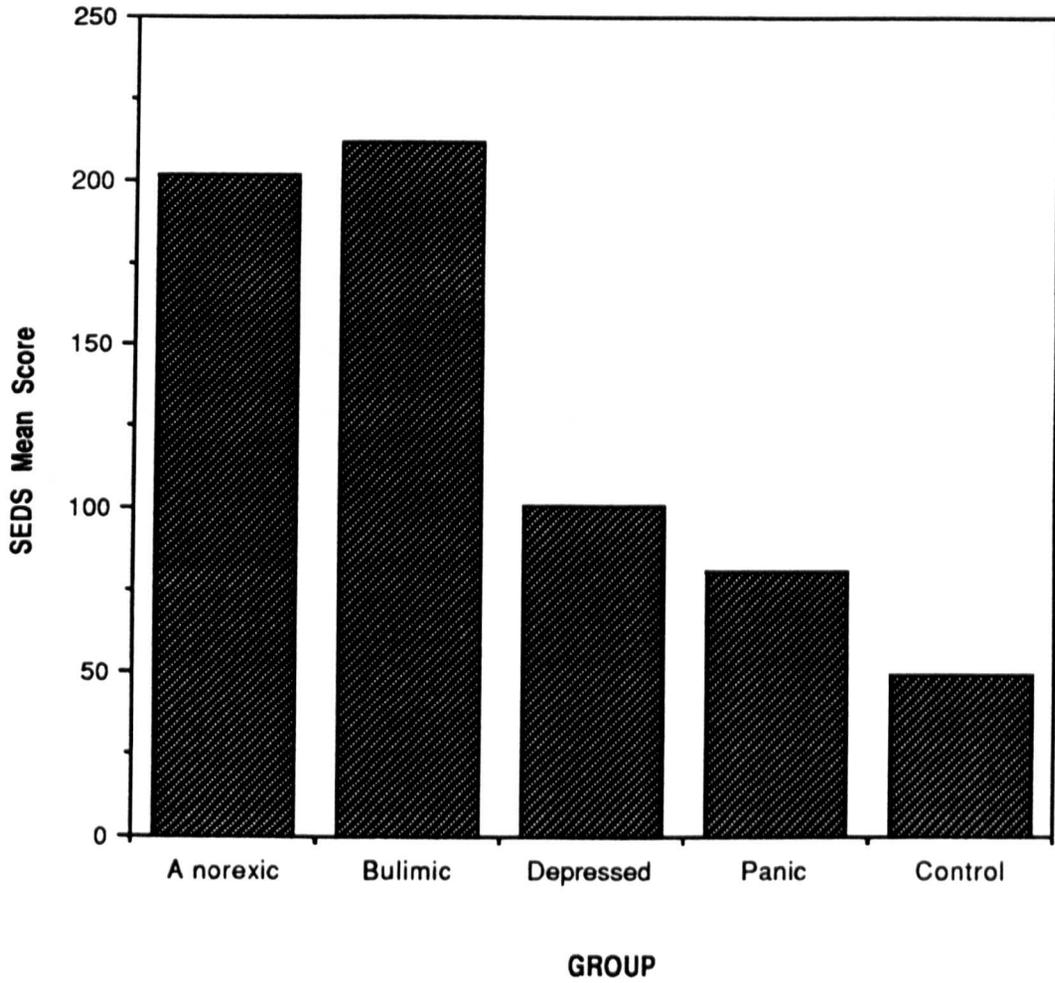
Key: In Post-hoc Scheffe Comparisons groups are coded: 1 = anorexic, 2 = bulimic, 3 = depressed, 4 = panic, 5 = control. Groups separated by a hyphen are significantly different from each other at the $p < .01$ level.

11.10 (1) SEDS Total.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means indicated that the bulimic group attained the highest mean, followed by the anorexic group. Of the 3 comparison groups, the depressed group attained the highest mean, followed by the panic disorder, with the normal control group attaining the lowest mean score. Post-hoc Scheffe comparisons revealed the the 2 primary eating disorder groups attained significantly higher means than the other 3 groups, but were not significantly different from each other. The depressed group, though significantly lower than the eating disorder groups, attained a significantly higher mean score than the panic disorder and normal control groups. There was no significant difference between the panic disorder and normal control groups.

Figure 11.1 presents the group scores in graphic form.

FIGURE 11.1: GROUP MEAN SCORES ON SEDS TOTAL

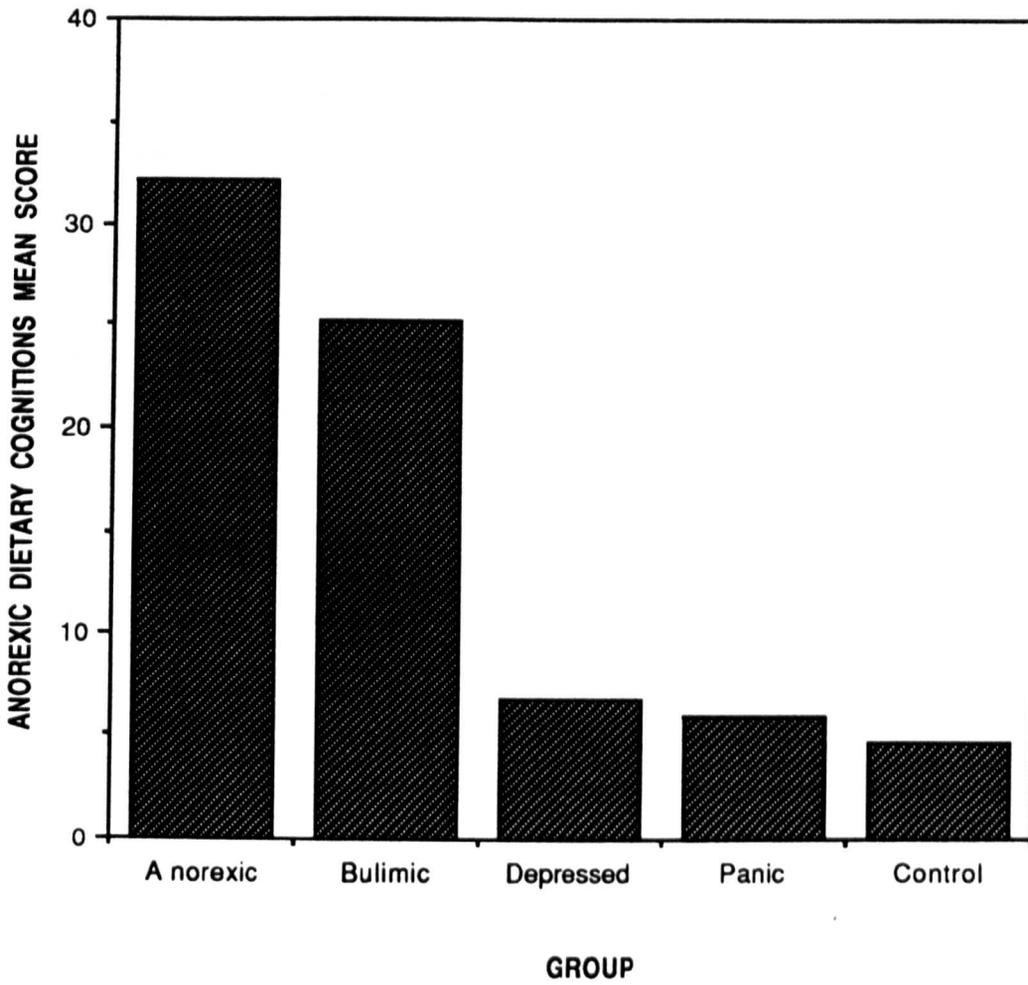


11.10 (ii) Anorexic Dietary Cognitions Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the anorexic group attained the highest mean, indicating the highest degree of anorexic dietary cognitions. The anorexic mean was followed by the bulimic group. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean; though these 3 means were considerably lower than the primary eating disorder means. Post-hoc Scheffe comparisons revealed that the 2 primary eating disorder groups attained significantly higher means than the 3 comparison groups. Further, comparison of the 2 primary eating disorder groups indicated that the anorexic group attained a significantly higher mean than the bulimic group.

Figure 11.2 presents the group means in graphic form.

