

# **An Exploration of the Psychometric Properties of the Recovery Capital Questionnaire**

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## Abstract

### Background

Successive Scottish strategies and guidance have placed emphasis upon addiction treatment provision to involve an assessment of strengths and assets, known as recovery capital. A psychometrically sound assessment tool will be pivotal in underpinning a strengths-based approach to providing addiction assessment and treatment. The study investigated the psychometric properties of the Recovery Capital Questionnaire.

### Methods

The sample (n=173) included people accessing community based addiction treatment (n=108) and residential treatment (n=65) in England and Scotland. Equivalence reliability was investigated using Cronbach's alpha (n=173) and stability reliability was investigated using a retest methodology with approximately one week between tests (n=102). Content validity was assessed using Lawshe's content validity ratio and index and seven subject matter experts. Criterion related concurrent validity was examined alongside a measure of quality of life and a measure of resilience. Construct validity was examined via exploratory factor analysis.

### Results

The Recovery Capital Questionnaire was found to possess good overall equivalence reliability ( $\alpha = 0.88$ ) and stability reliability ( $r = 0.89$ ) and ICC (0.88). Content validity was found to be strong (CVI = 0.91). The following correlations were found: RCQ Social Capital and WHOQOL social domain ( $r = 0.44$ ); RCQ Physical Capital and WHOQOL Physical domain ( $r = 0.59$ ); RCQ Human Capital and WHOQOL Psychological domain (0.43); RCQ Community Capital and WHOQOL Environment domain (0.40); RCQ Total and WHOQOL Overall QOL ( $r = 0.53$ ); RCQ Total and WHOQOL satisfaction with health ( $r = 0.44$ ); and RCQ Total and resilience total ( $r = 0.65$ ), demonstrating good concurrent validity. Exploratory factor analysis indicated a four factor solution. Recovery capital was found to correlate with length of time in recovery and participants self-identifying use as problematic.

## Conclusion

The RCQ has been found to be a reliable and valid assessment of the strengths and assets which can be called upon to initiate and sustain the resolution of alcohol and other drug problems.

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## **Declaration of authorship**

I have read and understood the University of Stirling's guidelines on plagiarism and declare that this submission is entirely my own work, that all sources have been acknowledged in the text and included in the references, and that all quotations from other authors are recorded as such in the text.

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By way of thanks I'd like to dedicate this work to the people who participated in this research, and to those who will seek support for alcohol and other drug problems in the future.

The struggle continues, the victory is certain.

## **List of Acronyms**

AOD – Alcohol and other drugs

ROSC – Recovery Oriented System of Care

DSDC – Drug Strategy Delivery Commission

PADS – Partnership for Action on Drugs in Scotland

ADP – Alcohol and Drug Partnership

QOL – Quality of life

RC – Recovery capital

RCQ – Recovery Capital Questionnaire

SME – Subject matter expert

CFA – Confirmatory Factor Analysis

EFA – Exploratory factor analysis

CVR – Content Validity Ratio

CVI – Content Validity Index

WHOQOL Bref – World Health Organisation Quality Of Life Bref Questionnaire

CD-RISC – Connor Davidson Resilience Scale

## Chapter 1: Introduction

### 1.1 Background

The way treatment for alcohol and other drug (AOD) problems is provided in Scotland is changing. The step-change was instigated and steered by the *Essential Care Report* (Scottish Government, 2008), *The Road to Recovery* (Scottish Government, 2008), *Changing Scotland's Relationship with Alcohol* (2009), and bolstered by the *Independent Review of Opiate Substitute Treatment* (Kidd, Lind and Roberts, 2013), the *Quality Principles* (Scottish Government, 2014a) and the alcohol and drug strategy, *Rights, Respect and Recovery* (Scottish Government, 2018).

Addiction services, traditionally preoccupied with problem identification, deficits, acute symptoms, addiction severity and its associated difficulties (White, 2007), have been accused of lacking aspiration for and of the people who use their services (National Treatment Agency, 2013). While reducing harm associated with AOD use should continue to be a guiding principle for service providers (Scottish Government, 2008, 2018), it should not be the end point. Indeed, if treatment ends when symptoms cease, i.e. the perceived harm has been reduced, support is arguably being removed just when people need it most (Miller and Miller, 2009).

The shift from the traditional acute care and deficit based approach to a model of recovery management has been called for by writers in the field for some time, for example White, Boyle and Loveland (2002), McKay (2005), Moos (2003) and Dennis and Scott (2007). The Scottish Government defines recovery as “a process through which an individual is enabled to move from their problem drug use, towards a drug-free lifestyle as an active and contributing member of society” (Scottish Government 2008: 23). This shift in policy and approach is echoed throughout the UK with the UK Drug Policy Commission describing recovery as “voluntary sustained control over substance use which maximises health and wellbeing and participation in the rights, roles and responsibilities of society” (2008: 6).

As a former practitioner involved in providing addiction treatment, I have first-hand experience of working with service users and assessing their personal circumstances and social histories using assessment tools such as the Scottish Morbidity Record forms (NHS Information Services Division, 2008) and the Treatment Outcome Profile (TOP; Marsden J, Farrell M, Bradbury C, et al., 2008).

As indicated in the title of the former, an acute focus has been placed upon assessing and recording morbidity. Interventions and ‘successes’ were then geared towards and measured by a reduction in morbidity. As a practitioner embarking on an MSc in 2011, I reviewed the emergent literature on how an improved approach would be characterised by a holistic assessment, one which identified needs and risks but would be complemented by an assessment which explicitly and systematically assessed strengths and assets. These strengths and assets within the literature are collectively known as ‘recovery capital’ (RC).

Through their grounded theory research, Granfield and Cloud (1999), worked with people who had at one point met diagnostic criteria for AOD problems but no longer met that criteria, and had not received addiction treatment. They interviewed people to investigate what participants thought had contributed to their resolution of AOD problems. People did not describe how they reduced deficits or harm, such that they lived a less harmful life or life characterised by less risk. Rather, they described being able to identify and mobilise their strengths and assets required to catalyse and continue their recovery, to both reduce symptoms and increase their quality of life, leading Granfield and Cloud (1999: 154) to define RC as “...the breadth and depth of internal and external resources that can be drawn upon to initiate and sustain recovery from alcohol and other drug problems”. The theoretical construct of RC has been developed by other contributions including Cloud and Granfield (2001), White and Cloud (2008), Cloud and Granfield (2008), Best and Laudet (2010), and was declared by Best, Rome and Hanning et al. (2010) as the best predictor of AOD problem cessation.

Cloud and Granfield (2001) suggest that, perhaps even independent of the intensity of AOD use, those who possess larger amounts of RC may be suitable for less intensive forms of addiction treatment. Elaborating on this, White and Cloud (2008) propose a ‘quadrant model’ where the type of interventions one requires will depend in part on the balance of RC and addiction problem severity. They suggest people with high RC and low problem severity may be appropriate for various types of brief interventions while people with high RC but also high problem severity may be appropriate for out-patient detoxification with intense community support. On the other hand, people with low problem severity and low RC may be appropriate for residential rehabilitation with appropriate follow-up and people with low RC and high

problem severity may need a combination of intensive interventions. Traditional assessments almost exclusively provide an indication of problem severity.

Interested in better understanding the relationship between RC and addiction problem severity, some of my previous research looked to investigate how much of an individual's addiction problem severity could be explained by their RC. In order to do this, a measurement of RC was required. In the absence of any widely available measure, I reviewed the RC literature, and worked with people with lived experience of addiction and recovery as well as addiction treatment practitioners to better understand what might be considered RC. This led to the inception of the Recovery Capital Questionnaire (RCQ) which was found to explain approximately 26% of the variance in addiction problem severity (Burns and Marks, 2013) in a sample seeking community-based addiction treatment in Scotland.

Although individual strengths and assets have been found to play a role in resolving AOD problems, it is important to bear in mind the wider context within which AOD problems manifest. There have been record numbers of drug related deaths in Scotland (NRS, 2019), with 1187 drug related deaths in 2018, leading the Minister for Public Health to describe it as “an emergency” (Brady, 2019). A possible explanation for this lies in the level of inequalities experienced in Scotland, and where experiences of and responses to poverty and deprivation play a key role. When controlling for the effects of poverty and deprivation on mortality, Scotland experiences over 5000 extra deaths per year than England and Wales (Walsh, McCartney and Collins et al, 2016). This excess mortality has been attributed to what has been described as ‘deaths of despair’ which “...are all psychosocial in origin. They are what happens when people are disempowered, and have little control over their lives” (Marmot, 2015: 2443). When explaining the manifestation of addiction, Alexander (2009) describes psychosocial dislocation (which includes, for example, an erosion of social networks, pro-social roles and identity) as a result of increased inequalities in society, and AOD problems as a result of psychosocial dislocation. Such theories fit well with multifaceted models of addiction (e.g. Zinberg, 1984; Kumpfer, Trunnell and Whiteside, 1990) which identify the role of the individual, the substance, and the environment in the development of AOD problems. Aligned to this thinking is the model of RC within the RCQ, that there are different domains within which strengths lie. It could be argued to be somewhat intuitive that

if a multifaceted model assists with our understanding of how addiction manifests, a similarly multifaceted model could assist with our understanding of how these problems can be resolved. However, it should be recognised that personal agency and the use of these strengths is, to some extent at least, restricted by the wider social structures within which people live their lives and the inequalities in wealth, power and opportunities which exist (NHS Health Scotland, 2019a).

Notwithstanding these important contextual factors, addiction treatment has been reported to be a protective factor in preventing harm and drug-related deaths, and supporting AOD problem resolution (Scottish Government, 2018). With increased emphasis on engaging people in human-rights and asset based treatment (Scottish Government, 2018), it is important that treatment services have evidence-informed assessment tools to support them to deliver strengths-based assessments and treatment.

## **1.2 Research Focus**

While previous research (Burns and Marks, 2013) found the RCQ to have good criterion-related concurrent validity with addiction problem severity, a number of key questions regarding the RCQ's psychometric properties remain outstanding. Indeed, any assessment tools used in clinical practice should be underpinned by rigorous research evidence. To that end, if the RCQ is to be used for the purpose for which it was designed – a strengths-based assessment tool to identify the assets people bring with them to addiction treatment which can be developed and mobilised in a way that helps achieve client outcomes – an investigation of the psychometric properties of the RCQ is required.

“Psychometrics are designed to do measurement: in fact the term is an abbreviation for ‘psychological measurement’” (Coaley, 2014: 9). When the psychometric properties of an assessment tool, scale or measure (terms often used interchangeably within the psychometric literature) are being considered, they tend to relate to the reliability and validity of the measure (DeVon, Block and Moyle-Wright et al, 2007). In relation to reliability, there are a number of ways in which it can be measured. Two of the most common ways involve examining equivalence reliability or ‘internal consistency’ and stability reliability (DeVellis, 2017). These will be briefly introduced here and elaborated upon later.

### *Equivalence Reliability*

Equivalence reliability (also known as internal reliability or internal consistency) is the most commonly cited measure of reliability, though that is not to say that it is well understood, and perhaps speaks more to the simplicity with which it can be calculated using Cronbach's Alpha. Alpha, developed by Lee Cronbach (1951), can be used to measure the inter-relatedness of items within a test, to measure whether each item in a test is measuring an underlying variable or construct, known as a latent variable – something which is not directly observable. Cronbach's Alpha can demonstrate the amount of measurement error which exists within a test, and it does this by correlating the items within the test with itself. Alpha is expressed as a figure between 0 and 1. Error is established by squaring Alpha and subtracting from one. For example, if a test achieved Alpha of 0.70, this would be squared (0.49) and subtracted from 1 (0.51) showing 51% random error in the variance of the scores. As Alpha increases, the amount of random error decreases with various interpretations of what constitutes acceptable alpha levels. Generally, Alpha of between 0.7 and 0.9 are considered acceptable although this will be explored further in this research when Alpha is applied and discussed.

### *Stability Reliability*

Stability reliability (also known as test-retest or retest reliability) is a method of testing the reliability of an assessment tool over a certain period of time. As indicated by the title(s) of the method, this requires the RCQ to be administered at two different points in time. The length of time between the two time-points is important. If, for example, only one day is allowed, performance could be heavily influenced by recall i.e. participants remember what they said the day before. Too long a time period between administrations however, could lead to actual change taking place in RC which would influence the results. This is particularly true when the sample is being recruited from a treatment population where treatment itself could influence participant levels of RC. For this reason, combined with precedence within the field (e.g. Groshkova, Best and White, 2013) participants in the study were interviewed with approximately one week between time-point one and time-point two. Statistical analysis involved interpretation of Pearson Product Moment Correlation Coefficients,

drawing on DeVon et al.'s (2007) work on benchmarking in psychometrics as well as that of McGraw and Wong (1996) and Koo and Li's (2016) work in applying and interpreting intraclass correlation coefficients (ICC).

### *Validity*

It is entirely possible that a test is reliable but not valid, it is less likely that it can be valid but unreliable (DeVellis, 2017). That is to say that a scale may well measure something consistently over time i.e. a participant scores the same result on a given instrument on two different time-points. However, the test lacks any validity if it cannot be tested with any scientific rigour what the *something* is that is being measured. On the other hand, if a new measurement has been robustly theoretically constructed, it *may* have more success when its validity (and reliability) is examined.

### *Concurrent Validity*

The inception and initial testing of the validity of the RCQ will be explained in more detail later, however, previous research (Burns and Marks, 2013) found that the RCQ was negatively correlated with addiction severity, which was measured by an instrument traditionally associated with measuring deficits (McLellan et al., 1995). Findings from that study included that changes in RC were associated with changes in addiction severity; when the former increased, the latter decreased. More fully exploring the validity of the RCQ will involve examining its validity alongside more asset-focused measures. To this end, it was decided to examine RC alongside quality of life (QOL) and resilience in the current study.

Those seeking to resolve their AOD problems have been suggested to be trying to do so, not as an end in itself, but to bring about a cessation of the associated problems and accompanying difficulties, and to ultimately improve their life in general (Laudet, 2011). Research has found that people in AOD treatment have priorities other than AOD outcomes; for them, areas such as education, employment and training and housing which will improve their QOL are also priority areas to be addressed, and they expect treatment to involve this (Laudet, 2009). This is entirely consistent with Scottish Government's AOD treatment strategy (Scottish Government, 2018). In her paper, *The Case for Considering Quality of Life in Addiction Research and Clinical Practice*, Laudet (2011) urges us to consider that, regardless of the treatment goal e.g. abstinence or harm reduction, if treatment is to



be successful from a client's perspective, it should lead to an improvement in QOL, not solely a reduction in substance use, and identifies the World Health Organisation's WHOQOL Bref (WHOQOL Group, 2008) as being recognised as the gold standard for measuring QOL.

In their critical review of the literature, Luthar et al (2007:543) assert that resilience refers to "a dynamic process encompassing positive adaptation within the context of significant adversity." Resilience will be unpacked in subsequent chapters but it has been proposed to involve how one copes with and/or adjusts to adversity in order to achieve a biopsychosocial homeostasis (Richardson, 2002). It is proposed that this equilibrium is dependent upon how a person has responded to the internal and external stressors which are ever-present in daily life and disrupt the equilibrium, and can be both brought about by and coped with as a result of how one has historically adapted to such stressors. Drawing upon the body of resilience work, Connor and Davidson (2003), have developed the Connor-Davidson Resilience Scale (CD-RISC) to help quantify the construct. The CD-RISC has been applied in a number of different settings and has been demonstrated to hold sound psychometric properties (e.g. Yu and Zhang, 2007; Jorgensen and Seedat, 2008; Yu, Lau and Mak et al, 2011). With resilience defined as being able to positively adapt within the context of adversity, it is argued here that if an outcome of AOD treatment were to involve some increase in resilience, which may lead to a reduction in future need for services by the individual given possible improvements in self-management, then this would likely involve the deployment of RC.

While the above will be elaborated upon throughout the thesis, it is hypothesised that an assessment of RC should be positively correlated with both a measure of QOL and a measure of resilience. It should be noted that each of these assessment tools (the WHOQOL Bref and CD-RISC) have their own purposes and one is no substitute for the other, and neither is correlation evidence of causation. For example, if the RCQ is found to be positively correlated with both assessments, this does not mean the RCQ is a measure of three things (RC, resilience and QOL) or that change in RC *causes* change in the others. Rather, what is hypothesised is that the RCQ is an assessment tool which illuminates the strengths and assets which can be called upon to initiate and sustain recovery from AOD problems, and that changing the

levels of these assets (e.g. increasing them via treatment) would be correlated with an increase in resilience and an increase in QOL.

In addition to considering the criterion related concurrent validity of the RCQ alongside the WHOQOL Bref and CD-RISC, the content validity of the RCQ will also be examined. Content validity calls upon the experience and expertise of subject matter experts (SMEs) to assess and provide comment on the validity of each item within a scale. On its own, content validity is only partly useful; SMEs may find items within an assessment tool meets with their expectations of an assessment of a given topic area, e.g. items seem appropriate and may appear to be underpinned by the literature in a particular area but statistical analysis may find the assessment to perform poorly in terms of criterion related concurrent validity and/or reliability. On the other hand, as a component within this study examining the psychometric properties of the RCQ, the examination of content validity is an appropriate and complementary approach the fuller analyses outlined here and described in more detail in the Methods chapter.

SMEs who have experience of using the RCQ will be asked to consider the items within the RCQ. Each of the 36 items within the RCQ will be reviewed by at least seven SMEs where they will rate each item as either “essential”, “useful but not essential” or “unnecessary”. These responses will be analysed using Lawshe’s (1975) Content Validity Ratio (CVR) and Content Validity Index (CVI) which can be used to indicate the extent to which the SMEs agree on each of the items. The CVI will be calculated as the CVR mean across the items within the RCQ. Two general principles are applied when interpreting the CVI (Gilbert and Prion, 2016): (i) any item rated as essential by more than half of the SMEs is expected to have some degree of content validity and (ii) the more SMEs (beyond 50%) rate an item as “essential”, the greater the degree of content validity. When calculating the CVI, Tilden, Nelson, and May (1990) suggest CVI values should exceed 0.70; however, Davis (1992) suggests a CVI exceeding 0.80 is preferred in order to conclude content validity for an entire scale. The RCQ will be assessed against these criteria when considering content validity.

### *Construct Validity*

Construct validity is the extent to which a scale measures the construct it is intended to measure, and is supported if the instrument's items are found to be related to its operationally defined theory and concepts (Cronbach & Meehl, 1955). A well-established method of examining construct validity is factor analysis (DeVon, 2007). Factor analysis uses mathematical techniques to measure phenomena – which may be otherwise unobservable – for the simplification of interrelated measures to discover patterns in a set of variables (Child, 2006). That is to say that it uses manifest or observable variables (e.g. items within the RCQ) to examine latent or unobservable variables (e.g. RC) and identifies these as factors (e.g. different but related types of RC). The aim of factor analysis is to find a parsimonious solution – the simplest explanation – of the complex relationships between items and factors (Harman, 1976).

The two main techniques for undertaking factor analysis include confirmatory factor analysis (CFA) and exploratory factor analysis (EFA). The former attempts to confirm hypotheses where a substantial body of evidence suggests a particular factor structure exists (Yong and Pearce, 2013). The latter, on the other hand, allows items to be related to any of the factors underlying participant responses. Subsequently it is possible to identify items that do not measure an intended factor or that simultaneously measure multiple factors, in which case they could be poor indicators of the desired construct and thought should be given to eliminating them from further consideration (Worthington and Whittaker, 2006).

The literature on factor analysis can be both confused and confusing with Costello and Osborne (2005:2) commenting, "it is often hard to figure out which method a textbook or journal article author is describing, and whether or not it is actually available in the software package the researcher is using." For the current study, key texts such as DeVellis (2017), Coaley (2014), Costello and Osborne (2005), Worthington and Whittaker (2006) and Yong and Pearce (2013) informed the selection of EFA over CFA and the subsequent decision-making involved throughout the EFA process regarding, for example, the method of factor extraction, the number of factors retained for rotation and the type of rotation applied. These are explained in more detail in the Methods chapter.

It is anticipated that a recurring aspect throughout the exploration of the psychometric properties of the RCQ will involve a critique and comparison of the RCQ to other assessment tools measuring RC, including a scrutiny of the methods used to develop those assessment tools. It is, to some extent, from this perspective that an understanding of the uniqueness and value of the RCQ research may be understood. Any and all observations are expressed with respect to the respective authors in acknowledgement of the contributions they have made to the field, to some of whom I owe a debt of gratitude for inspiring my work and motivating me to persist in what has been at times a challenging topic area.

Finally, it is worth re-stating that the focus of the research is to measure RC and *not* the recovery process itself. While these two things may well be closely related, they are not synonymous. Previous contributions have conflated the concepts and this will be explored later but for the avoidance of ambiguity, the RCQ attempts to measure the strengths and assets an individual can call upon to initiate and sustain the resolution of AOD problems, as opposed to the recovery experience or 'journey' itself.

### **1.3 Research Value**

While there may have been a proliferation of psychometric tools within the health and social care field in the latter part of the last century (DeVon et al, 2007), this was not extended to the addiction RC literature. Indeed, as will be argued in subsequent chapters, the growth of 'addiction assessments' pertained to the measurement of deficits, needs and risks in the lives of those trying to access addiction treatment. Furthermore, in her review of the RC literature, Hennessey (2017) identified only three assessments of RC: the RCQ (Burns and Marks, 2013), the Assessment of Recovery Capital (Groshkova, White and Best, 2013) and a measure designed by Sterling, Slusher and Weinstein (2008). Since Hennessey's review, one other assessment tool can claim to measure RC (Rettie, Hogan and Cox, 2019). This thesis will address a number of issues identified in the literature. For example, a clear typology of RC which the RCQ seeks to measure will be provided, as recommended by Hennessey (2017). It will build on previous RCQ research examining the relationship between addiction problem severity and RC (Burns and Marks, 2013), identified as an area requiring further examination by Groshkova et al.

(2013), and it will explore the relationship between RC and QOL, identified as a gap in research by Laudet (2009) among others. If found to be psychometrically sound, this research will provide a rigorously investigated alternative for treatment providers to use in their assessment of client RC, one which has a clear and inclusive philosophy and purpose.

The findings of this research will perhaps have greater implications for practice than policy in that they may allow the delivery of policy – in relation to alcohol and drug treatment – in an evidence-informed way. If found to be psychometrically sound, assessing and working to improve RC, as measured by the RCQ, by addiction treatment providers will be underpinned not by political or moral reasons that working in a strengths-based way may seem to be the ‘right thing to do’ but because the evidence demonstrates that by influencing RC, this correlates with changes in resilience, QOL and addiction severity, outcomes addiction treatments aspire to impact upon (Scottish Government, 2018). The implementation of the *Quality Principles* (Scottish Government, 2014a: 14) will be somewhat facilitated by a psychometrically sound RCQ given they assert “Your assessment should be based on your strengths, taking account of your recovery capital.” It will also, in part, address the conclusion of the Care Inspectorate (2017) in their review of the implementation of the *Quality Principles* that, “...there were still opportunities to improve the quality of assessments through greater focus and identification of the individual’s recovery capital and strengths” (Care Inspectorate, 2017:16). Finally, the findings could facilitate the delivery of the UK Clinical Guidelines on Substance Misuse (2017) which promote an approach to treatment that builds recovery capital in addition to focussing on symptom reduction.

If the RCQ is to have practice implications however, it will rely on wider systemic change within any ‘recovery oriented’ system of care, and this will rely on strong leadership within addiction treatment services and broader health and social care services. Asking addiction treatment staff, who likely already feel overburdened with paperwork, to complete yet another assessment, regardless of its apparent uniqueness, will not be sufficient. Moreover, the culture change required within treatment services to be less stigmatising of those accessing their services (Scottish Government, 2018) will need to be addressed. Successful RCQ implementation (assuming validity and reliability) will rely upon addiction treatment staff viewing *all*

people who attend treatment as possessing strengths and assets, that they (staff) and those to whom they provide a service are able to develop these, and demonstrate this consistently in their interactions. Perhaps RCQ implementation and associated RCQ training could support this. However, in the absence of any change or a treatment provision open to working in an asset-based and empathic way, ways which nurture a genuine therapeutic alliance (Norcross and Lambert, 2018), it is possible the RCQ might make very little impact on practice at all. What a psychometrically sound RCQ could do, however, is support level of care decisions (D'Aunno, 2006) where RC is systematically assessed alongside traditional assessment areas (needs and risks) to provide a robust assessment where decisions can be taken akin to those suggested by White and Cloud's (2008) quadrant model, and where treatment can be seen to impact on RC, QOL, resilience *and* addiction problem severity. Such policy and practice implications, as well as study limitations and considerations for future research will be explored in the discussion chapter.

#### **1.4 Research Aims and Questions**

Thus, the aim of this research is to examine the psychometric properties of the RCQ. The RCQ is a strengths-based assessment tool designed to assist treatment providers to support people to identify the assets someone can mobilise, build upon and utilise to initiate and sustain the resolution of AOD problems. If found to be psychometrically sound, the RCQ could complement existing assessment tools used within addiction treatment to support addiction treatment providers and their clients to better contextualise the needs and risks an individual may face while systematically identifying the strengths and assets they possess. This understanding could support both the service user and service provider to make more informed and robust decisions about levels of care and treatment outcomes, and how the RC one possesses can be developed and deployed to achieve these outcomes. Building upon previous research (Burns, 2012; Burns and Marks, 2013) which found RC measured by the RCQ to be negatively correlated with addiction problem severity, explaining approximately 26% variance in addiction problem severity, this research aims to answer the following questions:

- To what extent does the RCQ possess equivalence reliability (internal consistency) as measured using Cronbach's Alpha?
- To what extent does the RCQ possess stability (test/retest) reliability examined via a retest method?
- At what level does the RCQ possess content validity based on the response of subject matter experts and use of Lawshe's CVR and CVI (1975)?
- To what extent does the RCQ demonstrate concurrent validity with a QOL measure where the hypothesis is that such a relationship should be positive in direction and moderate to good in strength?
- To what extent does the RCQ possess concurrent validity with a measure of resilience where the hypothesis is that such a relationship should be positive in direction and moderate to good in strength?
- In terms of factor structure, which structure provides the optimum solution in terms of parsimony and interpretative value?
- Where validity relates to the context of addiction treatment, can the RCQ be considered a valid and reliable measure of RC which can identify strengths and assets that can be harnessed by people accessing treatment and treatment staff to initiate and sustain the resolution of AOD problems?

In answering these questions, this thesis will: set out the policy, practice and scientific literature context; explain the research methods used within this research; clearly present and subsequently provide a critical interpretation of the results from this research, tempering these with an explanation of study limitations, and couching the findings in the wider scientific literature while also considering policy and practice implications and suggestions for future research. This will be done using the following structure.

### **1.5 Thesis Structure**

Chapter two will follow this introduction and identify the international, United Kingdom, and Scottish policy contexts. A legislative context set by the United Nations and enacted by UK legislation which prohibits the use of certain drugs, and thereby criminalises those who use them, provides the backdrop to which only a minority of people who use these drugs go on to develop problems. How policy frameworks have impacted on practice by shaping how addiction problems are

assessed and how, as a consequence, this has instructed treatment approaches and priorities will be explored. The socially patterned nature of AOD problems, with those in lower socioeconomic positions experiencing a disproportionate amount of harm, will be highlighted. Problematic use of drugs and alcohol – where excessive use of substances is often accompanied by physical and mental ill health, homelessness, trauma, family and relationship issues and various other forms of adversity – will be described as being driven by poverty and socioeconomic inequality which results in inequalities in health outcomes. To that end, Scotland has experienced year on year record increases in drug related deaths which will be argued to have contributed to ‘excess mortality’, where individuals have died preventable ‘deaths of despair.’ Their deaths and the problems many people face who experience AOD problems will not be attributed to poor decision making or ineffective exercising of personal agency. However, it will be argued that, while it would preferable to have the structural change required to prevent and undo the inequality that drives these poor outcomes, action can be taken to empower individuals through addiction treatment whereby treatment should facilitate the development and mobilisation of strengths and assets to achieve an improved QOL. This thesis will explain how such a change is both required and markedly different from how addiction treatment has traditionally been provided in Scotland; how assessment as one example of practice has been traditionally couched in a pathogenic and criminal justice oriented policy context and the consequences of this has been to consider symptoms, deficits and risks almost exclusively.

Chapter three will provide an examination of addiction theories. Theories of addiction have evolved from silo thinking, where philosophies have provided unidimensional theoretical perspectives on how addiction manifests and resolves, through to more sophisticated multidimensional models. Arguably, it is only when multifaceted models are proposed which acknowledge the interaction of the substance with the individual and their environment that a more nuanced and helpful understanding is achieved. And it is through this that effective treatment and interventions can be offered. However, interventions, it will be argued, even when they recognise the multifactorial nature of the manifestation of AOD problems, have tended to be deficit based, informed by assessments designed to assess needs and risks, and to intervene to reduce these. It will be argued, by drawing upon scientific



addiction, medical sociological and psychological literature that people, generally, do not aspire for only less harmful lives (Laudet, 2009). While stability may be preferable to chaos, stability is only the beginning. Unfortunately for many, this is where addiction treatment has tended to stop (e.g. Miller and Miller, 2009; Laudet, 2009). And for some an almost inevitable return to a poorer QOL awaits. What is proposed within this thesis draws upon the wider addiction scientific and policy literature which recognises treatment providers need to increase their aspirations and ambitions for the people who use their services, to help both the people providing treatment as well as those receiving it understand and act in a way that communicates that people who require AOD treatment are worthy and capable of living a life worth living. And that by working together to develop and deploy their strengths and assets, service users can reduce the harm caused by AOD problems and not only achieve their 'treatment outcomes' but go on to live fulfilling lives (abstinent or not from illicit substances).

Chapter four will detail the evolution of the term and concept of RC. With RC clearly bringing together two terms which until 1999 were not commonly seen together, the evolution of their respective discourses is briefly outlined. Both terms and their associated concepts have often been at the centre of debate. Capital will be seen to have originally been used in the middle of the 17<sup>th</sup> Century to refer to financial accounts, and evolved through the 18<sup>th</sup> and 19<sup>th</sup> Centuries in the economic literature to encompass commodities, often linked to their quantification, measurement and growth. Not until the 20<sup>th</sup> Century will capital be seen to become associated with 'assets' or 'goods' which are similar but different from traditional commodities, and that the coining of the term 'social capital' began a discourse of its own which continues to be debated. Some propose social capital is both concise yet capacious, providing a useful conceptualisation of understanding a broad but specific set of assets while others argue that the term has become so diluted and applied to so many things that the term has become somewhat meaningless.

While the idea of recovery from AOD problems will have been introduced in earlier chapters given its increasing use in policy discourse, chapter four will see the unification of the terms 'recovery' and 'capital' to refer to a distinct collection of assets; the strengths and resources which can be brought to bear on AOD problems to support the initiation and maintenance of their resolution. The RC literature will be

presented as only just growing out of its infancy, and the numerous contributions which have seen the 'types' of capital included in various conceptualisations is a reflection of this. The key domains of Social, Physical, Human and Community RC within the RCQ will be clearly explained, and the relationships between RC and QOL and RC and resilience will be presented before going on to reaffirm this studies research questions.

Chapter five will clearly explain the methods employed to investigate and answer the associated research questions. This chapter will open with an explanation of the development of the RCQ, its use in previous research and the associated findings. One of the first questions the methods chapter will address is the extent to which a new scale is required. It will do this by highlighting both the aspects which set the RCQ apart from any other measure of RC as well as identifying and elaborating on some of the methodological shortcomings of other RC research. The chapter will set these issues out respectfully and with some circumspection but will nevertheless show the undisputable need for an alternative measure of RC. The concepts of reliability and validity will be unpacked, identifying authoritative texts and contributions to the psychometric literature.

The approach involved in the development of a psychometric assessment will be outlined with reference to at least two key contributors and their recommendations regarding best practice, the steps they identify as necessary in the process of scale development, and how closely these steps were followed in the development of the RCQ. Chapter five will explain the two ways in which reliability has been examined, using the two most common ways of testing reliability, and also facilitating the ability to provide data which can be compared to other RC measures. Acceptable levels of Cronbach's alpha for the reporting of equivalence reliability, and Spearman's correlation coefficient as well as intraclass correlation coefficients for the reporting of stability reliability will be noted. The concept of validity will be explained, and how it can be measured in a number of ways, with an emphasis on context, noting that no psychometric assessment can be 'valid' in and of itself, rather it is the inferences it facilitates which may hold validity. A well-established approach to measuring content validity will be explained along with generally accepted levels for considering the strength of content validity using the responses from seven subject matter experts. Criterion related concurrent validity will be described, and why this

approach is important and useful when describing the validity of the RCQ. Chapter five will provide an explanation of why it is acceptable to use parametric tests with Likert data despite a non-normal distribution. It will also outline the various parametric tests used in the study, including t-tests and analysis of variance to examine relationships between RCQ and demographic data as well as correlation coefficients to measure concurrent validity between the RCQ and a measure of QOL, and the RCQ and a measure of resilience. Construct validity will be explained as well as the various different ways this can be assessed. The selection of exploratory factor analysis and the decision making involved in the steps taken to apply this analysis will be explained and justified. Chapter five will conclude by fully considering and demonstrating how this research project, from inception to completion, has been undertaken on an ethically sound basis.

Chapter six will report the results of the study in a coherent and transparent manner. Descriptive and inferential statistics will be reported including: age and gender of participants; whether the participant reported to be 'in recovery' (where this meant the participant considered their use was no longer problematic – as opposed to requiring abstinence) and, if so, for how long; whether the participant reported to be abstinent from alcohol and/or drugs, and treatment type, with some participants involved in community based treatment provision and others in residential treatment. The relationships between the aforementioned variables and RC will be reported using, for example, independent samples t-tests and two-way between groups analysis of variance where appropriate. The distribution of RC among the sample will be explored, as well as the distribution of the constructs measured by the other research instruments used in the study. In relation to reliability, Cronbach's alpha will be reported in relation to equivalence reliability, intraclass correlation coefficients will be reported for stability reliability, and both results will be reported alongside a 95% confidence interval. In relation to validity, content validity will be reported using the content validity ratio and index; concurrent validity with a measure of QOL and a measure of resilience will be reported using Pearson's correlation coefficient, and relationships between particular constructs within these tools and the RCQ will also be reported. Exploratory factor analysis will be reported in a way which provides the statistical data as well as a more qualitative interpretation of the results in order to produce a simplified factor structure of the RCQ.

Chapter seven will provide a discussion of the results. This discussion will consider and offer some interpretation of the results from the independent t-test and analysis of variance; the Cronbach's alpha and retest reliability correlational and intraclass correlation coefficient tests; the content validity analysis and correlational analyses of the concurrent validity with QOL and resilience measures, and the exploratory factor analysis. Opportunities to compare the RCQ reliability and validity statistics with other measures will be taken where possible, and appropriately caveated where required. The RCQ will be considered in relation to its position within the literature and broader evidence of RC. Limitations of the RCQ as well as the research study will be identified, and potential implications for policy and practice will be discussed. Chapter seven, and the thesis as a whole, will be completed with a conclusion which will firstly answer the research questions in relation to the validity and reliability of the RCQ before going on to consider what this could mean in a policy and practice context, and will close by making suggestions for areas of future research.

## Chapter 2: Policy and Practice Context

### **2.1 International Policy Context**

For most of the 20<sup>th</sup>, and the entirety of the 21<sup>st</sup> Century, international drug policy has been underpinned by a legal framework which at its heart promotes prohibition. This framework stems from a series of Conventions set out by the United Nations, specifically the Single Convention on Narcotic Drugs (1961), the Convention on Psychotropic Substances (1972), and the Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988). According to the United Nations Office on Drugs and Crime (2019), these three major treaties are "...mutually supportive and complementary..." and "an important purpose of the first two treaties is to codify internationally applicable control measures in order to ensure the availability of narcotic drugs and psychotropic substances for medical and scientific purposes."

Despite such posits, there have been growing concerns in the 20<sup>th</sup> Century and early 21<sup>st</sup> Century that the latter point is certainly not the case (Nutt, 2012). Whilst the former point, that the treaties mutually support and complement each other may be true, they are increasingly at odds with many UN member states' domestic drug policies (International Drug Policy Consortium, 2017).

This has arisen for a number of reasons however the main driver has been a combination of a perceived failure of historical drug policy which waged a 'war on drugs' (and drug users) (Buchanan and Young, 2000) and a related but separate shift in the perception of substance misuse as a public health issue rather than a criminal justice one. Underpinning these drivers is the increasing belief that international drug policy is not one firmly rooted in evidence of 'what works' or the scientific method (Johns Hopkins-Lancet Commission on Drug Policy, 2016), and that if drug policy were to be designed around the harms caused by substances, policies would look markedly different (Nutt, King and Phillips, 2010)

In 2015 the former UN Secretary General, Ban Ki-Moon, made the following statement on 'World Day Against Drugs', "We must consider alternatives to criminalization and incarceration of people who use drugs and focus criminal justice efforts on those involved in supply. We should increase the focus on public health, prevention, treatment and care, as well as on economic, social and cultural strategies" (2015). This increase in focus on these areas has been somewhat reflected in UK policy, and, arguably more so, in Scottish policy.

## **2.2. UK Policy Context**

As suggested by Ki-Moon, member states are increasingly considering substance use and people who use drugs as a health issue and citizens, rather than a criminal justice issue and criminals. Nevertheless, national policies arguably remain juxtaposed to this, and to the legislative framework within which they sit. In the United Kingdom for example, the UN treaties are largely implemented through a piece of legislation passed in 1969, the Misuse of Drugs Act 1971.

The Act makes provisions for persons involved in the production, supply or possession of substances to be penalised in various ways. Substances classified under the legislation are ranked in order of presumed harm to the user and to society and sees a system of A to C used, where Class A substances (such as heroin and cocaine) are posited as the more harmful and Class C substances (such as benzodiazepines and khat) less harmful, and penalties are graded accordingly.

The Misuse of Drugs Act 1971 saw the creation of an Advisory Council on the Misuse of Drugs (ACMD). Populated by experts in various disciplines, the purpose of this independent body is to advise Government on drug related issues (UK

Government, 2017). The issue of evidenced based policy and how Government responds to recommendations of committees, many of which have a remit to critically evaluate the scientific literature in any given field and make subsequent recommendations to Government on policy formulation, is far wider than the addiction/AOD policy areas but it does provide some excellent examples of the challenges.

Cairney (2018), explains why policy makers appear not to listen to evidence while Humphreys and Piot (2012) suggest policy should never be based solely on scientific evidence. Cairney (2018a) suggests a 'hierarchy of evidence' where policy makers consider some evidence to be more important than others, with randomised control trials said to be at the top, and service user feedback ranked bottom. This is particularly interesting given recent AOD policy developments and the apparent increase in the importance of "lived experience" in the design and delivery of addiction services and policy (Scottish Government, 2018), and in various other fields such as mental health and adult support and protection (Burns, 2018). According to Cairney (2018b), policy is not formed in discrete stages such as agenda setting, policy formulation, legitimisation, implementation, evaluation, policy maintenance/succession/termination but in a much more complex, fluid, and multifaceted way. Instead, Cairney describes a policy environment, "...out of the control of individual policymakers. Environments consist of: many actors in many levels and types of government; engaging with institutions and networks, each with their own informal and formal rules; responding to socioeconomic conditions and events; and, learning how to engage with dominant ideas or beliefs about the nature of the policy problem. In other words, there is no policy cycle or obvious stage in which to get involved"

(Cairney, 2018b: online).

With the above in mind, the role of the ACMD can be considered to be somewhat less straightforward than it may initially have seemed.

The reclassification of cannabis, and the Government's refusal to implement the ACMD's recommendations, despite "accepting" them, is noted in the UK Drug Policy Commission's submission to the Omand (2010) review of the ACMD. The UK Drug Policy Commission describe themselves as a charity which brings together senior

and leading figures from policing, public policy and the media along with leading experts from the drug treatment and medical research fields to advocate for evidence informed drug policy. They highlight that there have been examples where the ACMD make recommendations, the Government ‘accept’ these, insofar as they do not dispute the rationale, evidence or science underpinning them but make decisions which run contrary to the ACMD advice (UKDPC, 2008). The UKDPC argue that such examples run deeper than the issue of which classification a substance may feature within legislation, “...it challenges the role of expert advisory bodies and the analysis of scientific evidence in the formulation of policy” (UKDPC, 2008).

The Omand review (2010) of the ACMD suggests when policy decisions and evidence diverge, the Home Secretary should meet with the ACMD Chair and ‘discuss the issues’. As polite and reasonable as this suggested etiquette may seem, the fact remains unchanged that the submission of recommendations based on a review of the evidence is a submission to the political world, one which is subjective and sways on opinion – and power – and can be a difficult one to navigate,

“In such a politically charged policy area such as drug misuse, it is likely to be the case that where you stand on the issue is where you sit. The Coalition Government drugs strategy is different in its underlying assumptions from the previous Government’s strategy. Current Ministers have already indicated that their approach differs in giving more weight to the objective of recovery and abstinence as opposed to emphasis on harm reduction from drug misuse”

(Omand, 2010: 8).