FIGURE 11.2: GROUP MEAN SCORES ON ANOREXIC DIETARY COGNITIONS SCALE

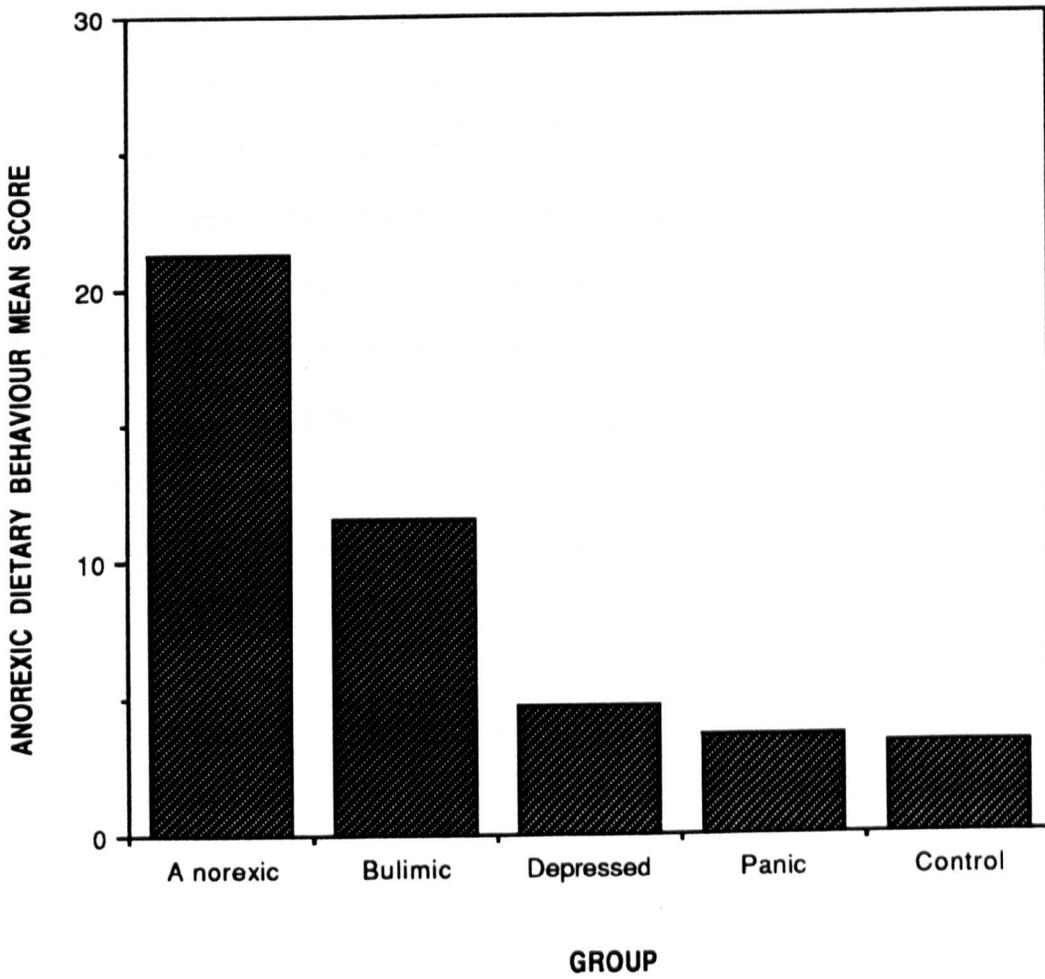


11.10 (iii) Anorexic Dietary Behaviour Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the anorexic group attained the highest mean, indicating the highest degree of anorexic dietary behaviour. The anorexic group mean was followed by the bulimic group. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean; though these 3 means were considerably lower than the primary eating disorder means. Post-hoc Scheffe comparisons revealed that the the 2 primary eating disorder groups attained significantly higher means than the 3 comparison groups. Comparison of the 2 primary eating disorder groups indicated that the anorexic group attained a significantly higher mean than the bulimic group. There were no significant differences between the depressed, panic disorder and normal control groups.

Figure 11.3 presents the group means in graphic form.

FIGURE 11.3: GROUP MEAN SCORES ON ANOREXIC DIETARY BEHAVIOUR SCALE

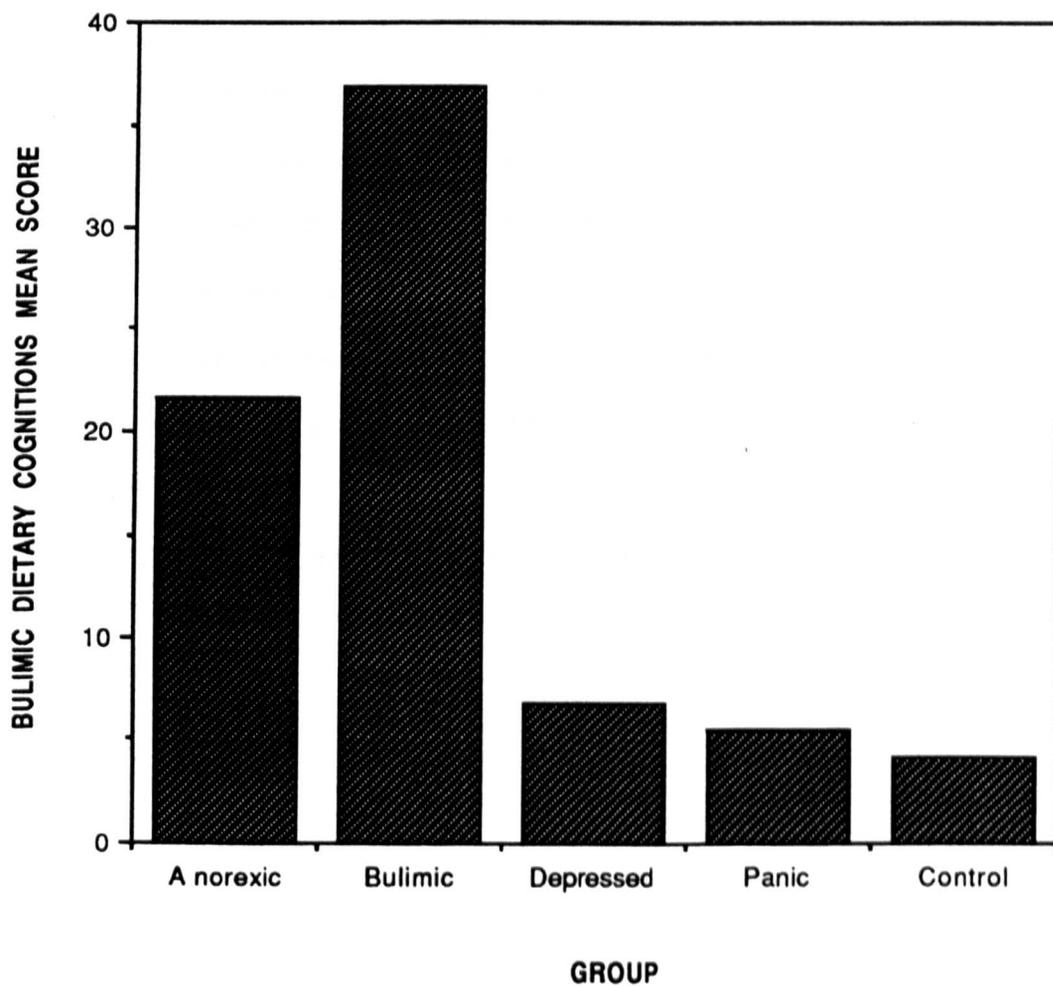


11.10 (iv) Bulimic Dietary Cognitions Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the bulimic group attained the highest mean, indicating the highest degree of bulimic dietary cognitions. The bulimic group mean was followed by the anorexic group mean. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean; though these 3 means were considerably lower than the primary eating disorder means. Post-hoc Scheffe comparisons revealed that the the 2 primary eating disorder groups attained significantly higher means than the 3 comparison groups. Further, comparison of the 2 primary eating disorder groups indicated that the bulimic group attained a significantly higher mean than the anorexic group.

Figure 11.4 presents the group mean scores in graphic form.