The issue of the UK Government’s apparent understanding of recovery being synonymous with abstinence is explored in the section ‘Recovery: Definitions and Debates’ within this thesis but for the time being, this excerpt from the review underscores the political climate, the policy makers themselves, their political allegiances and other pressures which compete alongside the ACMD’s efforts to provide evidence. These things combine to provide a cocktail of influences on policy decisions. Given the complexity of the situation, and the length of time it often takes

for policy and legal change to take effect, combined with Cairney's (2018a, 2018b) points on the cumbersome mechanics involved in influencing policy and legislative change, it is perhaps not so difficult to understand how a legal framework prohibiting the use of certain substances (the Misuse of Drugs Act 1971) co-exists with a policy framework which advocates the provision of treatment and support (e.g. Rights, Respect and Recovery, Scottish Government, 2018), even when these things appear so starkly contrasted.

The compatibility of these approaches – a legislative framework which criminalises and punishes behaviours alongside policy and strategic responses which consider similar behaviours as health and social needs requiring support – continues to be fraught with challenges. Examples of these challenges include the stigmatisation of people who use drugs, much of which emanates from the criminalisation of the behaviour (i.e. drug use). This has arguably prevented or dissuaded people from accessing treatment (Luoma, Twohig and Waltz et al. 2007), with treatment providers routinely asking questions about acquisitive crime, such as theft of or from a motor vehicle or shoplifting, as part of their standard assessments (e.g. Treatment Outcome Profile, Public Health England, 2016). That such questions are systematically asked as part of an assessment of people accessing addiction treatment is testament to the policy context within which practice is nested. This criminogenic policy lens has arguably contributed to the long history of considering drug use (and those who use them) as criminal and to explicitly and, in many cases exclusively, employ assessments which have an acute focus on failings and routinely ignore the virtues and assets of people who access treatment.

These challenges are extended to Scotland where although drug legislation is a reserved matter for the UK Government, drug policy is a devolved matter. Scottish Government introduced a drug strategy in 2008 which signified a step-change in Scottish drug policy to become more recovery focused. Subsequently, a further Scottish strategy was published in late 2018, which includes the treatment of alcohol and drugs (and the prevention of drug use), with a continued emphasis on recovery. Indicative of the step-change and focus is the title of these strategies, "*The Road to Recovery*" (Scottish Government, 2008) and "*Rights, Respect and Recovery*" (Scottish Government, 2018).



### 2.3 Scottish Policy Context

The notion of recovery from AOD problems is far from a novel one. Integral to AOD problem resolution from particular perspectives (e.g. 12-step mutual aid approaches such as Alcoholics Anonymous) for some time, it has grown to become the main organising paradigm in Scotland. This has been ensured since 2008 from the primacy placed upon the concept of recovery in the national strategic approaches for understanding and responding to AOD problems ('*The Road to Recovery: A New Approach to Tackling Scotland's Drug Problem*', '*Changing Scotland's Relationship with Alcohol*', and '*Rights, Respect and Recovery*', [Scottish Government, 2008, 2009 and 2018 respectively]). At a national level, and with cross party support in the Scottish Parliament, the idea that people can recover from AOD problems and that national and local approaches should be to support this, appears assured for the moment at least.

'The Road to Recovery' attempted to provide direction across a spectrum of areas from the protection of children from parental substance misuse (and the associated specific guidance, '*Getting Our Priorities Right*', Scottish Government, 2013), to prevention focussing on education and diversion for young people, through to enforcement which focusses more on the supply and distribution of substances, and on recovery which concentrates on treatment for and resolution of drug problems. Scottish Government (2008: 23) provide a definition of what recovery means within the strategy and for Scotland, proposing it to be "a process through which an individual is enabled to move away from problem drug use towards a drug free lifestyle, becoming an active and contributing member of society". This definition remains unchanged in the new national alcohol and drug treatment strategy (Scottish Government, 2018) though added emphasis has been given to taking a public health and human rights based approach where people are treated in a dignified and respectful manner. Their inclusion and prominence suggests such assertions were required.

It follows that Government expects services to be configured, commissioned, delivered and evaluated in ways which exemplify and deliver outcomes consistent with their definition of recovery and their strategies. This marks a sea-change in how drug and alcohol problems are understood and a change in expectations of how

services should be responsible for meeting needs and delivering outcomes. The idea that someone can initiate and sustain recovery from AOD problems, and that services should exist to support this process, is markedly different from previous philosophies underpinning Scotland's strategic approach and subsequent service delivery.

The approach to responding to and managing AOD problems has long been at the centre of clinical and political debate in Scotland and, for the most part, policy makers and strategists have tried to take cognisance of the evolving international evidence base (Kidd et al. 2013). This has seen various interventions such as safer injecting advice and needle exchanges, opiate replacement therapies and counselling approaches offered as means of reducing harm, with harm reduction recognised as the historical organising paradigm (Kidd et al. 2013). These approaches, supported by (the then) Scottish Executive strategies introduced in 1994 and 1999, involved AOD services providing interventions, often on the periphery or as lone interventions; support was often provided in isolation or lacked coordination with other health and social supports required to meet the needs of people accessing treatment.

In an effort to improve choice and outcomes for those accessing treatment the Scottish Advisory Committee on Drugs Misuse published the 'Essential Care Report' (2008) arguing that a range of services should be considered and involved when taking a holistic approach to the needs of people accessing treatment. These included a range of universal services such as dentistry and General Practitioner care which is perhaps a marker of how even basic care needs of people who use drugs had not been historically considered and provided for, at least not in any systemised way. The Road to Recovery (2008) marked a departure from a philosophy where the aim was solely to reduce harm, a philosophy suggested by the National Treatment Agency (now part of Public Health England) to be lacking ambition and aspiration for and of people accessing treatment services (NTA, 2013).

The Road to Recovery described 59 actions and expected outcomes for the Scottish Government and its partners. These included: 10 actions on *Promoting Recovery*; 11 on *Delivering the Recovery Model*; 9 on *Prevention*; 12 on *Enforcement* and 17 on *Children Affected by Substance Misusing Families*. The strategy aimed to increase

the expectations of both services dealing with substance misuse and their clients (Scottish Government, 2008). The strategy, supported by subsequent reviews and policies including an independent review of opiate replacement therapies (Kidd et al. 2013) and the *Quality Principles* (Scottish Government, 2014a), emphasised that the new approach should include a range of services, couched within a recovery oriented system of care (ROSC) which must recognise the strengths people bring to treatment, harness these and aim to enhance them.

With *Rights, Respect and Recovery* (2018) published at the end of November 2018, it remains too early to comment on its impact, though it is clear that many commitments remain similar to before. For example, the strategy describes an ongoing commitment to the implementation of the *Quality Principles* (Scottish Government, 2014a), a chapter is devoted to the development and implementation of a ROSC, and prevention and children and families remain thematic areas. A serious short-coming is the absence of any evaluation of the implementation of the previous strategy; there has been no systematic review of the 59 actions mentioned above or in fact any other actions pertaining to *The Road to Recovery*. Indeed, this omission was identified by Audit Scotland as a serious short-coming on the part of Scottish Government (Audit Scotland, 2019). It would seem reasonable to be able to draw conclusions on the implementation of a strategy introduced in 2008 but there is limited data or evidence to do so. The oversight arrangements perhaps provide insight into why this is the case.

In terms of oversight of strategy implementation, Scottish Government introduced a Drug Strategy Delivery Commission (DSDC) to oversee the implementation of The Road to Recovery, and to act as an expert group on policy and practice. The DSDC produced a number of reports including its first year report in 2011, where one of the first mentions of RC can be found in a Scottish policy context, “ADPs should be able to demonstrate that assessment and regular measurement of recovery capital underpins individual treatment plans” (DSDC, 2011: 15).

In 2017, for reasons never communicated publicly, the DSDC was replaced by the Partnership for Action on Drugs (PADS). This group, although charged with providing leadership in co-ordinating, directing and overseeing the implementation of a programme of work, particularly through three themed areas of prevention of drug

problems, recovery from drug problems, and reducing harm associated with drug problems, do not appear to have published any reports of their work to date. What is available on the PADS section of the Scottish Government website(s) is a link to the (now former) strategy and a link to the *Quality Principles* (Scottish Government, 2014a). A link (on an old version of the website as Government transitions to a new one) is also provided to agendas and minutes of meetings, however this only shows agendas for one meeting in February 2018 and another in March 2018. There are no minutes of either, and no record, on either the old website (Scottish Government 2019a) or the new one (Scottish Government, 2019b), of any other meetings or activity.

In what appears to be a repeat of previous events, for reasons never communicated to the public, the PADS group was stood down by Government in 2019. Monitoring and evaluation of the impact and implementation of *Rights, Respect and Recovery* now sits with NHS Health Scotland. This was communicated in the publication of the 2018 strategy's accompanying action plan (Scottish Government, 2019c). The action plan notes a commitment to providing guidance on asset based assessment and case management will be provided by 2021.

## **2.4 The Impact on Treatment**

Addiction treatment has been found to be an effective response to the multiple problems commonly associated with AOD problems, both for individuals and society. For individuals, treatment can lead to significant reductions in drug use, criminal behaviour, and psychiatric symptoms, as well as increases in employment (Farabee, Leukefeld, and Hays, 1998; Hubbard, Craddock, and Anderson, 2003; Simpson, Joe, and Brown, 1997). The benefits to society can include social, financial, and quality-of-life gains, including reduced criminal justice and health care expenditures, reduced dependence on public services, and increases in employment earnings (Ettner, Huang and Evans et al., 2006; McCollister and French, 2003; Zarkin, Dunlap, Hicks, and Mamo, 2005).

However, addiction treatment has also been accused of failing to deliver. For example, McKeganey, Morris and Neale et al. (2004), suggests the policy preoccupation with reducing harm has resulted in services not meeting the needs and aspirations of service users; they found widespread support for abstinence as a

goal of treatment, despite most treatment at that time being predominantly focused on harm reduction. The authors (McKeganey et al., 2004) recommended that harm reduction services should have a responsibility to promote abstinence as a treatment goal. McKeganey (2019) has also argued that harm reduction approaches, such as supervised consumption facilities and heroin assisted treatment, communicate an attitude of condonation, encouraging the use of illicit substances and do little to support abstinence based recovery.

Addiction services, traditionally preoccupied with problem identification, deficits, acute symptoms, addiction severity and its associated difficulties (White, 2007), and designed to reduce harm as per previous drug policies and strategies, have arguably overlooked the single biggest resource available to them in supporting the resolution of AOD problems – the service user themselves. As the service user/worker relationship evolves, no doubt, more often than not, service user strengths are identified. A host of variables can be involved in this such as the relationship formed between service user and worker and the time afforded for treatment. There is a body of evidence which identifies the relationship between service user and treatment provider as being a key ingredient to successful outcomes (e.g. Drug and Alcohol Findings, 2019). However, this is perhaps somewhat undermined when the starting point of any relationship is shaped by a policy and legislative framework which criminalises many people accessing services and has, to some extent, translated into assessment tools designed to assess deficits, arguably amplifying the experience of stigma and shame regarding AOD problems. When this is combined with considerations of the quality or quantity of treatment, with one study suggesting service users receive as little as four hours *per year* of therapeutic activity (Best, Day and Morgan et al., 2009), there is perhaps even more cause for concern. Before examining treatment provision and the impact (or lack thereof) of the paradigmatic shift upon it, it is important to understand the treatment context, and what exactly constitutes addiction treatment in Scotland and the type of treatment the participants in the study will have received.

Addiction treatment in Scotland can include a variety of treatment types or modalities. Introduced in 2009, Alcohol and Drug Partnerships (ADP's) are the bodies responsible for making local funding decisions in an effort to implement national policy at a local level; they are expected to monitor the activity of the

treatment provision they commission and are accountable to Scottish Government regarding the outcomes and impact achieved by these services. Despite ADPs providing annual reports to Scottish Government, Audit Scotland found there to be apparently no evidence of analysis of these reports (Audit Scotland, 2019).

There are 30 ADP's across Scotland's 32 Local Authority areas and 14 National Health Service territories, each with similar but in some instances, quite different funding arrangements for various treatment providers and types of treatment. However, all ADP's provide funding to the National Health Service for addiction services, which perhaps speaks to the prominence placed on the assumed need for a nurse, doctor or similarly NHS employed staff to provide addiction treatment.

In 2016 it was reported (e.g. The Herald, 30<sup>th</sup> Jan 2016) that ADP funding from Scottish Government for 2017/18 would be reduced by approximately 22% and that Health Boards would be expected to make up this difference from their increased budgets. The Health Secretary is reported to have said that this decision was to reflect a strategic shift in drug policy whereby substance misuse would be primarily considered a health issue rather than a criminal justice one (Naysmith, 2016). However, a number of Health Boards have been unwilling or unable to compensate ADP's for the deficit in Scottish Government funding (Smith, date unknown). It is worth bearing in mind that this is in the context of year on year increases in drug related deaths, with record figures announced this year (National Records for Scotland, 2019).

Notwithstanding the significant issue of reductions in funding, treatment from the NHS remains the most commonly available, professionally provided, type of addiction treatment across Scotland. NHS addiction treatment often involves medically assisted treatment for alcohol and/or drugs. For example, an alcohol detoxification process may require the prescription of drugs to manage withdrawal affects whilst opiate substitute therapy (OST) can be prescribed to mitigate opiate withdrawal, each approach requiring the oversight of a medically qualified prescribing professional.

Scottish Government (Smith and Massaro, 2010) produced a comprehensive briefing note regarding treatment access and waiting times. While giving an indication of what the Government's priorities were at that time (how quickly people should be

able to access treatment over, for example, the quality or impact of that treatment), this document also helpfully provides some definitions of what is to be understood by 'assessment', when these should be undertaken, and also reproduces a conceptualisation of treatment services in tiers, heavily borrowed from the National Treatment Agency (2006).

Drug and alcohol treatment is conceptualised in four tiers, with the complexity of interventions matched to the complexity of issues requiring to be addressed, increasing in chronological order. Tier one interventions are described as involving screening and information provision, and referral to specialised drug and alcohol treatment. These interventions are said to take place in various settings such as universal health care (General Practice, Accident and Emergency) or social care where the primary focus is not AOD related. Tier two interventions include those in tier one but also specific harm reduction advice and support (e.g. needle exchange), brief interventions, preparatory support and aftercare. Settings where tier two interventions may take place include pharmacy and criminal justice settings but it is noted "Tier two interventions may be delivered separately from tier three but will often also be delivered in the same setting and by the same staff as tier 3 interventions" (Smith and Massaro, 2010: 20). Tier three interventions include provision of community-based specialised drug assessment and co-ordinated care-planned treatment and drug specialist liaison. Tier three interventions tend to be delivered by specialist support provision with their own premises, perhaps in community hospitals or centres. In addition, outreach, peripatetic and other form of delivery can take place. Tier four interventions include provision of specialist residential or inpatient treatment, and tend to be delivered in hospital settings or dedicated facilities.

AOD problems, and their resolution, do not normally fit easily within single categories or tiers. That someone may meet criteria for a tier two service one day, and a tier three the next would not be uncommon, for example, as their AOD problems increase or decrease. That interventions are imagined to exist within these tiers has practical consequences, similar to policy approaches themselves; ADP's make commissioning decisions (ideally) based on an assessment of need or their broad understanding of demand. Commissioning arrangements may typically last three years meaning if a tier three service is commissioned and is successful (i.e. it

supports the resolution of AOD problems) then a tier three service may no longer be required within that three year contract. On the other hand, some treatment types, such as the prescribing of medications, almost necessitates the ongoing commissioning of certain services to provide oversight of prescribing. That these services behave in a way to ensure their own survival rather than to the benefit of their patients is a criticism made by people when they describe patients being 'parked on methadone' for many years without any or much other support (e.g. Allison, 2018).

Governance arrangements can perhaps be accused of enabling such criticism: ADP's are comprised of senior management figures from local services (including, for example, NHS services), and are often involved in funding decisions at a local level. That they may be unlikely to promote disinvestment in their own services (i.e. to argue the their role and/or that of their services should be reduced), and that funding decisions are often made in private only serves to further cloud the situation and fuel the notion that the status quo suits many of those involved, though perhaps least service users and patients. As has been noted, policies which have historically focused on reducing harms has led to the delivery of services which primarily seek to reduce harms; despite 10 years of 'recovery oriented' strategies, recovery oriented systems of care remain variable within and across areas in Scotland (Care Inspectorate, 2017). A key factor, arguably the only factor worth measuring for Scottish Government (Audit Scotland, 2019), has been to expedite access to these services.

Driven by long waiting times where individuals could wait years to access drug treatment with wide variation across the country (Kidd et al., 2013), Scottish Government designed a performance target, known as HEAT A11, "90 per cent of clients will wait no longer than 3 weeks from referral received to appropriate drug or alcohol treatment that supports their recovery" (Smith and Massaro, 2010). In addition, nobody should wait longer than six weeks. The importance of short/no waiting time for treatment is supported by evidence; people with AOD problems who wait for treatment services are less likely to enter treatment and often continue to use problematically, placing them at heightened risk for health complications such as overdose and exposure to infectious diseases such as hepatitis and HIV (Chawdhary, Sayer and Green et al., 2007; Festinger, Lamb and Kountz et al., 1995;



Hser, Maglione and Polinsky et al., 1998; Pollini, McCall and Mehta et al., 2006). Whether the quality and capacity for services to have an impact or the ability for people to access services should have been priority in Scotland is now a moot point given the primacy placed on waiting times.

According to the NHS Information Services Division (ISD), at the quarter ending December 2018, 93.98% of people referred to drug treatment were seen within three weeks (ISD, 2019a). This should be interpreted with a number of caveats. The Scottish figure is taken from the 14 NHS territories, one of which achieved 70% and another which has achieved 99.8%. Also, the actual numbers are not reported so it could be possible that the area achieving 70% saw more patients than the area achieving 99.8%.

In addition, it is entirely possible that someone is referred and seen by an addiction treatment provider within the three week target, and then not seen again for a number of weeks or possibly longer. While that allows the appropriate box to be 'ticked' in terms of treatment waiting times, 'treatment' might not (re)start for some time, with a reports that some people are waiting up to six months to receive methadone (Liddell, 2019). Data on this should be available via NHS ISD but they note that completion by staff of this indicator is so poor it renders the data unusable (ISD, 2019). And finally, these figures and the HEAT A11 target pertains only to tier three and four services. This was made clear in the briefing, "we are primarily interested in **tier 3 and tier 4 interventions**" (Smith and Massaro, 2010, emphasis retained). Keeping in mind that tier two and tier three interventions can often be provided in the same settings by the same staff, it is somewhat understandable how this might lead to confusion in treatment provision and for treatment providers. For example, patients trying to access a tier two intervention from a service which provides tier two and three interventions might find themselves waiting a lot longer than three weeks as those patients accessing a tier three treatment from the same service could be prioritised due to the HEAT target. This is another example of the perverse and unintended consequences of prioritising service access; it could be perceived as incentivising problem severity or for patients to embellish symptoms, where service users are seen expeditiously when they require higher threshold services.

In the same briefing note, definitions of 'assessment' are provided. Primacy is placed on three levels of assessment which include a screening assessment, triage assessment, and a comprehensive assessment. A strengths-based assessment appears almost as a secondary consideration, and as some sort of stand-alone and optional assessment, as opposed to something integrated within the assessment process more broadly.

It is suggested a screening assessment could be undertaken in universal or generic settings where, for example, a nurse or General Practitioner might be concerned enough to refer a patient to specialist AOD services.

According to the briefing note, a triage assessment is usually undertaken when an individual accesses specialist AOD services. The aim of a triage assessment is to establish the presenting issues, the urgency for treatment, the type(s) of intervention(s) required, and the service(s) available to meet the identified needs. A triage assessment should consider needs, risks and motivation to engage with treatment, and as a result, decisions about service provision, either within the assessing service or via onward referral or both, can be made.

These types of assessments should be undertaken by specialist treatment providers and should see the patient presented with a 'menu of options' available to them. There is no evidence to indicate whether this is happening in practice. For example, there is no data collected on the referrals made by specialist treatment providers to other services, so it remains unclear whether patients are in fact referred to or supported to access other services or "parked" on methadone maintenance treatment, and not seen by staff for some time (Kidd et al., 2013). The briefing note explains some patients may not require further assessment, that a triage assessment can inform what is called an "initial recovery plan", and that this might be sufficient for the patient until they leave treatment, notwithstanding reviews of the plan. More complex patient situations however may require a comprehensive assessment.

Comprehensive assessments are reserved for patients with more complex needs which could include multiple morbidities, offending behaviour, childcare concerns or pregnancy, a history of disengagement from services, a risk of harm to themselves and/or others, and require structured specialist addiction treatment. These

assessments should be undertaken via a collaboration between, if not agencies, then between disciplines within an agency, perhaps an 'integrated agency', and may include a prescriber, psychologist, psychiatrist, nurse and social worker. This has, unfortunately, been found not to be the case in at least two "integrated addiction services" in Scotland (Burns, 2016a; Burns, 2016b; Yates, Burns and McCabe, 2017).

The introduction of the Public Bodies (Joint Working) (Scotland) Act 2014 (Scottish Government, 2014b) provided a framework for the integration of some of the health and social care services provided by the National Health Service and Local Authorities respectively. Given the complexity of drug and alcohol problems, the many areas of life such difficulties can encroach upon and cause new problems (for example in self-care, housing, fulfilling childcare responsibilities, and social functioning), the idea of working in an integrated or multi-agency method is not new. Indeed, as far back as 1966 the so-called Second Brain Report recommended the attachment of social workers to their proposed drug dependency units (Brain, Abel and Hudson et al., 1966). That General Practitioners would work alongside other specialists was a model taken up and championed by the ACMD in its Treatment and Rehabilitation (1982) report. There have been a number of contributions to the literature on the successes and failures of this approach (Clement and Strang, 2005; Strang, Donmall, Webster, Abbey, and Tantam, 1991; Strang, Smith, and Spurrell, 1992). More recent work (Burns, 2016a; Burns, 2016b; Yates et al., 2017) would suggest that this model is still not realised in Scotland, despite the Public Bodies (Joint Working) (Scotland) Act 2014 (Scottish Government, 2014b) making 'integration' a legal requirement, and, perhaps more pressingly, the urgency of the situation i.e. record numbers of people are dying (National Records of Scotland, 2019).

A stakeholder review of an 'integrated' addiction service in Scotland – a tier three service - produced two reports; the first involved an anonymous online survey completed by addiction service staff (Burns, 2016a), and the second (Burns, 2016b) involved 11 focus groups of stakeholders from other services. Among some of the chief concerns from social work staff was that their health colleagues did not share the same values (where social work values were felt more aligned to being 'recovery oriented' where this was understood as person-centred/client led and holistic), and

they feared this would be diluted further as integration progressed. Indeed, this was a concern in another 'integrated' addictions service (Yates et al., 2017). A concern from stakeholders was the appropriation of the word 'recovery' and its incongruence with treatment provision, that 'business as usual' would continue but that the service was rebranded a 'recovery service'. This is elaborated upon later, particularly with Boyt's (2013) point on commissioners using the word 'recovery' to their own ends.

A further concern with the continuation of 'business as usual' is that it would involve a continued lack of buy-in with partner processes – such as the attendance of key child protection or criminal justice meetings and processes – and an apparent failure among some staff to understand what qualified as partnership working. One respondent, for example, suggested that because a patient was an 'open case' to them in addiction services and, serendipitously, also an open case to a psychiatric nurse within the community mental health team, that this constituted 'partnership working'. There were no instances of jointly undertaking assessments, jointly planning care (with or for the patient), jointly reviewing or even jointly seeing the client (Burns, 2016b). This not only falls short of the aspirations for integrated working within the Public Bodies (Joint Working) (Scotland) Act 2014 (Scottish Government, 2014b) but falls painfully short of recommendations made over 50yrs ago (Brain et al., 1966).

Perhaps, as unlikely as it seems given the length of time joint or integrated working has been recommended (e.g. Brain et al., 1966), things may improve in time, with legislation as the driver.

The section within the Scottish Government briefing note (Smith and Massaro, 2010) pertaining to strengths-based assessment is an interesting one for a number of reasons: firstly, a section on strengths-based assessments does not feature in the National Treatment Agency Guidelines (2006) from which most of the aforementioned material on assessment has been simply copied and pasted, indeed the authors acknowledge that the information on assessment comes from the NTA source. However, Smith and Massaro (2010) fail to note that the NTA couch the assessment information in a document double the length of theirs and with a much broader scope, one which, for example, references the competencies expected of a treatment professional who might undertake assessment. This is not something

Smith and Massaro (2010), nor anyone since, has adequately laid down for Scotland.

Secondly, its inclusion in the sequence of descriptions of assessment types within the briefing note sees it sandwiched between triage and comprehensive assessment, inferring it might come after the former but before the latter but for no good reason and with no explanation within the narrative. This fits well with the initial point, the section was absent from the source material and it may appear, although it is only speculative, that the authors were unsure of where to insert it in the briefing note.

Thirdly, the choice of language, specifically the term “one’s self” is used twice in this section to refer to the service user/patient but in no other section is this term employed. Finally, a line begins “A strengths-based assessment is defined as...” (Smith and Massaro, 2010: 24) but there is no reference provided. This is indicative of the depth and quality of consideration given to how strengths-based assessment may be used in addiction assessment and care planning approaches.

Nevertheless, the fact that a narrative of strengths-based assessment is included within this briefing note is perhaps a cause for optimism. It appears to be the first direction offered to services about what a strengths-based assessment might involve. However, such optimism must also be tempered by concern that it falls short in providing any specificity regarding when such an assessment should be used, by whom or with whom, and in which settings. Furthermore, it lacks any conceptualisation about how it should (or should not) be integrated with the other types of assessment and, crucially, how the output of such an assessment should be used and whether one of the purposes of treatment should be to increase strengths and assets.

The confusion, inconsistencies and challenges in the briefing note around assessment highlight some of the challenges inherent to undertaking a robust and holistic assessment of and for patients when entering addiction treatment. This is arguably the first real contact a patient has with a service provider and, despite having accessed treatment provision within three weeks as per the HEAT target, the quality of that treatment, not least the first interaction with the treatment provider (assessment, whatever the level), lacks real clarity or systematic quality assurance.

However, in an effort to remedy this, and to introduce some level of accountability and to support quality improvement in treatment services, *'The Quality Principles: Standard Expectations of Care and Support in Alcohol and Drug Services'* (Scottish Government, 2014a) has been introduced. This document sets out 8 principles, underpinned by a 'recovery philosophy', affirming that service users should be able to "quickly access...high quality, evidence informed treatment... (provided by staff who have) the right attitude, values, training and supervision... (which sees them) involved in a full, strengths based assessment... (and the) coproduction of a recovery plan that is person-centred and addresses your broader health, care and social needs" (Scottish Government, 2014: 12-15).

Scottish Government have introduced these Principles as part of a 'Quality Improvement Framework', which, according to the document (Scottish Government 2014a), were initially intended to support the 'next phase' of the implementation of *The Road to Recovery* (Scottish Government, 2008) but given Government have published a new alcohol and drug treatment strategy (as opposed to transitioning into the next phase of the 2008 strategy), it must be assumed the Quality Improvement Framework will now form part of this. On one hand, Scottish Government appears committed to the introduction and embedment of the Principles; they commissioned the Care Inspectorate to undertake a piece of work over an 18 month period beginning Autumn 2015 to corroborate ADP self-assessment of the implementation of the Principles across Scotland (Care Inspectorate, 2017). On the other hand, additional areas of the Quality Improvement Framework contained within the *Quality Principles* document (Scottish Government, 2014a), include revised planning and reporting arrangements for ADP's, a programme of development for the alcohol and drug workforce and the introduction of a new Drug and Alcohol Information System (DAISy). There have been minimal revisions of ADP reporting arrangements in the past five years, no national workforce development plan and, according to Scott, McDonald and Blackstock (2019), six years on and one million pounds later, the implementation of DAISy has been delayed yet again. Additionally, the impact of the Care Inspectorate exercise appears to have been minimal: ADP's were asked to produce an action plan addressing areas for development however, there is no published evidence that any were implemented or have been followed-up in the interim.

Nevertheless, if services are indeed to work in a more strengths-based way, and for this to be more meaningful than in the 2010 briefing note reviewed above, then it is important that services have the tools to do this. The use of a strengths-based assessment at treatment outset, where practical (i.e. not when someone presents in crisis) provides an opportunity for the timely identification of strengths, and allows for treatment providers and service users to consider what assets they have that can be tapped into to support their efforts to resolve AOD problems. In relation to the levels of assessment set out by Scottish Government (Smith and Massaro, 2010), a strengths-based assessment could be incorporated into existing assessments at every level except the screening assessment (i.e. triage and comprehensive undertaken by specialist services) where onus, it could be argued, should quite rightly be on the immediate risks, needs and harms and how action can be taken to best reduce these.

Arguably people presenting with what staff may perceive as 'chaotic lifestyles' and high levels of addiction problem severity may have depleted levels of RC (Burns and Marks, 2013) – and their RC may be less apparent to treatment providers. However, if strengths are identified early, then perhaps AOD problem resolution and/or sustainment of resolution efforts can commence more readily. Indeed, participants have reported to feel empowered after discussing their recovery capital, even when it is assessed at relatively lower levels (Burns, 2012). It is possible that this may also impact upon therapeutic relationships, a key predictor of treatment engagement and impact (see Drug and Alcohol Findings collection, 2019), and go some way to countering the effects of traditional assessments exclusively seeking to document deficits.

An individual may more readily and regularly engage in a process which explicitly examines the strengths they have, helps to consolidate and develop these, and initiates a relationship where the client is empowered and in a position of strength. This could contrast significantly with a relationship which is initiated via completion of a traditional assessment which exclusively and extensively documents needs, risks and deficits. Balance will be important however. RC cannot be used in attempt to mask the very real issues people experience and which often bring them to treatment. The UK Clinical Guidelines suggests treatment should involve a journey where there is a transition from managing risks to building recovery capital

(Independent Expert Working Group, 2017). While it may not be so linear, as has been acknowledged, and will continue to be throughout this thesis, assessment of both risks and strengths are necessary but the latter has been missing from the treatment provider repertoire in Scotland, with the arbitrarily placed cursory glance at strengths based assessment in Smith and Massaro (2010) indicative of this.

## **2.5 The Need for Treatment?**

It has been suggested that there are two broad methods to resolving AOD problems; with treatment, which may include for example, counselling and medication and without treatment, often referred to as 'natural' recovery. This is what Storbjork and Room (2008) have termed the 'two worlds' of AOD problems, conceptualising those who enter specialist addiction treatment and those who resolve their AOD issues without formal support, as two different population subgroups (Dawson, 1996). Natural recovery – although Edwards (2000) suggests there is no such thing as 'unnatural recovery' – has been researched at length (Blomquist, 1999; Sobell, Cunningham and Sobell, 1995 and Cunningham, Sobell and Sobell et al, 2000). Despite the reported deficiencies in some of the research into the phenomenon, including the issues around participant recall over time and the lack of a standardised approach (see Sobell, Ellingstad and Sobell, 2000 and Carballo, Fernandez-Hermida and Secades-Villa et al, 2007 for reviews), some important aspects of why some people can resolve AOD problems without formal treatment have been reported. Cunningham (2000) reported the main reason for change cited amongst their sample involved a weighing up of the pros and cons of continued problematic use. The Lundby alcohol study (Ojesjo, 2000) reported the main reason for cessation of problem drinking in their sample included family and peer pressure, changes in social circumstances and medical complications. Age and maturation have also been linked with a reduction in AOD problems (Hertzman, 1995; Smart, 1996). While such factors appear to have helped facilitate change in some people with AOD problems others appear to require treatment.

Treatment populations are evidenced to experience significant differences compared to those resolving AOD problems in non-treatment samples. Some of these differences include greater personal vulnerability, for example early age of onset of AOD problems, childhood trauma and substance using peers, greater severity and



intensity of use and associated problems and greater personal and environmental obstacles to recovery (Best et al, 2010). The majority of people who develop AOD problems resolve these without the need for treatment (e.g. Kelly, Bergman and Hoepfner et al., 2017) arguably by drawing on their recovery capital, and treatment providers should not be considered the 'gatekeepers' of recovery (Humphreys, 2015). However, it would appear natural recovery is the predominant pathway of resolution for less severe AOD problems, and treatment is the dominant pathway of entry into recovery from AOD dependence (Dawson, Grant and Stinson et al., 2006).

*With or without treatment: a distracting dichotomy?*

Orford (2008) argues that treatment research has become or has perhaps always been misguided. He notes that even service users who have received treatment report in follow up interviews that change is of their own making and directing, making it increasingly difficult for researchers to tease out the impact of treatment on change. Matzger, Kaskutas and Weisner et al. (2005) underscore the shrinking gap between self-change and treatment research when, after controlling for problem severity, their results showed a similarity in reported reasons for reduced drinking, and included reports of a traumatic life event or a spiritual awakening. Tucker Vuchinich and Rippens (2004) report that change can occur through several pathways with treatment effects being only one of these.

While AOD problem resolution takes place in both treatment and non-treatment groups, by exploring what separates these 'two worlds', perhaps paradoxically, some of what unites them can be revealed. Orford (2008) suggests research should explore how and why behaviours change, and the current study proposes to contribute to that body of research by building on the conceptualisation of RC (Granfield and Cloud, 1999). Regardless of the 'type' of recovery it would appear that many factors cited in natural recovery research which can precede and lead to change can be similar to the factors which lead to change in treatment populations and are both one and the same phenomenon. These phenomena appear to be impacting on both subpopulations and the treatment/natural recovery dichotomy seems to distract from measuring what facilitates change. The focus should arguably be upon the collective resources drawn upon to initiate and sustain AOD problem resolution.

These resources can be understood through the conceptual lens of RC with the suggestion that those who resolve AOD problems without treatment have higher levels of RC and lower levels of problem severity than those who enter treatment, and that they are more able, consciously or otherwise, to identify, tap into and deploy their RC. Those who enter treatment have already been shown to be likely to suffer from a multitude of issues including strained and estranged familial and social relationships, ingrained psychosocial substance misusing attitudes and norms and longer substance misusing careers, and thus have lower levels of RC, than those who resolve AOD problems without treatment (Best et al, 2010). That is to say that such a cohort will likely experience both an increase in addiction problem severity and a depletion in levels of RC (Burns and Marks, 2013). Arguably 'natural' recovery is not natural at all – it is not an organic process which if left unchecked will occur for everyone – and behaviour change through treatment is not attributable (especially by those who experience it) to treatment per se, it is in some part due to the role of RC. If it is accepted that, at the moment, the evidence points to RC being the single best predictor of the likelihood of the initiation and sustainment of recovery (Best et al, 2010), and that recovery may be initiated by a synergy between the need for change (addiction severity) and belief and resources to make it happen (RC) then it makes sense that services should act accordingly: the aim of services should include how they assess, harness, consolidate and enhance an individuals' level of RC i.e. work in a strengths-based way. Moreover, given the extent to which levels of RC may be depleted in those who access treatment services, treatment service may have to try doubly hard to identify RC in their clients. In order for them to do so, it is vital that the concept is better understood. It is instructive therefore to look to the genesis of the term and concept and explore the theoretical underpinnings which bolster it before beginning to think about quantification and measurement. Before that however, if RC is the strengths and assets called upon to resolve AOD problems, it would be useful to better understand how AOD problems are thought to manifest in order to require resolving in the first place.

## **2.6 Chapter 2 Conclusion**

The pervasive impact of the UN Treaties creates an international and national legislative framework which appears to be increasingly at odds with policy approaches in most European countries, and certainly within Scotland – where policy

is created by Scotland while drug legislation powers are reserved by the UK Parliament. People with problematic AOD use are being considered more and more as people who have experienced trauma, outlined by many of the common antecedents of problematic AOD use, and that treatment rather than punishment is required to assist them in resolving such problems. That an individual is able to access drug and alcohol treatment within 21 days, in accordance with the HEAT A11 target, is testament to the primacy placed upon supporting people to access treatment.

The treatment available to people in Scotland has to some extent changed; while options which inevitably reduce harm such as prescribing and needle exchanges remain available, the goal of treatment, driven by the 2008 Scottish strategy, is to support people towards a drug free life, and to be active and contributing members of society. That this is couched within person centred treatment approaches is important; treatment types and outcomes are not to be forced upon people, instead they are to be presented with a 'menu of options' (Scottish Government, 2008), and supported to make decisions to improve their quality of life (Scottish Government, 2018). Nevertheless, the context of this can appear confused and confusing for both those providing treatment and those trying to access it. In the absence of any robust national quality assurance mechanisms the quality of service varies between, and even within, NHS territories (Care Inspectorate, 2017). Scottish Government appear to have taken steps towards addressing these concerns, albeit tentatively, and that these areas are being considered is grounds for cautious optimism. The first real step has been the publication of the *Quality Principles* (Scottish Government, 2014a). However, their introduction was five years ago and they risk being undermined without levers for enforcement or provision of support for ADP areas when they fail to be implemented. Each of the eight Quality Principles are important, however the current study considers the emphasis on strengths-based assessment, covered by two of the Quality Principles which includes assessing RC at treatment entry and review. Measuring RC and working in a strengths-based way could be vital to moving the recovery agenda forward, where the 'recovery agenda' involves moving away from seeing patients through a lens of deficit based assessments, and where treatment has historically involved supporting patients towards only less harmful lives. The evidence that not only is AOD problem resolution possible but

that it is the norm for the majority of people who experience AOD problems, and that they do so without entering treatment is important; it indicates a role for treatment in nurturing a process which occurs for most individuals, and they do this by mobilising their strengths and assets.

In order for effective and efficient recovery oriented treatment to be delivered, service providers must have effective and efficient means of delivering that treatment. A measure of RC is essential therein; by treatment taking cognisance of what is strong in a person rather than what is wrong with a person, it is adopting elements of a salutogenic approach. Salutogenesis (Antonovsky, 1979), its relationship with positive psychology, and the relationship with positive psychology and the parallel growth in recovery (Krentzman, 2013), as well as the relationship to resilience are explored in the next chapter alongside theories of recovery and addiction.

## Chapter 3: Recovery and Addiction Theory

### **3.1 Recovery: Definitions and Debates**

The shift from the traditional acute care and deficit based approaches to a model of recovery management has been called upon by writers in the field for some time, for example White, Boyle and Loveland (2002), McKay (2005), Moos (2003) and Dennis and Scott (2007), and has gathered pace recently to become central to government policy in Scotland. The Scottish Government defines recovery as “a process through which an individual is enabled to move from their problem drug use, towards a drug-free lifestyle as an active and contributing member of society” (Scottish Government 2008: 23). This shift in policy and approach is echoed throughout the UK with the UK Drug Policy Commission describing recovery as “voluntary sustained control over substance use which maximises health and wellbeing and participation in the rights, roles and responsibilities of society” (2008: 6).

While the recovery management approach to resolving AOD problems can be considered a more sophisticated and multifaceted approach to AOD problem resolution, it would be erroneous to assume that recovery is an easily explained and well understood concept. Debate around a number of issues has gone on for some

time – for example whether abstinence is an essential element (Ashton, 2008) – but this has perhaps intensified as it has become central to Scottish (and UK) Government policy, and the organising paradigm for service delivery. While some consider it a panacea, others have been more suspicious and have contested the use of the term, and what this means for the concept. That services should be recovery focused perhaps seems self-explanatory. Indeed, in mental health where the term and concept of recovery has a longer history, Davidson, Rakfeldt and Strauss (2010: 10) suggest those not familiar with services might legitimately ask “...if services are not focused on promoting recovery, what else might they be for?” However, establishing what it means to be ‘recovery focused’ is beset with challenges, a number of which stem from the mixed and conflicted parentage of ‘recovery’ within the substance misuse field.

Boyt (2013: 11) accuses the recovery agenda of having a tendency to “plaster optimism over the struggles of the often disadvantaged, traumatized and neglected”. Others have concerns about a perceived over-emphasis on abstinence (Ashton, 2008). Meanwhile some of Roy and Prest’s concerns include the apparent top-down approach being adopted (Roy and Prest, 2014), and the increasing reliance upon and growth of peer led recovery support, which Roy and colleagues at least, suspect is a political move to dramatically reduce the paid workforce (Roy and Buchanan, 2016). An example of how confused and confusing the situation can be includes when the UK Government produced their policy document, “Putting Full Recovery First: The Recovery Roadmap” (2012). Despite positing in their national strategy document (UK Home Office, 2010) that recovery is “an individual, person centered journey”, they appear to contradict their own strategy by defining “full” recovery to involve “independence from any chemical”. ‘Successful’ services were expected to demonstrate this – and for some time were to be paid accordingly via the Payment by Results scheme piloted across eight sites in England. The final evaluation (Donmall, Sutton and Jones et al., 2017) demonstrated the poor success of the scheme which included an outcome/result to involve a patient successfully completing treatment, thereby becoming independent from any chemical, and not re-entering treatment for 12 months. Had this been achievable/successful, presumably this would have gone on to define recovery in England.

In an interview conducted by Clark (2013), Best suggests the aforementioned UK Drug Policy definition, and the definition proposed by the Betty Ford Institute Consensus Panel (2007: 222), that recovery involves "...a voluntarily maintained lifestyle characterised by sobriety, personal health and citizenship" feel somewhat diagnostic. Such definitions are suggested to introduce a set criteria which one may be measured against as being 'in' recovery. Best goes on to elaborate that these definitions are ill-fitted with the notion that recovery is both a 'personal quality' and a 'lived experience.' He points to a perspective taken by Valentine (2011: 264), "you are in recovery if you say you are." Best goes on to provide a list of things recovery *may* involve. For example, it can be visible or invisible; it can involve a sense of belonging in the community "(however that is defined)"; it can involve learning and/or mentoring with others; it can involve personal journeys, and he adds, "...but this does not mean that there are no common themes or 'typical' processes."

With reference to how wide, and perhaps excessive, the use of the term 'recovery' has become, and perhaps misused (Boyt [2013] makes reference to this also, saying a commissioner facetiously suggested using the word more in strategic papers and action plans will help people get better, quicker), Neale et al. (2015) titled their paper "You're All Going to Hate the Word 'Recovery' by the End of This...". This work will be looked at again later given its primary purpose was to develop 'recovery outcomes' – while noting, "we do not claim that our current research will produce a service user generated measure of addiction recovery" (2015: 27), but at this stage it is worth noting that Neale and colleagues, through a series of papers (e.g. Neale, Finch and Marsden et al., 2014; Neale and Strang, 2015; Neale, Vitoratou and Finch et al., 2016), suggest recovery outcomes in the absence of being able to lean heavily on a universally accepted definition of 'recovery'. Indeed, they comment on how definitions may vary from the concise (but prescriptive) versions, such as recovery means total abstinence, through to the capacious (but nebulous) versions, where recovery can be whatever the individual wants it to be. That recovery involves more than solely a reduction in substance use (Scottish Government, 2008) is referenced. So too is the importance of assessment. That this leads the authors to explore what the outcomes of treatment might involve (as opposed to considering the assessment tools to facilitate the achievement of outcomes – perhaps better described as prematurely considering the destination before adequately considering whether the

journey is suitably catered for) will be returned to when considering the proliferation of addiction assessment scales and tools.

One of the most contentious debates within the addiction treatment field involves the oft-presented dichotomy of harm reduction versus recovery (where recovery is defined as abstinence) (Ashton, 2008). Given the definitional ambiguity around 'recovery' itself, and as has been seen, that recovery is not defined as abstinence in all spheres at all times, and arguably not by the Scottish Government, the debate will not be explored in full but it would be remiss of any research into RC not to acknowledge the tensions.

Harm reduction perhaps is more easily definable with the UK Harm Reduction Alliance (UKHRA), for example, citing Newcombe's (1992) definition, "Harm reduction is a term that defines policies, programmes, services and actions that work to reduce the health social and economic harms to individuals, communities and society that are associated with the use of drugs" (UKHRA, 2017). The UKHRA cite the work of Lenton and Single (1998), when referencing some of the principles of a harm reduction approach. They suggest it offers pragmatism in its recognition that containment and a reduction of harms may be more feasible than the cessation of problem substance use entirely. Harm reduction is said to reflect 'humanist values' whereby no moral judgement is made regarding one's decision to use or not use illicit substances, only providing support to reduce the harm to the user and/or others affected by their use. And, crucially, harm reduction is not abstinence based – although entirely supportive of people who aim to achieve abstinence, a harm reduction approach neither presumes nor excludes abstinence as a goal of treatment (UKHRA, 2017).

That such an approach has informed policy for a number of years in the United Kingdom has been detailed in the previous chapter, it is mentioned again here because of the nature of the debates around definitions about recovery and whether harm reduction, and acute care type responses are mutually exclusive or compatible approaches. Many have suggested the debate is unnecessary and the dichotomy false (UNODC, 2008), and that the approaches could be considered to exist on a continuum. It could be suggested that while services have had the capacity to include abstinence as a goal within their remit, expectations have been low and

aspiration lacking (Strang, Babor and Caulker et al., 2012), and so there is perhaps an element of providing 'just enough' treatment to patients, to meeting their acute needs and moving them on, for the next patient who, in Scotland at least, must be seen within 21 days of referral.

The recovery paradigm appears to have evolved in response to an acute care model of treating substance misuse (White, 2008). It is not an alternative to this model, it is arguably a complementary extension, perhaps an inevitable one. The traditional model with its medicalised focus understands and explains addiction by assessing it as an illness, whereby assessment highlights deficits, and treatment is delivered in the form of symptom reduction and management, with the goal being to mitigate, reduce and remove the negative symptoms for the patient. Examples of traditional addiction problem severity assessments, which can inform such acute care responses, include the Addiction Severity Index (McLellan, Kushner and Metzger et al., 1992) and the Alcohol Use Disorder Identification Test (Saunders, Aasland and Olaf et al., 1993). Acute care type responses can include outpatient treatment, substitute prescribing and inpatient and community detoxification, essentially most of the types of treatment within the tiered model outlined in the preceding chapter. These types of intervention tend to focus on the elimination of the symptoms of a primary problem, the stabilisation and reduction of symptoms. That is not to say that such interventions do not have a role in a recovery management model.

While the acute care model may have provided legitimacy for addiction treatment throughout the 1970s and 1980s (White, 2008), the issue with this type of assessment and intervention is that it does not account for the chronicity of substance misuse, and if symptom reduction is the sole aspiration then it is likely to prove ineffective in the long term (Peele, 1998). Indeed, Miller and Miller (2009) suggest that if treatment ends when AOD problems cease (i.e. physiological symptoms), then treatment may be ending just when people need support the most. This conclusion is reached due to two major findings from outcome studies; treatment effects decrease over time (Weisner, Matzger and Kaskutas, 2003), and long addiction and treatment careers often precede the achievement of sustainable recovery (Anglin, Hser and Grella, 1997). While major outcome studies in the UK (Gossop, Marsden and Stewart et al., 2001; Gossop, Marsden and Stewart et al.,



2003) and the USA (e.g. Simpson and Sells, 1990) have shown significant benefits of treatment in terms of reductions in substance use and related problems, they tell us very little about the personal and social assets that support recovery. New measurement instruments that focus on such dimensions are needed to reflect the shift toward models of recovery management and recovery-oriented systems of care (ROSC).

A recovery management approach, while recognising the need for symptom management and reduction, emphasises the need to understand and treat the person as a whole who exists within a social context which has an impact upon their substance misusing behaviour (Cloud and Granfield, 2008). A recovery management based approach is a strengths based, solution focused, medium-to-long term approach that concentrates on the global health and wellbeing of a person, recognising and treating clinical symptoms while also looking to add to and develop the existing strengths and protective factors within a persons' life to support their recovery initiation and maintenance (White, 2008). It can involve individuals realising benefits in an array of life areas, including their social relationships and networks, health, housing, employment, self-care, use of time, community participation and well-being (ACMD, 2013; Burns and MacKeith, 2012; Neale, Pickering and Nettleton, 2012).

### **3.2 Theories of Addiction**

That recovery has been difficult to define is perhaps in part due to the various conceptualisations of addiction itself. Certainly, if the problem is ill-defined, defining a solution will be extremely difficult. Over time there have been various different theories of what causes and characterises addiction. Although a number of theories branch out into other behaviours such as sex, eating, shopping, and exercise, and although some would argue some common factors underlie each of these, the theories briefly explored here will focus primarily on alcohol and/or drug misuse. While some theories diverge markedly from others, a number of them can be broadly themed into biological, psychological and sociological.

#### *Biological Theories*

Perhaps the most pervasive conceptualisation of addiction is that it is some kind of biological disease. Peele (1985) is forthright in his condemnation of such models, suggesting such theorising derive more from magic than from science. That Peele is writing in 1985 but that Hart, a neuroscientist, finds himself making similar points in 2015 provides an indication of how little the debate has shifted, despite the evidence – or lack thereof – to support a biological model of addiction. Peele’s frustration can be perhaps understood in some of his writing; only four years before his comments about magic over science, Berridge and Edwards tell us, “Addiction is now defined as a disease because doctors have categorised it thus...” (Berridge and Edwards, 1981: 278). That physicians were initially solely allowed to dictate the terms and conditions of how addiction should be understood goes some way to explaining why it was defined in the terms and conditions understood by physicians i.e. they deal with disease in their day-to-day work, faced with a new and poorly understood phenomenon, it is perhaps unsurprising that their default position would involve trying to interpret it through an exclusively pathogenic lens. Despite their deficiencies, biological theories of addiction have a contribution to make in building up a picture of how addiction may operate.

Neuroscientific theories of addiction, a particular type of biological theory, posit that substances, although having idiosyncratic effects, mostly act through two major pathways in the brain with the dopamine reward system and the endogenous opioid system both implicated (Koob and LeMoal, 1997; Nutt, 1997). The mesolimbic-fronto cortical dopamine system (containing the mesolimbic and mesocortical dopamine systems) has been proposed to be fundamental in brain reward (Nutt, 1997; Wise, 1996). Research has found alcohol to be implicated in both the direct stimulation of and indirect increase in levels of dopamine (Altman et al., 1996). Nicotine has also been linked to the release of dopamine in the mesolimbic pathway (Benowitz, 1998). Similarly, cannabis (Adams and Martin, 1996), although initially thought not to have these effects, and cocaine (Bergman, Kamien and Spealman, 1990; Caine and Koob, 1994) have been discovered to have similar effects upon dopamine. In relation to the endogenous opioid system, opiates such as heroin, and morphine, are opiate receptor agonists, and linked to tolerance and dependence. Changes in opiate receptors take place after chronic opiate use, indicated by the

larger amounts required to achieve pain relief or euphoria. Further, naloxone, an opiate antagonist will quickly, and temporarily, induce withdrawal symptoms if administered. The opioid system has also been linked with the effects of alcohol; the opioid antagonist naltrexone has been used in the treatment of alcohol dependence (Volpicelli, Alterman and Hayashida et al., 1992). Similarly, research on the opioid system has been linked to nicotine ((Krishnan-Sarin, Rosen, &O'Malley, 1999), and, with naloxone reversing the brain reward effects of tetrahydrocannabinol, cannabis (Gardner, 1992). This growing body of evidence of the neurological effects of substances on the brain has heralded calls for addiction to be defined as a brain disease (Leshnar, 1997). However, in a counter to Leshnar's article, "Addiction is a Brain Disease, And it Matters", Levy (2013) responds with "Addiction is not a Brain Disease (and it Matters)". Both arguments have other exponents (e.g. Bedi, Martinez and Levin et al., 2017 argue for while Hart, 2017 against). Despite strong evidence of the links between substance use and neurological activity – there is no disputing that some complex interactions take place in the brain when substances are consumed and patterns of consumption change – there remains an inadequate evidence base to describe and explain addiction in terms of a disease of the brain.

Another biological theory of addiction, rather than examining the brain, tries to explain a predisposition to addiction, one that could be inherited through an individual's genes. Various study designs have been used to try and explore whether some genetic vulnerability to AOD problem development exists, including family studies (e.g. Merikangas, 1990; Kendler, Davis and Kessler, 1997), adoption studies (e.g. Bohman, Sigvardsson, and Cloninger, 1981; Cloninger, Bohman, and Sigvardsson, 1981; Heath, 1995), and twin studies (e.g. Kendler, Neale and Heath et al., 1992; Prescott and Kendler, 1999; Prescott, Neale, Corey, and Kendler, 1997). These (and many other similar) studies vary in their findings both in terms of statistical significance and effect sizes. Peele (1998) however, points out that these theorists accept their findings to be preliminary and require replication, which has proven difficult (e.g. Vailant, 1983). Peele (1998, online) suggests, "Not only has no biological mechanism been found to date to underlie alcoholism, but research on alcoholics' behaviour indicates that one cannot be found in the case of the loss of control of drinking that defines alcoholism." While inconclusive in their own right, biological theories are likely to add some value in understanding AOD problems and,

noting the rationale above about how an understanding of the causes of AOD problems may help to understand their resolution, a useful model of recovery capital is likely to require a similar cognisance of biological aspects of the experience.

### *Psychological Theories*

There are a number of psychological theories of addiction which reflect the different schools of thought within psychology itself. These include but are not limited to behaviourist theory, personality theory and rational choice theory. Behaviourist theories of addiction focus on behaviour which is directly observable and measurable. One example from this perspective involves drug self-administration and tries to explain the factors involved through reinforcers (West, 1989), positing that the maintenance or increased likelihood of behaviour occurring stems from the consequences/reinforcers of such behaviour. Laboratory research on drug-naïve animals has demonstrated that they will often self-administer substances to excess (Institute of Medicine, 1996). Such experiments suggest substances may be reinforcing in two general ways: directly on a reward system in the brain or indirectly through other behaviour reinforcers (Altman et al., 1996) but can be complex and require careful interpretation (Heidbreder, 2008). Nevertheless, repeated findings of such research has been able to demonstrate that different animals, under experimental conditions, will self-administer a variety of substances (Institute of Medicine, 1996).

A common psychological theory of addiction revolves around the notion of the 'addicted personality', with a main exponent of this work being Hans Eysenck. Eysenck (1997) points to the examples of the large numbers of people who use substances in certain circumstances, citing men who used opiates in Vietnam and the increased number of people who smoked during wartime due to the increased stress of the situation but for whom, when the situations abated, so too did their substance use, in contrast to others who become 'wedded' to their behaviour (Eysenck, 1997). He suggests this gives rise to the possibility of an addictive personality and posits this as, "a type of person who is readily addicted to certain types of behaviour which are reinforcing, and will continue to indulge in these behaviours even after the circumstances giving rise to them have changed (Eysenck,

1997: 80). Eysenck and Eysenck (1985) propose three major and independent dimensions of personality: P (psychoticism), N (neuroticism) and E (extraversion), with P involving a person's liability to functional psychosis which is conceptualised on a continuum from 'altruistic' to 'schizophrenic' (Eysenck, 1997). Eysenck, who adds that psychoticism measures a dispositional variable, that it requires to be combined with stress to produce psychiatric symptoms, describes characteristic traits of P to include egocentricity, impersonality, coldness and impulsivity. The N dimension refers to a propensity towards emotional liability and includes traits such as moodiness and neuroticism, anxiety and irritability (Eysenck, 1997).

Although a 'psychological' theory, genetic factors, particularly heritability, are thought to play a significant role in personality, with personality dimensions thought to be explained to some extent by heritability (Eley and Plomin, 1997; Eysenck, 1997). The relationships between the three personality dimensions and substance use has been a focus for research. Francis (1996), when reviewing studies exploring the link between extraversion (E) and drug dependence found mixed results; of the 24 studies included in the review, 10 found a negative correlation, two found a positive one and 12 found no significant relationship. However, research in relation to N and P dimensions have been more definitive in terms of a relationship, with those experiencing substance dependence found to have higher neuroticism (N) and psychoticism (P) scores (Eysenck, 1997). Francis (1996) also found evidence of people with dependence on a range of substances including heroin, benzodiazepines, alcohol and nicotine, to have higher P and N scores than controls. Similar results again (higher P and N scores) have been found in populations said to have similar traits as substance dependent samples including people experiencing eating disorders (Feldman and Eysenck, 1986), and gambling problems (Blaszczynski, Buhrich and McConaghy, 1985).

While a clear linkage has been established between substance dependence (and other behaviours) and personality, the design of this work, correlational research, limits what can be extrapolated from the findings. That personality factors exist, and that there is a large component of heritability therein is useful in understanding addiction. That people with higher levels of aggression and impulsivity (P scores) and people who are more anxious, irritable and moody (N scores) are also more

likely to be dependent on substances demonstrates a correlation but not a fully causal explanation. It could be that using substances contributes to a manifestation or amplification of these traits as opposed to these traits being antecedent to substance use and dependence. Different levels of these traits may be more important at different times in life or play more or less significant roles in different genders at different times. It could also be that high P and N scores are indicative of a propensity to psychopathology or neuroticism in more general terms, or of some other factor independent of but in some way correlated to a personality liable to addictive behaviours. Such speculation continues, and while providing more areas for research, these theories cannot, and are unlikely to ever be able to fully explain addiction.

Psychological factors and understanding the role of 'the self' clearly play some role in the manifestation of AOD problems. As was the case for biological theories, unidimensional models (i.e. biological or psychological) provide some insight but are inconclusive on their own. Nevertheless, and again using these addiction theories as a lens through which to consider problem manifestation with a view to developing a model of recovery capital, it is clear that a useful model of recovery capital must consider psychological factors.

### *Sociological Theories*

While biological explanations attempt to explain addiction from a disease perspective, and psychological perspectives from the individual psyche, both acknowledge that addiction does not occur in a vacuum; social and environmental explanations of addiction place a great emphasis on the numerous external variables which may impact upon addictive behaviours. Addiction has been characterised as an 'antisocial behaviour' – perhaps due in part to the legislative framework around certain substances – and some research has shown people who display other antisocial or conduct disorders are more likely to develop drug and alcohol problems than those without such disorders (Cicchetti and Rogosch, 1999; Gittelman, Mannuzza and Shenker et al., 1985). It has been proposed that the earlier a child or young person demonstrates serious antisocial behaviour, the more likely they are to

develop AOD problems, with these themselves framed as antisocial behaviours (Costello, Erkanli and Federman et al., 1999; Robins, 1978).

In a robust review of influences on how children and young people learn about and behave towards alcohol, Velleman (2009) identifies a host of environmental factors. Velleman identifies family structures and processes which influence attitudes, knowledge and subsequent behaviours; processes of peer selection and mutual influence; the impact of marketing and cultural representations and other factors such as ethnicity and race, country, religion, school, community, socio-economic status, and other cultural influences. Among other conclusions, he identifies family as perhaps the single biggest impact upon a child or young person's attitude, knowledge and use of alcohol. Key family structures and processes found to have influence include: responsive parenting where boundaries are consistent and levels of consistent supervision are appropriate to the child's age and stage; parental modelling of alcohol use, where congruence between messages communicated to children are consistent with parental behaviour/consumption; clear and open communication of expectations regarding behaviour, and the appropriate expression of disapproval when these are not met; high levels of family cohesion, cooperation and bonding; satisfactory child-parent relationships where the child wishes to emulate the parent, and sibling behaviour where older siblings desire to use and actual use are predictors of younger siblings use.

Moving from micro-environmental factors to macro level environmental factors, Alexander (2001) suggests there is a 'globalisation of addiction', and links this to the free market economy. Alexander (2001) draws and builds upon Erikson's work on psychosocial integration (Erikson, 1982) which describes how children from a young age strive for close bonds with parents and adult care givers, and adults continue this pursuit of connectivity in relationships with friends, colleagues, partners and community members. Erikson (1982) describes this integration as a life-long pursuit where the outcome is to flourish simultaneously as an individual and member of a culture.

Alexander (2001) describes the opposite of integration to be dislocation, something which if prolonged and severe may lead to such dire consequences as mental ill

health and suicide. So difficult to endure, dislocation has been used as a form of punishment in the forms of excommunication, exile and solitary confinement. Dislocation is linked in part to isolation and loneliness, which itself is evidenced to produce poor health outcomes (Cacioppo, Hawkley and Crawford et al., 2002). Alexander (2009) describes a 'globalisation of addiction', linked to the globalisation of free market economics. He uses historical examples of communities which have experienced significant social and physical upheaval, pointing to the natives of Vancouver whose cultural practices were outlawed by the English settlers, and to the Highland clearances where cultural destruction was wreaked upon the indigenous people by English rulers as examples which precipitated the introduction of free market principles and created psychosocial dislocation for the people who had once lived a certain way.

For Alexander, "Only people who are chronically and severely dislocated are vulnerable to addiction, although some of them manage to avoid it..." (Alexander, 2001: 16). Some manage to achieve a level of psychosocial integration which makes life bearable while others may instead become eccentric, physically ill, hypochondriacal, depressed, violent or suicidal. Addiction, along with a range of other poor health outcomes, has been found to be more prevalent in less equal societies, an inherent outcome of free market societies built on competition (Alexander, 2009).

Alexander (2001, 2009) points to dislocation almost as a 'cause of causes', dislocation creates a disruption in identity, socialisation, networks and affiliations, to a general degrading of a person as a social being which in turn increases their vulnerability to developing addiction problems. In a similar vein but applied more broadly, there has been work carried out to explore social determinants of health inequalities, pointing to social factors being predictive of poor health outcomes, including but not limited to obesity, mental ill health, criminality, drug and alcohol problems, literacy and a host of physiological conditions such as cardiovascular disease and types of cancers (Marmot, 2005). Marmot suggests that social determinants are relevant to communicable and non-communicable diseases alike, and that a difference in life expectancy of 48 years across countries and 20 years within countries need not be inevitable (Marmot, 2005). Such inequalities are said to



exist on a social gradient, and health outcomes are poorer when that gradient is steep and the gap between the least and most well-off within a country or society is large (Marmot and Wilkinson, 2005).

There has been a burgeoning of research in this area in recent years with numerous national and international commissions created to examine the issue, and bodies set up with the sole mission of reducing these inequalities, NHS Health Scotland for example (NHS Health Scotland, 2019a). The fundamental causes of inequality, the distribution of wealth, power and resources has a direct impact upon one's environment, including social and cultural experiences, access to transport, availability and accessibility of quality services, and access to good quality and affordable housing which combine to produce inequality in the distribution of health, attainment and wellbeing (NHS Health Scotland, 2018). That inequality exists on a gradient, with those at the top experiencing better QOL and health outcomes than those in the middle, and those in the middle having better QOL and health outcomes than those at the bottom sees those at the bottom generally experiencing more issues in relation to health and wellbeing, including problems with drugs and alcohol.

“Individuals who turn to alcohol, drugs and tobacco suffer from their use but their use is influenced by their wider social setting” (World Health Organisation, 1998: 22). That, regardless of social status, people have used drugs and alcohol over the course of human history is well established, with early man enjoying the effects of the consumption of fermented fruit, and our ability to consume and metabolise alcohol is said to date back millions of years (Williams, 2014). Those who use alcohol and those who develop alcohol related problems however, can be seen to exist on a social gradient: numerous surveys (e.g. the Opinions and Lifestyle Survey, General Household Survey and General Lifestyle Survey) indicate those in higher socioeconomic classes (generally earning > £40,000) drink more alcohol, often more frequently, than those in lower socioeconomic groups. On the other hand, alcohol related problems such as hospital admissions, alcohol related harms and alcohol related deaths are experienced more frequently amongst those in lower socioeconomic groups (Marmot, 2015).

In relation to drug use, Wilkinson and Pickett (2009) undertake an analysis of the United Nations Office on Drugs and Crime data to explore the relationship between inequality and substance use, finding that the countries with high levels of inequality such as the UK and US have high incidences of drug use, those with lower levels of inequality such as Finland, Norway and Sweden have low incidences of drug use, and Portugal, although having high levels of inequality, have comparatively lower levels of drug use. While this somewhat speaks to the unique policy approaches in Portugal which have already been referenced, Wilkinson and Pickett (2009: 71) conclude “The use of illicit drugs is more common in more unequal countries.”

That the environment can play such a significant effect on substance use is perhaps underscored when considering the amount of prescribed substances and illicit/self-medicated substances consumed. For example, the British Medical Association report antidepressant prescribing more than doubled in the decade to 2016 to 75 million prescriptions UK wide, along with 12 million benzodiazepine prescriptions in 2015, and 28 million opioid prescriptions in 2016 (BMA, 2016), and Von Soest, Bramness and Pedersen et al. (2012), among others, report prescribed anti-depressants to be social patterned. Meanwhile the Scottish Burden of Disease study shows the disease burden of drug use disorders is 17 times higher and alcohol dependence 8.4 times higher in the most deprived areas compared with the least deprived areas (NHS Health Scotland, 2018).

### *Biopsychosocial Theories*

Each model or theory of addiction arguably holds some explanatory value, and each has its own strengths and drawbacks. Biological theories of addiction have led to a move away from blaming the substance for having some inherent addictiveness, although that has not dissuaded the media from reporting the most addictive drug known to man to be the next thing to create a moral panic, from crack cocaine in the 1980's and 1990's to fentanyl more recently, when there is no evidence to support the notion of a substance being inherently addictive (Hart, 2013). Furthermore, biological theories have arguably led a move away from blaming the individual and degrading them for lacking moral fibre, instead suggesting they are suffering from a disease. Some argue that the problem with this is that disease infers helplessness

and an abdication of personal responsibility, and that the model, with so many vested interests of doctors, psychiatrists, counsellors, treatment providers and 12-step programmes, particularly in the US, has skewed the debate to prohibit a rational, evidenced based discourse (Peele, 1995). Psychological theories have provided insight into how patterns of behaviour become normal, even in the face of adverse experiences or outcomes, and how problem behaviour can grow and become unmanageable. However, even the more sophisticated theories acknowledge biological and environmental factors are key in understanding the various mechanisms involved in the initiation of drug and alcohol use and the subsequent manifestation of any associated problems. And, similarly, compelling evidence exists to illustrate the impact of the environment on drug and alcohol use; whether it be the immediate environment such as friends, peers and family or the wider context and structures within which these networks are nested, and how an individual may experience dislocation and/or inequality. This leads us to conclude that a viable theory of addiction must take cognisance of each of these elements, and possibly more. Such approaches have come to be known as biopsychosocial or interaction models of addiction, with one of the earliest and most important contributions coming from Norman Zinberg.

Zinberg's seminal work was produced in 1984 in his book, "Drug, Set and Setting: The Basis for Controlled Intoxicant Use", and from the title alone it is clear a multifactorial model is proposed. The title also reveals his research focused not only on how addiction problems may manifest but also how they may not. That 'intoxicants' can be used in a controlled way, even after periods of prolonged or problematic use, flies in the face of some traditional addiction theorists, particularly traditional disease model proponents (e.g. Jellinek, 1960). However Zinberg, an analyst in the Freudian tradition and well versed in psychoanalytical perspectives, explored how a combination of factors play a role in the manifestation – or not – of addiction.

Zinberg's interaction model was a response to the unidimensional models which had preceded it. As has been seen, addiction is a complex phenomenon, and trying to explain it through one theoretical or philosophical lens prohibits a full understanding. A biopsychosocial approach has been postulated as providing a framework or macro

theory, within which micro theories (see Bronfenbrenner, 1979), sometimes complimentary, sometimes opposing, can have some explanatory role, usually in combination with others (Kumpfer, Trunnell and Whiteside, 1990). This transactional approach, as opposed to an interactional one which sees one factor impact on the other in a unidirectional fashion (Altman and Rogoff, 1987), tries to incorporate the many factors which can impact and be impacted upon when understanding and explaining the development of AOD problems. Since Zinberg's original work, others have expanded and developed the biopsychosocial framework including Kumpfer (1987), Kumpfer, Trunnell and Whiteside (1990), Heather (1998) and Griffiths (2005).

Kumpfer (1987) proposed 'A Biopsychosocial Model of Vulnerability to Substance Abuse' and described the key elements to include biological and psychosocial components. Elaborated upon by Kumpfer, Trunnell and Whiteside (1990), the model involves three major clusters of biological variables: the first accounts for genetic heritability, biochemical and neurological vulnerabilities, differences in how individuals metabolise and react to AODs, and autonomic nervous (ANS) and central nervous system (CNS) structural differences. The second cluster considers in utero effects which could cause ANS and/or CNS problems, and physical and biochemical damage which could increase temperament or psychological vulnerability to the onset of AOD problems. The final biological cluster considers temperament or physiological differences which may manifest to cause an increased vulnerability and may include diet, accidents, sickness, and trauma, exposure to toxins or alcohol and drug use. The authors explain that this is not intended as an exhaustive list but provides a template to which other similar factors, even a new cluster, may be added if/when discovered. Moreover, it is proposed that no single variable is expected to explain the experience of AOD problems but when a number of them are present and converge, and combine with environmental factors more conducive to the manifestation of AOD problems, they may together increase one's vulnerability.

Kumpfer, Trunnell and Whiteside (1990) propose psychosocial factors in 3 clusters, temporally ordered according to how they see the clusters and variables influence a child or young person as they mature. The first psychosocial cluster includes 'family' and the variables therein which may be considered stressors, and includes attitudes and values which influence family relationships and cohesion, and parental and

sibling use of substances, not unlike Velleman's (2009) work mentioned above regarding risks around alcohol problems. Variables included in this cluster which may mitigate or buffer some of the aforementioned are suggested as family coping skills and resources such as life skills, problem solving, communication and external and material support. The second psychosocial cluster focuses on 'school/community', postulating stressors such as attitudes and values towards prosocial activity and drugs and alcohol, pressure to use substances, high population density, poverty, high crime rates, unsupportive relationships and impersonal climate increase AOD problem vulnerability. Variables suggested as protective factors include positive leadership, problem solving skills, prevention, and education and treatment resources. The third psychosocial cluster is 'peer/social' where stressors are identified as peer pressure to conform, poverty, adjustment issues, depression and mental health issues and barriers to education, training and employment. Buffers to these risk factors are identified as social support, effective group problem solving, conflict resolution and communication skills (Kumpfer, Trunnell and Whiteside, 1990). Similarly to the effect of the biological clusters, no single psychosocial variable was expected to be solely responsible for AOD problem development, and indeed none have been identified as such in almost 30 years since, however a combination of these factors, interacted by and upon other factors within the model are said to increase vulnerability.

While no individual cluster or variable has been identified to be solely responsible for AOD problems since Zinberg or Kumpfer's proposed and developed biopsychosocial framework, the concept itself has developed and grown to include more than substances, providing a conceptual lens through which to consider a range of behaviours which might be considered 'addictive', including overeating among other things (Orford, 2001), exercise (Szabo and Griffiths, 2007), videogame playing (Griffiths, Kuss and King 2012), internet use (Griffiths, 2000) and work (Quinones and Griffiths, 2015). That such behaviours have been found to have characteristics which facilitate their legitimate description as 'addictive behaviours' requires the consideration of the biopsychosocial model and, as had been set out, to explore theories of addiction to better understand addiction (and, in turn, recovery), it is appropriate and relevant to consider how addiction itself may be defined within this framework.

One early definition which takes cognisance of a diversity of behaviours within its definition of addictive behaviour comes from Marlatt, Baer, Donovan, and Kivlahan describing:

“...a repetitive habit pattern that increases the risk of disease and/or associated personal and social problems. Addictive behaviours are often experienced subjectively as ‘loss of control’ – the behaviour contrives to occur despite volitional attempts to abstain or moderate use. These habit patterns are typically characterized by immediate gratification (short-term reward), often coupled with delayed deleterious effects (long term costs). Attempts to change an addictive behaviour (via treatment or self-initiation) are typically marked with high relapse rates.”

(Marlatt, Baer, Donovan, and Kivlahan, 1988, p. 224)

While such definitions may begin to be helpful in understanding what addiction may involve, it lacks a level of specificity found in more technical examples.

Griffiths (1996, 2005) builds on Brown’s (1993) work to provide a components model of addiction within a biopsychosocial framework and posits the key components to include: salience, how important an activity becomes to someone and the primacy placed upon it above all else; mood modification, when the behaviour produces a physiological and/or psychological effect, sometimes due to expectancy, which have been measured through self-reports and physiological measures of arousal (e.g. heart rate); tolerance, when the initial dose of the behaviour is no longer adequate to produce the feeling desired by the individual, and subsequently increased doses and/or frequency of the behaviour occur; withdrawal symptoms, said to include the negative psychological and/or physiological experiences which take place when a behaviour is ceased, either in a planned or unexpected way; conflict, which includes internal conflict and conflict with others regarding their behaviours. Such conflict may stem from their behaviour negatively impacting on personal relationships, work or social responsibilities, and may also include a cognitive dissonance emerging from ambivalence between a current and desired state (Festinger, 1957). The final

component proposed by Griffiths is relapse, a partial or full return to the behaviour which is trying to be avoided, prevented or ceased after a period of control or abstinence. Griffiths (2002) contends that it is possible for people to experience some of these components but unless all are present, they would not meet his criteria set out in operationally defining addiction. He proposes that the difference between what might be regarded as a healthy enthusiasm for a particular behaviour and addiction is that a healthy enthusiasm is likely to add to one's life while addiction will take away.

Griffiths and Larkin (2004) have proposed a case for a complex systems model of addiction, which they suggest is a descendant of early biopsychosocial models. Recognising the transactional interplay suggested by Kumpfer, Trunnell and Whiteside (1990), and the various clusters and variables posited by Zinberg (1984), Griffiths and Larkin (2004) build on Davies' (1992: 63) suggestion of "...the development of a 'system' within which drug use is conceived of as an activity carried out for positive reasons, by people who make individual decisions about their substance use, and who may take drugs competently as well as incompetently." In such a system, Griffiths (2005) suggests the various components of his model manifest from the outcome of the interaction between the variables such as genetic predisposition, diet, general health, mental wellbeing, expectations, peer associations and pressures, societal attitudes and the other variables which fit the biopsychosocial clusters.

It is difficult to challenge such a model; one which throws a blanket over the silos of the research and other work of the preceding decades and essentially says, 'yes, all of that!' Perhaps its inclusiveness is part of its weakness, and part of this may be down to how research has been conducted. While it may be accommodating to include as many biopsychosocial factors as possible, demonstrated by empirical research to have a statistically significant relationship with AOD problems, the extent of the importance of these factors i.e. how much of the problem they explain, fails to be reported. This is an artefact of research theory which has evolved – or has rather failed to evolve for years – in that a statistically significant relationship has been valued more than a practically significant relationship. That an effect exists, and that this is not by chance is established (commonly reported as p values) but the size of

that effect is very rarely reported i.e. how much of the variance which has been discovered is accounted for by the statistically significant (or even not) relationship (Ellis, 2010). This is revisited in the results and discussion chapters but the problem leaves us guessing about which factors may hold more explanatory power than others, at what times and for whom. This was acknowledged by Kumpfer, Trunnell and Whiteside (1990: 55), “Because of the complexity of the model and the requirements for a large data set with multiple time samples, empirical testing of the model will be difficult.” Nevertheless, the model described above does provide a framework within which approaches begin to be taken to integrate and explain addiction, rather than vie for ‘magic bullet’ status.

That such models have been proposed, and that addiction research can be undertaken within such an accommodating framework does not necessarily improve or clarify how addiction is defined and understood. Indeed, even the “short definition” by the American Society of Addiction Medicine (2011) appears convoluted:

“Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits lead to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individually pathologically pursuing reward and/or relief by substance use and other behaviours. Addiction is characterised by inability to consistently abstain, impairment in behaviour control, craving, diminished recognition of significant problems with one’s behaviours and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.”

American Society of Addiction Medicine (2011:1)

That the conceptualisation of addiction as a ‘disease’ is included will remain contentious for the reasons outlined above, however there is more than a nod to the biopsychosocial aspects of the condition, albeit characterised as a manifestation of



brain circuitry dysfunction as opposed to addiction being a manifestation of the transaction interaction of a host of variables suggested to exist within a biopsychosocial multifactorial framework.

If a biopsychosocial framework helps depict the complexity of addiction, as well as enhancing our understanding of AOD problems, it is perhaps reasonable to assume a similarly sophisticated and multifactorial approach would lend itself well to our understanding of the resolution of AOD problems. Aside from the contradictory expressions of what the UK Government proposes recovery to involve, as mentioned above regarding being 'chemical free', even when they are consistent and coherent, Governments could perhaps be criticised for providing definitions which are too concise or oversimplified to give a deep understanding of recovery. White (2007) provides a more nuanced account: "recovery is the experience (a process and a sustained status) through which individuals, families, and communities impacted by severe AOD problems utilise internal and external resources to voluntarily resolve these problems, actively manage their continued vulnerability to such problems, and develop a healthy, productive and meaningful life" (White, 2007: 236). By including individuals, families and communities White points to the requirement of external validation of recovery, not just a self-declared status – somewhat challenging Best's (2013) and Valentine's (2011) suggestion that individuals can be in recovery simply because they say they are – and that the recovery process is likely to involve changes and reparation in family and community relationships with renewed identities, roles and rituals (White and Savage, 2005).

White's phrase 'utilise internal and external resources' acknowledges the role of internal and external assets, and that recovery can come from an assertion of self or from a surrender and transcendence of self (White and Nicolaus, 2005). The phrase 'resolve these problems' in White's proposal is similar to the Scottish Government's phrase of '(a person's) move from their problem drug use, towards a drug free life'. While neither source claims complete abstinence is a requisite they infer the often chaotic and destructive pattern of severe AOD problems will be absent from the life of a person in recovery. Indeed neither suggest how recovery should be initiated or managed with White, Kurtz and Sanders (2006) noting the philosophy of choice in recovery literature where a person's recovery journey is a deeply personal one and

so too must be their means of managing it, for example engagement in treatment or mutual aid is not mandatory to be 'in recovery'.

White (2007) notes that substitute prescribing treatment should not influence the view of a person's recovery by its presence but should be judged by the motivation of the patient and the purpose for its use. For example whether the prescription ameliorates drug seeking behaviour and craving, helps enhance broader goals of global health improvement and assists the patient in their recovery in broader terms. The final phrase in White's definition, 'develop a healthy, productive and meaningful life' equates to 'an active and contributing member of society' in the Scottish Government's (2008) definition and the UK Drug Policy Commission's (2008) definition of maximising 'health and wellbeing and participation in ...society'. It should be noted that even these elements could be contentious: on the one hand, 'giving back' has been seen to be important to people in recovery, and how they define recovery themselves (e.g. North Ayrshire Alcohol and Drug Partnership, 2015), and chimes with Scottish Government's 'active and contributing member of society' notion. On the other hand though, should the same be expected of people recovering from other challenges in life? Perhaps the importance of making a contribution to society and to the progression of recovery lies in the issues of biopsychosocial dislocation, and that by being socially connected and integrated both the individual's recovery and society benefit, rather than any sense of societal expectation regarding a moral repayment or an indebtedness. It is perhaps no coincidence that the growth of research and interest in the area of recovery from AOD problems has come at a time when there has been a significant growth in the grassroots recovery movement, and, in Scotland, its voice has grown louder (Scottish Recovery Consortium, 2018).

This section began by outlining the varying contributions of different theories in our understanding of the manifestation of AOD problems, recognising that no single perspective can claim to exclusively and satisfactorily explain how AOD problems arise. Instead, what has been found has been that more integrated and multicomponent models which recognise the unique contributions the respective perspectives offer, and by bringing these together can help provide a more rounded understanding of the development of AOD problems. While there is more work required in the area of addiction theory to more conclusively pinpoint *causes*, it can

be said with some confidence that a biopsychosocial model hold the most confidence when explaining the phenomenon. It is then prudent to suggest that a multicomponent model which considers biological, psychological and sociological assets and resources – recovery capital – would be most appropriate, than for example focusing exclusively on biological resources. As the literature on recovery as a process has grown, it too has been seen to be holistic and draw on various perspectives, noted above by White (2007). However, during the review of the literature for this study, it was discovered that there is potentially more overlap with theories of positive psychology and recovery than other theories, and in particular a model within positive psychology, known as salutogenesis, and the concept of recovery capital.

### **3.3. Positive Psychology and Recovery**

The recovery movements grassroots origins may be at odds with the academic soil from which positive psychology has grown, however, both have grown exponentially and in parallel over the last two decades (Krentzman, 2013), and, both have increasingly seen calls for the need for their respective fields to shift attention from a focus on pathology to one of wellness (e.g. Keyes and Haidt, 2003 in psychology and White, 2007, in addiction recovery). As has been seen, the addiction recovery literature is not without its challenges, and it would be prudent to consider positive psychology and its critiques in some more detail to better consider its potential contribution to addiction policy or treatment.

Positive psychology began to re-emerge in the late 20<sup>th</sup> and early 21<sup>st</sup> Centuries and has its roots in the work undertaken by some of the earlier humanist psychologists such as Maslow (1943) and Rogers (1959) around human happiness and wellbeing (Wood and Tarrrier, 2010). Positive psychology symbolises a shift for the discipline which since the 1950s has concentrated on mental ill health rather than wellness; nurturing and improving 'normal living' which were psychology's original aims (Seligman, 2002). Seligman (2002) suggests positive psychology can be understood through three overlapping areas; the pleasant life, the good life and the meaningful life. Each of these suggests humans strive for various degrees of happiness, with resilience and self-efficacy common themes inherent in achieving these (Seligman,

2002). These capacities are vital in recovery and will be explored later in terms of RC. Positive psychology is concerned with global well-being and the concept of psychological wellness. The re-emergence of this approach is similar to recovery in that both are responding to models which have been deficit based, focussing on pathology and symptoms to the exclusion of strengths. That is not to say that positive psychology ignores the challenges people have in their lives, or, similar to Boyt's (2013) accusation of recovery in that it can be used to plaster optimism over despair. Positive psychological science aims to improve the lives of both well and clinical populations by increasing knowledge and designing interventions to increase QOL and life satisfaction. Positive interventions have been defined as, "an intervention, therapy, or activity primarily aimed at increasing positive feelings, positive behaviours, or positive cognitions, as opposed to ameliorating pathology or fixing negative thoughts or maladaptive behaviour patterns" (Sin and Lyubomirsky, 2009: 469). It could be argued that a traditional approach within addiction treatment has aimed to 'ameliorate pathology' or fix negative behaviours rather than increase any positive thoughts, feelings or behaviours.

There is evidence of effective positive psychological treatments, and, moreover, potential for such interventions to have greater benefit for people with AOD problems and the often co-occurring poorer health and social outcomes. Examples of positive psychological interventions, referred to as positive activity interventions, which may have benefit for people experiencing AOD problems include one which focuses on gratitude and one which focuses on optimism. The gratitude exercise asks participants to "write down three things that went well each day and their causes every night for one week" (Seligman, Steen, Park, & Peterson, 2005: 416) while the optimism exercise asks participants to "Think about your life in the future. Imagine that everything has gone as well as it possibly could. You have worked hard and succeeded at accomplishing all of your life goals. Think of this as the realisation of all of your life dreams. Now, write about what you imagined" (King, 2001: 810). Research into these interventions has shown a measurable increase in psychological, cognitive, social, and physical resources, which went on to increase life satisfaction and decrease depression (Fredrickson, Cohn and Coffey et al., 2008), while another study found evidence of increased wellbeing and decreased depression (Sin and Lyubomirsky, 2009). Such studies have been undertaken with

different sample cohorts, and evidence suggests those whose starting point may be lower i.e. they may have a physical illness, low positive affect or high levels of self-criticism, stand to gain more than otherwise healthy populations (Emmons and McCullough, 2003; Sergeant and Mongrain, 2011).