FIGURE 11.4: GROUP MEAN SCORE ON BULIMIC DIETARY COGNITIONS SCALE

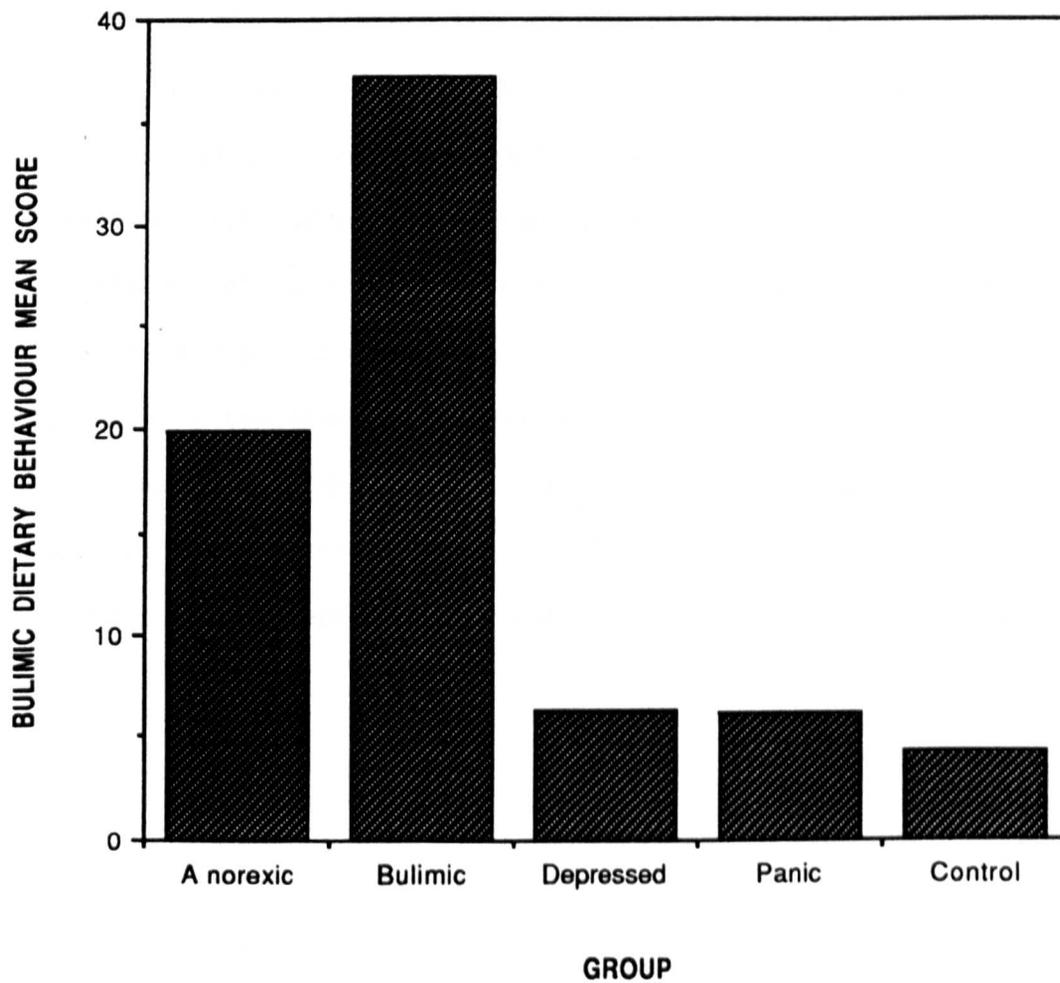


11.10 (v) Bulimic Dietary Behaviour Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the bulimic group attained the highest mean, indicating the highest degree of bulimic dietary behaviour. The bulimic group mean was followed by the anorexic group. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean; though these 3 means were considerably lower than the primary eating disorder means. Post-hoc Scheffe comparisons revealed that the the two primary eating disorder groups attained significantly higher means than the 3 comparison groups. Further, comparison of the 2 primary eating disorder groups indicated that the bulimic group attained a significantly higher mean than the anorexic group.

Figure 11.5 presents the group mean scores in graphic form.

FIGURE 11.5: GROUP MEAN SCORES ON BULIMIC DIETARY BEHAVIOUR SCALE

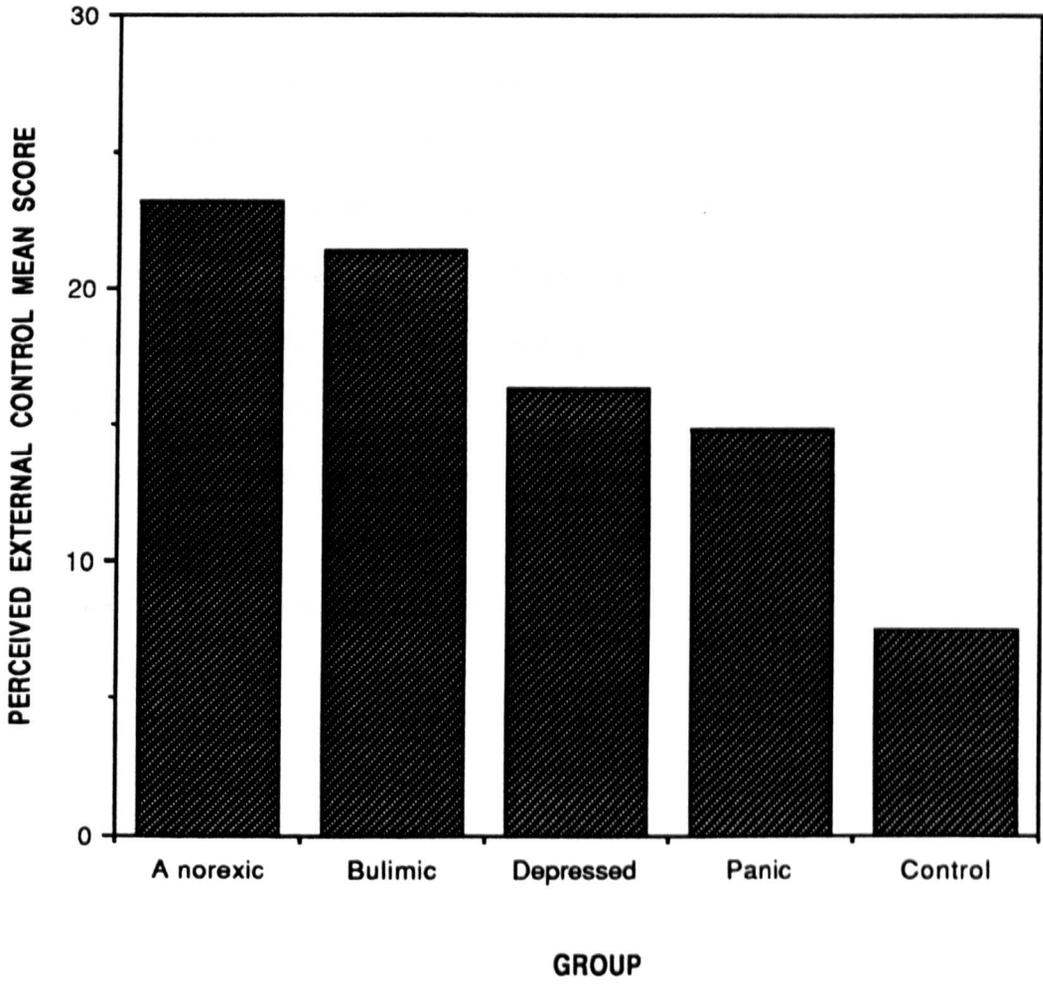


11.10 (vi) Perceived External Control Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the anorexic group attained the highest mean, indicating the highest degree of perceived external control. The anorexic group mean was closely followed by the bulimic group mean. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean. Post-hoc Scheffe comparisons indicated that the 2 primary eating disorder groups were not significantly different from each other; though these 2 groups attained significantly higher means than the panic disorder and normal control groups. There were no significant differences between the primary eating disorder groups and the depressed group. The depressed group mean was significantly higher than the normal control mean, though not the panic disorder mean.

Figure 11.6 presents the groups mean scores in graphic form.

FIGURE 11.6: GROUP MEAN SCORES ON PERCEIVED EXTERNAL CONTROL SCALE

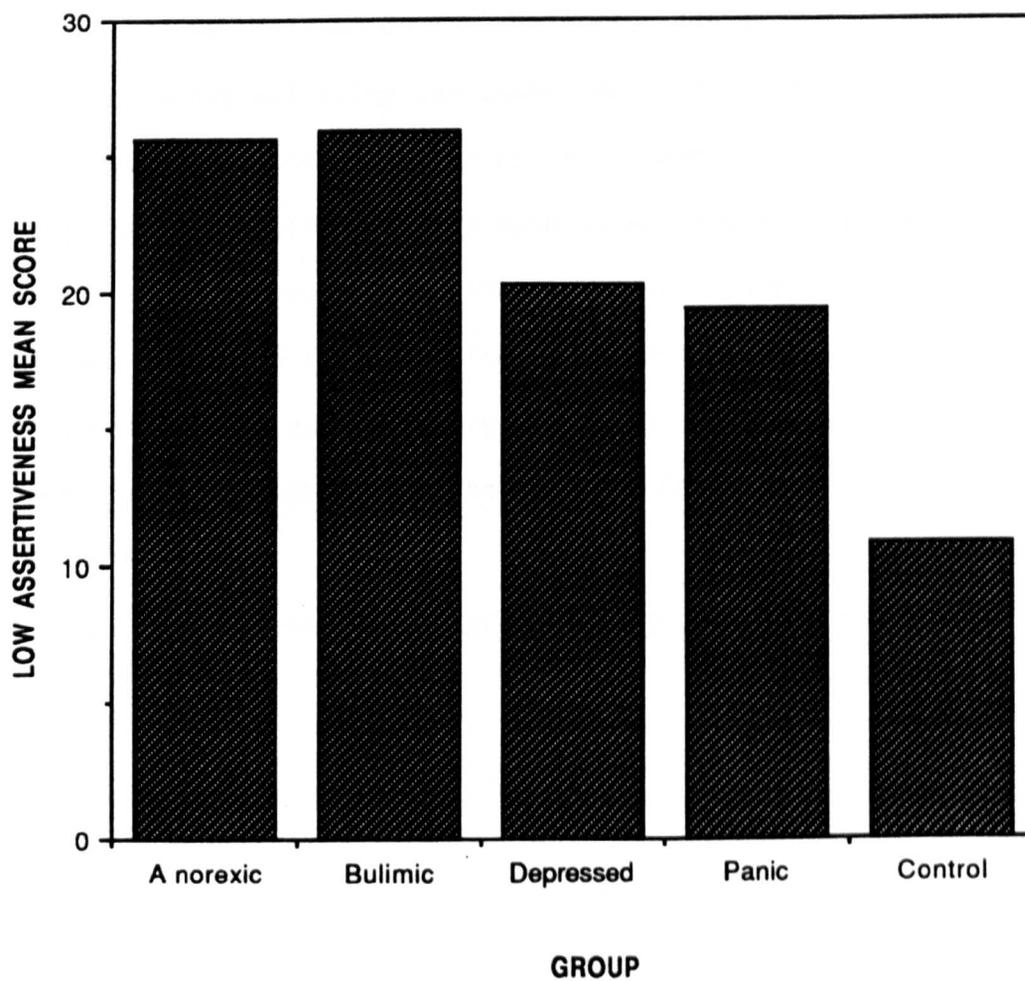


11.10 (vii) Low Assertiveness Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the bulimic group attained the highest mean, indicating the lowest degree of self assertion. The bulimic group was closely followed by the anorexic group mean. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean. Post-hoc Scheffe comparisons indicated that the 2 primary eating disorder groups were not significantly different from each other; though these 2 groups attained significantly higher means than the panic disorder and normal control groups. There were no significant differences between the primary eating disorder groups and the depressed group. The depressed group mean was not significantly higher than the panic disorder mean or the normal control mean.

Figure 11.7 presents the group mean scores in graphic form.

FIGURE 11.7: GROUP MEAN SCORES ON LOW ASSERTIVENESS SCALE

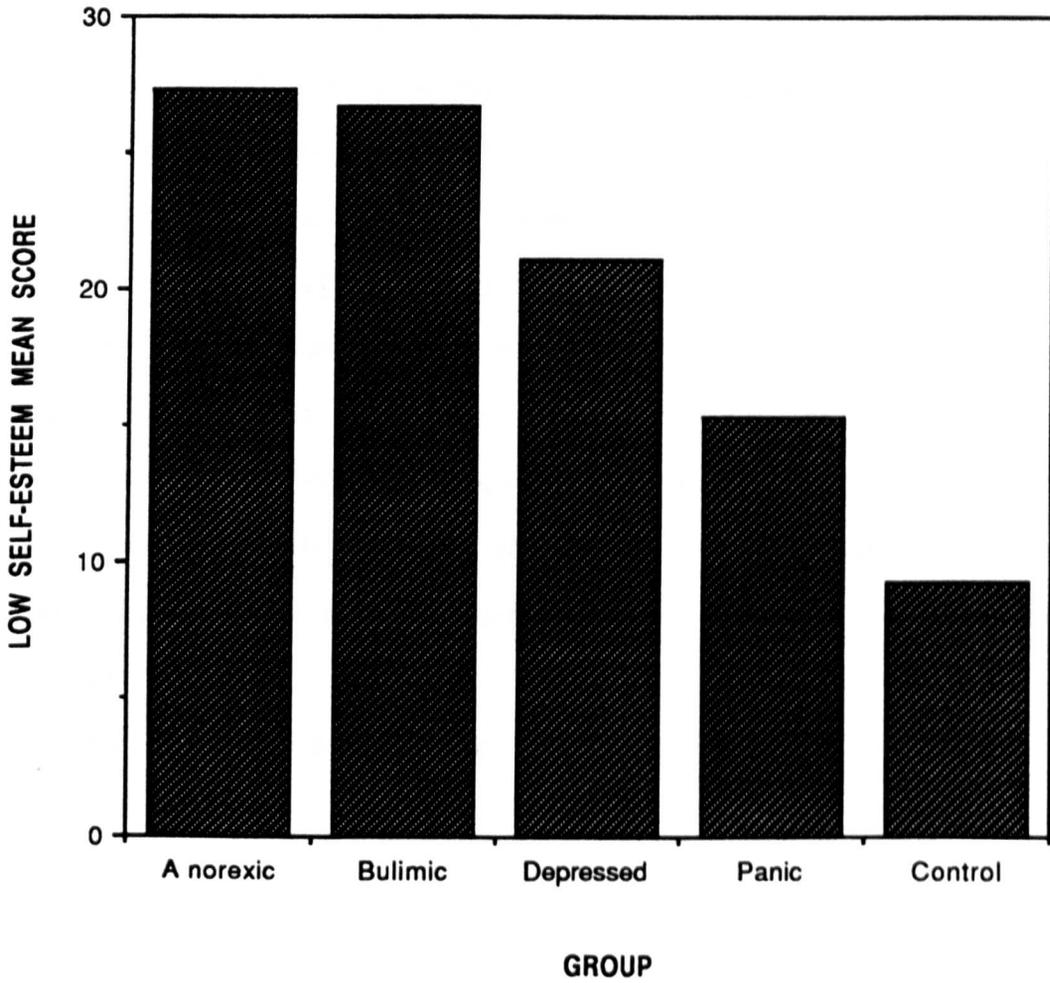


11.10 (viii) Low Self-Esteem Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the anorexic group attained the highest mean, indicating the lowest degree of self-esteem. The anorexic group mean was closely followed by the bulimic group mean. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean. Post-hoc Scheffe comparisons indicated that the 2 primary eating disorder groups were not significantly different from each other; though these 2 groups attained significantly higher means than the panic disorder and normal control groups. There were no significant differences between the primary eating disorder groups and the depressed group. The depressed group mean was significantly higher than the normal control mean, though not the panic disorder mean.

Figure 11.8 presents the group mean scores in graphic form.

FIGURE 11.8: GROUP MEAN SCORES ON LOW SELF-ESTEEM SCALE

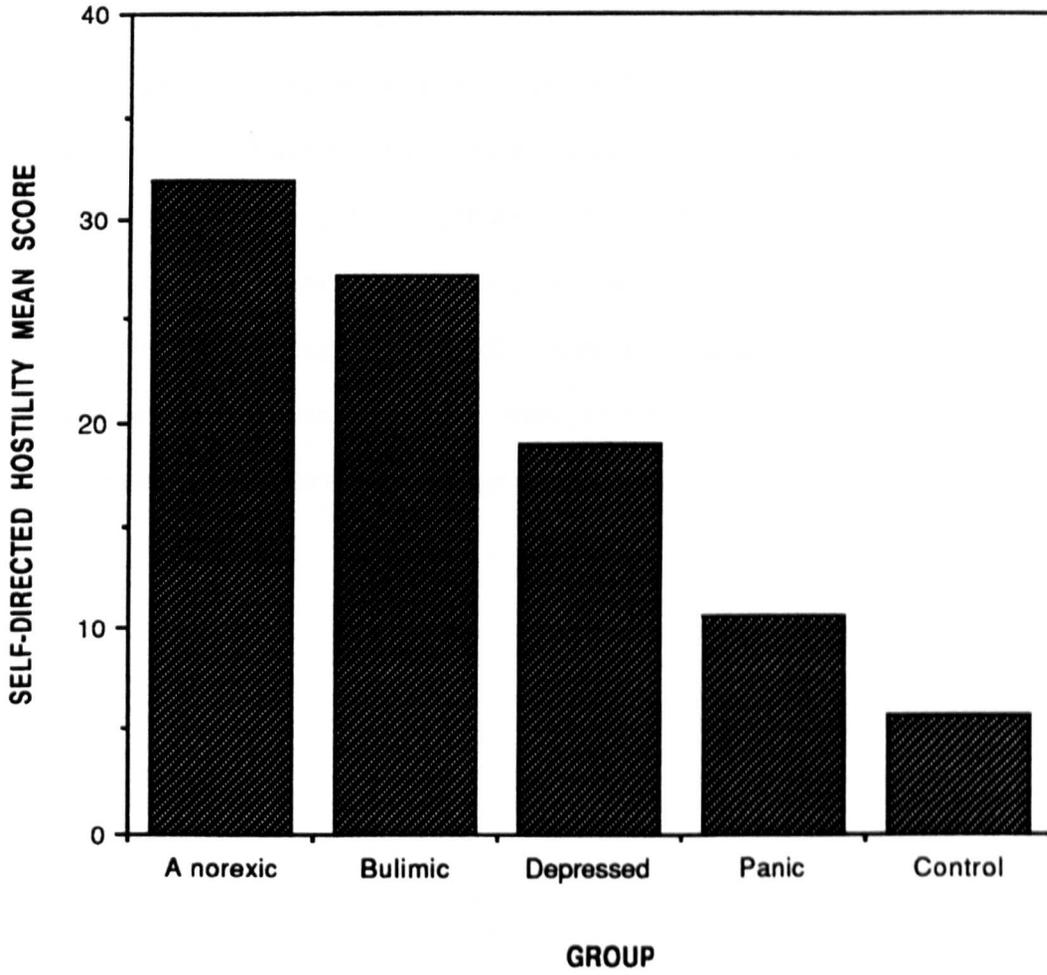


11.10 (ix) Self-Directed Hostility Scale Of The SEDS.

Oneway ANOVA showed that there were highly significant differences across the 5 groups. Reference to the means revealed that the anorexic group attained the highest mean indicating the highest degree of hostility towards the self. The anorexic group mean was closely followed by the bulimic group mean. Of the 3 comparison groups, the depressed group attained the highest mean followed by the panic disorder group, with the normal control group attaining the lowest mean; though these 3 means were considerably lower than the primary eating disorder means. Post-hoc Scheffe comparisons revealed that the 2 primary eating disorder groups attained significantly higher means than the 3 comparison groups. Further, comparison of the 2 primary eating disorder groups indicated that there were no significant differences between the 2 primary eating disorder groups. The depressed group attained a significantly higher mean than the panic disorder and normal control groups. There were no significant differences between the panic disorder and normal control groups.

Figure 11.9 presents the group mean scores in graphic form.