Caveats or barriers to people with AOD problems (or anyone) benefiting from these or similar interventions include issues of motivation and literacy; those involved in research studies to date tend to be highly motivated, have a good level of education, the resources to access materials online, and sustain the positive activity interventions after the initial study (Lyubomirsky, Dickerhoof and Boehm et al., 2011). Notwithstanding these barriers, there is potential for such interventions to be effective for AOD using populations. Critiques of positive psychology range from the presentation of old ideas as new (Ryff, 2003), the methodological weakness of research to support some of its tenets (Coyne and Tennen, 2010), the oversimplification of the complexities and harshness of life (Lazaraus, 2003), and an attempt at maintaining the status quo. Increasing personal happiness and resilience may see a reduction in the emotions, such as frustration and anger, required for social change (Ehrenreich, 2009). Positive psychology also carries low favour in academia due to its commercial proliferation and use in popular media, and the countless authors who have financially benefitted from a form of 'think positive and your life will change' type advice, acknowledged by Aspinwall and Tedeschi (2010: 28), "We agree that there is a dangerous popular literature that oversells research findings and promotes dubious claims about positive thinking and health." Countering this, academics and scholars assert that it is scientific rigour which sets positive psychology as a science apart from folk wisdom and lay advice (Biswas-Diener, 2010; Peterson and Park, 2003).

Positive psychology remains in its infancy, and with such challenges as those mentioned above, applied critical thinking will be important when considering its application within the drug and alcohol treatment field. What it does demonstrate is the paradigmatic shifts taking place not only within the addiction and recovery movements but in social science and how health and social wellbeing can be considered differently. This approach, of which positive psychology is an example, can be described to be salutogenic.

## *Salutogenesis*

There are clear linkages between positive psychology and the recovery movement, particularly in how responding to AOD problems has been reconsidered and reconfigured in Scotland and internationally. With reducing harm being the overarching aim of drug strategies and treatment for many years, epitomised by a concentration on illness, pathology and acute symptoms, the recent initiation of transition to recovery oriented systems of care (ROSC) and recovery management where the focus is on wellbeing, there is a remarkable mirroring of the as yet independent development of positive psychology and the recovery agenda with a clear opportunity for crosspollination and collaboration. A framework within which both can be considered, and one which brings us closer to considering RC, is salutogenesis. The term, coined by the medical sociologist Aaron Antonovsky (1979), describes a concept and approach to health and wellbeing as a direct alternative to, and arguably a consequence of, focusing on pathology.

According to Antonovsky (1979), it was important for people to be able to live well, even in the presence of symptoms of illness or adversity. He spent his career developing a salutogenic orientation, positing that total health (health-ease) and total ill health (disease) exist on a continuum, and a salutogenic approach involves working with people to move them towards the health-ease pole. Central to this orientation is the theory of sense of coherence (SOC), referring to an individual's capacity to understand their situation and to mobilise resources available to them, "... a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1979: 123). Sense of coherence is said to have three key elements: comprehensibility, the ability to assess and understand the situation; meaningfulness, the ability to find reason(s) to move in a health promoting direction; and manageability, the resources and ability to move in that health promoting direction (Antonovsky, 1979). Antonovsky proposed such a model involves the transactional impact of interactions between an individual's environment, their physiology and their psychology – a biopsychosocial

model. Lindstrom and Ericksson (2005) explain that salutogenesis, studied extensively in public health and health promotion but less so across a variety of other disciplines including social work, education, sociology, and psychology, explains why people stay well despite stressful situations, adversity and hardship. It is perhaps worth noting the absence of salutogenesis from Krentzman's (2013) review of positive psychology and addiction, despite it speaking so loudly to positive psychology.

The ability to comprehend, make meaning of and manage a situation is underpinned by the resources available to an individual to move towards health and health promoting behaviours (Antonovsky, 1987). These resources were collectively termed General Resistance Resources (GRRs). Speaking at a WHO seminar in 1992, and published two years after his death in 1994, Antonovsky said,

“The 'bright ideas' which initiated my search for a theoretical answer to the question 'What explains movement toward the health pole of the health ease/dis-ease continuum?' were what I called 'generalized resistance resources' (GRRs). This referred to a property of a person, a collective or a situation which, as evidence or logic has indicated, facilitated successful coping with the inherent stressors of human existence”

(Antonovsky, 1996: 15)

According to Antonovsky (1979, 1987) these resources may include: material resources, knowledge and intelligence, ego identity (e.g., integrated but flexible self), coping strategies, social support, commitment and cohesion with one's cultural roots, cultural stability, ritualistic activities, religion and philosophy, preventive health orientation, genetic and constitutional GRRs, and individuals' state of mind. There are some striking similarities in terms of what Antonovsky considers GRRs, and how both the manifestation and resolution of AOD problems could be conceptualised. From acknowledging the biopsychosocial aspects of the models to the role psychosocial integration or dislocation may be thought to play, through to the conceptualisation of RC, and how most of the GRRs can be viewed through the conceptual lens of RC.

Attempting to develop a parsimonious model, Antonovsky drew on his earlier work and theory on 'stressors', and included these into a model of GRR-RDs: Generalised Resistance Resources-Resistance Deficits (Antonovsky, 1987). Within this model, it was asserted that each of the aforementioned GRRs exist on a continuum where the presence of the resource qualifies as a GRR and the absence or low levels of the resource was described as a Generalised Resistance Deficit (GRD), where both GRRs and GRDs impact on one's SOC. Antonovsky's salutogenic model, while primarily focusing on the impact GRR-RDs have on SOC, posits a reciprocal relationship between the variables. GRR-RDs have an impact upon SOC and one's SOC has an impact on the ability to mobilise GRRs in order to manage tension and adversity (Idan O., Eriksson M., and Al-Yagon M., 2017). Primacy however, remains placed on the strength of GRR-RDs and when these become chronically built into an individual's life situation, they are proposed to become the primary determinants of the strength of an individual's SOC (Antonovsky, 1987).

### **3.4 Chapter 3 Conclusion**

This chapter has provided an overview of some of the extant literature from the addictions field itself but has also drawn upon psychological and sociological works from other fields. While it is a debate which has consumed the addictions field for most of the 20<sup>th</sup> Century, addiction cannot be 'simply' classified as a disease – however well-intentioned such a notion may have been for some in reducing stigma – and no unidimensional model, whether it be physiological, psychological or environmental, goes far enough to account for the facets involved in the manifestation of AOD problems. The works of researchers such as Michael Marmot, Richard Wilkinson and Kate Pickett around inequalities and the social determinants of health provide a perspective on how impactful one's environment may be, and, importantly, the impact derived from where individuals see themselves within it. Positive psychology has grown in parallel with the recovery movement but, to date, there has been very little positive psychology work undertaken within addiction recovery. That positive psychology works to identify strengths and assets which can be utilised to enhance health and wellbeing, as opposed to mitigating poor health or obstacles, sees it more aligned to a recovery oriented approach within the addiction recovery field. Although no work has been found to cite in relation to addiction



theory or treatment, a recovery oriented approach to treatment could also be considered salutogenic. The conceptualisation of GRRs and GRDs can perhaps be seen to be mirrored within addictions where the resource deficits could be considered to be the deficits measured by traditional addictions assessments – e.g. early exposure to substance use, mental ill health, poor or inadequate housing, social networks which condone or promote use – while GRRs could be likened to RC. This parallel has been drawn above and while the model of RC explored in this thesis will not account for all 12 of the GRRs identified by Antonovsky, it is possible that some of the strengths and assets identified here were not identified by Antonovsky. This is arguably because the current work focuses specifically on addiction recovery, and the strengths and assets important therein, while Antonovsky developed a theory for general population health and wellbeing. To better understand the specificity of the resources involved in RC, the following chapter will explain the evolution of the term and concept, and go on to explain how RC is conceptualised within the Recovery Capital Questionnaire.

## Chapter 4: From ‘capital’ and ‘social capital’ to ‘recovery capital’

### **4.1 ‘Capital’ Origins**

To better understand the conceptualisation of recovery capital, explain it, measure it and apply it, it is important to explore its genesis. In doing so it becomes immediately clear that it involves the unification of two terms and concepts which separately have caused divisions in their respective uses; through the two discourse journeys of ‘recovery’ and ‘capital’ there have been additions and extensions to the literature, distractions, and efforts to peel away obfuscation while some debates rumble on to present day around what constitutes ‘recovery’ and what is meant by ‘capital’. Having already considered ‘recovery’ in previous chapters, the following review of the literature will consider the origin of the term ‘capital’ and, briefly, the evolution of its use to being applied in social contexts, and subsequently in the AOD sphere.

The word capital comes from the Latin ‘caput’ meaning ‘head’. It was first used in its current meaning in England around 1611, derived from ‘capital grant’, meaning grant from the King- i.e. the head – which would be the basis of a new estate. According to Marx (1867), the circulation of commodities is the starting point of capital. Tied

directly to a capitalist theory of economics, capital is intrinsically related to discourse of quantification, measurement, growth and trade. In economics, capital is a factor of production (along with land and labour) and by definition is something which can be amassed, exerted, depleted or exhausted. Even in classical economics the term capital had varied application and accounted for a breadth of assets.

Cannan's 'Early History of the Term Capital' (1921) notes the Roman use of the word *capitalis*, formed from their substantive 'caput', which is the Latin for the English substantive 'head', had probably been used to mean various different things but most likely used the adjective 'capitalis' in the same way the adjective 'capital' can be used in applying to crime and punishments, the sense of 'having to do with life'. He goes on to explain the term was increasingly used to infer importance with later uses referring to a capital city, the capital merit of a work, even a capital letter being at the head of a sentence. Cannan suggests 1569 sees the first use of the term capital (or capitall) and is directly linked to financial accountancy, and from here sees itself in the New English Dictionary, the Oxford English Dictionary. Though that is not to say that the definition was decided; the Oxford Dictionary quotes Cotgraves Dictionaire of the French and English Tongue (1611) as negative evidence, suggesting capital was not at that date in familiar use in England. Cotgrave, according to Cannan, suggests the French use of capital is about more than money or a transactional currency but 'wealth, worth, a man's principle or chief substance.'

"Starting thus in company finance, the term gradually, won its way into the fields of individual finance, political arithmetic, and economics. In earlier times the individual could feel no want to such a term in his own affairs. The primitive agriculturist, feeding himself and his family almost entirely on what he and they had won from the ground with their own hands, might recognise...that his stock of cattle had increased, or that he had got his soil into a better condition, but he certainly never dreamt of saying that he had put in a certain number of...pounds into the business and was getting 10 per cent or any other percentage upon that number. The early artisan knew when his stock of tools was improving or deteriorating and when his stock of materials or finished goods was greater or less, but it did not occur to him that he ought to know what profit he was making on the sum of money which he had very gradually in all probability 'put into the business'."

(Cannan, 1921: 139).

Perhaps one of the earliest indications that capital may have alternative manifestations comes from Marx in his 'German Ideology of 1845-6', "It follows from this that a certain mode of production, or industrial stage, is always combined with a certain mode of co-operation, or social stage, and this mode of co-operation is itself a 'productive force'" (Marx and Engels cited in Oishi, 2001: 23).

## **4.2 'Social' Capital**

The history of the term and concept of social capital is a contested one, and such a contest is perhaps best exemplified in the debate between Farr, a Professor of political theory at the University of Minnesota, and Fine, a Professor of Economics at the School of Oriental and African Studies, University of London in the journal *Political Theory*. Farr's conceptual history (2004) provides the starting point, of which Fine (2007) offers a critique, written in a deliberately provoking fashion offering no less than 'Eleven Hypotheses on the Conceptual History of Social Capital...' to which Farr provides a reply (2007). Between them, a confused picture emerges about the origins, evolution, uses and misuses of 'social capital'.

Concern around the increasing use of the term is not limited to Farr or Fine with most articles beginning with a complaint about the semantic fallout of how it has proliferated meanings and provoked contests by its increasingly frequent use by academics, politicians and commentators. Writing in 1988 Mondack notes "...the meaning of social capital will become muddled" within the "staggering flood of discourse" (Mondack, 1988: 433) and this was before the explosion in use of the term leading Fine to comment that it has become the second most prominent concept (behind 'globalisation') emerging to rapid prominence in the 1990s (Fine, 2004). There have been numerous writers and contributions to the development of the concept of social capital including Loury (1977), Bourdieu (1985) and Coleman (1988) though credit (or blame) for the exponential increase in the use of the term goes to Putnam (1995) and his diagnosis of 'bowling alone' which found its way from such academic avenues as the *Journal of Democracy and Political Science* (Putnam, 1995) through to mass outlets such as *People Magazine* (Day, 1995). Farr comments that "...it will take some time before the semantic morphing of social

capital slows its pace or steadies its forms” (2004: 7), and while the future may be unforeseeable, what of its history and meaning?

Putnam’s (1995) conceptualisation, which could perhaps generously be described as both compact and capacious, suggests social capital refers to networks which can prove dense and valuable, norms which pervade individual actions and social relations. Putnam conceptualises social capital as the network of associations, activities or relations that bind people together as a community via certain norms and psychological capacities, most notably trust, which can be essential in the achievement of outcomes for individuals and the society of which they are part (Putnam, 1995). Putnam identifies earlier writers whose collective work support this broad concept though there are differences among and between them. For example, for Coleman (1988), social capital was an endowment of social structure and not individuals, and was disinclined to include ‘community’ while Bourdieu (1986) accented institutionalised relationships of mutual acquaintance and recognition, and found class distinction more important a resource than trust. Other authors have invoked the broad concept briefly or at length, have expanded upon or limited its domain, emphasised different norms or capacities, promoted different associations or activities above others or put the concept to critical rather than commendatory uses. While Farr (2007) argues there to be a rich conceptual history of the term and concept which itself reveals and adds to the value of social capital, Fine suggests the only history it has “...can only be invented...and its conceptual future...is hardly a welcome prospect...” (2007, p52).

According to Fine (2010), social capital has a conceptual history which dates back to around the early 1980s and any history before then is simply invented; social capital, he suggests, has a conceptual history equivalent to that of the ‘ploughman’s lunch’ whereby, “If we only look for an invented ploughman’s lunch of cheese, pickle and bread, that is what we will be liable to find” (Fine, 2010: 51). As has been noted above, the term ‘capital’ is intrinsically linked to economics. Farr hails Bourdieu for his unique application of the concept to understanding how interactions between class and culture take place through habitus and field, concepts developed by Bourdieu for investigative purposes. Fine is scathing of Putnam, the most cited author in the social sciences through the 1990s, caricaturing him as a pioneer social capitalist who conceals or discards its specific origins in Bourdieu, Coleman and

Becker in order to reconstruct or construe any social theory or case study, neglecting criticism and identified analytical and empirical fallacies in order to self-promote and seek funding for research grants and conferences (Fine, 2010).

While Fine and Farr's debate risks becoming tautological with neither acquiescing or conceding any ground, both agree that one of the earliest references in the 20<sup>th</sup> Century to capital that is social comes from Lyda Hanifan, applying the concept in a report on rural schools in Virginia, "I do not refer to real estate, or to personal property or to cold cash, but rather to that in life which tends to make these tangible substances count for most in the daily lives of people, namely, goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit" (Hanifan, 1916: 130). Whilst social capital is generally used by sociologists to refer to relationships within and between networks, and has become shorthand for all that is good about community spirit and self-belief in the related fields of health service provision, social work and social policy, its acceptance as a concept which has the potential to further articulate the relationship between health and its broader determinants clearly comes from the work of Bourdieu, Coleman and Putnam. Whilst each of these theorists describes social capital through a different disciplinary lens, they each contribute to a framework where the common thread ties to the impact of positive social networks of different types, shapes and sizes have upon the social, economic and health development of different groups, hierarchies and societies and the individuals within them.

It is in this endeavour that many social scientists have applied the term and concept of social capital in their work to describe various elements that their predecessors may have not even considered relevant. It is also the case that other forms of capital have been described by authors which may have been convenient to their needs but has consequently led to confusion and conflation of various different terms relating to similar but different concepts. The term human capital, for example, the origins of which can be traced back to at least Adam Smith when he provided his fourth definition of capital: "The acquisition of ... talents during ... education, study, or apprenticeship, costs a real expense, which is capital in [a] person. Those talents [are] part of his fortune [and] likewise that of society" (Smith, 1776 cited in Goldin, 2014), has since become almost synonymous with or an extension of 'social' capital. Human capital has been intrinsically linked with the broader notion of capital

described above, used by economists to denote the value human beings can contribute to an economic system (Goldin, 2014). The term human capital has made its own lexical journey from a time when economists were uncomfortable with the term, as it equated people to commodities such as property (Shultz, 1961), through to more recent times when it is used largely in human resources discourse (Arp, 2014).

Human capital has been proposed to have grown from social capital, and both from traditional forms of capital (Coleman, 1988). Coleman suggests if physical capital is tangible goods or products in a material form, human capital is less tangible, represented by the knowledge and skills within an individual. Social capital is suggested to be less tangible still, as it exists in the relations among and between people (Coleman, 1988: 101). Perhaps delineating social and human capital could be understood as instead of looking outwardly from the individual (social capital), it considers 'assets' which may be intrinsic to the individual. Some conceptualisations include skills and abilities, education and training, knowledge, interests and talents (Goldin, 2014). That human capital can be taken to apply to these facets of an individual, and that it can be considered a type of social capital, alongside individual level physical and community capital, takes us back to the arguments of how capacious social capital definitions have become to consume and include all types of capital which can be denoted to an individual. While bearing in mind the importance of psychosocial integration, and the difficulties encountered when someone is psychosocially dislocated (Alexander, 2009), emphasising the social aspect of the human state, it may be possible to consider all capital belonging to an individual to be a type of social capital, which has utility in maintaining wellbeing. Or perhaps, as Fine (2010) might suggest, none of it is 'social capital' where social capital has become a term applied to everything and has subsequently lost meaning. This may create difficulties for anyone looking to define and measure different 'types' of capital and will be revisited in later chapters, particularly when considering exploratory factor analysis. It is perhaps worth considering, if the capital – social, human, physical or community – possessed by a human does not exist to serve a function within their social world, for what might it have purpose, and how might it be labelled?

Skinner suggests "The surest sign that a society has entered into possession of a new concept is that a new vocabulary will be developed, in terms of which the

concept can then be publicly articulated and discussed” (1978: 352). Whilst RC cannot be presented as an entirely new concept as it draws heavily from the social capital literature, what can be suggested is that from reviewing the literature and undertaking research into how and why people change, Granfield and Cloud (1999) coined the term for the application of the concept to the sphere of AOD problem resolution and so created a conceptual lens and term for the articulation and discussion of the impact of the mobilisation of strengths and assets in an individual’s life geared toward the resolution of AOD problems.

### **4.3 ‘Recovery’ capital**

In their seminal work, Granfield and Cloud (1999) interviewed 46 individuals who had initiated and sustained their recovery without coming into contact with treatment services. They developed the construct of RC to explain how these 46 individuals, previously addicted to a range of substances including alcohol, methamphetamine, cocaine and heroin, had managed to achieve recovery ‘naturally’. According to Granfield and Cloud (1999), analysis of participant interviews revealed a swathe of factors – assets – which were available to be mobilised to resolve their AOD problems. Examples of resources from the original sample included college degrees, physical and mental health, and employment (Granfield and Cloud, 1999). They subsequently defined RC as:

“...the sum of one's total resources that can be brought to bear in an effort to overcome alcohol and drug dependency. It is embodied in a number of tangible and intangible resources and relationships, including those that existed prior to a person's drug involvement, during the period of drug use, and conditions likely to prevail in the future. It encompasses attitudes and beliefs that one has toward the past, present, and the future. It also includes one's mental status and other personal characteristics that can be drawn upon to resolve a dependency problem.”

(Granfield & Cloud 1999: 179)

Since then, there has been a body of work exploring RC; some work has seen the concept defined and redefined while others have tried to quantify it and measure it. Hennessey (2017) undertook a systematic review of the RC literature, identifying 6 theoretical articles and 29 research studies, 12 qualitative, 12 quantitative and 5

mixed methods. From her review, Hennessey suggests the domains of RC, of which the various contributors have added to and subtracted from based on their own work, can be considered to exist in an ecological framework consisting of 3 levels: individual level, such as physical and human capital; micro level, including social capital and mesa level which includes community and cultural capital. To better understand how different authors contributed to the RC debate, it is useful to begin with the contributions from the original authors' on the subject which includes their original piece (Granfield and Cloud, 1999) and follow-up works (Granfield and Cloud, 2001; Cloud and Granfield, 2008).

### *Recovery capital – a typology*

Granfield and Cloud (1999: 197) have described the various resources available to people to overcome AOD problems as RC, "a body of resources that can be accumulated or exhausted. How much and what types of resources a person accumulates and/or exhausts hold significant implications for the options available to that person". It is perhaps worth noting that the method of research from which this was borne is grounded theory (Strauss and Corbin, 1998), and is open to criticisms of researcher preconceptions and bias in the collection and analysis of data (Thomas and James, 2006). Notwithstanding these potential methodological limitations Granfield and Cloud (1999) propose four categories of RC.

### *Social capital*

Social capital unlike human and physical, does not have a transcontextually definitive meaning for substantive and ideological reasons (Dolfsma and Dannreuther, 2003); as discussed above, social capital has almost become a 'catch-all' term for capital and has been applied across contexts and requires definition therein. For Cloud and Granfield (2001) social capital includes membership in a social group which confers resources, relationships which involve reciprocal obligations, and social networks and connections to conventional institutions. Social capital, for example, may be seen to have influenced those in the Lundby study (Ojesjo, 2000) where reports of family and peer pressure and changes in social circumstances preceded cessation of problem alcohol use.



### *Physical capital*

Physical capital is proposed to encapsulate economic and financial resources and can include income, savings, property, investments and other assets which can be converted into money (Cloud and Granfield, 2008). The benefits for a person who possesses physical capital are numerous, particularly in a society such as the US where health insurance can buy care and treatment but also in the UK where private healthcare can be purchased. Outwith paying for treatment, physical capital could be used to temporarily or permanently relocate allowing an individual to remove themselves from an environment which may have become synonymous with AOD problems.

### *Human Capital*

Human capital is a construct which includes knowledge, skills, educational attainment and health (Cloud and Granfield, 2008). These capacities are defined as “individual human attributes which provide one the means to function effectively in contemporary society, to maximise individual benefits associated with membership in that society, and to attain personal goals” (Cloud and Granfield, 2008: 1974). An area where this capital is important is in employability, something identified in numerous studies as a goal for those in recovery (Best et al, 2010). In studies of natural recovery where participants reported a weighing of the pros and cons of use which led to problem resolution (see Cunningham et al, 1995 and Sobell et al 2000), it can be suggested that those with capacity to undertake such a task were utilising their human capital which reportedly provided the impetus for change.

### *Cultural capital*

Cultural capital, according to Cloud and Granfield, (2008), embodies cultural norms and includes dispositions, values, beliefs, perceptions and appreciations which come from membership of a particular group. They suggest that if an individual misuses substances yet remains subscribed to other societal norms and has a stake in societal conformity then they will find it easier to desist than those who do not. In other words, if an individual were to become consumed by a pro-AOD use, anti-social sub-culture then the expectation may be that the individual would find it much more difficult to initiate and maintain recovery. As noted previously (Best et al, 2010), those who enter treatment, those with the more severe AOD problems, tend

to come from communities where substance use is ingrained and where AOD-using norms and values are prevalent.

Cloud and Granfield's (2008) typology offers four broad categories to understand the internal and external resources available to support recovery but that this categorisation is not exhaustive. They report, however, this typology fails to specifically capture spirituality or religiosity which could perhaps be seen as a significant short coming given the previously noted citing of a spiritual awakening reported in some self-change research. On the other hand, this could be captured in the human and cultural categories with their associated strands for example, how an individual feels about themselves and their control of their life and their membership within a religious culture.

### *Capital conflict and consensus*

While Cloud and Granfield (2008) offered and expanded upon their theoretical construct, tandem developments were also taking place between White and Cloud (2008). In their paper 'A Primer for Addiction Professionals', White and Cloud merge certain aspects from Granfield and Cloud's model and to a degree redefine some of the categories. For example one's values and beliefs are removed from cultural capital and placed in human capital alongside problem solving, self-efficacy, self-awareness and self-esteem. Furthermore cultural capital becomes embodied in community capital and human capital falls under the auspices of personal RC. Social capital remains though it is rebranded 'family/social capital' with family defined as "non-traditional i.e. family of choice" (White and Cloud, 2008: 2). Physical capital continues to include economic and financial assets however physical health has been absorbed into this category from human capital.

Other authors have extrapolated certain constructs, rebranded constructs from the original model or created new constructs in their study of RC. For example, Neale et al (2014) extrapolated health from human capital (while White and Cloud saw it fitting better within physical capital) while Hewitt (2007) suggested a domain called 'growth'. Growth capital assumes an innate desire for positive growth and the existence of some of this facilitates its increase, "The range of available internal and external resources that support the person's growth and development in a positive direction... to remove obstacles to any drive to grow and to actively support further

personal growth” (Hewitt 2007: 231). According to Hennessey (2017), Neale et al (2014) renamed physical capital as ‘financial capital’ but also repositioned budgeting to sit within human capital, when previously, money and finances had been considered physical capital (Cloud and Granfield, 2008, White and Cloud, 2008).

An area which requires further exploration, and is outwith the scope of the current study but requires acknowledgement, is the existence and role of what could be described as negative RC. Granfield and Cloud (2008) suggest negative RC is anything across the four domains which could impede an individual’s efforts to initiate and sustain recovery. Disposable income is suggested as an example of a resource which could both act as an asset which could be mobilised to move towards recovery if it were spent, for example, to access treatment or invest in other recovery conducive resources but also as negative RC if, for example, it was used to purchase drugs and/or alcohol. Arguably here though, the money itself is not the asset/problem but the motivation or intention to use or deploy an asset in a particular way. It could be suggested that the absence of RC (e.g. money) is not the same as the presence of negative RC, and that something more concerning (and, at this time, better understood) are the risk factors associated with substance use and relapse. That these could be conceptualised as negative RC is a possibility but requires further examination. Similarly, the absence of risk or harm does not equate to the presence of RC. It could well be the case that an individual has ceased to use a substance intravenously, that they are no longer homeless and not requiring state welfare support, and while this may look like success in terms of reducing harm, this does not mean that they have increased their RC. For example they may still be using substances at a level they consider problematic, their housing may not be conducive to their recovery needs and their income may prohibit their participation in recovery activities. Further research in these theoretical and practical situations is required but first, it is important to be clear on how RC will be interpreted in this study, and how it will be measured.

Each of the aforementioned works has slightly, or in some cases markedly, different views of what should be understood within constructs of RC. Despite this, each of these contributions reach consensus about many of the resources inherent to initiating and maintaining recovery, whether and how they are subdivided and labelled is perhaps less important. Indeed, in correspondence with this author,

White (Personal communication, 2012) has noted the importance of gaining a better understanding of the 'active ingredients' in recovery, and how different elements of RC may be more or less important to different people at different times. Indeed, of the multiple definitional works, and to some extent the confusion it causes, Hennessey (2017) concludes that although the original four domain framework provided by Granfield and Cloud (1999; 2008) has been used by a number of authors, there has been some inconsistent application of constructs therein, and it is therefore incumbent upon authors to make clear what they mean when they apply RC domains in their work. An interpretation and understanding of the domains used within the RCQ is provided below, and will be revisited in more detail at relevant times throughout the remaining chapters.

#### **4.4 Recovery Capital in This Study**

This study will look to contribute to the evidence in relation to RC by building on the author's original work (Burns and Marks, 2013) which found the model used in the RCQ was able to explain approximately 26% of the variance in addiction problem severity. The proposed study, will investigate and measure RC using the RCQ (Appendix 1, p246) which employs a combination of Cloud and Granfield's (2008) and White and Cloud's (2008) social, physical and human constructs with the following understanding:

Social capital embodies family, social and intimate relationships, their existence, levels of satisfaction and conduciveness to recovery. Social and relational roles, involvement in social rituals (e.g. sharing meals), emotional support and access to recovery-supporting information and advice.

Physical capital is understood as physical health and wellbeing, sleep hygiene, recovery conducive housing, finances, diet, access to transport and physical appearance.

Human capital includes perception of past, present and future, self-efficacy and self-awareness, problem solving, patience, resilience, hopefulness, decision-making, knowledge, skills and abilities.

Community capital in the original study (Burns and Marks, 2013) was labelled perceived community capital but the inclusion of 'perceived' was unnecessary, each

domain is 'perceived'. This domain, in this study, will be called community capital and considers both the cultural capital explored by Cloud and Granfield (2008) while considering and merging the notion of community capital proposed by White and Cloud (2008). Community capital will include experiences of stigma, acceptance, and community safety combined with the availability of treatment opportunities.

The criterion related concurrent validity of the RCQ will be assessed by measuring correlations between RC measured by the RCQ and QOL and resilience. The following explains why this is appropriate and necessary.

#### **4.5 Recovery (Capital) and Quality of Life**

Those seeking to resolve AOD problems have been suggested to be trying to do so, not as an end in itself, but to bring about a cessation of the associated problems and accompanying difficulties, and to ultimately improve their life in general (Laudet, 2011). Laudet (2011) urges us to consider that, regardless of the treatment goal e.g. abstinence or harm reduction, if treatment is to be successful from a client's perspective, it should lead to an improvement in QOL, not solely a reduction in substance use. Bonomi, Donald and Donald et al. (2000) suggest that while there is no universally accepted biomedical definition of QOL, there is consensus that it involves an individual's perception of a range of clinical, personal and functional variables. Two types of QOL have been proposed by researchers: health-related quality of life (HRQOL) and overall quality of life (OQOL). Leidy, Revicki, and Geneste (1999) propose HRQOL concerns how an individual perceives their health impacts upon their wellbeing, physical, social and psychological functioning. The Short-Form 12 (Ware, Kosinski and Keller, 1996), an abbreviated version of the Short-Form 36 is an example of an assessment tool designed to measure HRQOL, and tends to focus on deficits, an ethos akin to that of traditional addiction assessments. It emphatically seeks to identify how health may have limited one's ability to partake in different activity, for example, "(In the past four weeks have you) **Accomplished less** than you would have liked?" and, "...how much **did pain interfere** with your normal work?" (Ware, Kosinski and Keller, 1996: emphasis retained from original).

On the other hand, OQOL has been defined by the World Health Organization (WHO), as "an individual's perception of their position in life in the context of the

culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (WHOQOL Group, 1995: 1403), demonstrating that OQOL is not restricted to poor health or its impact, and considers life satisfaction more broadly. This perhaps chimes more with the notion that recovery can involve living well in the presence or absence of symptoms (Scottish Recovery Network, 2019). The WHOQOL Bref (WHOQOL Group, 1998), an abbreviated version of the WHOQOL, is a commonly used measure of OQOL, and is suggested to be a gold standard for such (Laudet, 2011). Questions such as “How well are you able to concentrate?”, “How satisfied are you with your capacity for work?” and “How satisfied are you with your personal relationships” emphasise both the breadth of scope and the onus on satisfaction over how restrictive or negative these things may be on someone’s life.

Having gone from being described as the missing measurement in health (Fallowfield, 1990) to in 2003 having more than 7000 articles listed in Index Medicus with ‘quality of life’ as a key word (Donovan, Matson and Cisler et al., 2005), there has clearly been a growth in the use of QOL measures and their position in health and wellbeing research has become more prominent; ‘simply’ measuring and considering symptoms is no longer sufficient, cognisance of patient reported outcomes and feelings of life satisfaction have grown. Despite this, research on QOL of people with AOD problems is somewhat limited with less than 100 studies undertaken in the last twenty years, and of these, many focused on alcohol alone (Laudet, 2011). While this presents a case that further research in this area is required, and the present study makes a contribution towards this, some early findings have bolstered the case for why QOL, particularly OQOL, should be considered in addictions research.

The well-established problems which may accompany AOD problems, such as family breakdown, work issues and health and wellbeing problems clearly affect OQOL. Indeed, QOL has been found to be lower in those with AOD problems and those seeking treatment for AOD problems than in cohorts without these problems (Donovan et al., 2005; Smith and Larson, 2003). Similarly, when symptoms of AOD problems decrease, QOL has been found to improve, with Villeneuve, Challacombe and Strike et al., (2006) reporting increases in QOL during abstinence and decreases during relapse. With this in mind, it is perhaps unsurprising that research

has found that people in treatment have priorities other than abstinence. Areas such as education, employment and training and housing which will improve their QOL are also priorities to be addressed, and people expect treatment to include this (Laudet, Stanick and Sands, 2009). In research with outpatient cohorts, QOL at treatment completion has been found to be closely linked to a commitment to abstinence which itself has been found to be a strong predictor of sustained abstinence (Laudet and Stanick, 2010). Thus it has been demonstrated that QOL is affected by AOD problems, that people who enter treatment expect treatment outcomes to consider and include broader QOL issues (such as employment and housing), and that QOL can be an indicator of abstinence post treatment.

Despite some of the clear linkages between QOL and AOD problems and their resolution, research suggests AOD problem resolution (and in this case the research considered abstinence) may only explain small improvements in QOL, and even then may be limited to the mental functioning aspects of QOL (Foster, Peters and Marshall, 2000). An additional challenge lies in whether any such changes in QOL as a result of AOD problem cessation endures over the longer term. Research in this area is limited and mixed (Laudet, 2011). Mann, Morlock, and Mezger (1997) followed a cohort of alcohol dependent participants over 6 years and at final assessment found 65% of them had been abstinent for 4 or more years, and these participants reported significantly higher levels of physical, psychological, social, and everyday life functioning compared with those still drinking. Laudet and White (2008) meanwhile, looking at the relationship between abstinence duration and QOL, found that there was a positive relationship between them, with abstinence duration explaining 9% of the variation in QOL satisfaction.

Since QOL has such a broad relevance and relationship with AOD problems, and that the WHOQOL BREF is seen as gold standard in measuring QOL (Laudet, 2011), it would seem entirely appropriate to measure concurrent validity of the RCQ alongside the WHOQOL BREF. The hypotheses being tested in terms of concurrent validity include: RCQ Total scores will have moderate correlations with the WHOQOL Bref OQOL satisfaction score and health satisfaction score; Social, Human, Physical and Community capital domains of the RCQ will have moderate correlations with the social, psychological, physical and environment constructs, respectively, of the WHOQOL Bref. Moderate correlations between QOL and RC

are hypothesised for a number of reasons: QOL has been seen to be related to improvements associated with treatment outcomes but not hugely (Laudet and White, 2008). This perhaps owes to current treatment foci not being on improvements in QOL, although there are some indications this may be changing in Scotland (Scottish Government, 2018). While increasing RC could be a treatment goal in itself, it is also appropriate to consider RC as the tools required to achieve other goals of treatment, which may or may not include improved QOL. QOL improvement is something which would require specific tasks and actions, perhaps aided by RC; it may be possible for someone to have high levels of RC but, due to how RC is deployed or used, they may not have high levels of QOL. The RC someone accrues during and through treatment could be applied to achieve various goals. Some of these may be conceptualised and measurable as QOL domains while others may not. Finally, the RCQ is designed to identify assets to aid AOD problem resolution; high correlations with QOL might see a dilution of this whereby the RCQ measures something too close to QOL and not specifically about AOD resolution resources. It is therefore appropriate to expect moderate correlations between the WHOQOL BREF and the RCQ.

#### **4.6 Recovery (Capital) and Resilience**

The growth of research in QOL and recovery is mirrored in the resilience research. Similarly to recovery, the definitional work can create a confusing picture; various scholarly contributions have applied the term in different ways and have triggered debate about what the concept can and should apply to. It is useful then to be clear about how the current research understands resilience, how it is measured and what relationship this may have with RC.

In their critical review of the literature, Luthar, Cicchetti and Becker (2000:543) assert that resilience refers to "...a dynamic process encompassing positive adaptation within the context of significant adversity." Harrop, Addis and Williams (2006) suggest that although resilience has been suggested to be a trait as well as a process and an outcome, consensus has grown to understanding resilience as the latter. Two key components concern risk, threat or adversity and positive adaptation. Indeed, a number of authors' (e.g. Garmezy, 1990; Luthar and Zigler, 1991; Masten, Best and Garmezy, 1990) works' have conceptualised resilience from this



perspective insofar as they have examined the positive adaptation (or lack thereof) in individuals who have been in situations of risk or threat. Such situations could be single stressful life events or prolonged experiences.

Much of the early research, as well as more contemporary research, has focused on children. Early work focused on how children of schizophrenic parents coped with adversity; not that they just barely survived such situations but that many went on to thrive (Garmezy, 1974). Indeed, one of the most influential studies of resilience explored the trajectories of 698 children with one-third assessed as likely to have poor outcomes (Werner and Smith, 1992). Despite two out of three of these children fulfilling the prediction of a poor outcome, characterised by the researchers as mental health problems, delinquent behaviour and teenage pregnancy, a third defied the predictions and avoided such 'negative' outcomes. While risk/adversity and positive adaptation have remained the key factors of research, researchers have applied the concept of resilience to various situations including socioeconomic deprivation (Garmezy, 1991), parental mental illness (Masten and Coatsworth, 1998), maltreatment (Beeghly and Cicchetti, 1994), and poverty and violence (Luthar, 1999).

Research has indicated that resilience is a multidimensional characteristic, variable by gender, age, time, context, and within individuals in different situations.

Richardson (2002) proposes a model for understanding such differences and the process which, at its core, assumes human nature aspires for an equilibrium, described as a biopsychosocial homeostasis. This equilibrium is said to be dependent on how an individual has responded to internal and external stressors which are ever-present in daily life. These stressors disrupt the equilibrium and can be both brought about by and coped with as a result of how a person has previously adapted to such stressors.

Where disruptions are minor – and context is important and relative here i.e. a minor disruption for one could be seen as a major disruption for another – then an individual is able to use the protective factors, or resilience, to cope with and manage the disruption and regain homeostasis. Where that disruption is more significant, and where protective factors are unable to buffer the negative impact, Richardson (2002) suggests one of four possible outcomes may occur. Firstly: the disruption is

utilised as an opportunity for growth and development and once successfully resolved, a person achieves a higher level of homeostasis than before. The second outcome involves a return to homeostasis just to get past or move on from the disruption. A third outcome sees the person recover from the disruption but with experience of loss and a subsequently reduced level of homeostasis. And the final potential outcome involves unsuccessfully coping with the disruption, manifesting as living in a dysfunctional state where maladaptive coping strategies are deployed, often perpetuating and compounding the homeostatic disruption and making a return to equilibrium increasingly elusive.

While there is a paucity of research specifically examining the relationship between resilience and substance use, Stajduhar, Funk and Shaw et al. (2008) undertook an exploratory study with people who inject drugs. Although they do not apply it, their findings can be understood through Richardson's (2002) conceptualisation. Identifying two themes, Stajduhar et al. (2008) propose the first theme 'Getting to a point of change' involved the sub-themes, 'getting scared', 'recognising it is not worth it' and 'recognising an inner desire to quit'. The second theme they identified regarding the manifestation of resilience involved what White has described as the synergy between recognising the need for change and the hope and belief that such change is achievable (White, 2007), and what Stajduhar et al. (2008) called 'envisioning a better future' which centered on goal setting anchored to hope. In terms of Richardson's (2002) conceptualisation, such manifestations of resilience could involve moving from outcome four (dysfunctional and maladaptive coping, manifested here in injecting drug use) to either of the other three positions. To this end, it is worth considering how homeostasis might be conceptualised and measured. Arguably, QOL would be a useful measure of one's equilibrium. QOL in people self-reporting long term recovery (>5yrs) has been commented upon by Valentine (2011), and again by Collins and McCamley (2018); those in long term recovery report higher levels of QOL than the general population. The latter study found this to be the case in the WHOQOL Bref environment and psychological domains, and argued that elements of RC such as developing perspective, improving self-esteem and having broader social commitments and involvement are key areas in participant psychological QOL. These same factors could also be termed protective factors which play a key role in an individual's resilience.

Connor and Davidson (2003), recognising the burgeoning work around resilience, and understanding it as a process which could be operationalised, as described by Richardson (2002), set out to develop a means of quantifying and measuring resilience. Drawing upon the body of resilience work, they identified key characteristics from the literature including, for example, being able to draw on others for support, self-efficacy, past success and sense of humour (Rutter, 1985) as well as patience (Lyons, 1991) and commitment (Kobasa, 1979). Combining these with other characteristics, Connor and Davidson (2003) designed the 25-item Connor Davidson Resilience Scale (CD-RISC) which provides statements which participants answer on a Likert scale response format from zero (not true at all) through to four (true nearly all of the time).

The CD-RISC was found to have good equivalence and stability reliability, reporting a Cronbach's alpha of 0.89 for the full scale and an intraclass correlation coefficient of 0.87 respectively (Connor and Davidson, 2003). They examined convergent validity in relation to a number of different assessment tools measuring stress vulnerability, perceived stress, and social support finding that resilience was positively correlated with these measures. The CD-RISC was not found to have discriminant validity when used alongside a measure of sexual functioning. Factor analysis led to the authors suggesting a five factor model could best fit the data with the following broad interpretation. Factor 1 involves high standards, personal competence, and tenacity. Factor 2 reflects tolerance of negative affect, the strengthening effects of stress and trust in one's instincts. Factor 3 involves the positive acceptance of change, and secure relationships. Factor 4 pertains to control and Factor 5 to spiritual influences.

While the CD-RISC has been widely used, translated into numerous languages, been found to have concurrent validity with other instruments, the factor structure has been debated. Factor analysis can be a subjective experience, with factor analysis providing the tools to undertake a task, rather than providing the 'right' answer (DeVellis, 2017). It is perhaps then unsurprising that different studies propose different factor structures, and that even therein there is little consensus. For example, while some findings concur with Connor and Davidson's (2003) five factor model (Green, Hayward and Williams et al., 2014), others have suggested a four factor solution (Bitsika, Sharpley and Peters 2010) while Jorgensen and Seedat

(2008) suggested it could be a two or three factor solution which fits best. One of the difficulties of factor analysis lies in how the construct is understood and defined, and how researchers understand the data they (or others) have collected best fits the extant theoretical framework. Given the lack of uniformity regarding how resilience is understood, variations on factor structure may be expected. This explanation may also extend to the application of factor analysis to RC and will be revisited in later chapters.

The latter section of this chapter has explained the concept of resilience, how it has been positioned in the research literature and how knowledge of the term and concept have developed. It has considered the relationship between resilience and QOL, and how resilience can result from the experience of adversity and whether and how a person adapts to that adversity. This is entirely appropriate when applied to the manifestation of AOD problems, as well as their resolution. The relationship between RC and resilience could be a very important one. While improved QOL has been suggested to be an appropriate or desirable outcome from addiction treatment (Laudet, 2011), less attention has been devoted to the issue (and measurement) of resilience. It could be argued though that if someone exits treatment with an increase in the assets which enable their recovery journey, assets which have already been demonstrated to explain a reduction in addiction problem severity (Burns and Marks, 2013), they could have increased assets and protective factors which may reduce the likelihood of their need to return to treatment. This increased resilience, in Richardon's (2002) model, could see them accrue RC which aids the successful resolution of their AOD problems and, if sustained would see them reach levels of QOL reported by Valentine (2011) and Collins and McCamley (2018).

If RC is found to correlate with resilience, the following proposal may be plausible: Increasing RC correlates with increases in resilience. Increasing RC would not *cause* resilience however, people with more RC are likely to be more resilient. People with more resilience will be more able to self-manage in future times of difficulty, and less likely to require to return to treatment. Thus treatment should seek to increase RC to both increase someone's ability to self-manage and reduce the likelihood people will need to return to treatment. For these reasons, the current study proposes to explore the concurrent validity of the RCQ alongside the WHOQOL Bref as a measure of QOL and the CD-RISC as a measure of resilience.

However, before investigating the psychometric properties of any potential assessment tool, it is important to establish if any such thing is actually required.

#### **4.7 Is A(nother) Measure of Recovery Capital Required?**

The RC literature can be fairly described as being in its infancy; White (personal communication, 2012) suggests there are more questions than answers. Although some measures of RC are incorporated into assessments including the Global Appraisal of Individual Need (Dennis, Titus and White et al., 2003) and Brown, O'Grady and Battjes et al.'s (2004) Community Assessment Inventory, there is a dearth of research and examples of explicit strengths based assessments designed with the sole purpose of quantifying RC. Indeed, in her systematic review of the RC literature, Hennessey (2017) identified only three instruments designed to measure it: Sterling et al. (2008), Groshkova et al. (2013) and the author's original work (Burns and Marks, 2013). It is worth noting that so few measures of strengths is in stark contrast to the plethora of assessments which exist to measure the risks and deficits someone brings with them to addiction treatment. Hennessey (2017) noted Sterling, Slusher and Weinstein's (2008) work looked primarily at personal and social RC, with a focus on spirituality, but was found to be statistically weak, with no significant relationships between their 23 item scale (which is not publicly available) and measures of abstinence and addiction severity. Sterling et al. (2008: 603) admit, "Further work aimed at designing a psychometrically sound measure that specifically assesses the assets that someone brings with them into substance abuse treatment is needed". Groshkova et al., (2013) took up this task with the development of the Assessment of Recovery Capital (ARC) which was initially a 50 item, dichotomous response questionnaire which measured two domains which the authors argue encapsulate social and personal RC. Groshkova et al. (2013) explored the psychometric properties of the ARC by examining concurrent validity alongside the WHOQOL Bref (WHO, 2004) and the Treatment Outcome Profile (TOP; Marsden, Farrell and Bradbury et al., 2008), and stability reliability (explained below) using a space of one week between tests. Equivalence reliability (Cronbach's Alpha), for which good practice would see it reported each time a scale is used, as it and can vary from sample to sample (Streiner, 2003), was not reported in the original paper but has been published in at least two other studies in which the ARC has been used (Mawson, Best and Beckwith et al., 2015 and McPherson, Boyne and MacBeth et

al., 2017), and was found to vary widely. More detail on this is provided in the discussion chapter. While the ARC was reported to have good concurrent validity alongside a treatment outcome (TOP) and QOL measure (WHOQOL Bref), its reliability was reported as 'moderate' (Groshkova et al., 2013).

A further concern with the ARC's reliability is the sample size of 45 used in the original study. Leading authors in the field (e.g. Kline, 2000; Coaley, 2014) recommend a sample size greater than 100 is required for such analysis to be sufficiently powered, "The sample size used for a calculation of reliability should never be below 100" (Coaly, 2014: 143). While such an issue may be considered minor – the ARC has been developed by some of the most established writers in the addictions field – it would appear that the original research which claimed the ARC possessed moderate reliability used a sample of less than half of what is recommended. That there remains a question mark over the reliability of the ARC insofar as it appears to have not been appropriately tested, this may, only to a small extent but nevertheless, call into question the numerous pieces of research which have subsequently used the ARC. Hennessey (2017) points to six studies which have used the ARC or a subset of the ARC in their work and include Best et al. (2012; 2014; 2015), Mawson et al. (2015), van Melick (2013) and Groshkova, Best and White (2011). In addition to the latter, which used the ARC to validate the Recovery Group Participation Scale, since Hennessey's (2017) review, there have been at least two other works which have used the ARC to validate a new assessment. Vilsaint et al. (2017), in their creation of the Brief Assessment of Recovery Capital (BARC-10), and Rettie, Hogan and Cox (2019) to validate their Recovery Strengths Questionnaire. Whether or not all of this research necessarily requires to be reviewed would be a decision for others but it raises issues regarding the reliability of alternative measurements of RC (or recovery group participation), as well as issues for researchers regarding due diligence when using others' work, and perhaps for reviewers and journal editors when taking decisions to publish papers.

When considering whether another measure of RC was required, in addition to the questions raised regarding the empirical research underpinning the ARC, there are some possible issues regarding its theoretical underpinnings. Vilsaint et al (2017) suggest that by reducing the ARC from 50 to ten items they have increased the chances of the tool being used in busy clinical settings. To this end, a question

regarding the purpose of the ARC must be asked due to the lack of clarity provided in the numerous publications within which it has appeared, and also due to its revised version. If the ARC is a treatment outcome tool, something which shows that treatment has had an impact on particular areas of a client's life, then perhaps 10 questions, one from each of the ARC's original subscales, is sufficient. This would also make sense when measuring its validity against the Treatment Outcomes Profile (Marsden et al., 2008) in the original ARC research (Groshkova et al., 2013). However, there are perhaps more methodically sound approaches to creating addiction recovery treatment outcomes and patient reported outcome measures, with Neale et al. (2016), for example, taking a more robust and qualitative approach, though, as noted above, the conflation of outcomes and RC remains.

On the other hand, if the ARC is designed to illuminate the strengths and assets which can be harnessed by clients (and services) to initiate and sustain recovery, then reducing the opportunity to do this by 80% when abbreviating from 50 to 10 questions seems somewhat counterproductive. As will be seen below, clarity of purpose is essential when considering the validity of any psychometric tool; it provides the foundation for drawing any inferences or conclusions from outputs. In its absence, and combined with the concerns regarding reliability, both the validity and reliability of the ARC could be somewhat open to challenge – not that it is invalid or unreliable, simply that it is not as valid or reliable as has been reported.

Another important issue pertaining to theoretical underpinnings is that the original ARC contained a question about sobriety/abstinence, and in order to 'score' 100% in the ARC, one had to be sober/abstinent. Ashton (2015) suggests the ARC becomes confused about whether it is attempting to measure RC or recovery itself. Making abstinence a requirement fails to align the ARC with the original conceptualisation of RC (Granfield and Cloud, 1999) or any subsequent contributions to the definitional literature, even contradicting one of the main author's (Best) assertion that he thinks someone can be in recovery 'if they say they are.'

While abstinence could be an asset an individual could use in their recovery journey, the fact that many people may never aspire to nor achieve this could be construed as discriminatory; the idea that recovery is a personal journey which may or may not include abstinence but that abstinence is a required strength, at least to excel in

ARC terms, may seem somewhat incompatible. Interestingly, the item on abstinence does not appear in the BARC-10 but if the BARC-10 retains the original philosophy of the original, and its psychometric properties retain the essence of the original – which is the goal of the BARC-10 research – then simply by omitting the question, although obfuscating, arguably fails to address nor resolve it.

An additional change made in the evolution from the ARC to BARC-10 is the change from a dichotomous response (yes/no) format to a six-point Likert response format scale. While one could argue that this is a progression, there was an opportunity here to opt for an arguably better suited response format given the content and nature of the latent variable. The psychometric scale development literature, (e.g. DeVelis, 2017), suggests a 5 or 7 point scale might be preferable, allowing respondents a neutral position when scales range from disagreement through to agreement.

It is unclear what the development of the BARC means for the ARC. For example, in which circumstances might one use the former over the latter? Is such a decision required if the BARC is just as efficacious as the ARC, therefore making the latter redundant? To what extent has the ARC been compromised due to what some might describe as pandering to treatment services, who presumably fed back that a 50 item version was too long for them to build into their assessment and treatment processes? Such an assumption is based on Vilsaint et al. (2017) reporting the reason for the abbreviated version is to increase the likelihood of use in treatment settings.

As noted above, since Hennessey's (2017) review, a new measure has been introduced to the literature called the Recovery Strengths Questionnaire (RSQ; Rettie, Hogan and Cox, 2019). The authors claim the originality of this offer is that it provides an 11 point Likert style response format for 15 items. The authors explain they set out to validate the RSQ (as opposed to examine its psychometric properties), and purport to have done so by examining internal consistency (using Cronbach's Alpha) and concurrent validity against the ARC (Groshkova et al., 2013). The issues with the philosophy of the ARC then (reported above) are equally relevant for this new tool and will not be restated. There is no retest reliability measure for this instrument, arguably a flaw of any "validation" study. The authors,



similar to Groshkova et al. (2013), use Principle Components Analysis (PCA) to examine and report factor structure despite a consensus in the literature that it is the least appropriate method (though also the simplest) for undertaking factor analysis in scale development (e.g. DeVellis, 2017; Field 2013; Worthington and Whittaker, 2013). The sampling frame for this study was from addiction recovery groups across the United Kingdom which is important for the conclusions the authors draw. They achieved a sample size slightly smaller than the current study,  $n = 151$  vs  $n = 173$ , which will be identified as having potential limitations to the findings in the current study.

Using PCA as opposed to EFA, the authors reportedly found the RSQ to have a two factor structure. The first of these is surmised to consist of items which indicate within-group recovery strengths, and the second, externally generated recovery strengths. They found that the within-group strengths were found to be predictive of recovery stage and report a (low) correlation between RSQ score and time in recovery ( $r = 0.167$ ) and recovery group participation ( $r = 0.149$ ). These are similar to the ARC correlations with the same variables of time in recovery and recovery group involvement ( $r = 0.147$  and  $0.156$  respectively; Groshkova et al., 2013).

In their conclusions, the authors note the RSQ demonstrates the important role recovery groups can play. While recovery groups undoubtedly have a role to play, interpreting and claiming that the RSQ identifies 'within-group' recovery strengths as a unique factor appears to imply this factor comprises items which measure strengths which can only be accrued and developed from the unique experience of recovery groups. However, examples of items cited later in the narrative reveal this not to be the case, for example, 'meaningful activities' and 'activity learning', are arguably items which could be responded to in the affirmative without any recovery group participation. This raises doubts over the interpretation of the other items and the scale itself. Questions about author bias could also be raised given the intention set out in the abstract (to validate rather than examine the psychometric properties of the RSQ).

There are a host of other potential issues with this research, ranging from erroneously referring to their own Recovery Strengths Questionnaire as the "recovery capital questionnaire" (i.e. the subject of this thesis), using different

instrument completion methodologies (e.g. online or in person) without reporting what this might mean in practice (e.g. could this influence responses and/or is the RSQ intended as an online tool?), but perhaps the biggest limitation – despite the researchers noting only that participant self-reporting data was a study limitation – is that the RSQ appears to restrict itself only to recovery groups, and the affect these groups may have on RC. This arguably limits its application in the fields for which it appears to have been designed. Unless of course, the authors only intend for it to be used for those involved in recovery groups. If this is the case, a renaming of the tool from the Recovery Strengths Questionnaire to something more specific about recovery group attendance, a reinterpretation of the factor structure, and a revalidation, perhaps alongside the Recovery Group Participation Scale for example, might be more appropriate.

Given that there are so few measures of RC in existence, and that there are clearly some issues ranging in significance regarding those currently available, it is appropriate to conclude that there is scope to introduce an alternative measure of RC if such a measure were found to be psychometrically sound.

#### **4.8 Research Questions**

The previous chapters have set out, relevant to this research: the national and international policy context; the appropriate addiction theories and addiction recovery literature, and the position of RC therein; the relationship between RC, QOL, and resilience, and how any valid and reliable measure of the former is likely to have a relationship with measures of the latter two, identifying validated measures of same; the dearth of measures available to help quantify and measure RC as well as the philosophical and methodological differences between them and the RCQ. It is appropriate to now consider the research questions set for this study. DeVon et al. (2007) in their paper “A Psychometric Toolbox for Testing Validity and Reliability” make recommendations for the types of validity and reliability, and the associated statistical tests for undertaking this type of research in nursing. With the RCQ intended to be used by health and social care staff including social workers and nurses, this is a useful standard against which to consider the proposed RCQ research. Combining this with some of the previously mentioned texts and Coaley’s

(2010, 2014) important point regarding context and purpose, this leads to the following summation of the research questions this research aims to answer:

1. To what extent does the RCQ possess equivalence reliability as measured using Cronbach's Alpha
2. To what extent does the RCQ possess stability (test/retest) reliability examined via a test retest method
3. At what level does the RCQ possess content validity based on the responses of subject matter experts and the application of Lawshe's Content Validity Ration and Content Validity Index (1975)?
4. To what extent does the RCQ demonstrate concurrent validity with a quality of life measure where the hypothesis is that such a relationship should be positive in direction and moderate to good in strength
5. To what extent does the RCQ possess concurrent validity with a measure of resilience where the hypothesis is that such a relationship should be positive in direction and moderate to good in strength
6. What factor structure does the RCQ assume? Using exploratory factor analysis, which factor structure provides the optimum solution in terms of parsimony and interpretative value
7. Where validity relates to the context of addiction treatment, can the RCQ be considered a valid and reliable measure of RC which could be used identify strengths and assets in those seeking treatment for AOD problems, where those strengths and assets could be harnessed by clients and treatment staff to initiate and sustain the resolution of AOD problems?

## Chapter 5: Methodology

The research project involved exploring the psychometric properties of the Recovery Capital Questionnaire (RCQ), which, if done appropriately, allows for conclusions to be drawn about the reliability and validity of the RCQ. This chapter will explain the process involved in scale development, which parts of the process have been completed in previous research (Burns and Marks, 2013) and which are the focus of this research project. Also explained in this chapter: the design of the project in

terms of how reliability and validity have been operationalised, why reliability has been tested in a certain way, how data was collected across different sites and by whom, and which methods of analysis will be used when considering reliability and validity. This chapter will also address relevant ethical issues.

## **5.1 The Creation of the RCQ**

The study builds on the author's previous research (Burns, 2012; Burns and Marks, 2013) which involved the creation of the RCQ and explored the relationship between RC and addiction problem severity. Those works laid the foundations for the current project and it is therefore appropriate to revisit some of the methods involved therein. At the time of the original study, the lead author was employed within a community based addiction treatment centre, and set out to design an assessment of RC which could be used in the treatment centre to identify RC. A review of the definitional works revealed RC to contain elements of resilience, self-efficacy, and QOL, and tapped into broader concepts of physical and emotional wellbeing. Initial item formulation therefore drew heavily from this thinking but ensured each item had a grounding in the addiction literature. Items such as sharing a meal with others (Velleman, 2009), being able to draw on previous success for future challenges (Best et al., 2010), access to transport (White, 2007), and access to treatment (Best et al., 2010) are examples of areas which items within the RCQ are used to measure Social, Human, Physical and Community capital respectively, and have associated empirical evidence within the addiction recovery literature.

An initial item pool of 82 items was drafted and consulted upon with addiction treatment staff (n=4) and people in recovery (n=5) from a statutory addiction service provider. These two groups were prioritised as the former would be the staff supporting the latter to complete the RCQ, and support the deployment of RC to achieve (mutually) agreed treatment outcomes. A number of items were identified as being duplicate or ill-fitting and saw a revised list of 67 items being retained. A convenience pilot was undertaken whereby the questionnaire was piloted by 8 full time post graduate research students in addiction studies, 2 full time researchers in addictions, and 5 treatment practitioners, different from those initially consulted. They were set the remit of evaluating and commenting upon the physical layout, content and ease of completion of the questionnaire. In addition, their advice

regarding the content of the research instrument was also taken on board, with their responses used to improve the physical layout and increase the ease of completion.

The RCQ was then used to measure RC and examine the relationship with addiction problem severity, finding that RC measured by the RCQ could explain approximately 26% of the variance in addiction problem severity (Burns and Marks, 2013). Such an effect size was suggested to be good (Best, personal communication, 2012; White, personal communication, 2012). RC was expected to explain no more than this in relation to addiction problems severity, a phenomenon better explained and constituted by the various components measured by traditional addiction severity instruments (e.g. age of first exposure, length of time of problem usage etc.).

Principal Components Analysis (PCA; Dunteman, 1989) was then used to explore the RCQ and identify statistically weak items, and saw the creation of a 36 item RCQ. It is the 36 item version of the RCQ which has been used in the present study. The original RCQ research was assessed to have been of a high standard (see Munton, Wedlock and Gomersall, 2014 for an independent appraisal).

The RCQ is a 36 item Likert style response format questionnaire which measures the four domains of RC previously presented. The purpose of the RCQ is to perform as a strengths-based assessment, completed in interview format between practitioner and client, where the practitioner's role is to ask the question and record the response, and where the strengths identified can be used in partnership between the client and service provider to initiate and sustain the resolution of AOD problems. That the RCQ is to be used in an interview format is primarily due to evidence of people experiencing drug and alcohol addiction also experiencing challenges around literacy (e.g. Bentley and Conley, 1992) and dyslexia, with Yates (2013) estimating the prevalence of dyslexia in treatment seeking populations could be as high as 40%.

Furthermore, the introduction of a strengths-based assessment arguably facilitates the emergence of new understanding of the client seeking treatment; it is reasonable to expect practitioners who routinely use deficit based assessments to come to see their clients as the personification of their life's deficits. A strengths-based assessment challenges them to explicitly and systematically seek strengths in their clients. While some clients have reported this to be difficult and novel initially (Burns,

2016c), it is fair to extend this difficulty to practitioners involved in facilitating the assessment. The RCQ uses a five-point Likert response format in an attempt to provide respondents with opportunity to recognise that their feelings on aspects of RC may not be binary (e.g. Groshkova et al., 2013).

In response to Clark and Watson's (1995: 311) assertion that "Unless the prospective test developer can clearly articulate ways in which the proposed scale will represent either a theoretical or an empirical improvement over existing measures, it is preferable to avoid contributing to the needless proliferation of assessment instruments", it is felt that the aforementioned differences, deliberate design differences, and different understandings of RC, combine for a sound argument for the need of an alternative measure of RC.

## **5.2 Description of the Methodology**

Studies examining validity and reliability are to some extent methodologically constrained by their purpose, and are anchored to a quantitative methodological approach. Stability reliability, for example, is defined by how a test performs on at least two occasions (e.g. Coaley, 2014). Consequently, at least two administrations of the measure are required over a given time period and analysis of this performance relies on quantitative methodology. There are, however, different types of validity and reliability and this section will explore these in more detail and explain why certain options were chosen, and what statistical analysis will be undertaken of the data.

### *5.2.1 Scale Development*

While a plethora of scales have been developed, and many are used in research and clinical settings which fail to follow a coherent or rigorous methodology or report fundamentally important data (DeVon et al, 2007), there are widely recognised steps and generally held expectations about standard reporting requirements (Coaley, 2014; DeVon et al, 2007). Although some texts diverge on emphasis of particular areas or techniques which are favoured over others, the literature appears to reach consensus on issues which seem to matter most. For example DeVellis (2017) and Coaley (2014) agree on the general 'steps', and suggest a procedure for scale development. It is useful to consider these steps before going on to examine the historical and more recent development of the RCQ.

Both authors agree that the first steps should involve being clear on the aim and purpose of the scale. DeVellis (2017) describes how theory and specificity can aid clarity. The development of the RCQ has been largely driven by the theoretical and empirical work of various contributors to the definitional and developmental literature on RC, and the catalyst for its development, through which its purpose was borne, was the author's professional experience. It is clear that there is a theoretical grounding, and that this grounding assists in targeting the measurement of the construct of RC. When DeVellis (2017) describes specificity he points to the levels of a construct, individual, societal or global for example, and the influence this may have over what is being measured. If a questionnaire were to enquire about personal attitudes or behaviours, very specific things, but were then to enquire about more global behaviours, it may be found that such items, and subsequently the questionnaire, fail to correlate well, "There is general agreement in the social sciences that variables will relate most strongly to one another when they match with respect to level of specificity" (DeVellis, 2017:106). The RCQ measures RC which is specific to the individual, and enquires about thoughts, feelings and behaviours in an attempt to illuminate strengths and assets.

The next step in scale development involves considering the content (items), who the target population is (access), the kinds of items and their format, and administration instructions (Coaley, 2014). Content, item generation, refinement, selection and piloting has been described above. The target population for the RCQ is addiction treatment staff for use with their clients and patients accessing treatment. Initially it was intended that this would be community based treatment, however, as has been and will be explained, this research project has also recruited participants from residential based treatment. Some differences will be explored and the implications will be examined. For Coaley (2014) though, the main purpose of considering the target population is to ensure the questionnaire can be used/access to the population can be attained. To this end, there were no issues other than those detailed in the section below regarding participant recruitment.

In relation to items and their formats, the RCQ uses a 5-point Likert response format which ranges from 1 (Untrue of me) through to 5 (True of me). Well-accepted convention in scale development is that Likert response formats should have between five and seven points, and, usually, a midpoint which allows respondents to

provide a 'neutral', 'neither' or 'don't know' response (DeVellis, 2017). The RCQ meets with this convention. Regarding administration instructions, these are concise and straightforward, and can be seen on the front page of the RCQ (Appendix 1). In summary, the instructions explain: the concept of RC; participants will be asked questions relating to this concept; they are free to answer or not any and all of the questions; when considering their answers, they are asked to reflect on their circumstances over the last four weeks. This is in line with scales measuring similar constructs. For example the WHOQOL BREF, where the phenomena being measured could change slightly – or even significantly depending on life events – over a short period of time, and so the participant is invited to consider 'on the whole' and over a period of time (four weeks).

Both authors (DeVellis, 2017 and Coaley, 2014) emphasise the importance of identifying the most appropriate items to be used in the scale – the items are the essence of the scale. Problems with structure and flow, content, language, jargon and length, are issues which need to be identified and addressed as early as possible. The work noted above in the development of the RCQ which involved both those who would administer the assessment and those who would answer it, in addition to convenience piloting, satisfactorily addressed these issues early in the development of the scale. From this stage in the process, the steps identified by Coaley (2014) go on to describe the methods which will be used and described below to explore the psychometric properties of a scale. Broadly, this involves the scale's reliability and validity. Specifically, consideration will be given to the equivalence and stability reliability, content validity, concurrent validity and the factor structure of the RCQ. These are described in detail in the 'Data Analysis Methods' section below.

### *5.2.2 Participant Recruitment Sites*

The field site originally identified for the study was a Local Authority provided treatment centre (referred to as the 'statutory service site' or similar). This centre employs 10 Addiction Workers, 3 Social Workers, 2 Social Work Assistants, a Support Worker and an Activities Coordinator. On average there are around 250-300 service users working with the service at any one time. Staff are professional social service addictions practitioners who have been recruited through a robust



competency based recruitment process and have subsequently undertaken a range of training opportunities including: child protection, adult support and protection, working with vulnerable families, and basic and advanced drug awareness training. Almost all staff have completed the COSCA Counselling Skills Certificate and many have gone on to study at post graduate level.

The service accepts referrals from various sources, with the main source being self-referrals and referrals from Children and Families Social Work and Criminal Justice Social Work Departments. It is the main service provider for addiction support in the Local Authority area to work with service users over the age of 18 years. The service offers a variety of support from a predominately psychosocial perspective.

It should be noted that this site was also the site from which a sample was recruited for the author's original research (Burns and Marks, 2013). The benefit of this is that the majority of the staff involved in data collection were familiar with a similar research procedure and working in this way for research purposes. Furthermore, upon completion of the original research, the RCQ had been integrated into the service's assessment and treatment planning approaches therefore the staff were not only familiar with the RCQ but were using it as a matter of course in their assessments and planning of care for clients accessing treatment. The proposed procedure, detailed below, took cognisance of this and was designed to cause minimal disruption to service delivery.

Despite efforts to ensure participant recruitment went smoothly, and even with the service having previous involvement in a successful research project behind it, there could be no anticipating some of the challenges involved in participant recruitment: numerous changes in manager and integration of health and social care services. The service experienced three different managers in less than three years, each with their own set of priorities for the service, and each having differing views on the importance of the RCQ research. Even though the research retained the support of the Local Authority and the senior management team which at that time remained the same, such a frequent change in management at service delivery level caused a reduction of the research in the service's priorities. Data collection subsequently slowed and eventually stopped.

Although the service delivery manager changes represented a challenge, perhaps the biggest obstacle to data collection presented itself when the service was forced to undergo a significant episode of organisational change. The Public Bodies (Joint Working) (Scotland) Act 2014 (Scottish Government, 2014b), enacted on April 2<sup>nd</sup> 2014 set the legislative context for the integration of NHS and Local Authority community based services in Scotland. The impact of this means there is no longer a Local Authority provided service as it has been merged, or 'integrated', with what was NHS Addiction Services.

Although there is a paucity of research in the area, particularly in relation to alcohol and drug services, the suggestion that integration is seen as an inherently good thing has been challenged (Yates, Burns and McCabe, 2017). Furthermore, whether the experiment in the Local Authority area can be described as integration remains to be seen, with many staff from both employers unsure of the future, the direction and purpose of their service (Burns, 2016). The local media published an account from a 'whistle-blower' which would suggest things have not gone as well as may have been hoped (Smith, 2018). The problems with recruitment from this site presented an opportunity to recruit a slightly different treatment cohort for the study.

The second site is a UK charity (referred to as 'the third sector site') providing support to people with AOD problems for almost 50 years. It provides support in various settings including therapeutic communities (TC's), community, and prison settings, providing addiction recovery support for those in active addiction through to recovery initiation and sustainment/aftercare. The third sector site was contacted to enquire if they would be willing and able to support the research project. They were agreeable to supporting data collection through three of their TC's and one of their community projects. Research participants were recruited from two TC's in England and one in Scotland, and a community-based project in Scotland. Additional ethical approval (detailed below) was sought in order to permit data collection from these sites.

Although the involvement of the third sector site was very much welcomed, it potentially presented an issue in terms of a different treatment population being involved in the research. However, that the treatment populations from the sites may be different should have minimal impact, if any, upon the data involved in answering

the research question(s). Generally, community based treatment and residential treatment tend to be accessed by people who have identified a need for treatment and attend voluntarily.

The treatment population accessing community based treatment from the statutory service in this study may experience mental health problems, housing issues/homelessness, family estrangement, unemployment, poverty, food and fuel poverty, childcare issues and trauma. This is much the same as the population accessing residential treatment through the third sector site with a couple of key exceptions. These participants are likely to have experienced a number of unsuccessful community based treatment episodes – an apparent condition before commissioners consider paying for residential treatment (Yates, 2008; Yates, Burns and McCabe, 2017). Their substance use and lifestyle may be posing a higher risk to themselves or others, and they happen to live in a Local Authority/NHS Health Board area where such treatment is accessible and affordable.

A potentially key difference between community based treatment seekers and those in TC's is likely to be their mix of RC and addiction problem severity, where those in community based treatment may have slightly higher of the former and slightly less of the latter than those in residential treatment. This would be true if the hypothesis that only those with the most severe addiction problem severity were referred to TC's is accepted, and this was combined with the relationship found between addiction problem severity and recovery capital found in Burns and Marks (2013). However, this is not a significant concern as the study design would see such differences identified across the three different measures (i.e. RC, QOL and resilience). The differences in the treatment populations would have no impact on exploring validity as their relative differences (between the sample populations) would be reflected consistently in these measures. In other words, where a participant identifies low RC, and the RCQ is found to have concurrent validity with the WHOQOL Bref and CD-RISC, then treatment type becomes irrelevant.

Where there may be some impact, although this would be minimal, could be in the reliability component. In this area, the TC population might be expected to have slightly different retest scores, and this could be either lower or higher, depending on how the participant is coping with treatment. For example, participant one may be

new to the TC at first interview and rates their RC quite high. At second interview, after an intense week of TC work, they may have reflected on this and provide a lower rating at retest. On the other hand, participant two may have given a balanced rating at week one but, also due to a week of successful and intense TC work, provides a higher rating at retest. The key point is that TC work is intense; that the individual lives in the place of treatment compared to someone in the community cohort who may not have frequent contact with treatment services. This indicates a potential difference in treatment effects which in turn could impact on levels of RC. This will be reflected upon in the discussion chapter.

### *5.2.3 Participant recruitment*

#### *Sample size(s)*

It is important to contextualise sample sizes; they are only relevant in the context of the types of analysis being undertaken, and whether such analysis is appropriate. Although the types of analyses being applied are discussed elsewhere, it is useful to mention them here in relation to the sample size requirements. When considering sample size, it is useful to review the size of samples used by other researchers in the same field (DeVellis, 2017) while being careful not to repeat their mistakes. An initial sample size of 132 participants and a sub-group of 45 participants for retest purposes was proposed, and this was based on a similar study (Groshkova et al., 2013). However, as noted, there have been some issues identified with the small sample for reliability testing in that it may lack statistical power. Coaley (2014), suggests that for reliability analyses, samples with less than 100 are too small. The current study recruited a sample of 102 for reliability analysis.

Sample sizes for validity research vary widely (Coaley, 2014), and despite his observation that “Small samples have notoriously been used in many validation exercises” (Coaley, 2014: 179), he fails to provide any suggestions for minimal sample sizes nor signposting to any such resource, pointing out only that the smaller the sample size, the larger the amount of error. Other examples of sample size in relation to validity include Clark and Watson (1995) who suggest a moderate sample size would be 100-200. Anthoine, Moret and Regnault et al. (2014) reviewed 114 publications in PubMed between 2009 and 2011. They found approximately 92% of the articles reported a subject to item ratio of greater than or equal to two, and 90%

of the studies had a sample size of greater than or equal to 100. If an item to participant ratio of two was applied to the current study, the required sample would be 72. The sample size used in this study for validity testing purposes ( $n=173$ ) provides for a ratio double that, of almost five (4.8) participants to one item.

Anthione et al. (2014: 9) conclude, "Clear and scientifically sound recommendations on the sample size for validation studies remain to be developed."

Finally, there is similar disagreement in the literature about satisfactory sample sizes for factor analysis. 'Rules of thumb', although convenient, tend to miss the nuances and complexities involved in more sophisticated statistical analysis. For example, Comrey's (1973) suggestion of 50 participants being a poor sample and  $>1000$  being excellent, leading to a suggestion of around 300 being appropriate, is based solely on the consideration of the number of participants. In a similar vein, Gorsuch (1983) has proposed a guide for minimal sample sizes when using factor analysis in scale construction using a participant to item ratio of 5:1. These authors have erred on the side of caution when it comes to minimal sample sizes and factor analysis though they could be accused of being too cautious in their efforts to mitigate for the two central risks when considering this issue. The first is that when the ratio of participants to items is too low, patterns of covariation may be unstable because chance could substantially influence correlations. The second is that the sample used in scale development may be different from the population where the scale is intended to be used.

Although providing an indication of what a reasonable sample might involve for this type of analysis, numerous authors (e.g. Tabachnick and Fidell, 2001; Velicer and Fava, 1998) have suggested they (Comrey, 1973 and Gorsuch, 1983) could be misleading and lack sophistication. In their work, Velicer and Fava (1998) found that a participant to item ratio of less than 3:1 and item communalities are other important issues to consider when determining sample size. When describing 'best practice' for factor analysis in scale construction, Worthington and Whittaker (2006) offer four overarching guidelines: (i) sample sizes of 300 are sufficient in most cases, (ii) sample sizes of 150-200 are likely to be adequate where datasets contain communalities higher than .50, (iii) smaller sample sizes may be appropriate if all communalities are greater than .60 and (iv) sample sizes of less than 100 are generally inadequate. The sample size for the factor analysis component of the

study is 173. The results and discussion sections address whether this is adequate as calculations and cognisance of communalities is required.

#### *5.2.4 Sampling Method*

During scale development it appears common practice that the scale may be developed with a sample, known as the development sample, who could be quite different from the population with whom the scale is intended for regular usage (DeVellis, 2017). For example, a scale intended to be used by the general population, such as a household survey, could have involved a development sample of undergraduate university students. This is noted above as one of the reasons for preferring a larger sample size, to mitigate sample effects. Taking this approach to sampling is known as convenience sampling i.e. taking advantage of a sample which is easy to engage should be convenient. The current study adopts a purposeful random sampling strategy, where the process involves identifying a population of interest but participant selection is done in a systematic way which is not based on prior knowledge of the likelihood of outcome (Cohen and Crabtree, 2006). In the current study the population from which the sample was recruited is the population with whom the scale is intended for future usage (if satisfactorily reliable and valid), and the staff collecting the data were randomly allocated clients within their organisational roles, albeit for service delivery purposes, and interviewed them in the research project. All clients open to the organisations involved in data collection were eligible to participate in the study – not only those suspected to have low or high RC – with reasonable exceptions noted below (e.g. if clients were suspected to be under the influence of alcohol or drugs).

#### *5.2.5 Staff Training and Organisation Appropriateness*

##### *Organisation Appropriateness*

Both the statutory and third sector sites can be argued to be ‘recovery oriented’ services. From the analysis of policy changes in the preceding chapters which have and continue to take place, both services have, to a greater or lesser extent, either embraced these changes or were working in a recovery focused way prior to the policy changes. For example, third sector site prides itself in providing recovery focused, person centred support to clients and do this through various projects and initiatives which consider client/resident wellbeing. Traditionally, the statutory

service site too considered overall client wellbeing in how they engaged with and delivered care to clients.

Furthermore, both the statutory and the third sector sites have a history of being involved in academic research, and RC specifically (e.g. the former was involvement in Burns and Marks [2013]; the latter had involvement in Neale, Tomkins and Strang [2017], and Yates [2013]). Moreover – and linked to the appropriateness of each selected field site – is the various organisations' involvement in the training and preparatory work undertaken.

### *Staff Training*

Managers from both recruitment sites were briefed on the research project, and provided with the literature proposed to be provided to staff as briefing papers, as well as the data collection instruments and the associated procedure. Feedback from these stakeholders allowed for consideration about how the research could be undertaken most effectively whilst minimising disruption to service and treatment delivery. Both organisations identified a lead for the work. This was the main point of contact between the researcher and the staff involved in data collection. These leads were responsible for ensuring staff received staff information sheets (Appendix 2, p251) and the research packs which contained participant information sheets and consent forms (Appendices 3 and 4, pp252 and 254 respectively) and the data collection instruments including the RCQ (Appendix 1), a demographic information sheet (Appendix 5, p256), the WHOQOL Bref (Appendix 6, p257) and the CD-RISC<sup>1</sup>. In relation to the statutory service site, the researcher visited numerous team meetings to provide a brief input regarding what was required from staff, and gave a chance for staff to ask any questions. Staff were familiar with the RCQ having used it previously for research purposes, and it having been integrated into their assessment and care planning procedures. Although familiar with the RCQ, some staff were unfamiliar with the other two data collection instruments, and a bespoke data collection tool designed to gather demographic information. During the researcher's initial input, staff were able to interview each other using all the data collection tools in a 'mock interview' style. Very minor changes were made to the

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<sup>1</sup>In line with copyright, the CD-RISC has not been reproduced as an appendix. To obtain a copy of the CD-RISC, please use the following link: <http://www.connordavidson-resiliencescale.com/contact.php>

information sheets to improve readability. Otherwise the statutory service site staff were satisfied with the data collection tools and the proposed procedure.

Due to the geographical spread of the third sector site operations, it was not possible to physically offer the same level of input. Nevertheless, the researcher worked closely with project managers via telephone and email to explain the project in detail and ensure they understood the project, their role therein and the role of staff. An offer of a conference call and/or video call was made but not felt necessary with each manager happy to relay the information to staff and, if any questions were raised, would bring these back to the researcher. Similarly to the statutory service's site, the third sector site staff were encouraged to follow the proposed procedure through a mock interview whereby staff could interview each other. There were no issues raised from any of the third sector site services. The procedure for collecting data, and ethical issues are considered below.

#### *5.2.6 Data Collection*

##### *Inclusion criteria*

The inclusion criteria for this study was relayed to the respective staff groups involved in data collection and included service users working with both recruitment sites (and so were over 18yrs old) and were able to provide informed consent to participation. Such inclusion criteria may initially appear broad but takes cognisance of the criteria expected to be met by a population accessing addiction services. For example, a fundamental criteria for inclusion involved the sample requiring to either be in active addiction or recovery from AOD problems in order for RC to be considered. This is self-evident given the setting. Whilst drug using populations may be considered vulnerable groups, most treatment staff are professionally trained and in most instances had a relationship with potential participants. This should provide a level of reassurance that they would not try to engage someone inappropriately in the research (e.g. at a time of crisis or where the service user is suspected to be under the influence of illicit substances).

##### *Data collection Procedure*

In order to reduce interruption to service delivery, the statutory service site staff introduced the opportunity to participate in the research at the same time as a care



plan review was taking place. RCQ's were completed by staff with clients in adherence to standard procedure during care plan reviews. It was explained to clients that if they chose to participate in the research, they would be provided with a full information sheet and consent form, and interviewed using the data collection instruments. If agreeable at this stage, participants were then provided with an information sheet which was read to them by the staff member and which explained: the purpose of the research, their rights regarding confidentiality, how their data would be stored and how it would be used. The information sheet also provided contact details of the researcher and their supervisor, and encouraged participants to get in touch with any questions either before agreeing to take part or, if they had any questions, to contact them after the interview. Participants were then asked to sign two consent forms, one for the researcher's records and one for their own which they were encouraged to keep. Participants were reminded that, regardless of their answers to any of the questions and/or if they decided they wished to withdraw from the research, which they could do at any time and without providing a reason, the quality and quantity of treatment and support they would receive from the treatment provider would not be compromised.

Each of the associated data collection instruments were completed in an interview style whereby staff asked the questions and recorded the answers using pen and paper (as opposed to digitally recording answers). Interviewers progressed the interview by explaining that some demographic and substance use information was required, and participants were asked their date of birth and initials. This was used to match initial RCQ's with retest RCQ's for the sample involved in RCQ reliability testing. Other information sought via this questionnaire included gender, whether they considered themselves to be using any illegal substance or alcohol problematically, whether they were abstinent from illegal substances or alcohol, how long – if at all – they considered themselves to be 'in recovery' (where recovery means not to have used any substance problematically), and whether they were prescribed any substitute medication (e.g. methadone). Following completion of this, participants were then interviewed using the RCQ, the WHOQOL Bref and the Connor-Davidson Resilience Scale, using the appropriate instructions and response options for each.

It was then reiterated to participants that a second part of the study involved considering the reliability of the RCQ which, if they were willing, would require a second interview in seven days' time from their initial interview. This proved to be a challenge for the statutory service staff for a number of reasons. While the initial interview conveniently tied in with a care plan review, most clients were not required to be seen weekly, with some seen fortnightly and others less frequent still.

Although not fed back to the researcher, it is possible to speculate that staff might have found it inconvenient, and clients too might have found having to see their worker twice in seven days to be somewhat burdensome. This perhaps explains in part why there were more participants involved in first interviews (n=173) than follow-up interviews (n=102). Nevertheless, 102 participants were involved in the follow-up interview whereby they were asked to complete another two consent forms, the first four questions of the demographics sheet which accounted for date of interview, date of birth, initials and gender which allowed the researcher to match first and second interviews. They were then re-introduced to the RCQ and encouraged to answer as honestly as possible without thinking about their previous answers. Interviewers were encouraged to emphasise that the process was not a test of participant's memories.

When the interviews were complete, staff put the completed paperwork back into the pre-prepared envelope which formed the research pack, and sealed the envelope. Where possible, these completed research packs were returned to the researcher within 24 hours or were otherwise stored in a secure locker, with the respective organisations routinely making these facilities available to their staff. In relation to the third sector site, the responsible manager stored the data before returning the packs to the researcher via recorded delivery. Once in the possession of the researcher, data was inputted to a password protected laptop and stored on an encrypted portable drive and prepared for analysis. Hard copies were stored in a secure filing cabinet.