FIGURE 11.9: GROUP MEAN SCORES ON SELF-DIRECTED HOSTILITY

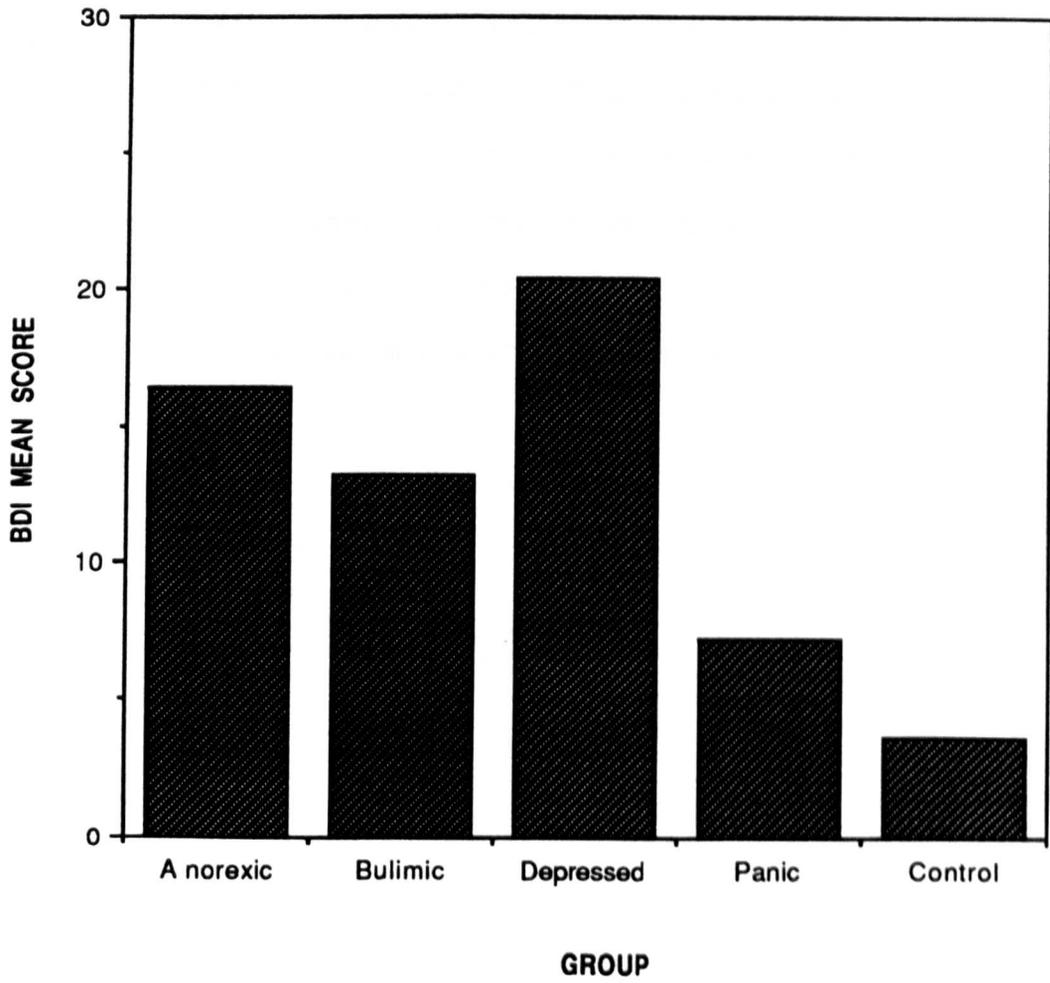


11.10 (x) Beck Depression Inventory.

Oneway ANOVA showed that there were significant differences across the 5 groups. Reference to the group means revealed that the depressed group attained the highest mean score indicating the highest degree of depression. The anorexic group attained the second highest mean followed by the bulimic group; and then the panic disorder group. The normal control group attained the lowest, and considerably smaller mean. Post-hoc Scheffe comparisons indicated that the depressed group mean was significantly higher than the 4 other groups. The 2 primary eating disorder means were not different from each other, though they were significantly higher than the panic disorder and normal control means. There was not a significant difference between the panic disorder group means and the normal control mean score.

Figure 11.10 presents the group mean scores in graphic form.

FIGURE 11.10: GROUP MEAN SCORES ON THE BDI

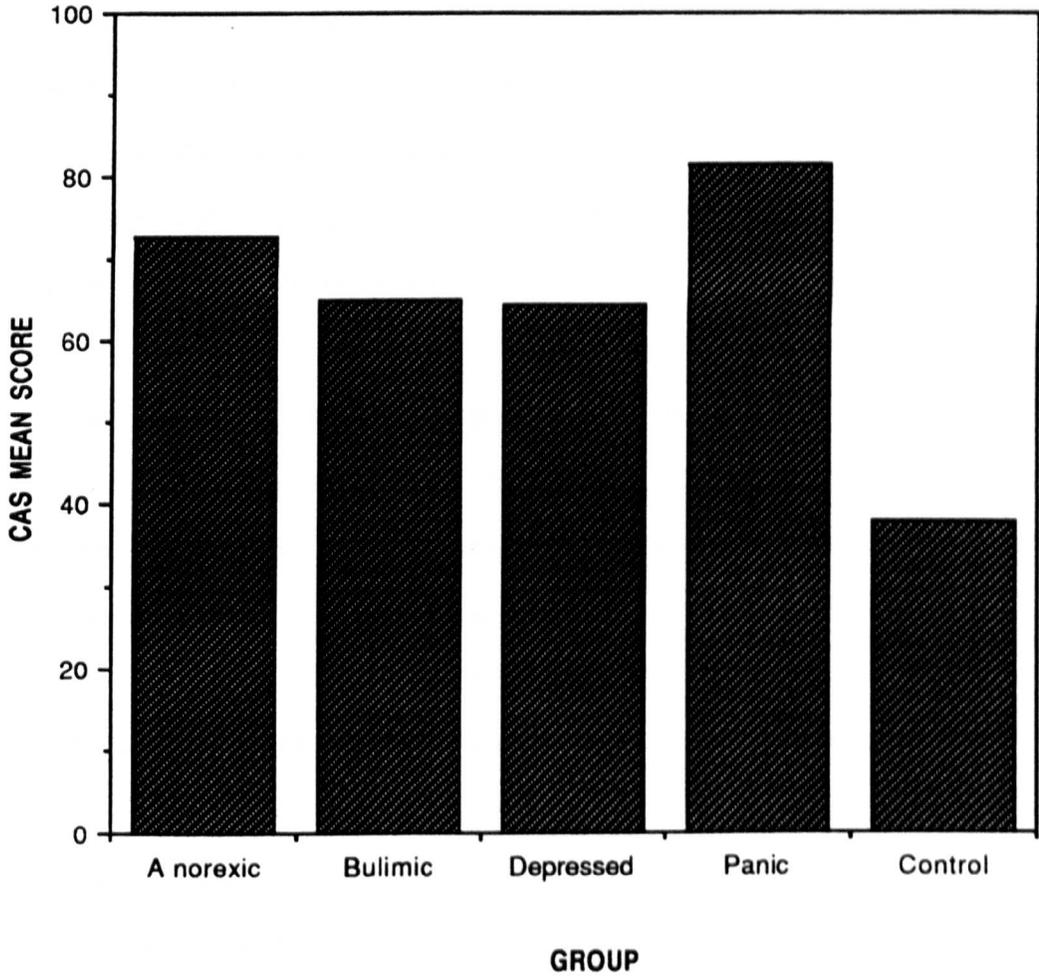


11.10 (xi) Clinical Anxiety Questionnaire.

Oneway ANOVA showed that there were significant differences across the 5 group means. The panic disorder mean attained the highest mean score, indicating the highest degree of clinical anxiety and panic. The panic disorder group mean was followed by the anorexic group, bulimic group, depressed group and normal control means in descending order. Post-hoc Sheffe comparisons indicated that there were significant differences between the panic disorder group and the other 4 groups. There were no significant differences between the anorexic, bulimic and depressed group means. However, these 3 group means were significantly higher than the normal control mean.

Figure 11.11 presents the group mean scores in graphic form.

FIGURE 11.11: GROUP MEAN SCORE ON THE CAS



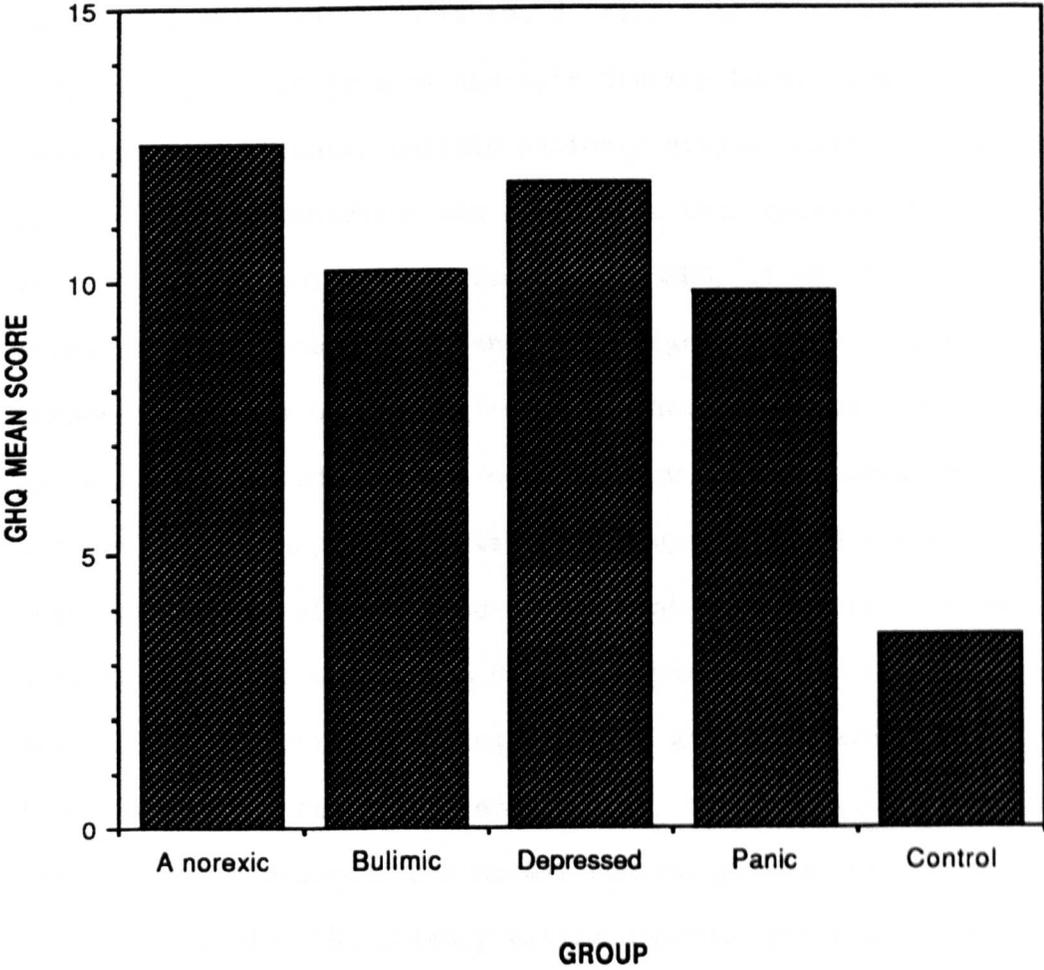
11.10 (xii) General Health Questionnaire.

Oneway ANOVA showed that there were significant differences across the 5 group mean scores. Reference to the group means revealed that the anorexic group attained the highest mean, indicating the highest degree of psychiatric dysfunction. The anorexic group mean was followed by the depressed group, the bulimic group, the panic disorder group and the normal control group means in descending order. Post-hoc Sheffe comparisons indicated that there were no significant differences between the mean scores of the four clinical groups, though all clinical groups attained significantly higher mean scores than the normal control group.

Figure 11.12 presents the group mean scores in graphic form.

The individual scores were analysed to discern the number and percentage of patients in each group who attained a GHQ score above the chosen cut-off point for psychiatric caseness (12). In the anorexic group 19 (45.2%) of the patients were above the cut-off score; in the bulimic group 15 (41.7%) patients were above the cut-off score; in the depressed group 14 (46%) of the patients were above the cut-off point; in the panic disorder group 10 (37%) of the patients were above the cut-off point; and in the normal control group, none of the subjects scored above the cut-off point.

FIGURE 11.12: GROUP MEAN SCORES ON THE GHQ



SECTION 3: DISCUSSION.

11.11 Summary Of Results.

The above results have indicated that anorexic patients and bulimic patients display significantly more dietary behaviours and dietary cognitions than depressed patients, panic disorder patients and normal controls. They are also differentiated from each other on these dietary behaviours and cognitions in the direction of their disorder (anorexics display significantly more anorexic dietary behaviours and cognitions than bulimic patients; bulimic patients display significantly more bulimic dietary behaviour and cognitions than anorexic patients). On the four cognitive/emotional scales of the SEDS, it was found that the primary eating disorder patients were significantly higher than all 3 comparison groups on the self-directed hostility scale only. On the scales of perceived external control, low assertiveness, and low self-esteem, the primary eating disorder groups attained significantly higher means than panic disorder and normal control subjects; but were not significantly different from depressed patients. On the measure of depression, the primary eating disorder groups attained significantly lower means than the depressed patients, but significantly higher means than the panic disorder and normal control groups. On the measure of clinical anxiety, the primary eating disorder group attained significantly lower means than the panic disorder group, were similar to the depressed group, but attained significantly higher means than the normal control group. Finally, on the measure of psychiatric caseness, the four clinical groups all attained significantly higher means than the normal control group, but were not significantly different from each other. It was found that over 40% of the two primary eating disorder

groups and the depressed group subjects were above the cut-off point for psychiatric casesness. Thirty-seven percent of the panic disorder group were above that point; though none of the normal controls were in the realms of psychiatric dysfunction.

11.12 Demographic And Treatment Background Of The Four Clinical Groups.

It was noted that the depressed and panic disorder group patients were, on average, 10 years older than the anorexic and bulimic patients. This was not surprising in the light of claims that primary eating disorders are a problem generally associated with adolescence and early adulthood (Bruch, 1973; Crisp, 1980; Sours, 1980). Also previous research in the areas of panic disorder and depression have reported mean ages over 35 years (Fisher & Wilson, 1985; Jarrett & Weissenburger, 1990). This suggests that depressive disorder and panic disorder have a later onset than anorexia nervosa and bulimia nervosa. This notion is corroborated by the fact that the duration of psychological problems and duration of treatment was similar across the four clinical groups.

It was found that chronicity of psychological problems, and duration of treatment was not significantly related to the severity of dysfunction as measured by the 12 scales/measures. This indicates that those patients who report longer periods of dysfunction and longer need for treatment, are not necessarily the patients who display greater psychological dysfunction. A tentative suggestion could be made from this finding, that psychological dysfunction reaches a set 'level' in the patient, which is not necessarily increased by longer duration of that dysfunction. However, the data collected in this study are not sufficient to support this contention. Again, further research would be

required to assess the course of different disorders over time. This was not an aim of the present study.

Concerning hospitalisation, comparison of the four clinical groups showed that a higher proportion of the anorexia nervosa and depressed patients had been hospitalised, compared with panic disorder or bulimic patients. Also, within the patients of all groups who had been hospitalised, the anorexic and depressed patients were more likely to report multiple admissions. This may reflect the fact that the consequences of these two disorders require a higher level of medical intervention than do panic disorder or bulimia. As noted in Chapter Five, the prolonged self-induced starvation noted in anorexic patients has dangerous physical ramifications, especially in the area of cardiac function (Bhanji & Mattingly, 1988). Likewise, depressed patients can manifest physical and mental lethargy, with the danger of suicide. Therefore, it is likely that such patients would require more medical attention than patients who experience periodic panic attacks or engage in periodic bingeing and purging.

11.13 Between Group Comparisons On The Twelve Measures.

(a) Dietary Behaviour And Cognitions Scales Of The SEDS.

The results on the four dietary scales (anorexic dietary cognitions, anorexic dietary behaviour, bulimic dietary cognitions, and bulimic dietary behaviour), indicated that, as expected, the primary eating disorder groups could be distinguished from the three comparison groups on the basis of their dietary behaviours and the cognitions pertaining to those behaviours. This supports the findings of Williams et al. (1990) who found that a mixed eating disorder group displayed

significantly more dietary dysfunction than a heterogenous group of psychiatric patients. However, that study has been improved upon by comparing two, diagnostically differentiated primary eating disorder groups, with two well defined psychological dysfunction groups. In addition the differences and the direction of differences between the two primary eating disorder groups have supported the findings of Study Two. In that study and the present study, the anorexic patients displayed significantly more anorexic dietary behaviours and cognitions; while the bulimic patients displayed significantly more bulimic dietary behaviours and cognitions. As discussed in Studies One and Two, this finding supports the decision to define the different diagnostic criteria of the two eating disorder groups (A. P. A, 1980).

(b) Perceived External Control Scale Of The SEDS.

As noted in Chapter Six, while considerable research into perceived control has been conducted in primary eating disorders, depression and panic disorder, no previous study has compared these groups with each other. Consequently, this study stands as the first in this area. On the scale of perceived external control, it was found that the primary eating disorder groups attained significantly higher mean scores than the normal control and the panic disorder groups. This indicates that both anorexic and bulimic patients perceive significantly more control by forces external to themselves and from other people, than do people who suffer panic attacks and people who have no psychological problems. While these results support the findings of Studies One and Two, that primary eating disorder patients are more 'external than normal controls; no support is provided for the contention that primary eating disorder patients may be similar to panic disorder patients.

However, it was found that the primary eating disorder groups were not significantly different from the depressed group patients, though the mean score of the depressed group was lower. This indicated that people who suffer depression are likened to primary eating disorder patients in their perception of control. These results provide some support for the contention put forward in Chapter Six, that there are links between primary eating disorders and depression. Previous research into these links has been concentrated on the manifestation of depressive symptomatology displayed by the diagnostic groups. The present study expands this notion by indicating that these links are also apparent in the perception of control over the self and life events. However, as this is the first study which compares depressed and primary eating disorder patients on this measure, the results are insufficient to support the claim that primary eating disorders and depression are different diagnoses of the same psychopathology. It is equally likely that eating disorders and depression are separate disorders, both of which are characterised by perceived external control.