### **5.3 Data Analysis Methods**

#### *5.3.1 Data Exploration*

While the aim of the study was to explore the psychometric properties of the RCQ in relation to its reliability and validity, the RCQ results themselves were analysed

alongside other variables including: whether a participant identified as being 'in recovery'; length of time in recovery; gender; age; whether they were prescribed medication to support their recovery; whether they reported to be abstinent from drugs or alcohol; and treatment type (residential or community based treatment). The distribution of RCQ item scores was also assessed. Some texts on scale development suggest that responses to items should be normally distributed (e.g. Clark and Watson, 1995). The assumption is that such tests are developed with the general population where the variables being measured (e.g. altruism) may likely be normally distributed. On the other hand, there is acknowledgement that developing a scale using a population where the variable is unlikely to be normally distributed, taking decisions about the removal of items from the scale should be done with caution (Clark and Watson, 1995; Worthington and Whittaker, 2006). In the current study, for example, participants might have been expected to have reported higher levels of RC, perhaps as an outcome of being involved in treatment. If this were compared to a sample of participants not in treatment, and who were experiencing high levels of addiction problem severity, they may be expected to report relatively lower levels of RC, in part indicated in Burns and Marks (2013).

An important aspect of any data analysis is to consider at the outset which types of tests can be used with the data. Traditionally, parametric tests (for example, Pearson's Correlation Co-efficient) are undertaken with normally distributed data, while non-parametric tests (for example, Spearman's rho), do not assume that the sampling distribution is normally distributed (Field, 2013). A normal distribution sees values of a variable cluster around the central peak and decrease equally as they move away from the centre. One way of examining the distribution of data is to consider the Kolmogorov-Smirnov test where a non-significant result indicates normality, which requires a significance value  $>.05$  (Pallant, 2016). While the Kolmogorov-Smirnov test is reported to be sensitive to sample size, particularly with smaller samples, sample sizes of more than 100 should look to the Shapiro-Wilk test (Pallant, 2016). When considering normality other data such as the trimmed mean, skewness, and kurtosis of the distribution should be explored (Pallant, 2016). While skewness indicates the symmetry of the distribution, kurtosis indicates its 'peakedness'. For a perfectly normal distribution, a skewness and kurtosis values of 0 would be found.

According to Tabachnick and Fidell (2013), skewness will not make a substantive difference to subsequent analysis where reasonably large samples are used (c.200). While kurtosis can result in an under-estimate of the variance, this risk is also reduced with similar reasonably large sample sizes (Tabachnick and Fidell (2013). The same authors encourage the inspection of histograms to examine distribution among the variables.

In addition to the above influencing the decisions of whether to undertake parametric or non-parametric statistical tests of the data, the issue of analysing Likert style data must also be considered. Likert response format questions provide an ordinal scale from which participants may select a response, for example a range from 1-5 where one usually represents one end of a given spectrum and five represents the other (e.g. strongly disagree/strongly agree). Each category, although different from the other cannot be consider equidistant i.e. 'true of me' is not five-times more true than 'untrue of me' simply because they are one and five on a response format option. In his comprehensive review of the challenges in analysing Likert style data, using a combination of real and simulated data sets, Norman (2010) found the use of parametric tests not only to be acceptable for use with Likert style data when assumptions of normality are breached but that parametric tests are more robust than non-parametric tests for analysis of Likert style data. Norman (2010) recommends that parametric tests are able to yield largely unbiased answers when analysing Likert style data, even when assumptions, such as normal distribution, are violated to an extreme degree. To this end, the analysis of RCQ data has been undertaken using the parametric tests described below.

Data in relation to age, gender, treatment type (community or residential), whether a participant was using substances problematically, and how long they reported to have been in recovery were all analysed. Examples of means, ranges and standard deviations were calculated where appropriate. The distribution of the key variables within the RCQ, WHOQOL and CD-RISC were examined and the range of possible scores from these instruments, as well as distribution, dispersion and confidence intervals were provided.

Analysis was undertaken to examine any differences between various independent variables and the Recovery Capital Total rating. Independent sample t-tests were

undertaken to examine gender, treatment type, problematic use, abstinence from alcohol or drugs, and prescription status as the data in each of these analyses involved one categorical independent variable in only two groups (e.g. male/female; using/not using problematically). One-way between-groups analysis of variance were undertaken to examine age and length of time in recovery where these two categorical independent variables were in more than two groups (e.g. age included 19-34.56yrs, 34.57-44.31 and 44.32-65.50yrs). It should be noted that these categories were designed to provide an equal number of participants in each category for analysis purposes as opposed to signifying anything significant about these particular age cut-off points. The extent to which the age of participants in the sample reflects the age of the treatment seeking population and the wider population of those defined as problem drug users (ISD, 2019) is considered in the discussion. The measure of central tendency, dispersion, confidence interval and effect size data was reported where appropriate. The chosen effect size statistic for t-tests was eta squared. This is a commonly used effect size statistic (Ellis, 2010). The guidelines for interpretation of this statistic were proposed by Cohen (1988: 284-7).

### *5.3.2 Method of Testing Reliability*

#### *Equivalence/Internal Reliability*

The most commonly cited method of testing equivalence reliability (although often referred to only as 'reliability') is Cronbach's Alpha (Coaley, 2014). Alpha, developed by Lee Cronbach (1951), can be used to measure the inter-relatedness of items within a test, to measure whether each item in a test is measuring an underlying variable or construct, known as a latent variable – something which is not directly observable. Cronbach's Alpha can demonstrate the amount of measurement error which exists within a test, and it does this by correlating the items within the test with itself. Alpha is expressed as a figure between 0 and 1. Error is established by squaring alpha and subtracting from one. For example, if a test achieved alpha of 0.70, this would be squared (0.49) and subtracted from 1 (0.51) showing 51% random error in the variance of the scores. As alpha increases, the amount of random error decreases with various interpretations of what constitutes acceptable alpha levels. Generally, alpha of between 0.7 and 0.9 are considered acceptable although this will be explored further in the results and discussion chapters.

### *Stability/retest Reliability*

This section describes how stability reliability is understood, and how the fieldwork and data analysis has been undertaken accordingly. The reliability of a psychometric instrument refers to how consistently (reliably) it performs its proposed function. For example, a test or questionnaire administered at week 1 should produce almost the same answer if it were to be administered 30 minutes from its first administration. If it were redone 5 weeks from the original and 30 minutes later on that date the results should again be similar. However, the result may change from week 1 to week 5 depending on other variables. This does not mean the test is unreliable but that other factors may have caused change in whatever characteristic is being measured. For example, QOL could be influenced by a range of factors over a 5 week period including bereavement, change in work circumstances or physical health diagnosis. Another variable to be considered in stability reliability is participant recall; if participants remember the answers they provided before (such as the 30mins example above but even one or two days between tests) then this undermines the reliability of the test. A balance has to be achieved between administering the test twice in a time that allows for reduced reliance on recall but also minimal time for genuine variation in the variable being measured, with a general rule that the longer the, time the lower the reliability is likely to be (Trochim and Donnelly, 2001) due to actual changes in the variable being measured.

The literature on what constitutes an appropriate length of time between tests provides no definitive answer. It urges researchers to take cognisance of participant life events and how quickly these could change; the phenomena being measured and how quickly this could change; the participants ability and likelihood to try and recall their answers, for example whether there is any incentive to 'score' the same or if they think they are being tested on some ability; and it encourage researchers to examine precedents set within their field (DeVellis, 2017; Coaley 2014).

There is a swathe of addiction assessments currently used in research and clinical settings. These vary from assessments which attempt to measure needs, deficits and risks through to assessments which try to measure outcomes and impact of treatment and, as has been seen, a very small number designed to measure RC. To that end, assessments within the addictions field examining reliability of addiction

severity symptoms have varied from three to seven days (e.g. Addiction Severity Index, McLellan et al, 1992; Liang, En-Wu and Zhong et al., 2008), treatment outcome measures have used seven day intervals (e.g. Marsden et al., 2008), and Groshkova et al.'s (2013) RC research also used an interval of one week between tests.

Reliability has been defined as representing a ratio of true variance over true variance plus error variance (Bartko, 1966); it considers not only the degree of correlation between two measures but, by applying the appropriate analysis, it can also measure the agreement between the measures (Bruton, Conway and Holgate, 2000). Stability reliability has traditionally been measured by analysing the correlation between two scores, using a measure of correlation such as Pearson's correlation coefficient. However, because such a test only considers correlation, and not the level of agreement between measurements, a more desirable measure in the form of an intraclass correlation coefficient (ICC) is advocated by Koo and Li (2016). ICC is a widely used index for reporting reliability using test-retest methods and for inter and intra rater reliability but has a history of being poorly understood, implemented and reported (Koo and Li, 2016). This is perhaps due to the complexity of some of the detail; there are 10 different options available when considering how to implement ICC.

McGraw and Wong (1996) identified 10 forms of ICC based on the 'model' (2-way fixed effects, 2-way random effects or 1-way random effects), the 'type' (single rater/measurement of the mean of raters/measurements), and the 'definition' of the relationship thought to be important – whether absolute agreement or consistency is important.

For the selection of the most appropriate form of ICC for test-retest (stability) reliability, Koo and Li (2016) suggest 2-way mixed effects, because, by definition, the sample used in retest is not a random sample (Portney and Watkins, 2000). The 'type' is a measurement of the mean of multiple measures ( $n = 102$ ), and the 'definition' is absolute agreement, "absolute agreement definition should always be chosen for...test-retest...reliability studies because measurements would be meaningless if there is no agreement between repeated measurements" (Koo and Li, 2016:159). In relation to interpreting and reporting the ICC, Koo and Li (2016) make

the following points: when a confidence interval of 95% is applied, an ICC can be considered poor, moderate, good and excellent with values of less than 0.5, between 0.5 and 0.75, between 0.75 and 0.9 and over 0.90 respectively. Careful interpretation is required of any given value and its confidence interval. For example, a value of 0.934 may be found, suggesting 'excellent' reliability but, if the 95% confidence interval ranges between 0.863 and 0.945, this could suggest a more appropriate description of the ICC value would be good to excellent.

The current study examined both the stability and equivalence reliability of the RCQ. Stability was measured through the retest method which examines repeatability. By measuring participants' RC using the RCQ, and then again at a later date. The RCQ output should contain a similar rating for an individual to achieve a high ( $\geq 0.75$ ) ICC. It is recognised that the lives of people in active addiction as well as those in recovery from AOD problems can change quickly (White, 2007); relapse can be triggered by a range of factors, as too can recovery initiation. Consequently it was felt that one week from the initial RCQ was an appropriate length of time to undertake the retest RCQ. This time frame is consistent with a similar test in a similar population (Groshkova et al., 2013). Equivalence reliability measures the internal reliability of the test using Cronbach's Alpha Coefficient, and is held as the most commonly used method and statistic for reporting internal consistency (Polit and Beck, 2004). In addition, due to Coefficient Alpha being sample specific, good practice would see the statistic reported each time a test is used in research (Polit and Beck, 2004).

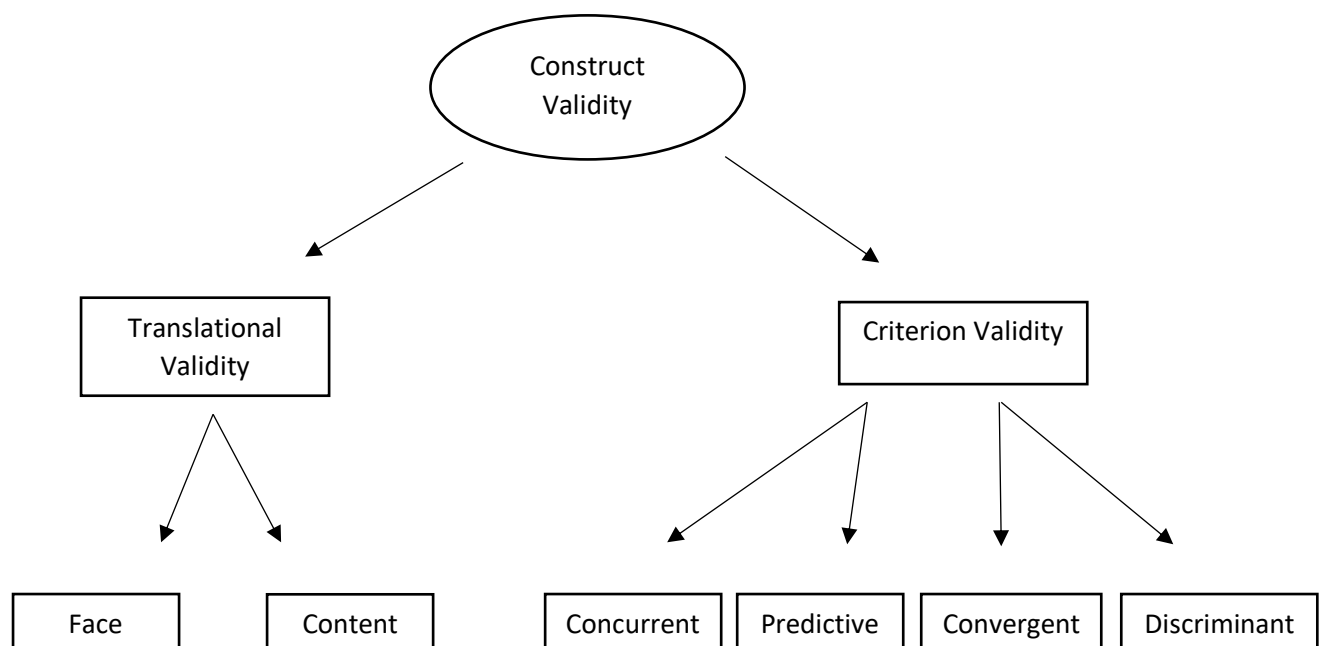
### *5.3.3 Methods of Testing Validity*

Whilst reliability explores the accuracy of a test, validity examines the nature of the constructs being measured. Coaley (2014) explains that a test must be measuring something with a degree of accuracy in order for it to possess any validity and, if it is valid, it must therefore be reliable. Despite significant efforts, validity remains a notoriously difficult concept to quantify and measure. To say that validity is the extent to which a test measures what it purports to is perhaps an oversimplification. Trochim (2001) posits that all validity falls under the broad heading of construct validity but content and face validity are termed translational (i.e. translation of the



construct) while concurrent, convergent, and discriminant validity are types of criterion validity. This is shown in Figure 1.

**Figure 1:** Mapping Validity: Trochim (2001)



The British Psychological Society’s Steering Committee on Test Standards (cited in Coaley, 2014:165) suggest “Validity is the extent to which a test measures what it claims to be measuring, the extent to which it is possible to make appropriate inferences from the test score.” This leads to perhaps the most important components of validity: purpose and context.

If validity provides for appropriate inferences to be made then these inferences must have purpose and be contextually specific. Landy and Farr (1980) suggest validity relates to the correctness of the inferences a test allows to be made whilst Coaley (2014) suggests a psychological test can never be valid in and of itself, only the inferences which are made based upon a tests results can hold validities based on their purpose and application. This places particular emphasis on the purpose of any test and the associated guidance or manual provided by the test publisher in association with the application of the test. Whilst reliability can be relatively simple

to quantify, where often a single figure can be used to indicate reliability, the same cannot be said of validity. Not only are contexts and inferences variable but so too the types of validity. Construct validity, introduced by Cronbach and Meehl (1955), was originally seen as a separate form of validity in its own right, however contemporary thinking sees all types of validity fall under the heading 'construct validity', with face and content validity being translational while concurrent, convergent and discriminant validity are considered types of criterion validity (Trochim, 2001). This research project investigated content and concurrent validity of the Recovery Capital Questionnaire as it is described above/below. The issues of inferences made from the RCQ and the purpose and context for application are also considered.

### *Content Validity*

Content validity pertains to the items on a scale, and how they may relate to any domains and to the overall construct being measured. The assessment of content validity is something which relies heavily on context and the appropriate selection of reviewers. Coaley (2014) suggests, in addition to the phenomena any proposed scale aims to measure, the reviewers should also understand the application of the scale (its context) and be considered to have a level of expertise in that area. For example, those with expertise and experience of AOD problem manifestation and resolution will arguably have a broader and deeper understanding of the issues therein than someone without this experience, and would therefore be more appropriate for selection as, what Lawshe (1975) calls 'subject matter experts' (SME). In content validity, SMEs are provided with literature which explains the test in its entirety, and are invited to consider each item in the scale and rate how essential these items might be in measuring the construct(s) using response options of 'essential', 'useful but not essential' and 'unnecessary'. The Content Validity Ratio (CVR) can be calculated to indicate the extent to which the SMEs agree on each of the items using the formula proposed by Lawshe (1975) for calculating the CVR:

$$\text{CVR} = (\text{N.E} - \text{N}/2)/(\text{N}/2)$$

Where CVR = content validity ratio, N.E = number of SMEs indicating 'essential' and N = total number of reviewers involved. This formula provides answers ranging from -1 to 1 with positive values indicating at least half of the reviewer's rate an item as

essential. The Content Validity Index (CVI) for the test can then be calculated as the CVR mean across the items. While there are no fixed recommendations regarding the number of reviewers, Gilbert and Prion (2016) suggest a panel of between five and ten experts is preferable while Lynn (1986) suggests more than ten is unnecessary.

SMEs were recruited from the statutory service involved in the data collection from service users for reliability and other validity components of the study. Expressions of interest were sought regarding who would be willing and able to participate in this component of the study. Ten expressions of interest were received. These expressions of interest were followed-up by the researcher and saw these staff provided with the instructions required to complete the rating of content. Seven participants provided a response. In addition to the rating of each item as per the requirements to calculate the CVR and CVI, participants in this component of the study were invited to provide any other comments or feedback regarding the RCQ. Two participants chose to do so and their comments are provided in the results chapter. The staff from the statutory service involved in this study use the RCQ in their regular assessment of patients (i.e. outwith the study). The extent to which this might have influenced their response is considered in the discussion chapter.

Of the ten expressions of interest received to participate in reviewing and rating the content of the RCQ, seven staff participated in this part of the study. The study will subsequently calculate the CVI for the RCQ from responses provided by seven SMEs, all of whom have experience of using the RCQ for assessment purposes.

Two general principles are applied when interpreting the CVI (Gilbert and Prion, 2016): (i) any item rated as essential by more than half of the SMEs is expected to have some degree of content validity and (ii) the more SMEs (beyond 50%) rate an item as 'essential', the greater the degree of content validity. When calculating the CVI, Tilden, Nelson, and May (1990) suggest CVI values should exceed 0.70; however, Davis (1992) suggests a CVI exceeding 0.80 is preferred in order to conclude content validity for an entire scale. The RCQ will be assessed against these criteria when considering content validity, and where the hypothesis is that the RCQ possesses good content validity (a CVI exceeding 0.80).

#### *Concurrent Validity*

Previous chapters have noted the appropriateness of the research instruments being used in the study, the procedure has described their administration, and this section will describe how the data was analysed. A construct can be described as concurrently valid when it is correlated with a similar construct from a measure taken at the same time (Carmines and Zeller, 1979). RCQ concurrent validity was measured using the WHOQOL Bref and the CD-RISC.

Correlational analysis is typically undertaken to measure concurrent validity (DeVon et al., 2007). DeVon et al. (2007) suggest the accepted standard regarding correlation analysis for concurrent validity is  $\geq .45$  for correlations to qualify as “substantial and high”. A common error in this type of analysis includes tools with low correlations being reported as criterion valid (DeVon et al., 2007). The hypotheses tested in terms of concurrent validity between the RCQ and WHOQOL Bref include: the overall RCQ score has moderate correlations with the WHOQOL Bref overall quality of life and health satisfaction scores, that the Social, Human, Physical and Community capital domains of the RCQ have moderate correlations with the social, psychological, physical and environmental aspects respectively of the WHOQOL BREF. In relation to resilience, the hypothesis was that the RCQ overall rating would be moderately correlated with CD-RISC scores.

### *Construct Validity*

Factor analysis is a well-established method of examining construct validity (DeVon, 2007) and uses mathematical techniques to measure phenomena which may be otherwise unobservable, known as a latent variable. Factor analysis is often used to reduce a larger number of observed variables to a smaller number of latent variables or constructs. Tabachnick and Fidell (2001) observe that, while factor analysis is used in a number of different settings, it is most commonly used in new scale development to help understand how many factors underlie certain items, and assist with exploring the characteristics or dimensions of these.

There are two main categories of factor analysis, confirmatory factor analysis (CFA) and exploratory factor analysis (EFA). CFA uses path diagrams to represent the relationships between variables and factors in an attempt to confirm hypotheses whereas EFA explores the dataset for underlying dimensions involved in any measures (Child, 2006). Sample sizes for factor analysis have been noted above,

however, an additional note regarding sample size and factor analysis applies to the appropriateness of factor analysis with any sample and data. Bartlett's test of sphericity which estimates the probability that the correlations within a correlation matrix are 0 is the recommended test (Worthington and Whittaker, 2006) for a sample size of less than 5 cases per item (and more than three). Costello and Osborne (2005:4) suggest that while 'more is better', "Strict rules regarding sample size for exploratory factor analysis have mostly disappeared", and urge item communalities, item loading values and the number of items per factor to be good indications of satisfactory sample size. The sample size for the factor analysis component of the study is 173 which, with the RCQ comprised of 36 items, falls between 4 and 5 cases per item.

There has been some debate or confusion over when, and in which order, EFA and CFA should be undertaken. Indeed, in their paper, Worthington and Whittaker (2006) devote a section to reviewing how this has been done erroneously, and they make a recommendation regarding which order EFA and CFA should be undertaken. Although CFA seeks to confirm a theory, and, in the case of the current research RC has been theoretically constructed from four constructs (social, human, physical and community capital), Worthington and Whittaker (2006) suggest any new measurement tool (of which the RCQ is an example) should first employ EFA. They point to an example where researchers use CFA and find that their theory is not confirmed, and so they return to EFA to establish a factor structure. Worthington and Whittaker (2006) suggest that EFA would have been the most appropriate option in the first place. In addition, they suggest that, rather than placing confidence in a single CFA, more confidence could be taken from a series of EFAs where future findings corroborate (or challenge) the original factor structure, and are unequivocal in their assertion that a CFA should only be undertaken when a scale has already undergone EFA at least once.

When applying EFA, there are several issues which should be considered: method of factor extraction, the number of factors to retain for rotation and the type of rotation applied. With the aim of factor analysis being to identify any latent variable(s) which cause the observable variable(s) to covary, the process of factor extraction allows the shared variance of a variable to be partitioned from its unique and error variance to allow the underlying factor structure to be revealed (Tucker and

MacCallum, 1997). It should be noted that EFA, and factor analysis in general, can be a complex and highly technical procedure. Take for example the method of factor extraction, where the literature is not particularly accessible. Costello and Osborne (2005) describe the problem well in the following:

“There are several factor analysis extraction methods to choose from...SPSS has six...Information on the relative strengths and weaknesses of these techniques is scarce, often only available in obscure references. To complicate matters further, there does not even seem to be an exact name for several of the methods; it is often hard to figure out which method a textbook or journal article author is describing, and whether or not it is actually available in the software package the researcher is using.”

Costello and Osborne  
(2005:2)

Costello and Osborne (2005), having reviewed the literature, point to Fabrigar, Wegener and MacCallum et al. (1999) for advice on what should influence decision-making regarding factor extraction. The key issue involves considering the distribution of the variable: if normal distribution is ‘severely violated’, one should consider one of the principal factor methods, however, if the assumption of normal distribution is not severely violated, one should consider maximum likelihood. As a method of factor extraction, maximum likelihood is the optimal choice because, “it allows for the computation of a wide range of indexes of the goodness of fit of the model [and] permits statistical significance testing of factor loadings and correlations among factors and the computation of confidence intervals” (Fabrigar et al, 1999: 277).

Following the process of factor extraction, a decision is required about how many factors to retain; the extraction of too many factors may present undesirable error variance while on the other hand, extraction of too few may overlook important common variance. Two popular methods for this include Kaiser’s Criterion (Kaiser, 1960) or Jolliffe’s Criterion (Jolliffe, 1987) which involve retaining factors which either have an eigenvalue of more than 1 or a factor loading greater than .07 respectively. Both, however, have been criticised for producing an overestimation in the number of factors retained (Field, 2013). A recommended method (Costello and Osborne,

2005) for considering factor retention is the use of a scree test. Adopting this method involves reviewing a graph of eigenvalues and looking for the break or inflexion, and the number of data points above the break (not including the point at which the break occurs) is the number of factors to be retained (Costello and Osborne, 2005). Yong and Pearce (2016) suggest that the number of factors to be retained should be influenced by the following: factors with less than three variables, too many complex variables, and item loadings of less than .32.

Finally, how the factor(s) can be conceptually interpreted is said to be the definitive criterion for factor selection (Worthington and Whittaker, 2006). It would be unhelpful to retain factors in a model, regardless of the empirical or statistical support for the factor if it cannot be meaningfully interpreted by the researcher(s). According to Worthington and Whittaker (2006), EFA involves a quantitative and qualitative approach; they identify scree plot and conceptual interpretability as two of the most common approaches to factor retention with the latter an example of a more 'qualitative' approach.

In terms of factor rotation, which aims to simplify and clarify the data structure, there are similar decisions to be taken. The two broad types of rotation include orthogonal or oblique rotations. Oblique rotations can produce factors which may be correlated while orthogonal does not (Costello and Osborne, 2005). It is sometimes unrealistic to expect factors not to correlate, particularly in social science where behaviour and phenomena are unlikely to occur in isolation from other factors (Yong and Pearce, 2016). There are different types of oblique rotation: direct oblimin, quartimin, and promax. According to Costello and Osborne (2005), there appears to be no preferred method of oblique rotation in common use and, citing Fabrigar et al., (1999), suggest there is no apparent difference in terms of the results they produce. Further, when they reviewed changing the default values of delta and kappa values, which influences how much each factor is allowed to correlate, they found no discernible differences and suggest it introduces an unnecessary level of complexity to an already complex process.

EFA, when used in scale development, is described as a combination of both qualitative and quantitative methods by Worthington and Whittaker (2006). They describe it as such because EFA does not provide a single objective and absolute

answer. Rather, EFA provides the tools for researchers to consider the items within a scale and the latent variable(s) being measured and to reflect on what the EFA is suggesting and consider making adjustments to the scale or the model accordingly, reaching a tentative rather than definitive conclusion. While on the one hand this could be seen as a strength, providing flexibility and dynamism in approach, on the other hand, it could be suggested to be a limitation. Indeed, the language one uses to describe a factor may be ambiguous or confusing or it may not accurately describe the items thought to be representing the factor (Yong and Pearce, 2013). Another issue may be that items load on to more than one factor or they may correlate with each other but have little underlying meaning for the factor (Tabachnick and Fidell, 2013).

Informed by the literature on factor analysis, the analysis of RCQ data (n=173) has been undertaken using an EFA approach where the maximum likelihood method of factor extraction has been employed, and scree test examination has been undertaken, and item loadings  $>0.32$  were observed. In terms of factor rotation, the promax method has been used. Accompanying this approach has been a conceptual interpretation ensuring data analysis is complemented by consideration of the implications for practical use i.e. the retention of factors and items, and explanations for these, make sense for the practical utility of the RCQ.

#### **5.4 Ethics**

This section describes ethical aspects of the study which required consideration including: when ethical approval was granted for the study and from which body; sources of ethical guidance; informed consent; confidentiality and anonymity; and ethical constraints for the study.

Research ethics exist to ensure open and transparent research is undertaken in a way that harms neither the researcher(s) nor participant(s), that generates knowledge which contributes to the advancement of the understanding of a particular topic, is undertaken objectively, and applies scientifically sound methods (Economic and Social Research Council, 2015). The below demonstrates rigorous consideration of the ethical implications of the research study by reflecting upon, and where appropriate taking action to undertake research which: adheres to the ESRC ethics framework (2015), enacted through the University of Stirling's School of Applied



Social Science ethics committee; recognises the broad sociological research ethics standards as described by the British Sociological Association (2017); as well as research ethics issues within the drug treatment population, and demonstrates that appropriate processes and approaches were taken to allow the study to proceed on a sound ethical footing.

#### *5.4.1 Ethical Committees and Guidelines*

The study was granted ethical approval from the University of Stirling's School of Applied Social Science Ethics Committee on January 15<sup>th</sup> 2015. The SASS Ethics Committee approval provides that the study sets out to adhere to the Economic and Social Research Council's Research (ESRC) Ethics Framework 2012. Due to participant recruitment challenges noted already, an additional application was made to the Ethics Committee to facilitate the recruitment of study participants from the third sector site. Approval for recruitment from the third sector site was provided in July 2016. Although neither organisations involved in the study have official ethical bodies in the same way as University of Stirling, participation in the study required organisation approval. For the statutory service site, the appropriate Head of Service was contacted and furnished with study details. The Head of Service presented this to their Senior Management Team who approved the study. In relation to the third sector site, the appropriate Director was similarly furnished with study information and presented this to the third sector site's Clinical Governance group who approved the study. The following ethical issues have been identified as pertinent in the ethics application and in line with ESRC ethics principles for the study:

#### *5.4.2 Vulnerability*

AOD problems have been linked with homelessness, frailty, mental health issues, capacity impairment, and stigma which impacts on support seeking behaviour (Glass, Orion and Mowbray et al. 2013). Substance misuse has also been found to be correlated with dyslexia (Yates, 2013) which not only results in difficulties in reading but also in attention and concentration. It is therefore important to take cognisance of the potential vulnerabilities of people accessing services, and how such an assessment can be made while ensuring participants are respected, research is non-maleficent and safeguards are in place to protect participants and

the researcher(s) (ESRC, 2012). To this end, interviews were undertaken sensitively with participants where any forms they are provided with – including information sheets and consent forms, as well as the actual research instruments themselves – were read aloud to them. Staff involved in data collection were well experienced and trained, nevertheless, the briefing packs for staff collecting data discouraged them from inviting study participation or initiating interviews where a potential participant is in crisis; that this is relative (i.e. crisis for one person could be something minor for another) and required gauging from staff relied on their knowledge of the service user and their training to approach the situation appropriately.

#### *5.4.3 Informed consent*

All participants were provided with written information (Appendix 3, p253) regarding the nature of the study and received this with an appointment letter, giving service users time to consider involvement. Contact details for the researcher and their lead supervisor, Rowdy Yates, were included should any potential participant wished to have asked any questions prior to their appointment. Participants were read the same information sheet at the interview appointment and were required to tick each statement on the participant consent form (Appendix 4, p255), indicating they understood each individual statement, and finally they were required to sign the consent form. There were two copies of this consent form, one for the researcher's records and one for the participant. Consent forms specifically stated that participants may withdraw at any time and that participation in the study would not affect in any way the service(s) they received immediately nor in the future. The participant information sheet noted that the data collected may be included in research papers and/or presented at conferences. All participants were assured of anonymity in any published materials arising from the study.

Clients were not invited to participate in interviews if clearly intoxicated or if there were indications that they lacked the decision making capacity to provide informed consent. In many cases participants were active clients within treatment, they were known to staff within agencies and staff therefore had experience and understanding of participants decision making capacities. This went a significant way toward safeguarding against clients with insufficient decision making capacity being invited to participate.

#### *5.4.4 For Service Users who Decline to Participate*

The RCQ has been incorporated into the assessment undertaken by the statutory service site staff with service users as part of regular assessment and treatment. This means clients who could become study participants would be required to undertake an RCQ as part of their assessment and treatment by the statutory service even if they declined to participate in the study. Participants who declined to take part in the study however were not asked to complete the two supplementary questionnaires as featured in the study for validation purposes, and the RCQ data collected as part of their regular assessment was not used in the research study. The third sector site did not use the RCQ as part of their assessment and care planning processes, and use of the RCQ as part of the study was not intended to be a substitute for or act as additionality to any of their standard assessment tools. Where clients declined to participate in the study, they were asked to retain the information sheet provided and to make contact with staff should they change their mind regarding participation. Otherwise, they continued with their treatment with the third sector site unaffected by the study.

It is noted in the participant information sheet, and has been made explicit to staff members, that service users' treatment in both the immediate and broadest sense should not be prejudiced by their involvement or refusal to become involved in the study.

#### *5.4.5 Confidentiality*

As the study will be undertaken within a statutory and third sector site, their respective confidentiality and information sharing protocols will apply. This refers to the sharing of information in relation to child and adult support and protection information. If information in relation to vulnerable adult or child welfare and/or protection is required to be passed to other persons or agencies then participants will be informed of this so long as this is not assessed as increasing the risk to the vulnerable adult or child. During the previous study (n=98; Burns and Marks, 2013), no need to pass on such information arose, however participants will be made aware of the policy at the outset of their involvement with each organisation.

#### *5.4.6 Risk to the Researcher(s)*

A full risk assessment was undertaken and submitted as part of the SASS ethics application. This accounted for risks faced by the applicant as research lead and for staff in their role in data collection, and included the following: fieldwork sites (office and service user home visits), emotional risk, training requirements, supervision, lone working protocol, and insurance. Risks were graded on severity and likelihood with overall ratings for each category noted as 'low'. Each risk area had control measures recorded which met with the satisfaction of the SASS Ethics Committee. In addition, the risk assessment and ethics application explicitly noted that staff will be undertaking their role in data collection as part of their normal working duties. This means the respective service's risk assessments, protocols and insurance remain in place throughout.

#### *5.4.7 Risk to participants*

Any potential risk to participants was expected to be low with action(s) to ameliorate including: staff from both sites involved in data collection are professionally trained addiction workers who, more often than not, are likely to have an existing working relationship with participants. This means they are likely to be aware of any volatility and have in place any appropriate contingency planning. Staff have been specifically trained in the use of the RCQ and have received briefing sessions and notes on the study. Service users are advised that their involvement in the study is voluntary, that their treatment will not be prejudiced in anyway regardless of their involvement and that they can terminate the interview at any time without reason. In the previous study (Burns and Marks, 2013) participants anecdotally reported data collection as a positive experience, remarking on the novelty of the questions and how the experience differed from a 'typical assessment'. Furthermore, Laudet and White (2008) report how reflecting on hypothesised RC can be therapeutic in its own right with many of their sample stating they wished to be included in future research similar to this research study.

#### *5.4.8 Ethical Considerations in Drug Treatment Research*

The study has taken close cognisance of the British Sociological Association's (BSA) Statement of Ethical Practice (2017) which, among other things, considers confidentiality (including informing participants when this may not be possible), informed consent, risk to participants and risk to researchers in carrying out

research, all of which have been detailed above. However, the study involved working with a unique population who, due to their characteristics, required special consideration. Indeed the BSA encourage reference to any specific guidance on unique populations where such guidance is evidence informed and available. It is therefore prudent to consider ethical issues from the perspective of those accessing drug treatment. Anderson and McNair (2018) identify client vulnerability, informed consent and decision making capacity, involvement in the administration of drugs (e.g. substitute treatments such as methadone), the withholding of treatment or provision of placebos (e.g. for randomised control trials) and compensation for involvement in studies as requiring special consideration in drugs research.

The study involved recruiting and engaging with some of the most vulnerable individuals within society (e.g. Scottish Government, 2008). Moreover, it required engaging with this population at a time when their vulnerability may have been heightened i.e. seeking treatment and support, and were perhaps more likely to 'comply' with what was being suggested by those from whom they were seeking treatment. It was therefore particularly important, and subsequently emphasised accordingly during briefing notes and inputs, when participants were invited to take part in the study, they were aware that their refusal to take part would in no way prejudice the treatment they could expect from the treatment provider neither immediately nor at any time in the future.

It is noted above that clients were not invited to participate if they were suspected to be intoxicated. While tools to assess decision making capacity exist (Saks and Jeste, 2006), they were not felt to be required for this study. There are a number of reasons for this. Clients were being invited to participate by qualified and experienced practitioners, who, in almost all instances, had previous experience of the specific client and in many cases had what could be described as a therapeutic relationship or rapport which would have been able to inform practitioner judgement about recruiting clients to the study at particular times. Participation in the research could be considered low risk in the context of "drugs research" insofar as there was no experimental design where a control group was required which involved the non-provision of treatment for comparator purposes. Involvement in the study had minimal impact on treatment delivery itself – if any impact took place it would have been that staff would have had a greater awareness of the presence or absence of

strengths and assets in their clients' lives. A concern may be that clients may have experienced the RCQ to be markedly different in its areas of inquiry and approach than traditional assessments, as noted above when collecting data for Burns and Marks' (2013) research, inasmuch as it actively seeks strengths and assets (and is designed to be distinctly different from traditional assessment tools). Clients may be disappointed that they only experience such an assessment for research purposes and that regular assessment will return to, arguably disproportionately, focus upon the measuring of morbidity through traditional assessment tools.

## **5.5 Chapter 5 Conclusion**

This chapter has provided the relevant background on the development of the RCQ which provided the foundation for the current research. The case for why a new psychometric assessment of RC has been made through identifying a combination of the paucity of existing options, the quality of existing options and the unique features of the RCQ, distinguishing it from any other strengths-based addiction treatment assessments. The conceptualisation of and analytical approach to the concepts of reliability, validity and the factor structure of a psychometric test has been provided in detail, and sets out clearly what will be provided in the subsequent chapters. This chapter has demonstrated appropriate and proportionate steps were taken to ensure the study, from inception to completion, was undertaken on an ethically sound basis. This chapter has provided a breadth and depth of information which would facilitate study replicability, and for readers to be appraised of the context within which the study took place, providing clarity for readers when reviewing the results chapter.

## Chapter 6: Results

### **6.1 Introduction**

This chapter will examine descriptive and inferential statistics including: descriptive statistics of the sample such as age, gender, whether the participant reported to be 'in recovery' (where this meant their use was no longer considered problematic – as opposed to abstinence) and, if so, for how long, whether the participant reported to be abstinent from alcohol and/or drugs, and treatment type, with some participants involved in community based treatment provision and others in residential treatment.

The relationships between the aforementioned variables and RC will be analysed. The distribution of RC among the sample will be explored, as well as the distribution of the constructs measured by the other research instruments used in the study, namely QOL and resilience measured by the WHOQOL Bref and the CD-RISC respectively.

Reliability analysis – determining if the RCQ measures something consistently – will be considered in two different ways. The equivalence reliability of the RCQ, sometimes referred to as ‘internal consistency’ (DeVellis, 2017), will be measured using Cronbach’s Coefficient Alpha (1951). Equivalence reliability measures the internal reliability of the test and is held as the most commonly used method and statistic for reporting internal consistency (Polit and Beck, 2004). DeVellis (2017), when explaining alpha, describes the variability in a set of items scores as due to either actual variation in the latent variable (RC in this case) or error. Variation is described as consisting of signal and noise, where signal is the true difference and noise is the difference in scores created by everything but the latent variable. Alpha involves separating the items into signal and noise components where the proportion of variation that is signal equals alpha (DeVellis, 2017). That reliability can or should be reduced to one single value is an oversimplification, and can be misleading. One way to provide a more meaningful finding is to couch it within a confidence interval. If, for example, an alpha of .82 is found, it would be possible to report it alongside a confidence interval of 95%. Reporting a 95% confidence interval bounded by .76 and .87 which would indicate the likelihood of the true reliability of the scale between those boundaries. The alpha values for the RCQ will therefore be reported alongside confidence intervals set at 95%. This will be the level of confidence set for all confidence intervals unless otherwise noted.

In addition to equivalence reliability, stability reliability will be measured using a test-retest approach. When examining stability reliability, it is possible to do this only with a correlation statistic, such as Pearson’s Correlation Coefficient. For reasons noted above and below, this statistic has been reported and so too an Intraclass Correlation Coefficient (ICC) statistic has been calculated and reported.

In relation to validity, content validity has been undertaken using the content validity ratio and index (Lawshe, 1975); concurrent validity with the WHOQOL Bref, a

measure of QOL, and the CD-RISC, a measure of resilience has been calculated using Pearson's Correlation Coefficient, and relationships between particular constructs within these tools and the RCQ have been explored; and Exploratory Factor Analysis has been undertaken to explore construct validity.

The software package SPSS version 23 was used to undertake the data analysis computations. Before any analysis was undertaken, a data cleansing process was completed to ensure all variables were within their required ranges. For example, if males were coded as 1 and females as 2, then there should have been no values of 3 in this field. A search of the data for any missing values was undertaken with zero missing values identified. This is largely attributable to the process employed during data entry: if research packs had data missing from the research instruments, for example if only one section of the RCQ had been completed, then this data was not entered. Similarly, if demographic data, such as length of time in recovery or gender were missing, these were also excluded. This resulted in 8 research packs not being used due to incomplete data.

Because of the research design, there is an overall sample and two sub-samples. The overall sample for the study – participants who completed demographic data and then *either* participated in the validity component *or* the reliability component is 173. Each of these participants completed at least one RCQ and so the data can be used to analyse the construct validity (factor structure) of the RCQ. The number of participants who participated in the concurrent validity component of the study which involves the WHOQOL Bref and CD-RISC questionnaires is 155. Some participants completed this interview but did not complete a follow-up interview for the stability reliability component. The number of people who completed two RCQ's (some of whom did not complete the additional two instruments at first interview so could not participate in the validity component) is 102.