Concerning the bearing of the results on the SEDS, the criterion validity of the perceived external control scale has been further established. It has been found that the perceived external control scale differentiates primary eating disorder patients from another psychological group (panic disorder) which is not characterised by 'externality', as shown by its similarity to normal controls. However, the perceived external control scale has been shown to show statistical similarities between primary eating disorder and depressed groups, both of which are more external than controls and which have been previously

noted as displaying a perception of external control.

The findings also have some bearing on the research conducted in the individual clinical groups. The results support the contention that eating disorders are more 'external' than controls (see Study One/Chapter Three). In the area of depression the findings support the contention that externality is a feature of depression (Becker & Lesiak, 1977; Benassi et al., 1988; Moore & Paolillo, 1984). In the area of panic disorder, the present findings, that the panic disorder patients were not significantly more external than controls, goes against previous, though limited, research. Other studies have found correlational relationships between social anxiety/fear and external locus of control (Lefevre & West, 1981; Traub, 1982; Hoffart & Martinsen, 1991); and that agoraphobic patients are significantly less internal than controls (Brodbeck & Michelson, 1987; Adler & Price, 1985; Hoffart & Martinsen, 1990; Fisher & Wilson, 1985). The reasons for such disparity between the results is difficult to interpret as previous research is fairly well controlled. However, it is possible that the extreme score ranges (variance) within the study created by the primary eating disorder and depressed groups has statistically clouded the panic disorder-control differences to the point of statistical non-significance.

(c) Low Assertiveness Scale Of The SEDS.

Results of the low assertiveness scale have indicated that the two primary eating disorder groups have less ability to display self-assertion than normal controls and patients with panic disorder. In the light of the results of Studies One and Two, the eating disorder/control differentiation was not unexpected. However, panic disorder patients

have been described as unassertive and dependent (Fodor, 1974; Goldstien & Chambliss, 1978), which has been empirically demonstrated (Chambliss et al., 1982; Fisher & Wilson, 1985). This led to the suggestion that primary eating disorder and panic disorder patients may be comparable in this psychological area. The results of the present study go against this notion by showing the primary eating disorder patients to be significantly less functional than panic disordered comparisons. Moreover, the finding that the panic disorder patients were not significantly less assertive than the controls goes against previous empirical research which has claimed to find differences (Chambliss et al., 1982; Fisher & Wilson, 1985). Again, as the panic disorder mean was higher than the control group mean, this may be explained by the variance created by the extreme scores of the primary eating disorder group.

The present study has, however, shown that primary eating disorder and depressed patients are comparable in their perceived low ability to be assertive; though the mean scores of the primary eating disorder groups were higher than that of the depressed group. It was found that both the eating disorder groups and the depressed groups were characterised by a perception of being unable to assert themselves in social situations and relationships. This finding lends some support to the claim that there are similarities between primary eating disorder and depression. Nevertheless, this claim has never previously been examined in the area of low assertiveness. Therefore, in the absence of replication, the findings in no way serve to establish the 'equality' of depression and primary eating disorder. It is quite possible, especially in the light of dietary differences, that primary eating disorders and

depression are distinct disorders, both of which are characterised by low assertiveness. Further, the fact that SEDS are able to detect this cognitive/emotional aspect in both primary eating disorder patients and depressed patients - both of which have been shown to be less assertive than controls, and who have been previously noted as unassertive - gives more weight to the criterion validity of the scales. As a final point, the finding that the depressed patient were significantly less assertive than controls supports the claims that this patient group is characterised by low assertiveness (Zetzel, 1965; Lefevre & West, 1981; Packman & Foy, 1978; Sanchez et al., 1980; Culkin & Perrotto, 1985).

(d) Low Self-Esteem Scale Of The SEDS.

The findings have shown that the primary eating disorder groups are significantly lower in self-esteem than the normal controls, though this was expected in the light of Studies One and Two. It has also been shown that primary eating disorder patients can be differentiated from panic disorder patients, indicating that anorexic and bulimic patients have a lower perception of self-worth and self-value than patients who suffer panic attacks and, in some cases, agoraphobia. As noted in Chapter Six, the notion that the primary eating disorder and panic disorder patients may have been similar, could only be postulated in the absence of relevant research. The notion is not supported. Likewise, no previous research has been found to compare panic disorder with normal control subjects, though low self-esteem has been put forward as a characteristic of panic disorder (Bagley et al., 1979). The findings of the present study suggest that low self-esteem is not a characteristic of this group. However, this finding may be confounded by the variance of scores in the present study, and should be further investigated.

The present study has, however, shown that primary eating disorder and depressed patients are comparable in their feelings of self-esteem and self-worth. Again, this finding lends support to the notion that there are links between primary eating disorders and depression, and also replicate the findings of Strober (1980), who found that eating disorder and depressed patients were comparable on a measure of self-acceptance. Nevertheless, as noted in the discussion of the perceived external control and low assertiveness scales, the psychological links between depression and primary eating disorder have not been extensively investigated. Therefore, the finding by this study and Strober (1980), that there are inter-disorder similarities in the area of self-esteem, does not serve to support the claim that primary eating disorder and depression are different manifestations of the same psychopathology. The results can only indicate that the different disorders both display low self-esteem.

The results of the low self-esteem scale also have a bearing on the criterion validity of the SEDS. It has been shown that the low self-esteem scale can differentiate primary eating disorder patients from another psychological group (panic disorder) which is not deficient in this area - as shown by the similarity to the normal control group. However, the SEDS have shown similarities between another psychological group (depressed) who have been noted elsewhere as being characterised by low self-esteem, and who are significantly more dysfunctional in this area - as shown by the difference from normal controls.

As a final note, the findings also support previous research which has claimed that low self-esteem is a central component of depression (Lefevre & West, 1981; Altman & Wittenborn, 1980; Cofer & Wittenborn, .

1980).

(e) Self-Directed Hostility Scale Of The SEDS.

The results of the self-directed hostility scale has indicated that the primary eating disorder groups display more self-criticism, guilt and self-punitiveness than normal control, though this result was expected in the light of Studies One and Two. It has also been shown that the two primary eating disorder groups are more dysfunctional in these features than both depressed and panic disordered patients.

The finding that the primary eating disorder groups reported significantly more self-directed hostility than panic disorder patients is in keeping with results on the other cognitive/emotional scales. The only previous research which was found to be relevant, was a study which had found agoraphobic patients to report more guilt than controls (Alessi et al, 1987). This led to a tentative postulation that primary eating disorder and panic disorder patients may be similar in this feature. This postulation was not supported.

The finding that the primary eating disorder patients also reported more dysfunctional self-directed hostility than the depressed patients was not expected in the light of the similarities on the other cognitive/emotional scales. Further, there is considerable theoretical and empirical research which has noted that such negative feelings towards the self are a central characteristic of depressed patients (Herman, 1983; Carver & Ganellen, 1983; Altman & Wittenborn, 1980; Roy, 1990; Jarrett & Weissenburger, 1990). These similarities of results between primary eating disorder and depression research led to the suggestion that these groups may be similar. The notion has not been supported. It has been found that though the depressed patients were

significantly more hostile to the self than were normal controls, the primary eating disorder patients were, in turn, more hostile to the self than the depressed patients. This suggests that, though this feature may characterise depressed patients, it is even more extreme in anorexic and bulimic patients. The findings support and improve on the findings of Frank (1991) who also showed that self-reported eating disorder subjects were higher in shame and guilt than self-reported depressed subjects.

(f) The Other Measures Of Depression And Anxiety.

The mean group scores on the BDI indicated, as would be expected from diagnosis, that the depressed patients reported the highest degree of depressive symptomatology. It was also found that the primary eating disorder groups reported a higher degree of depression than the panic disorder and normal controls. This finding certainly supports the previous research which has shown that anorexic and bulimic patients are characterised by elevated levels of depression. However, the finding that the primary eating disorder groups were significantly lower than diagnosed depressives on this measure, suggests that while these patients may be depressed they are not affected to the same degree as diagnosed depressives. This finding has a bearing on the theory that eating disorder, notably bulimia, is a variant of depressive disorder (Hatzukami et al., 1984b). The present findings do not support this notion, and alternatively support the dissenting claims of Strober (1985), who has stated that depressed thoughts in primary eating disorder patients does not serve to justify the belief that these patients are depressed with secondary eating dysfunction.

The mean group scores on the anxiety scale indicated, as expected

from the diagnosis, that the panic disorder patients reported significantly more anxiety and panic symptoms than the other four groups. It was also found that the primary eating disorder groups and the depressed groups, though less anxious and panic orientated than the panic patients, were comparable with each other. This finding, again, supports the contention that there are links between primary eating disorder and depression. However, in the absence of any previous research between the groups on this type of measure, this finding cannot be taken as support for the 'shared psychopathology' of primary eating disorders and depression.

11.16 Final Comments.

As noted at the end of Chapter Six, the first aim of this study was to investigate the issues raised by Williams et al. (1990). In that study it was found that a mixed primary eating disorder group was not significantly different from a heterogeneous psychiatric group on measures of perceived control, assertiveness, and self-directed hostility. The nature of the items would indicate that these two groups would be comparable in terms of self-esteem. This called into question the differentiation between primary eating disorders and other psychological groups on these four characteristics. The present study has addressed that issue by comparing both anorexic and bulimic patients with groups of depressed patients, panic disordered patients and normal controls. The groups were compared on the SEDS and measures of depression and anxiety. It has been shown that the primary eating disorder patients were significantly more dysfunctional than the panic disorder patients and the controls on all eight SEDS. On the SEDS the

primary eating disorder patient groups were significantly more dysfunctional than the depressed group on all scales, except perceived external control, low assertiveness, and low self-esteem. This suggests that eating disorder patients are differentiated by their dietary behaviour and cognitions, and the extent to which they feel hostility towards the self. However, they are similar to depressed patients on their perception of being controlled externally, their perceived ability to assert themselves, and their feelings of self-worth. Nevertheless, the primary eating disorder groups attained higher means on those three scales, suggesting that there may be subtle differences which require further research.

The second aim of the study was to further investigate the SEDS. The criterion validity of the SEDS has been illustrated by the fact that the four dietary scales discriminated the primary eating disorder groups from other psychological groups, which are not characterised by dietary and eating dysfunction. Concerning the four cognitive/emotional scales, all four scales have differentiated primary eating disorder groups from another psychological group (panic disorder), which does not display the features under measurement - as shown by the similarity of that group to normal controls. However, the perceived external control, low assertiveness, and low self-esteem scale has been shown to illustrate similarities between primary eating disorders and another group (depressed) who have been noted as characterised by these features. In short, the criterion validity of the SEDS has been further demonstrated by this study.

The specificity of the characteristics assessed by the SEDS warrant comment. Results indicate the perceived control, low assertiveness and

low self-esteem scales do not differentiate between primary eating disorder and depressed patients. This lack of differentiation has also been noted in another multi-scale measure of eating disorder - the EDI (Garner et al., 1983d). Hurley et al. (1990) found that the ineffectiveness, interpersonal distrust, and maturity fear scales of the EDI failed to differentiate between eating disorder patients and a general psychiatric patient group. Some may argue that characteristics which have been shown to be non-specific, detract from the applicability of a measure to primary eating disorders. However, this seems a somewhat weak argument. The fact that certain cognitive/emotional characteristics are also found in other psychological groups of similar psychiatric severity does not detract from the importance of those characteristics in the psychopathology of primary eating disorders. Indeed, this argument has been presented by Hurley et al. (1990) in discussion of their results:

"...these results do not provide a fatal refutation of any hypothesis suggesting the specificity and importance of these issues...although not specific, these issues could, nevertheless, play an important or even a necessary role in the pathogenesis of eating disorders.

That they occur in other disorders, does not diminish this possibility" (pp. 424).

Likewise, though these characteristics may be shared between primary eating disorder and depressed patients, the necessity of treating these characteristics remains an important issue in the clinical management of anorexic and bulimic patients. The corollary of this necessity, is that the importance of the adequate assessment and monitoring of these

characteristics is not diminished.

As a final conclusion, it is suggested that further research is required to investigate the links between primary eating disorders and other psychological disorders. It was noted in Chapter Six that anorexia nervosa and bulimia nervosa have been linked with several psychological disorders other than depression and panic disorder. The similarities between eating disorder and depression in this Study raises the question whether eating disorders are also similar to other disorders in the cognitive/emotional areas measured. Further research is required to assess links between eating disorders and disorders such as obsessive compulsive disorder, generalised anxiety and phobia. However, it is important that such research is not used to redefine eating disorders as a variant of another disorder. As noted in Chapter Five, the dietary/behavioural aspects of eating disorders are potentially life threatening; and their treatment is essential to the management of eating disorder patients. Redefinition as a variant of another disorder may detract from the importance of these dietary/behavioural features. While certain cognitive/emotional characteristics may be shared between eating disorders and other psychological disorders, this should not serve to detract from the fundamental and unique behavioural features of the primary eating disorders.

CHAPTER TWELVE:

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS FOR FUTURE RESEARCH.

This thesis has presented literature reviews (Chapters 4 to 6) and resulting research implications for the present project (Chapter 7), which have been addressed by four interrelated studies (Chapters 8 to 11). The findings of those studies can be summarized as follows:

1. Anorexia nervosa and bulimia nervosa patients can be differentiated from two forms of dietary/weight concern (obese dieters and non-obese dieters), as well as from normal controls on four cognitive/emotional characteristics. Those characteristics are the perception of being controlled by external forces, low self-assertion, low self-esteem, and hostility directed towards the self. The fact that primary eating disorder patients can be differentiated from other individuals who also display dietary/weight features which are viewed as problematic (and not simply non-dietary controls) gives stronger support for the contention that these characteristics are important components of an eating disorder personality.
2. The Stirling Eating Disorder Scales (SEDS) have been developed in response to deficits in existing assessment measures for primary eating disorder patients. These eight scales assess anorexic dietary behaviour, anorexic dietary cognitions, bulimic dietary behaviour, bulimic dietary cognitions, perceived external control, low assertiveness, low self-esteem, and self-directed hostility. The scales have been developed according to established methodology, and have been shown to be consistent, valid, reliable, and not subject to response bias or gender bias. Correlations with clinical ratings produced weaker results.
3. The SEDS have been shown to be sensitive, in that they are able to detect change in the patients dietary/behaviours and

cognitions/emotions over treatment time. These results suggest that the SEDS are valid and appropriate for treatment monitoring. Moreover, the fact that the scales address both dietary/behavioural and also cognitive/emotional features, suggests that these are particularly relevant for use in conjunction with modern, and increasingly popular cognitive-behaviour therapies.

4. The criterion validity of the SEDS has been further demonstrated by indicating that they can differentiate between primary eating disorder and another clinical group (panic disorder) which scored similarly to normal controls. However, the Scales do illustrate links between primary eating disorder and a more severe clinical group (major depression) in the areas of perceived external control, low self-assertion, and low self-esteem. These results also have a bearing on claims that primary eating disorders are manifestations of depression. However, it is equally possible that eating disorders and depression are distinct disorders, both of which are characterised by these three cognitive/emotional characteristics.

However, in the discussion of these results, several issues have been raised which would require further, specialised research. These issues can be summarized as follows:

1. Obese and non-obese dieters were selected as representative of dietary /weight concern for this study, as these groups would fit a simple but viable working criteria for dietary/weight concern. Recruitment of other dietary/weight groups, which may be behaviourally closer to primary eating disorder (weight-preoccupied, restrained eaters) was deemed inappropriate as there were no working criteria.

For the purpose of further investigating primary eating disorder

characteristics vis à vis other dietary/weight concern, further research is required to establish working criteria for other dietary/weight concern groups which are noted in the literature, but remain undefined. This is especially important if the theoretical continuum of eating behaviours and dietary concern is to be empirically addressed.

2. It has been established that primary eating disorder patients can be differentiated from obese dieters, and non-obese dieters on the four cognitive/emotional features central to this thesis. However, further research is required to assess the extent to which primary eating disorder patients are different or similar to other, more severe, dietary/weight groups such as restrained eaters, subclinical eating disorder, and obese binge eaters, compulsive eaters. Though, as noted in the thesis, adequate research in this area would be contingent on recommendation 1. above.
3. In all four empirical studies, cognitive/emotional similarities have been noted between anorexic and bulimic patients. It has been noted elsewhere that the differentiation between the two diagnostic types may be spurious. The differences between the two patient types may be in terms of behavioural manifestation rather than cognitive/emotional psychopathology. It is essential that further research is conducted to establish similarities and differences between the two diagnoses. Such research would have a direct bearing on the understanding, and treatment of eating disorder patients. Further, this research may clarify the problems surrounding the diagnostic criteria of the two disorders, as outlined in chapter Two.

4. The present thesis has presented results which indicated that the SEDS are promising measures of primary eating disorder which improve and expand on existing assessment in this area. However, further research is required to establish normative data for eating disorder groups, dietary/weight concern groups, gender groups, normal control groups, and also norms for populations from other countries.
5. The SEDS have also been deemed appropriate for treatment monitoring. However, further, refined research is required to establish whether the scales are particularly appropriate for certain treatment modalities, and their application to treatment outcome research. Further, in the light of non-significant relationships between Scale scores and clinicians' ratings, research is required to establish whether the Scales can assist in enhancing communication between therapist and patient.
6. The present study has supported claims that perceived external control, low assertiveness, low self-esteem, and self-directed hostility are important features of primary eating disorders. As these cognitions/emotions are dysfunctional (and some claim causal), it is important that they are adequately addressed in treatment. Indeed, all four characteristics have been noted as warranting treatment. However, the clinical validity check in Study Two, and correlations between clinicians' ratings and patients score-change in study Three were non-significant. This suggests that these issues are either not addressed in treatment, or at least, are not important features of treatment. Specific research is required to investigate the most appropriate and efficient means by which these areas could be incorporated into treatment modalities. If, as claimed elsewhere, these characteristics

are causal of the extreme dietary behaviours of eating disorder patients, it is essential that they are adequately addressed in patient management.

7. Further research is required to investigate links between primary eating disorders and other psychological groups, notably depression, not only in the cognitive/emotional areas addressed by the Stirling Scales, but other features noted as important in primary eating disorder patients. However, this research should not detract from the central, and potentially life threatening, dietary/behavioural aspects of both anorexia nervosa and bulimia nervosa.