## **6.2 Descriptive Statistics**

### *Gender, Age and Treatment Type*

The sample (n = 173) was almost evenly split in relation to gender with 49.7% (n = 86) male and 50.3% (n = 87) female. In relation to treatment type, 63% (n = 108) of the sample were receiving community based treatment which saw them recruited from the statutory service site or one of the third sector sites, while 37% (n = 65)



were receiving residential based treatment which involved the three other third sector treatment facilities. The gender differences within the treatment settings were a little more marked: of the 108 participants recruited from community based treatment, 42% (n = 45) were male while in the residential sample (n = 65) this figure was 63% (n = 41). The age of participants ranged from 21-66yrs (M = 41yrs), with the average age of participant from both genders being 40yrs old.

*Problematic Substance Use/Abstinence and Substitute Prescribing*

Participants were asked if they were using substances at a level which they would consider problematic (Table 1). Of those reporting to be using substances at a level thought to be problematic, 75% (12) were female. Given that those in the community have readier access to alcohol and illegal drugs, while those in a residential setting arguably have reduced access, it is perhaps unsurprising that 100% (n = 65) reported to be abstinent from alcohol and only one person said they were not abstinent from illicit drugs. Regarding substitute prescribing, a common component of treatment, often but not exclusively in the form of methadone, 37 participants said that they were in receipt of a prescription. In relation to treatment modality differences, again there was a difference between community based and residential based treatment with 9.2% (n = 6) of those in residential treatment (n = 65) receiving a prescription.

**Table 1:** Reported Problem Usage/Abstinence

Using Alcohol and/or Drugs Problematically	Abstinent from Alcohol	Abstinent from Drugs
9.2% (n = 16)	81% (n = 140)	88% (n = 152)

*Time in Recovery*

Participants were asked how long they had been “in recovery” where recovery meant not to be using substances problematically. The length of time in recovery ranged from zero days (n = 13) through to almost 7 years (n = 1). The mean time in recovery for the whole sample (n = 173) was 7 months (SD = 12.94). 71.7% (124) of the sample reported they were in recovery for 6 months or less, 14.5% (25) reported they were in recovery for 6-12 months, 12.1% (21) reported between 1 and 4 years and just under 2% (n = 3) reported being in recovery for over 5 years. In relation to any differences of length of time in recovery between the two treatment modalities, the range of time in recovery varied from 1 week (n = 5) through to 5 years (n = 1) in the residential treatment sample, and with an average length of time in recovery of almost four months (SD = 7.44). This compares with a range of between zero days (n = 13) and just under 7 years (n = 1) in recovery, and an average of almost 9 months (SD = 13.57) in the community treatment sample. Of the three participants reporting to be in recovery for longer than 5 years, one was receiving residential treatment and 2 were receiving community based treatment.

#### *Distribution of Key Variables: RCQ, WHOQOL and CD-RISC Data*

##### *RCQ Data*

The RCQ is divided into four components: Social, Physical, Human and Community Capital. Each component has a number of questions answerable on a Likert response format of 1-5, with one exception where the answer to the question involves the number of days of the week and so ranges from 0-7. The ratings from each of the four components are summed to provide an RCQ total. The following explores the range of ratings received and how RC, and the four constructs, was distributed across the sample as well as any differences in gender, age and treatment type. Relationships between RC and abstinence, substitute medication, and time in recovery are also reported.

The measure of central tendency (mean) and dispersion (standard deviation) for each of the constructs are noted in Table 2 below. Social Capital (SC) is measured using eight items measured on a scale of 1-5 and a ninth item measured 0-7. The possible ratings subsequently range from 8-47. The Physical Capital (PC) construct is measured by nine items on a scale of 1-5 with responses potentially ranging from 9-45. The Human Capital (HC) construct is measured by ten items on a scale of 1-5

with responses potentially ranging from 10-50. The Community Capital (CC) construct is measured by eight items on a scale of 1-5 with responses potentially ranging from 8-40.

As noted, each of these constructs are summed to produce an RCQ Total with outputs potentially ranging from 35-182. Table 2 also reports the confidence interval for the mean statistic. A confidence interval is a range of scores constructed such that it is very plausible that the population mean falls within it. The wider the lower and upper limits, the less reliable the original statistic (Field, 2013). For example if  $M = 47$  and if the CI was 45-61, this may be too broad a range for the mean statistic to be useful.

It should be noted that 0 (zero) is used to denote where a participant has declined to answer a question. This technically means that each question/construct could range from zero through to its maximum however no participant refused to answer any questions during the research project.

**Table 2:** Measure of Central Tendency with 95% CI and Dispersion for the Four RCQ Constructs and Total RCQ Score

	Social Capital Total*	Physical Capital Total*	Human Capital Total*	Community Capital Total*	RCQ Total*
Mean (95% CI)	39.197 (38.38 – 40.01)	33.098 (32.03 – 34.16)	39.757 (38.66 – 40.86)	32.295 (31.16 – 33.42)	144.347 (141.31 – 147.38)
Std. Deviation	5.437	7.071	7.319	7.496	20.231

\*N = 173

Tests of normality were undertaken for the four RCQ constructs and the RCQ Total, and the results are presented in Table 3. Normality has been considered by reviewing the data in Table 3 and the inspection of histogram output (Figures 2-6) from SPSS on each of the individual constructs and their sum.

**Table 3:** Normality Statistics for each RCQ Construct and Total RCQ Score

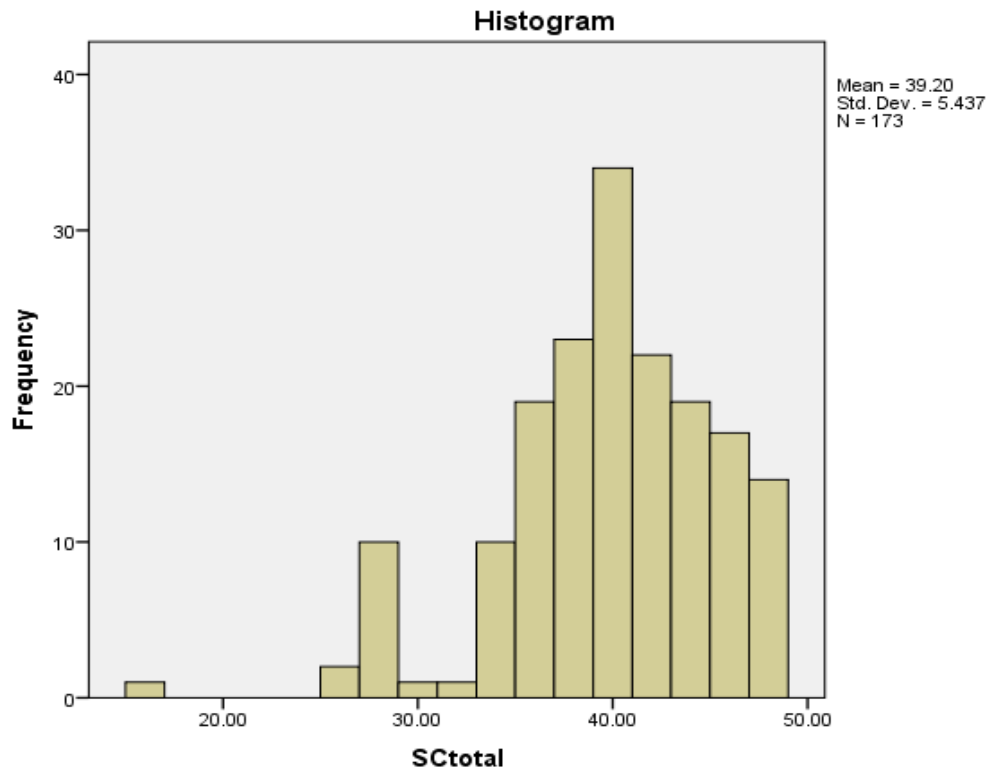
	Kolmogorov-Smirnov*			Shapiro-Wilk		
	Statistic	Df	Sig	Statistic	df	Sig
SCTotal	.098	173	.000	.937	173	.000
PCTotal	.088	173	.002	.971	173	.001
HCTotal	.117	173	.000	.941	173	.000
CCTotal	.152	173	.000	.883	173	.000
RCQTotal	.076	173	.016	.953	173	.000

\*Lilliefors Significance Correction

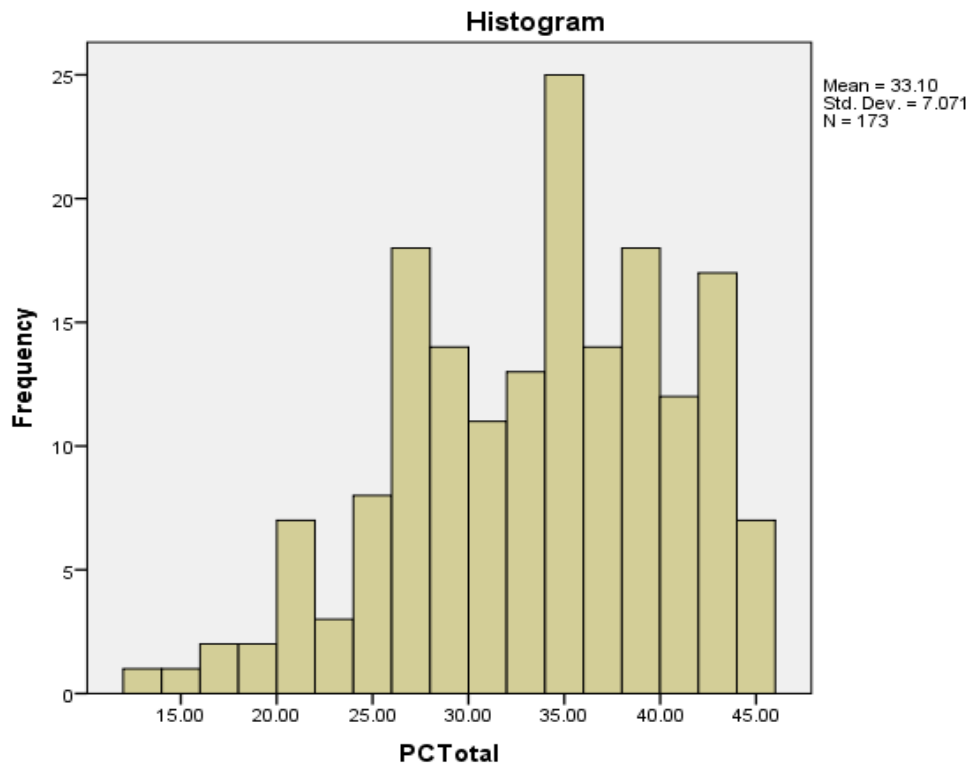
The normality statistics presented in Table 3 indicate that the data is not normally distributed. A normal distribution measured by the Kolmogorov-Smirnov test is indicated by a significance value of more than .05 (Pallant, 2016). As the K-S test is reported to be sensitive to sample size, particularly with smaller samples, sample sizes of more than 100 should look to the Shapiro-Wilk test (Pallant, 2016). In this case however, the Shapiro-Wilk test too suggests the data has a non-normal distribution with significance values of less than .05 recorded. When examining normality, other data requires to be considered including the 5% trimmed mean, skewness, and kurtosis of the distribution. While skewness indicates the symmetry of the distribution, kurtosis indicates its 'peakedness'. For a perfectly normal distribution, one would find skewness and kurtosis values of 0.

According to Tabachnick and Fidell (2013), skewness will not make a substantive difference to subsequent analysis where reasonably large samples are used (c.200). While kurtosis can result in an under-estimate of the variance, this risk is also reduced with similarly reasonably large sample sizes (Tabachnick and Fidell, 2013). The same authors encourage the inspection of histograms to examine distribution among the variables. A review of the histograms for each of the four RCQ constructs and the RCQ Total (Figures 2, 3, 4, 5 and 6 respectively) reveals each variable to be negatively skewed (scores cluster to the high end of the scale and to the right of the graph).

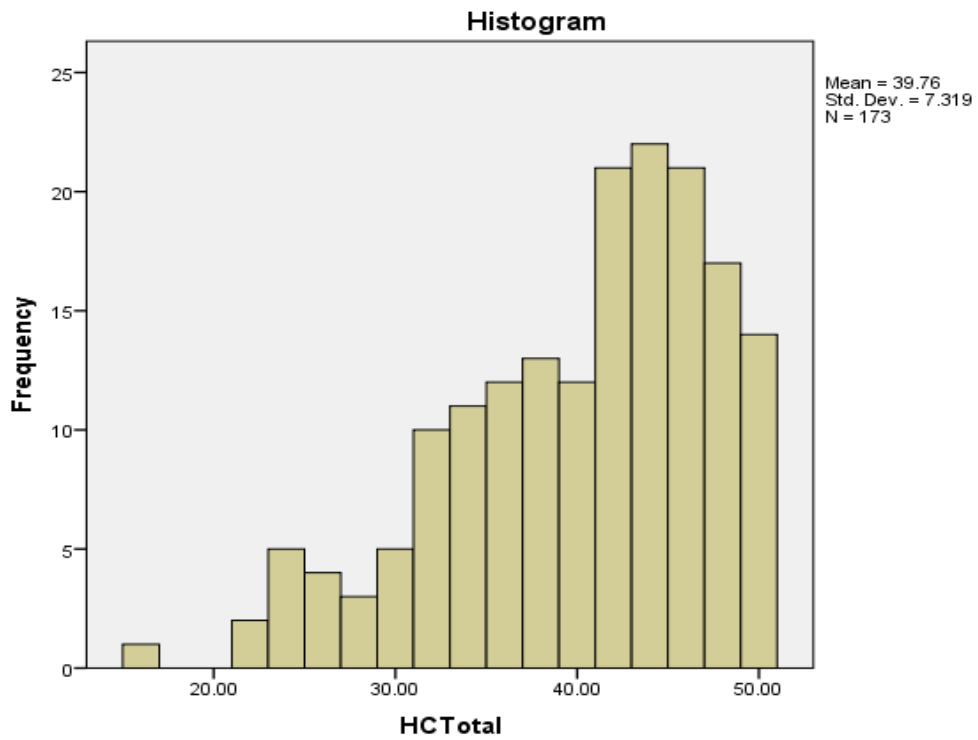
**Figure 2: Histogram Showing Distribution of RCQ Social Capital**



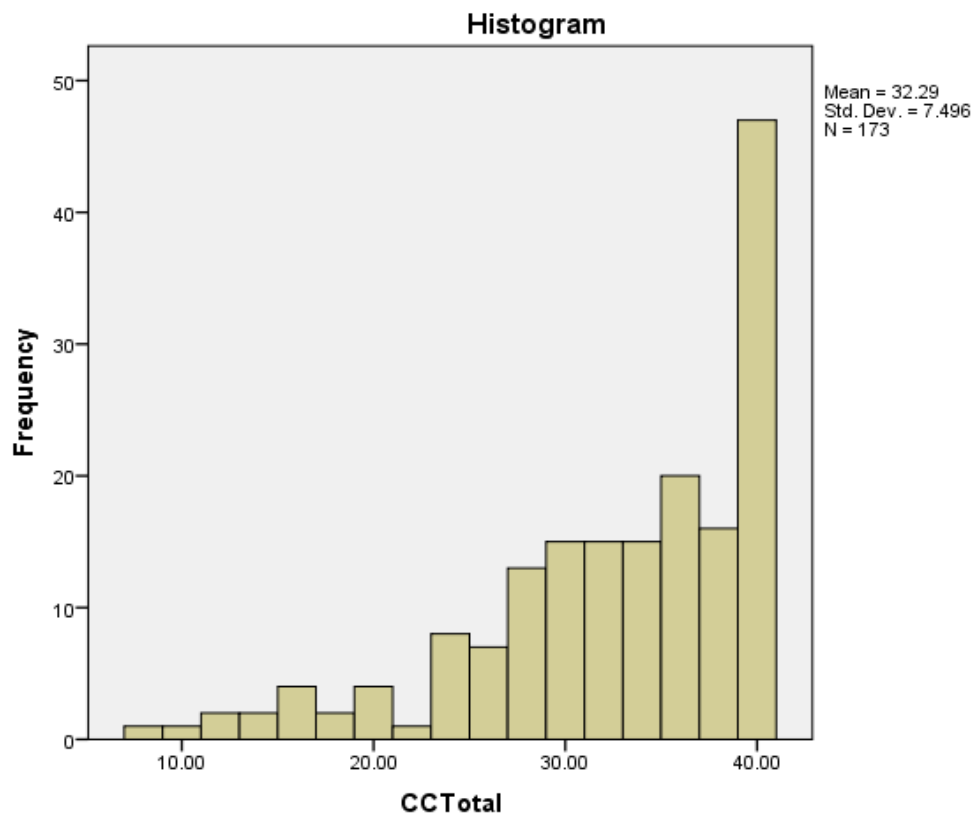
**Figure 3: Histogram Showing Distribution of Physical Capital**



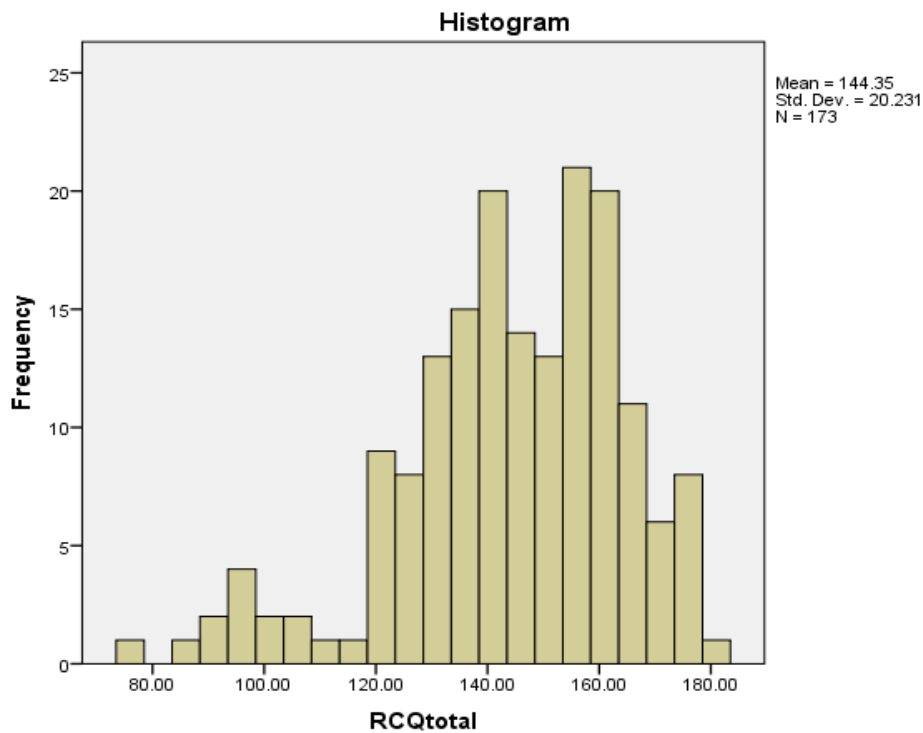
**Figure 4: Histogram Showing Distribution of Human Capital**



**Figure 5: Histogram Showing Distribution of Community Capital**



**Figure 6:** Histogram Showing Distribution of RCQ Total Scores



There are a number of reasons why this could be the case within this sample, mostly due to the benefits being engaged in treatment may bring. For example, if one were to compare the levels of RC between those in treatment and those in active addiction (where addiction severity is high – as opposed to being present but not at a level felt to require treatment), levels of RC may be found to be low. Time in treatment, as well as treatment type may also have an impact upon levels of RC. Data on the former was not collected, and is noted in the study limitations section within the discussion chapter. The latter of the variables is explored below but it is limited to the sample. Differences in RC across treatment types (e.g. twelve step, residential, community based, abstinence based etc.) and across the course of treatment (e.g. treatment entry, treatment duration and treatment exit) currently remains unknown and outwith the scope of this research though is revisited in the discussion chapter.

In relation to the 5% trimmed mean statistic, this value can be used to remove 5% of the top and bottom cases and recalculate a mean statistic removing any extreme values. This can be useful when considering distribution and allows for the identification of any extreme scores which may be influencing the data. The trimmed

mean for each of the SC, PC, HC, CC and RCQ Total scores is provided respectively (M is provided in parenthesis for ease of comparison): 39.53 (39.19), 33.34 (33.09), 40.17 (40.17), 32.96 (32.29), 145.52 (144.35). It can be concluded that extreme values are having a very limited effect on the mean.

#### *WHOQOL Data*

The WHOQOL-BREF instrument comprises 26 items, which measure the following broad domains using a 5 point Likert style response format: physical health (WHOQOL PHYS) in seven items, psychological health (WHOQOL PSYCH) in six items, social relationships (WHOQOL SOC) in three items, and environment (WHOQOL ENV) in eight items. The data was prepared using the WHOQOL guidance issued with the instrument whereby negatively framed questions were transformed and summed to provide scores for the aforementioned domains. In addition, the WHOQOL-BREF provides a single question for overall QOL (WHOQOL QOL) and overall satisfaction with health (WHOQOL Health). The following analysis provides interpretation of the distribution of these key variables in the sample. Participant results for each of domain are presented in Table 4.

**Table 4:** WHOQOL Mean scores, Standard Deviations and 95% Confidence Intervals

Variable	Mean	Std Deviation	CI
Overall QOL	3.54	0.87	3.40 – 3.68
Health Satisfaction	3.19	1.12	3.02 – 3.37
WHOQOL Physical	12.60	2.07	12.27 – 12.93
WHOQOL Psychological	12.97	2.52	12.57 – 13.37
WHOQOL Social	12.87	3.67	12.29 – 13.54
WHQOL Environment	14.98	2.58	14.57 – 15.39



A review of histograms for each of the WHOQOL variables in the sample (n = 155) revealed the distribution to be relatively normal and would not violate the assumption of normality to the extent that it would prevent the application of parametric data analysis.

#### *CD-RISC data*

The CD-RISC instrument comprises 25 items which are summed to provide an overall resilience rating. The CD-RISC provides a Likert style response format ranging from 0-4 where 0 indicates not at all true, 1 indicates rarely true, 2 sometimes true, 3 often true and 4 true nearly all the time. The average CD-RISC score was 63.98 (CI, 61.22-66.74, SD = 17.47). A review of the associated histogram revealed the distribution to be relatively normal and would not violate the assumption of normality to the extent that it would prevent the application of parametric data analysis.

Before undertaking correlational analyses between the RC variables and the WHOQOL and CD-RISC variables, an examination of scatterplots revealed indications of positive correlations ranging from weak to strong, suggesting further correlational analysis would be appropriate and necessary. Notwithstanding the distributions revealed, and in terms of undertaking parametric analysis, Norman (2010), as has been documented, notes parametric testing of Likert data is appropriate even when assumptions of normal distribution are violated.

### **6.3 Comparative analysis**

The data was examined to explore any differences between a range of independent variables and the Recovery Capital Total ratings. Analysis was undertaken to examine any differences in gender, age (in three categories), problematic use status, abstinence from alcohol or drugs status, treatment type, prescribed medication status, and time in recovery. Independent sample t-tests were undertaken to examine gender, treatment type, problematic use, abstinence from alcohol or drugs, and prescription status as the data in each of these analyses involve one categorical independent variable in only two groups (e.g. male/female; using/not using problematically). One-way between-groups analysis of variance were undertaken to examine age and length of time in recovery where these two categorical independent

variables were in more than two groups (e.g. age included 19-34.56yrs, 34.57-44.31 and 44.32-65.50yrs).

As can be seen from Table 5, a series of independent samples t-tests reveal the only statistically significant relationship between RCQ Total Scores and the variables recorded is between RCQ Total scores and whether participants reported problem alcohol or drug use ( $p = 0.009$ ). The magnitude of the differences in the means (mean difference = -13.74, CI, -24.15 - -3.44) was small (eta squared = .04), accounting for approximately 4% in RCQ Total.

**Table 5:** Independent Samples T-Test Results for RCQ Total Scores and Gender, Treatment Modality, Problem Use, Abstinence and Prescription Status

		<b>Gender</b>				
Variable		Males (n = 86)	Females (n = 87)	t-value	Sig.	ETA Squared
RCQ Totals	M SD	145.98 20.25	142.83 20.22	0.93	0.32	0.01
		<b>Treatment modality</b>				
		Community based (n = 108)	Residential (n = 65)			
RCQ Totals	M SD	144.94 18.64	143.37 22.75	0.49	0.62	0.001
		<b>Problem Drug and/or Alcohol use</b>				
		Declared Problem Use (n = 16)	Declared No Problem Use (n = 157)			
RCQ Totals	M SD	131.96 25.51	145.62 19.26	-2.63	0.009	0.04
		<b>Abstinent from Drugs</b>				
		Yes (140)	No (33)			
RCQ Totals	M SD	145.29 19.51	138.29 24.59	1.59	0.14	0.02

		<b>Abstinent from Alcohol</b>				
		Yes (n = 152)	No (n = 21)			
RCQ	M	144.93	141.98	0.78	0.44	0.003
Totals	SD	20.57	19.39			
		<b>Abstinent from Drugs and Alcohol</b>				
		Yes (n = 129)	No (n = 44)			
RCQ	M	145.35	141.41	1.12	0.26	0.007
Totals	SD	1.89	2.96			
		<b>Prescribed Substitute Medication</b>				
		Yes (n = 37)	No (n = 136)			
RCQ	M	145.87	143.93	0.51	0.64	0.002
Totals	SD	19.16	20.69			

A one-way between-groups analysis of variance (ANOVA) was undertaken to find any differences in RCQ Total scores and age, where age is analysed in three categories (1 = 19 – 34.56yrs, 2 = 34.57 – 44.31yrs and 3 = 44.32 – 65.50yrs). The ANOVA received a result showing there was no statistically significant difference in RCQ Totals across the three age categories ( $p = 0.96$ ).

Similarly, a one way between-groups ANOVA was undertaken to explore the impact of time in recovery on RCQ Totals. Participants were divided into three groups according to their time in recovery (Group 1: 0-8 weeks [ $n = 63$ ]; Group 2: 9-24wks [ $n = 61$ ]; Group 3: 25-364weeks [ $n = 49$ ]). There was a statistically significant difference ( $p < 0.001$ ) in RCQ Totals for the three groups  $F(2, 170) = 7.99$ ,  $p = 0.001$ . In addition to being statistically significant, the effect size calculated using eta squared was 0.08, which in Cohen's guidelines for interpretation (1988) would be considered a medium effect size, and explains approximately 8% of the difference in RCQ Totals between Groups 1 and 3. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Group 1 ( $M = 137.44$ ,  $SD = 22.61$ ) was significantly different from Group 3 ( $M = 152.28$ ,  $SD = 15.92$ ). Group 2 ( $M = 145.28$ ,  $SD = 18.58$ ) was not significantly different from Groups 1 or 3.

A two-way between groups analysis of variance was undertaken to examine any interaction effects between age and gender, and RC. This test found no significant

differences and allows us to conclude that there are no significance differences in RC in relation to age and gender, for example RC in males is no higher than in females when age is considered as a moderator.

In summary, from the variables examined above, including age, gender, treatment type, abstinence from alcohol and/or drugs, and use of substitute medication, only two variables, length of time in recovery and problematic use, were found to offer any statistically significant and meaningful explanation in terms of effect size in the differences in RCQ Total scores. One can conclude from this that those who report no (self-assessed) problem usage and a longer time in recovery are likely to have more RC, with those two variables collectively explaining approximately 12% of the variance in RCQ Total scores.

## 6.4 Reliability

### 6.4.1 Equivalence reliability

Alpha was calculated for each sub scale – social (9 items), physical (9 items), human (10 items) and community (8 items) – as well as for the overall RCQ scale (36 items). The alpha statistics are shown in Table 6.

**Table 6:** Cronbach’s Alpha Statistics for the RCQ sub scale scores and RCQ Total scores

Recovery Capital Construct	Cronbach’s Alpha Value	CI 95% lower-upper bounds
Social	.52	.40 – .62
Physical	.73	.66 – .78
Human	.85	.82 – .88
Community	.85	.82 – .88
RCQ Total	.88	.85 – .90

Kline (2000) suggests generally accepted values of .8 are appropriate for cognitive tests, and for ability tests .7 is more suitable. He goes on to say that values below .7 may be acceptable when dealing with psychological constructs because of the diversity of the constructs being measured. Meanwhile, Nunnally (1978) suggests values of .5 and above can be sufficient. It can be seen from the above that while the

Social capital construct demonstrates the weakest level of internal reliability, it meets with Nunally's benchmark while the three other constructs range from .73 to .85, and the RCQ Total internal reliability statistic is .88.

When considering the amount of random error in the SC construct (i.e. 48%), it is useful to consider it alongside the Exploratory Factor Analysis (below) and how 'social capital' more broadly has been conceptualised both in this research and the broader literature. As has previously been explored, social capital has been both heralded and criticised (Farr, 2004; Fine, 2007) for trying to be capacious and concise, to be restrictive yet expansive in what could and should be encompassed within any useful definition. This too could apply to the current use of 'social capital' as a labelled within the RCQ and will be discussed further below in the Exploratory Factor Analysis section on construct validity and in the discussion chapter.

Although Cronbach's alpha is a useful statistic used to indicate internal reliability, and should be reported every time a scale is used in research, it is perhaps the most oft-cited reliability statistic, not because of what it means in psychometric scale development but because of its ease to calculate. Its ease though is accompanied by a required level of caution when offering any interpretation. It should be noted that the value of alpha depends on the number of items in a scale, with a higher number of items likely to lead to a higher alpha statistic (Field, 2013). This is because the formula used to calculate alpha involves squaring the number of items within a (sub)scale. Despite its usefulness, some have argued (e.g. Coaley, 2014) that more meaningful analysis of reliability comes in the form of stability reliability, and by examining the associated correlations.

#### 6.4.2 Stability Reliability

##### *Spearman Correlation Coefficient*

The RCQ was administered with participants ( $n = 102$ ) at time-point one and then again at time-point two, where the desired length of time between tests was one week. Correlations between these two scores were measured using Pearson's Product Moment Correlation Co-efficient. DeVon et al (2007) suggest no statistically significant differences between scores is desirable and that correlations with a value  $\geq .7$  would be considered to be high/very good. The correlations between the four

RCQ constructs and RCQ Total scores from when the RCQ was used during the first and second tests are noted in Table 7.

**Table 7:** Correlations between RCQ sub scales and RCQ Totals between time-point one and time-point two

Construct	Test-retest correlation (r)
Social Capital Total	.891*
Physical Capital Total	.853*
Human Capital Total	.821*
Community Capital Total	.882*
RCQ Total	.889*

\*correlation is significant at 0.01 level (two tailed)

#### *Intraclass Correlation Coefficient*

Intraclass correlation coefficient (ICC) is a widely used index for reporting reliability using test-retest methods and for inter and intra rater reliability but can be poorly understood, implemented and reported (Koo and Li, 2016). Koo and Li (2016) explain that researchers should report the software used for their calculations as well as ‘model’, ‘type’ and ‘definition’ information.

The software used has previously been noted. The model is 2-way mixed effects, because, by definition, the sample used in retest is not a random sample (Portney and Watkins, 2000). The ‘type’ is a measurement of the mean of multiple measures (n = 102), and the ‘definition’ is absolute agreement, “absolute agreement definition should always be chosen for...test-retest...reliability studies because measurements would be meaningless if there is no agreement between repeated measurements” (Koo and Li, 2016:159). In relation to interpreting and reporting the ICC, Koo and Li (2016) make the following points: when a confidence interval of 95% is applied, an ICC can be considered poor, moderate, good and excellent with values of less than 0.5, between 0.5 and 0.75, between 0.75 and 0.9 and over 0.90 respectively. The ICC for each of the four constructs and the RCQ Total scores (n = 102) are noted in Table 8 along with the 95% CI statistics.

**Table 8:** Intraclass Correlation Coefficient Statistics for RCQ sub scales and RCQ Total scores

Construct	ICC statistic	CI 95% lower-upper bounds
Social capital	.891	.843 - .925
Physical capital	.850	.786 - .896
Human capital	.815	.736 - .872
Community Capital	.877	.822 - .916
RCQ Totals	.884	.829 - .921

When considering the individual constructs within the RCQ, some variation between them in their reliability can be observed insofar as, while their ICC statistic suggests good reliability across each of them, including the RCQ Totals, the lower bound of the confidence interval for the Human capital construct would see it more accurately described as moderate to good. When considering the confidence intervals for Social capital, Community capital, and the RCQ Totals the reliability of these constructs can be accurately described as good to excellent. Based on this, it would be a reasonable conclusion to postulate the RCQ has been found to possess good reliability.

## 6.5 Validity

### 6.5.1 Content Validity

The first type of validity examined concerns content validity, and was assessed using Lawshe's (1975) content validity ratio (CVR) and content validity index (CVI). The CVR and CVI can be used to indicate the extent to which subject matter expert (SME) reviewers agree on each of the items proposed to measure each domain within the RCQ. As noted in the methods chapter, in addition to providing ratings as per the scale used in calculating the CVR and CVI, participants were invited to provide any additional comment. Two of the seven participants provided comment, seemingly explaining their rationale on their rating of certain items. These are reported below.

Analysis of the results for the CVR for each item and the CVI for the RCQ revealed the following: the 7 subject matter experts identified 9 items which they considered either to be 'not necessary but useful' or 'unnecessary'.

Items identified by SMEs as 'not necessary but useful' included:

- a) I have at least one friend and/or family member with whom I can share my thoughts and feelings
- b) On average how many days in a week do you eat meals with one or more people?
- c) I am satisfied with my physical appearance
- d) I manage to solve difficult problems when I try
- e) I feel accepted within my local community
- f) I have an intimate partner who supports my recovery
- g) I have people who rely on me to continue in recovery

The items identified by SMEs as 'unnecessary' included

- h) I feel comfortable in my local community
- i) I have had extra energy recently

Notwithstanding the fact that at least one SME noted the above items to be either 'not necessary but useful' or 'unnecessary', it did not significantly affect the RCQ CVI. On the other hand, if, for example, an item had been rated as unnecessary by the majority of SMEs – or all SMEs – there would have been a strong case for considering the removal of that item, regardless of the rationale for that items original inclusion.

While the feedback from SMEs has been considered alongside the Exploratory Factor Analysis when taking decisions about the inclusion or exclusion of items from the RCQ (below), it is useful to briefly discuss the two items identified as 'unnecessary' by SMEs as well as the comments provided by the two SMEs who chose to provide them.

Item "h)" above was identified by one SME as being unnecessary. They explained, "I think feeling comfortable is a contradiction if you're asking about stigma as well. If



one experiences stigma they are not likely to feel comfortable.” While the SMEs comments are respected and appreciated, there are examples of the contrary; people accepting the stigma they experience to the extent that it has been normalised, and that it is quite possible that they could feel stigmatised, accept this, and feel ‘comfortable’ within their community (Matthews, Dwyer and Snoek, 2017). On the other hand, there is also the possibility that stigma is not experienced and, for reasons other than that, someone does not feel comfortable in their community. It can be argued therefore that these items are not mutually exclusive and, for these reasons, it would be appropriate and useful to consider retaining this item within the RCQ.

Item “i)” above was also identified by one SME as being unnecessary. In this case there was no rationale presented for identification of this item as unnecessary. In the absence of such, it is not possible to identify what exactly the SME felt made this item unnecessary. Given that all of the other SMEs assessed this item as necessary, and that this item loads strongly onto factor two in the exploratory factor analysis (below), this item will be retained.

The remaining items of the RCQ were unanimously considered essential. Where an item had been identified as either ‘not necessary but useful’ or ‘unnecessary’ by one or more SME, the item was also considered essential by more than half  $\geq 4$  SMEs. Using Lawshe’s formula, the content validity index statistic for the RCQ = 0.91. This statistic exceeds the 0.70 value suggested by Tilden, Nelson, and May (1990), and the 0.80 threshold suggested by Davis (1992) and is indicative that the RCQ has strong content validity.

In addition to the comments already noted above, SMEs 2 and 6 provided the following comments:

“I feel the RCQ allows open discussion with Clients and is a reflective tool to record where they are in their recovery. There is enough information to understand the issues and why it is important that this information is recorded. The questions are stated directly and the writings seem in proportion to what is being discussed. It is imperative that the Worker engages with the Client and try and maintain this till the end of the questionnaire. There is nothing unclear or confusing in this questionnaire.”

(Subject Matter Expert 2)

“In Physical Capital I am unsure as to how directly physical appearance relates to recovery. In Human Capital I think problem solving is either the same as or too similar to ‘solving unexpected situations’. Also in Human Capital, the wording of 4h could be improved. In Community Capital I think feeling comfortable is a contradiction if you’re asking about stigma as well. If one experiences stigma they are not likely to feel comfortable. I also think 4e (about threat) could be reworded to improve reading.”

(Subject Matter Expert 6)

While the latter of the points made by SME 6 regarding the wording of items is considered below, it is appropriate to address the points made in their feedback given they took the time to provide them. In relation to physical appearance and recovery, this item is important for a number of reasons: satisfaction (or its absence) with physical appearance has been linked to the manifestation of problem AOD use (e.g., Nieri, Kulis and Keith et al., 2005); a person’s physical appearance can be damaged through ADO problems, serialised in the popular press with photographs of the changes one may experience from non-use to problem use (e.g. CBS News, 2019) but seldom considered by the press from the individuals’ perspective. Associated with this but separate is the stigma one may experience because their physical appearance could indicate substance misuse problems, even if these are historical issues (Earnshaw, Smith and Copenhaver, 2013). While not an exhaustive list of issues pertaining to physical appearance and AOD problems, and their resolution, they arguably combine and contribute to a sound case for including an item in relation to physical appearance within the RCQ.

In summary of the above it can be concluded that by applying Lawshe’s (1975) method of examining content validity, it can be concluded that the RCQ has strong content validity, with a CVI statistic of 0.91. On the other hand, it could be argued that this type of validity, if presented alone, has a number of limitations. For example, there could be issues with SME expertise inasmuch as how one qualifies as possessing such could vary across examples, indeed across fields there could be a paucity of SMEs. Furthermore, their (SMEs) task is a highly subjective one, despite the instructions provided. Although unlikely, it is possible to have a lack of agreement across SMEs on items in a scale which via other analyses appears to have good concurrent validity. And likewise, while similarly unlikely, it is possible

that SMEs identify a handful of items which they think are necessary but when analysed further these items offer very little in, for example, factor loading and factor interpretation in exploratory factor analysis. It is for these reasons that while the CVI statistic indicates strong content validity, further validity analysis was undertaken through the examination of concurrent and construct validity.

### 6.5.2 Concurrent Validity

#### *RCQ and WHOQOL Bref*

The previous chapter noted how validity has been conceptualised within the psychometric literature; that a psychological assessment tool cannot in and of itself be considered valid, and that validity pertains more to the inferences and conclusions which can be drawn from any assessment output. To that end, the RCQ has been demonstrated to hold criterion related concurrent validity in relation to addiction problem severity (Burns and Marks, 2013), with RC, measured by the RCQ, negatively correlated with addiction problem severity and explaining approximately 26% of the variance in addiction problem severity. The current examination of concurrent validity examined the correlations between the RCQ and the WHOQOL Bref and between the RCQ and the Connor Davidson Resilience Scale (CD-RISC).

The hypotheses tested in terms of concurrent validity between the RCQ and WHOQOL Bref include: the Social, Human, Physical and Community Capital domains of the RCQ have moderate correlations with the social, psychological, physical and environmental aspects respectively of the WHOQOL BREF. Correlations between the RCQ Total scores and the RCQ domains, and the WHOQOL Bref life satisfaction and health satisfaction questions were also examined. In relation to resilience, the hypothesis was that the RCQ Total rating, as well as the four domains of Social, Physical, Human and Community Capital would be moderately correlated.

Correlational analysis is typically undertaken to measure concurrent validity (DeVellis, 2017). DeVon et al. (2007) suggest the accepted standard regarding correlation analysis for concurrent validity is  $\geq .45$  for correlations to qualify as “substantial and high”. The first set of variables examined in relation to their

correlations included those between the RCQ constructs and the WHO QOL Bref constructs. The results are presented in Table 9.

**Table 9:** Correlations Between RCQ Variables and WHOQOL Bref Variables

	SC Total	PC Total	HC Total	CC Total	WHO SOC	WHO PHY	WHO PSYCH	WHO ENV
SC Total	-							
PC Total	.366**	-						
HC Total	.427**	.603**	-					
CC Total	.199**	.383**	.351**	-				
WHOSOC	.442**	.301**	.424**	.227**	-			
WHOPHY	.356**	.588**	.492**	.148	.275**	-		
WHO	.435**	.567**	.658**	.246**	.495**	.551**	-	
PSYCH								
WHOENV	.297**	.550**	.364**	.401**	.236**	.527**	.467**	-

\*\*Correlation is significant at the 0.01 level (2-tailed).

As can be seen in Table 9, there are positive, statistically significant correlations ( $p > 0.01$ ) between all RCQ variables, WHOQOL variables and RCQ and WHOQOL variables with the exception of the relationship between the Community Capital domain of the RCQ and the Physical domain of the WHOQOL. In terms of meeting the standard of “substantial and high” set by DeVon et al (2007) for concurrent validity ( $\geq .45$ ), the correlations between the RCQ Physical Capital and WHOQOL Physical domains (.588), and the RCQ Human Capital and WHOQOL Psychological domains (.658) exceed that figure. The correlations between the RCQ Social Capital and WHOQOL Social domains (.442) only just fall below the “substantial and high” threshold and the correlations between the RCQ Community Capital and WHOQOL Environment domains slightly more below (.401) though the relationship remains statistically significant.

In addition to statistically significant correlations varying from moderate to substantial and high, it is also useful to consider the effect sizes of the relationships. That is, squaring the  $r$  statistic reveals the shared variance between the two constructs. Ellis (2010) provides thresholds for interpreting effect sizes when using correlation statistics. According to Ellis (2010), correlations of .10 would indicate small, .30, medium, .50 large and .70 very large effect sizes. Considered alongside these thresholds, the effect sizes for the correlations found in Table 9 would suggest medium to large effect sizes exist between the RCQ and WHOQOL domains.

In addition to examining the correlations between the aforementioned variables, the relationships between the RCQ Total scores and the WHOQOL overall QOL and health satisfaction questions were also examined. In these cases, similar to before, statistically significant ( $p < 0.01$ ), substantial and high correlation (.531) between RCQ Total and overall QOL, and a statistically significant ( $p < 0.01$ ) moderate correlation (.443) between RCQ Total and health satisfaction was found. What these relationships between RCQ and WHOQOL constructs mean in practice and for the validity of the RCQ is discussed in the next chapter. However, it is appropriate to conclude that the RCQ holds good criterion related concurrent validity with the WHOQOL Bref where one can infer that an increase in RC, as measured by the RCQ, also involves an increase in QOL as measured by the WHOQOL Bref. It should be noted here, as well as below, that this does not infer causality i.e. increases in QOL may or may not bring about increases in RC and likewise vice versa, rather what has been found is that there is a positive correlation between these variables.

#### *RCQ and CD-RISC*

The CD-RISC is a less complex psychometric assessment tool than either the RCQ or the WHOQOL Bref insofar as it considers one construct – resilience – and uses 22 items to assess it. Correlational analysis was undertaken to examine the relationships between each of the four RCQ constructs and the RCQ Total scores and the overall score from the CD-RISC. Table 10 presents these figures.

**Table 10:** Correlations between RCQ variables and CD-RISC

	SC Total	PC Total	HC Total	CC Total	RCQ Total	CD Total
SC Total	-					
PC Total	.366**	-				
HC Total	.427**	.603**	-			
CC Total	.199**	.383**	.351**	-		
RCQ Total	.625**	.808**	.818**	.685**	-	
CD Total	.413**	.510**	.779**	.186*	.646**	-

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tailed)

Table 10 shows the correlations between the RCQ constructs and RCQ Totals, and both the former and latter with the CD-RISC totals for participants. All correlations between the variables were found to be statistically significant at the 0.01 level with the exception of the correlation between RCQ Community Capital and the CD-RISC Total which was statistically significant at the 0.05 level. Using DeVon et al.'s (2007) benchmark of correlations  $\geq .45$  being "substantial and high", one can see that, in terms of sub constructs, RCQ Social Capital is close to this (0.413) while RCQ Community Capital falls quite short (0.186). This is similar to the correlations between these constructs and QOL findings above. Similar again to the QOL findings are the findings in relation to the RCQ Physical Capital, RCQ Human Capital and RCQ Total correlations with CD-RISC, demonstrating "substantial and high" correlations (0.510, 0.779 and 0.646 respectively). An observation at this stage is the strongest correlation appears to exist between RCQ Human Capital and CD-RISC Totals (0.779). This may have perhaps been expected given that the RCQ Human Capital construct entails the internal assets thought to be important in resilience. That the RCQ Total correlation is lower (0.646) is an effect of combining the other constructs to achieve the RCQ Total score. While the RCQ appears to have good concurrent validity with the CD-RISC, it is not an assessment tool designed solely to measure resilience (nor QOL). It is therefore acceptable that one

component within the RCQ is more strongly correlated with resilience than the RCQ Total score.

In addition to statistically significant relationships varying from moderate to substantial and high, it is also possible, as before, to consider the effect size of the relationships. Considered alongside the thresholds suggested by Ellis (2010), the effect sizes for the correlations found in Table 10 would suggest medium to large effect sizes exist between the RCQ domains and CD-RISC totals with only the effect size between RCQ Community Capital and CD-RISC totals being small. While probability testing accounts for statistical significance, effect sizes can help understand practical significance. Further interpretations of the correlations and their effect sizes, and what this means in practice for the RCQ is provided in the next chapter. It is appropriate to conclude that the RCQ possess good criterion related concurrent validity with the CD-RISC, with generally substantial and high correlations and medium to large effect sizes. This allows the acceptance of the initial hypothesis regarding the relationship between the two assessment tools. As above, it is important to note that this does not mean a causal relationship exists between the variables.

### 6.5.3 Construct Validity

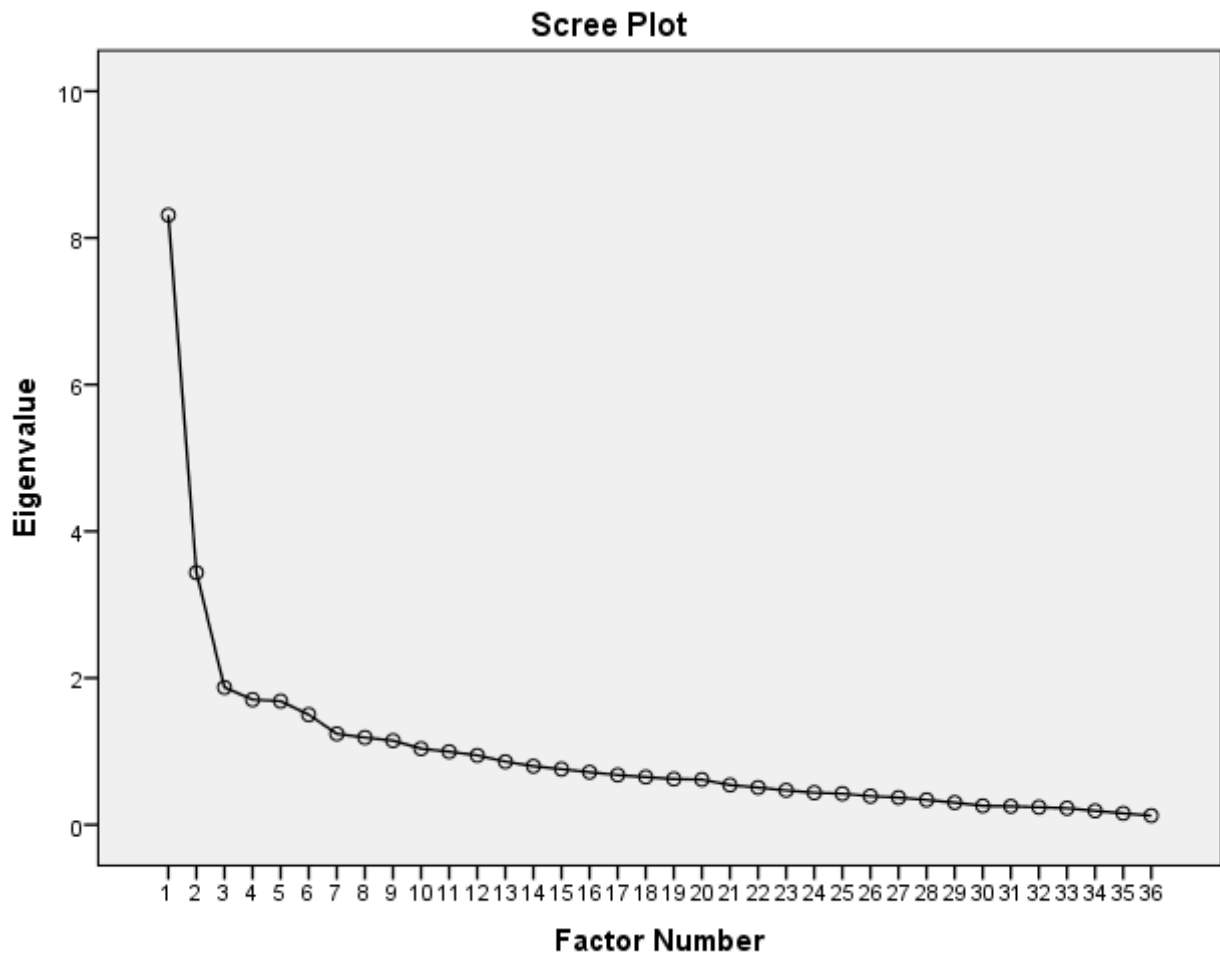
The first statistic to examine when undertaking EFA is the the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of sphericity (Field, 2013). The KMO statistic indicates the proportion of variance in variables that might be caused by underlying factors. Bartlett's test of sphericity estimates the probability that the correlations within a correlation matrix are 0. To indicate whether EFA is appropriate, the KMO statistic should  $>.6$  and Bartlett's test should be significant ( $p > 0.01$ ). In this case, the KMO and Bartlett's test statistics met the desired thresholds (0.818 and  $p > 0.001$  respectively). In addition, when considering sample size, Worthington and Whittaker (2006) urge consideration be given to communalities within the dataset. Datasets which contain communalities  $>0.5$  (the literature is not specific about how many of these communalities should be  $>0.5$ ) can be considered appropriate and smaller sample sizes where all communalities are  $>0.6$  are appropriate. Within the current dataset, over 30% of the variables (11 items) have communalities  $>0.5$ .

It is inconclusive if this level of communalities is sufficient and is noted as a potential limitation in this analysis. Finally, Yong and Pearce (2016) suggest an inspection of the anti-correlation matrix should be undertaken, looking specifically at the data labelled “Measures of Sampling Adequacy” and, if there are values  $<0.5$ , the items which are identified should be removed. A review of the anti-correlation matrix revealed there were no items falling below this threshold (values ranged from 0.54 – 0.89, with only four values  $<0.6$ ). Notwithstanding the possible limitation in relation to communalities, by combining considerations of KMO, Bartlett’s test of sphericity, an inspection of communalities and a review of the anti-correlation matrix, it can be concluded that EFA is appropriate with the current data set.

Following confirmation of appropriateness of EFA, the decision was taken to undertake factor extraction using the Maximum Likelihood option. This extraction method is appropriate when factors can be expected to correlate. When deciding the number of factors to retain, an examination of the scree plot was undertaken. While the default for deciding which factors to retain for rotation on SPSS is set at factors with an eigenvalue greater than 1, Costello and Osborne (2005) report that this is the least accurate method upon which to base a decision. The scree plot review involved identifying where an inflection takes place, and retaining the number of factors above the inflection. Costello and Osborne (2005) recommend that if it is somewhat unclear where the break occurs, the analysis should be undertaken a number of times. In this case, the analysis was run using a 3, 4, 5 and 6 factor solutions because the inflection looked to take place between 4 and 5 factors (Figure 7). Costello and Osborne (2005) suggest the analysis should be run using one factor above and one below where the inflection is observed which informed the decision to run the analysis four times using a 3, 4, 5 and 6 factor solution.



**Figure 7:** Scree Plot Showing Eigenvalues for EFA of RCQ



The type of rotation used was promax, an oblique rotation method as opposed to an orthogonal one. Promax was used because Yong and Pearce (2016), referencing Gorsuch (1990), suggest promax rotation produces a simpler structure, and there is very little difference between the different choices of oblique options (Costello and Osborne, 2005).

When considering factor loadings, an inspection of the pattern matrix reveals which items or variables load onto which factors. While it has been noted that a factor should be rejected if it contains less than 3 items (Costello and Osborne, 2005), others (e.g. Yong and Pearce, 2016) suggest the retention or rejection of a factor should be considered if it has less than 3 variables. Yong and Pearce (2016) and Worthington and Whittaker (2006) also encourage consideration be given to whether

the retention of these variables to create a factor offers any explanatory value in terms of interpretation of the latent variable(s).

As noted above, the analysis was conducted to examine 3, 4, 5 and 6 factor solutions. This allowed for an opportunity to examine how variables loaded onto each of these numbers of factors. In the six factor solution one factor had only three items. This saw a factor rejected and the analysis run with five factors. In the five factor solution, one of the factors saw only two variables load onto a factor which lead to the exclusion of another factor. In the four factor solution (Table 11), one of the factors loaded 8, one 7, another 8 and the fourth four items. Nine variables failed to load onto any factor. The three factor solution saw eight variables load onto factor one, 15 variables load onto factor two, and four variables load onto factor three. There were six variables which failed to load onto any variables. In terms of model fit, Yong and Pearce (2016) explain that this can be checked – that the model is a good fit – by checking the summary of the percentage of the non-redundant residuals at the Reproduced Correlation Matrix. They explain, “A model that is a good fit will have less than 50% of the non-redundant residuals with absolute values that are greater than .05” (Young and Pearce, 2016:90). In the case of the four factor model, the summary of the percentage of the non-redundant residuals in the Reproduced Correlation Matrix notes 31% of non-residuals exist with an absolute value greater than .05. Further examination of the structure of the RCQ in a four factor model, and interpretation of the factor loadings and the potential explanatory value they held led to the decision that the four factor solution would be the most useful. What each of these four factors may mean is explored below.

**Table 11:** Four Factor Solution Pattern Matrix

**Pattern Matrix<sup>a</sup>**

	Factor			
	1	2	3	4
CC6	.965			
CC7	.915			
CC3	.774			
CC4	.648			.312

CC5	.642			
CC1	.455			
CC8	.446			
CC2	.355			
PC5				
SC5				
PC7		.803		
PC8		.757		
PC4		.659		
PC2		.537		
HC10		.438		
PC9		.424		
PC6		.401	.317	
HC5		.307		
SC7				
HC3			.867	
HC1			.668	
HC4			.655	
HC9			.586	
HC2			.491	
HC7		.301	.433	
HC6		.344	.426	
SC8			.399	
SC9				
SC1				.823
SC4				.508
SC2			.350	.454
PC3				.374
SC3				.316
HC8				
PC1				
SC6				

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 7 iterations.

As mentioned previously, exploratory factor analysis has been likened to a mixed methods approach (Worthington and Whitaker, 2006) insofar as the quantitative data analysis in relation to running the factor analysis itself is quite significant, however, so too is the qualitative interpretation involved in relation to the output. According to a range of sources (e.g. Costello and Osborne, 2005; Yong and Pearce, 2016; DeVellis, 2017), exploratory factor analysis is used for exactly that – to explore the data: while it will not provide any ‘right answers’ it allows for data to be analysed and interpreted in a particular way, offering otherwise unseen insight into underlying factors. Given the subjectivity of the method, the ambiguity in the literature regarding, for example, some of the options available for factor rotation and/or equivocation about appropriate sample sizes, it would be erroneous to make *conclusive* decisions regarding which items should be retained and which should be rejected. It is ill-advised to undertake a single EFA and herald the factors, including, importantly, the retention and rejection of items from a test, as the finished article (Worthington and Whitaker, 2006). Indeed, EFA gives insight into the items and factors, indicating if items coalesce around particular factors, and indicate the existence of a latent variable. However, if other empirical evidence (for example, concurrent validity analysis), the scientific literature or professional experience significantly jars with an EFA finding, discretion can be applied to the retention or rejection of an item from a test. It is for these reasons among others that Worthington and Whitaker (2006) suggest running numerous EFA’s with different samples and in different settings to most appropriately inform scale design and development.

While keeping the above in mind, the items which loaded on each factor of the four factor solution, as well as those which do not load onto any factor will be considered. An interpretation of these factors will be offered in terms of what the factors could be telling us, and the potential to reject items based on their non-loading will be considered.

Factor one loaded 8 items these included the following (factor loading statistic provided):

1. *I do not feel stigmatised as an alcohol and/or drug user in my local community (0.45)*
2. *I have not been a victim of crime in my local community (0.36)*
3. *I feel comfortable in my local community (0.77)*
4. *Members of my community do not treat me badly (0.67)*
5. *I do not feel under any threat in my local community (0.64)*
6. *I am treated as an equal and with respect in my local community (0.97)*
7. *I feel accepted within my local community (0.92)*
8. *There is accessible treatment to support recovery within my community (0.45)*

Each of these items existed as a ‘factor’ in the original construction of the RCQ prior to running the EFA. They came under the conceptual heading of “Community Capital”. Although some feedback from the CVR analysis will see some wording made simpler, it appears unnecessary to consider removing any items. To understand their original construction it is helpful to reconsider some of the definitional work which predated their existence. These are laid out in chapter three – sub heading, “Capital Conflict and Consensus” – when considering how different authors have used, altered then applied the original conceptualisations. This, within reason, has to be expected; when a new term and concept is created, it is somewhat understandable that the definitional literature may grow, that some previously-thought themes or issues may grow, become aggregated or collapsed to form new constructs. However, it is important that authors provide a rationale for their representations, and that they are thorough in their explanation of what they mean when they say, for example, “community capital” (Hennessey, 2017).

To that end, and supported by the EFA output, it appears appropriate to report each of the factors, the items which load onto each factor, the definition of each factor and whether items contribute to that definition. This will help with an understanding of the factors, and whether a new conceptualisation is required to better explain what the factors suggest the items may be measuring.

Factor one saw eight items load onto it, and these items can be considered to measure “community capital”. Community Capital has been defined in this study to include experiences of *stigma, acceptance, and community safety combined with the availability of treatment opportunities*. Previous work (Burns, 2012; Burns and

Marks, 2013) notes that this draws upon both the cultural capital explored by Cloud and Granfield (2008) while considering and merging the notion of community capital proposed by White and Cloud (2008). While factor one may be appropriately labelled as Community Capital, and Community Capital has been defined as it has been in this thesis, it is important to review each item and consider if it does indeed fit this definition (item numbers refer to their listing above): Item 1 can be seen to address *stigma*; Item 2 considers *safety*; Item 3 encompasses *safety* and *acceptance*; Item 4 considers *stigma* and *acceptance*; Item 5 considers *safety*; Item 6 relates to *stigma* and *acceptance*; Item 7 addresses *acceptance*; and Item 8 considers *treatment opportunities*.

It seems appropriate to conclude that Factor 1, “Community Capital” does indeed measure a single factor, that this factor has been labelled “Community Capital”, and that each item within this factor meets with the definition provided. It should be noted that although these items provide an indication of an individual’s Community Capital, it is not an exhaustive list. Indeed, the EFA (and the RCQ) sought to provide a simple structure, not an exhaustive account of all things which could be considered community capital. While it will be somewhat elaborated upon in the following chapter, it is important to note that each item, rated on a scale of 1-5 by the participant, is only the beginning of a conversation about that item, not the definitive end.

Factor two saw seven items load onto it. These included the following:

1. *I am satisfied with my physical appearance (0.80)*
2. *I have had extra energy recently (0.76)*
3. *Most nights I sleep well (0.54)*
4. *I am in good general physical health (0.66)*
5. *I am happy with my current set of skills and abilities (0.44)*
6. *My home environment supports my recovery (0.42)*
7. *I eat regularly and healthily (0.40)*

Of these seven items, six of them were formerly conceptualised as “Physical Capital” prior to the EFA. One item (item 5 above) had previously been considered “Human Capital”. Physical Capital had previously comprised of nine items. The EFA saw 3 items removed from how physical capital was previously constructed (one of which

loaded onto factor four), and one item from Human Capital has been added. Using the same process as above, considering the definition of Physical Capital and whether the items meet with this definition, Physical Capital has been defined in this study as: *physical health and wellbeing, sleep hygiene, recovery conducive housing, finances, diet, access to transport and physical appearance*. In relation to whether the items meet any aspects of the definition, the following can be observed: Item 1 relates to *physical appearance*; Item 2 considers *physical health and wellbeing*; Item 3 addresses *sleep hygiene*; Item 4 relates to *physical health*; Item 5 could be related to *wellbeing* and is considered further below; Item 6 relates to *recovery conducive housing*; and Item 7 considers *diet*. No item in relation to finances loads onto factor two (but loads onto factor four), and there are no items in relation to access to transport.

In relation to item 5 concerning skills and abilities, there is a strong argument that ones' skills and abilities are linked to their health and wellbeing (e.g. Peerson and Suanders, 2009; Eiser and Morse, 2001; Warr, 1994) where skills and abilities are linked with physical health and wellbeing across the life course in relation to health literacy, children's functioning and stress in work respectively. Previously presented (Burns and Marks, 2013) as an internal aspect of RC i.e. within oneself, it is perhaps more strongly linked to being able to realise and exploit opportunities which are external to the individual, that they can deploy agency through applying their aggregated skills and abilities, thus fitting more within a conceptualisation of physical capital.

In relation to the absence of any item considering access to transport, and as noted above, EFA should not be taken as conclusive evidence that an item be rejected, particularly when evidence and/or professional experience suggests otherwise. Indeed, lack of access to public and/or private transport can be one of the single biggest barriers to participating in addiction treatment (e.g. Kelly, Yeterian and Myers, 2008; Gates, Copeland and Swift et al., 2012; Jessup, Humphreys and Brindis et al., 2003), and is perhaps one of the reasons why in 2018 Scottish Government surveyed stakeholders on how big a barrier transport to treatment played in patient and client groups (survey outcome remains unknown/unpublished at time of writing). Taking this into consideration, it is not unreasonable to include the item relating to transport access which had not loaded onto factor two (nor any

factor), "I have access to personal and/or public transport". This item will be retained in any revised draft of the RCQ.

Factor three saw 9 items load onto it. However, one of these items cross-loaded onto factor four, and with a stronger loading onto factor four (.454 for factor four and .350 for factor three) it was more appropriate that the item was retained in factor four. Subsequently, factor three contains eight items. These include:

1. *I manage to solve difficult problems when I try (0.67)*
2. *I can set and stick to my aims to achieve what I want (0.49)*
3. *I can deal with unexpected situations (0.87)*
4. *I have been able to make up my own mind about things recently (0.66)*
5. *I can draw upon previous successes to give me confidence for new challenges (0.43)*
6. *I consider myself a strong person (0.43)*
7. *I can see the funny side of life (0.57)*
8. *On average how many days in a week do you eat meals with one or more people? (0.49)*

Of these eight items, seven of them have been drawn from what had previously been defined as Human Capital with the RCQ. The eighth item, item eight, was considered Social Capital. Human Capital had been comprised of ten items pre EFA. One of these items loaded onto factor two. The other two items did not load onto any of the four factors. These will be considered to below. Using the same process as above, considering the definition of Human Capital and whether the items meet with this definition is necessary to determine if a re-defining of the factor is necessary to better understand what it is measuring. Human Capital has been defined in this study as: *perception of past, present and future, self-efficacy and self-awareness, problem solving, patience, resilience, hopefulness, decision-making, knowledge, skills and abilities*. With skills and abilities featuring in factor two this can be discounted from an appraisal of the items loading onto factor three. Whether any of the items in factor three meet with the definition of Human Capital, the following can be observed: each of the items arguably tap into more than one aspect of the definition, for example, all items require a level of self-awareness; items 1 to 4 speak to problem solving and decision-making; items 1 to 3 and item 5 could include



hopefulness; and finally, each item speaks to elements of resilience. It is perhaps then unsurprising that it was Human Capital which was identified as the RCQ construct most strongly correlated with the CD-RISC in the above analysis ( $r = 0.779$ ).

The item which has loaded onto factor three but was not previously considered Human Capital is item 8. Item 8 enquires about frequency of meals shared with others. While the issue of diet itself is somewhat tapped into here, it is better examined in item 7 in factor two regarding frequency and nutrition. In the current case, eating with others was considered somewhat as a proxy for social contact, connectedness and identity. Indeed there is evidence of the benefits of sharing meals which considers these things (e.g. Ochs, 1993; Fruh, Fulkerson and Mulekar et al., 2011; Weinstein, 2005; Fulkerson, Story and Mellin et al., 2006). Furthermore, and specifically in relation to the moderating effect meal sharing can have on alcohol problem development, Velleman (2009) notes how sharing family meals (and where that experience is a positive one), has been demonstrated to delay the initial use of alcohol, and the onset of problem alcohol use in terms of years. Despite the perceived 'social' element of this activity, it is entirely possible that the benefits accrued from the activity could be considered to be more personal i.e. in this case, they fit just as well into a conceptualisation of Human Capital even though the activity might be seen as a social one, and that any effort to meaningfully decouple or define meal sharing as a Social Capital or Human Capital type item is unnecessary.

In relation to the two items previously considered as Human Capital but failed to load onto factor three (or any factor) include "I can be patient when need be" and "I am aware of how what I do impacts on other people". While the latter could arguably be tapped into by the setting of and sticking to aims item (Item 2 above), and the former speaks clearly to self-awareness, none of the items which do load onto factor three measure the aforementioned respective positions as acutely as these two items. In relation to self-awareness, while most of the items which load onto factor three do indeed touch on this, they do not specifically consider it from a perspective of how behaviour impacts on others. A rewording of the item, as suggested by one of the SME's in the CVI analysis, to read "I am aware what I do impacts on other people" will improve the item in terms of comprehension – it makes the item easier to read,

articulate and understand, and only minimally alters the meaning of the question by removing “how” – further discussion between clinician and patient could illuminate “how” the behaviour impacts upon others. Subsequently, it would be useful to have both items in relation to patience and self-awareness in a revised draft of the RCQ for the reasons stated.

The fourth and final factor produced by the EFA included only four items. These items were:

1. *I have access to information and advice which supports my recovery (0.82)*
2. *I have a routine which supports my recovery efforts (0.45)*
3. *I have people who support me in my efforts to recover (0.51)*
4. *I can financially afford to take part in activities which support my recovery (0.37)*

The first three of these items were previously conceptualised as Social Capital, and the fourth as Physical Capital within the RCQ. Social Capital has been defined as: *family, social and intimate relationships, their existence, levels of satisfaction and conduciveness to recovery. Social and relational roles, involvement in social rituals (e.g. sharing meals), emotional support and access to recovery supporting information and advice.* In terms of the EFA, the items which had been included in what was previously defined as Social Capital performed particularly badly when loading onto factors. For example, while Community, Physical and Human Capital have largely ‘hung together’ in their loadings, this cannot be said of Social Capital. Similarly, while one or two items have been seen to ‘switch’ from human to physical and one Social Capital item loads onto factor three, mostly made up of Human Capital items, only three Social Capital items load onto factor four which means 4 – or 50% of what were previously defined as Social Capital items – failed to load onto any factor. This may be interpreted in a number of ways. Perhaps the simplest would be to assume that Social Capital was a poorly construed construct in the first place.

An alternative explanation perhaps lies in considering how social capital has been defined in some of the literature, alongside the function of EFA. It was noted previously, when considering the inclusion of Item 8 in factor three, that it can be incredibly difficult, and somewhat tautological, to decouple social and human capital

in terms of trying to decide if a *single item* can be considered more one than the other. It becomes a little clearer when considering groups of items i.e. factors, and trying to interpret what a collection of items might speak to. For example, when considering the first three items in factor four, these items appear to consider external phenomena; information and advice, routines, individuals who can support someone's recovery. So too though does the fourth item, the financial capability to participate in activities which can support recovery. That these items do not neatly fit into a pre-conceptualisation of "Social Capital" is perhaps not overly surprising. Earlier chapters have noted the challenge to the concept of social capital and its portrayal as being both concise and capacious, that social capital is so broad and all-consuming, and human, physical and community (and almost any other form of capital) is a derivative of social capital; that some items thought of as being Social Capital load onto other factors which otherwise measure Human or Physical Capital, while three other items coalesce around different factor is unsurprising.

As noted above, it is helpful to consider the items in factor four as explicitly external to the individual, and not sufficiently loading onto any of the preceding three factors. These are items which have been identified as important in explaining variance in the factor analysis when brought together but do not explain as much of the variance as the previous three factors. To this end it is important to reiterate the purpose of the EFA. EFA is to *explore* a data set. What can be concluded in relation to the output is that this current data set has produced four factors encompassing 27 items which, collectively, explain approximately 45% of variance. Possible explanations for this include: while the current sample (n=173) has been proposed to be adequate for this type of analysis, it has also been noted as being at the lower end of this. It is possible a larger sample could have an effect on the level of shared variance explained. Additionally, it has been noted that a series of EFA's could be undertaken in order arrive at a more substantive conclusion, for example, a different sample might see the level of variance increase (or decrease), and (or) suggest a different number of factors and factor structure. Finally, the RCQ is not an exhaustive account of all things which could be considered 'recovery capital'. Such a list would be unwieldy and, for treatment purposes (for which the RCQ was designed) impractical. The EFA was undertaken to explore the factor structure associated with the RCQ alongside other measures aimed at assessing the reliability and validity of

the assessment tool. Although useful in examining the factor structure of the RCQ, EFA has little bearing on the criterion related concurrent validity or reliability of the RCQ. To that end it has been useful to help consider the latent variables associated with the RCQ, and a fuller discussion of the above is provided in the next chapter.

Items which did not load onto any factors are not unimportant, only in this EFA they failed to account for any variance. To that end, it is entirely possible and plausible to conclude that items which failed to load onto any factor could be included in any future version of the RCQ. The position taken on the inclusion of any items which have not loaded onto any factor has been iterated above, for example when a body of literature suggests an area is important (i.e. access to transport) and/or by referring to other analyses e.g. the content validity and concurrent validity analyses reported above. Consequently, items which will be included in a revised version of the RCQ following a review of the fuller analyses but did not load onto any factors include:

- (i) I have at least one person with whom I can share my thoughts and feelings (edited from “I have at least one friend and/or family member with whom I can share my thoughts and feelings” based on SME feedback)
- (ii) I am happy with the relationships I have with the people who matter to me in my life
- (iii) I have responsibilities to someone/something other than myself
- (iv) I can be patient when need be
- (v) I have access to personal and/or public transport
- (vi) I am aware what I do impacts on other people
- (vii) I have no significant financial debts

Furthermore, items which failed to load onto any factor, were reviewed in the context of the full analyses, and will not be included in a revised version of the RCQ include:

- (i) I have an intimate partner who supports my recovery
- (ii) I have people who rely on me to continue in recovery

The two items which will not be included in a revised version of the RCQ have been identified through the CVI and EFA as being useful but unnecessary in the former analyses and failed to load onto any factors in the latter. Moreover, two of the items which have been retained arguably already capture the essence of these two items.

For example “I have at least one person with whom I can share my thoughts and feelings” is in some respects similar to having an intimate partner – where intimacy does not equate to a sexual relationship – while the item detailing responsibilities to someone or something is very similar to “I have people who rely on me to continue in recovery”.

## **6.6 Chapter 6 Conclusion**

This chapter has presented the full range of analyses undertaken for this research project. The project set out to explore the psychometric properties of the RCQ. While psychometric scale development is iterative, and the methods which can be applied to undertaking this task are numerous, this research has demonstrated a robust approach. The software package SPSS version 23 was used to undertake the data analysis computations. Before any analysis was undertaken, a data cleansing process was completed to ensure all variables were within their required ranges. The distribution of the RCQ scores in the sample was found to be non-normal, though the deviations were not felt to be extreme enough to prevent the application of parametric testing, particularly in relation to Likert response format data. Various sources were consulted and cited to reach this conclusion.

Descriptive statistics have been presented and examined, and included, for example, the mean, standard deviation and confidence interval. Analysis examining relationships between and within the sample in relation to RC by using the appropriate statistical tests. In this case independent sample t-tests were undertaken to examine gender, treatment type, problematic use, abstinence from alcohol or drugs, and prescription status as the data in each of these analyses involve one categorical independent variable in only two groups (e.g. male/female; using/not using problematically). One-way between-groups analysis of variance were undertaken to examine age and length of time in recovery where these two categorical independent variables were in more than two groups. Confidence intervals and effect sizes were reported.

While no statistically significant relationships were found between RCQ scores and age, gender, treatment type, abstinence, and prescription status, there were statistically significant relationships between RCQ scores and problematic use, and length of time in recovery. The combined effect size for these two variables was

approximately 12%, indicating 12% of the variance in RCQ scores can be attributed to whether a participant reported to be using alcohol and/or drugs problematically combined with their time in recovery. This finding should be interpreted with caution given how 'problematic use' was defined and measured i.e. it was a simple yes/no question and was self-reported, though participants had no reason to be dishonest in their responses.

RCQ reliability was assessed and reported using Cronbach's Alpha to examine internal consistency, and Pearson's Correlation and Intraclass Correlation Coefficient were used to measure stability reliability. Cronbach's Alpha for the RCQ was found to be .88 demonstrating good internal reliability. Pearson's Correlation for each of the RCQ constructs and the RCQ Total scores were found to be 0.891, 0.853, 0.821, 0.882 and 0.889 respectively with all correlations significant at level 0.01. These levels of correlations suggest the RCQ has very good stability reliability.

Furthermore, Intraclass Correlations Coefficients were examined and confidence intervals were provided alongside each of the RCQ construct and RCQ Total ICC scores. This method allows for the conclusion that, while there is some slight deviation within the constructs, the RCQ Total scores have good-to-excellent reliability.

In relation to validity, content validity was examined using Lawshe's (1975) content validity ratio (CVR) and content validity index (CVI). Using the CVR from seven subject matter experts' responses, the CVI was calculated. Using Lawshe's formula, the content validity index statistic for the RCQ = 0.91. This statistic is indicative that the RCQ has strong content validity. When examining concurrent validity, the RCQ was tested alongside the WHOQOL Bref and the Connor Davidson Resilience Scale. Pearson's Correlation was used to examine correlations between RCQ constructs and RCQ Total scores and results in the WHOQOL Bref and the CD-RISC. DeVon et al (2007) suggest the accepted standard regarding correlation analysis for concurrent validity is  $\geq .45$  for correlations to qualify as "substantial and high".

Positive, statistically significant correlations have been found ( $p > 0.01$ ) between all RCQ variables, WHOQOL variables, and RCQ and WHOQOL variables with the exception of the relationship between the Community Capital domain of the RCQ and the Physical domain of the WHOQOL. Furthermore, almost all correlations between variables exceed DeVon et al.'s (2007) benchmark of 0.45. This allows us

to conclude that the RCQ has good concurrent validity with the WHOQOL Bref. Similarly in relation to the CD-RISC, the RCQ was found to have good concurrent validity with this measure of resilience.

Finally, in relation to construct validity, the EFA undertaken revealed a simple factor structure in the form of a four factor solution. Three of the original four RCQ constructs were found to cluster together across three factors while a fourth included items which could be best conceptualised as capital explicitly external to the individual. That EFA is an exploratory analysis, and that the four factor model explains approximately 45% of variance, it does not mean that items which did not load onto any factor must either be retained or rejected. Indeed, rationale has been presented as to why certain items which failed to load onto any factor will be retained in a revised version of the RCQ. According to Worthington and Whitaker (2006) a plausible approach to examining the factor structure of any new instrument would be to undertake a series of exploratory factor analyses to identify consistent patterns in factor structure before undertaking a confirmatory factor analysis.

The analyses and findings from this results chapter, by taking a robust approach to examining reliability, content, concurrent and construct validity, allows us to conclude that the RCQ is a reliable and valid measure of RC, and that further research could be undertaken to further examine any factor structures. The correlations between the different aspects of RC and the RCQ Total scores and the WHOQOL BREF and CD RISC confirms the hypothesis that RC as measured by the RCQ is moderately correlated with QOL and resilience. The policy and practice implications of these results are considered in the discussion chapter.

## Chapter 7: Discussion

This chapter will discuss the results reported in the previous chapter: chiefly it will consider and offer some interpretation of the results from the independent t-test and analysis of variance tests; the Cronbach's alpha and retest reliability correlational and intraclass correlation coefficient (ICC) tests; the content validity analysis and correlational analyses of the concurrent validity with QOL and resilience measures, and the exploratory factor analysis (EFA). Opportunities to compare the Recovery

Capital Questionnaire (RCQ) reliability and validity statistics with other measures will be taken where possible, and appropriately caveated where required. The RCQ will be considered in relation to its position within the literature and broader evidence of RC. Limitations of the study will be identified, and implications for policy, practice and future research will also be explored.

## **7.1 Key Findings**

The key findings of this research, in relation to the research questions set out in the introduction include: a simplified structure of the RCQ involves four factors which, with the exception of one factor, closely reflects the previously hypothesised conceptualisation of RC proposed within this work and previous research (Burns and Marks, 2013); the RCQ, using Lawshe's (1975) Content Validity Index, demonstrates strong content validity; the RCQ demonstrates good criterion-related concurrent validity with a measure of the WHOQOL Bref; the RCQ demonstrates good criterion-related concurrent validity with a measure of resilience (the CD-RISC); the RCQ possesses excellent test-retest reliability and appropriate equivalence reliability. It can be concluded that the RCQ is a psychometrically sound strengths-based assessment which could be used in collaboration between service providers and service users to identify the strengths and assets in people who access addiction treatment. The RCQ has been demonstrated to have moderate to high positive correlations with QOL and resilience and, as demonstrated in Burns and Marks (2013), a negative correlation with addiction problem severity, leading us to conclude that if RC, as measured by the RCQ, is accrued, this is correlated with an increase in QOL and resilience and a decrease in addiction problem severity.

## **7.2 Comparative Analysis**

Before examining the findings in relation to the psychometric properties in greater detail, the data reported in the results chapter which explored any potential differences in RCQ ratings among participants themselves will be considered. This research found there were no statistically significant differences in RCQ Total ratings across age, gender, treatment type, abstinence from alcohol and/or drugs, and use of substitute medication. Statistically significant relationships were found between RCQ Total ratings and length of time in recovery, and whether a participant reported their substance use was problematic. Comparing and interpreting these findings



with other studies should be done with caution – it has already been established that different measures have conceptualised RC differently (e.g. Groshkova et al, 2013, include a measure of abstinence within their Assessment of Recovery Capital [ARC]), so comparing differences in RC between genders or ages measured by different tools becomes difficult. It is perhaps more useful to consider previous research using the RCQ (e.g. Burns and Marks, 2013). In this case, the lack of statistically significant differences in RC across age and gender is consistent.

In relation to treatment type, Burns and Marks (2013) did not compare community based and residential treatment so a comparison between the two studies is not possible, and, to contextualise this finding, it would be more helpful to consider the literature on this more broadly. It has previously been noted that those accessing residential treatment may be expected to have lower levels of RC, and that this could be related to their higher levels of addiction problem severity; people accessing residential treatment are oftentimes required to demonstrate repeated ‘failure’ in community treatment (Yates, Burns and McCabe, 2017) while other research (Yates, 2005) has found more harmful use, such as intravenous use, to be more prevalent in a residential treatment cohort. Also, given that residential treatment is considered a tier 4 treatment by Scottish Government (Smith and Massaro, 2010), participants within these settings could be expected to experience more complex issues. In comparison, community based treatment is considered a tier 2/3 treatment option (Smith and Massaro, 2010), where people accessing these services have relatively less complex issues. Based on this, it could have been expected that the participants in the community based treatment cohort would have had different (possibly higher) levels of RC than those in residential treatment, however there are a number of issues which may serve to confound drawing conclusions in this area within the study.

This study did not measure RC at treatment intake i.e. participants could have been in either of the treatment conditions for any length of time before being recruited and interviewed. Linked to this is the impact of the treatment itself; it is possible that due to treatment dose, changes in RC may be more likely to occur more quickly through residential treatment. If someone is receiving treatment 24 hours per day as opposed to once per week or fortnight (or even less frequent), the gains may accrue more quickly. In addition, it is possible that people are not accessing or being

supported to access the appropriately tiered services. For example, some people who continue to access community treatment might be more suitable for residential treatment but have not yet accessed or been offered it. This may be down to the perceived costs of residential treatment (Yates, 2010) or inadequate assessment. Indeed, an assessment of RC to complement traditional assessments should inform levels of care decisions (D'Aunno, 2006) and could better direct these decision in relation to the combination of addiction problem severity/RC someone may experience (White, 2009). Ultimately, these factors likely play a strong role in confounding any interpretation of differences or similarities in RC between the two treatment groups, and further research would be required to explore this in more detail.

This study found no statistically significant relationship between RCQ Total ratings and abstinence. The lack of significance is itself perhaps significant in the role abstinence plays in RC. While some consider abstinence to be an outcome of treatment and recovery (e.g. McKegany, 2019), abstinence could also be considered an asset in recovery, perhaps the rationale of Groshkova et al. (2013) and their inclusion of an item enquiring about abstinence in the ARC tool. However, this thesis has already reported how difficult a concept recovery itself can be to define with many reporting it to be deeply personal and highly individualistic (e.g. White, 2007), and how contentious it can become when abstinence is asserted as being the desired (or only) outcome or prerequisite in relation to AOD problem resolution.

The finding that self-defined problematic use and length of time in recovery have statistically significant relationships ( $p = 0.009$  and  $p = < 0.001$  respectively) with RCQ Total ratings is related to the aforementioned issues insofar as if their use is no longer problematic, then an individual may be likely to consider themselves 'in recovery'. Taken together with the lack of statistical significance between abstinence and RC, this resonates with some of the literature on recovery. For example, Valentine's (2011) pragmatic assertion that you are in recovery if you say you are, and Best et al.'s (2010) contribution that recovery does not always involve nor require abstinence. It can be seen that participants, although not abstinent from alcohol and/or other drugs, have reported their use to be non-problematic and it is this which has been found to be statistically significant with participant RCQ Total ratings.

In this study, participants were asked how long they have been 'in recovery', "Where recovery means not to have used any substances problematically". This study found there was a statistically significant relationship between this length of time and RCQ Total ratings. This is consistent with wider recovery literature (e.g. White, 2007), and chimes to some extent with the principle within therapeutic communities that "you can't keep it unless you give it away" (Rawlings and Yates, 2001). The more time someone has 'in recovery' (however they define it), presumably the more time they have to both keep and give away (i.e. use) their RC. By deploying their RC, people may experience growth in it. Again, the length of time someone is afforded to both deploy and accrue RC would be consistent with the finding that there is a statistically significant difference in RCQ Total ratings, and length of time in recovery where those in earlier recovery had less RC than those in later recovery, relative to the study.

To better understand the sample, it is useful to consider it within a broader context. For example, understanding the gender and age dimensions of those experiencing AOD problems and those accessing treatment will help contextualise the findings. In the current study, the gender split of the sample was fairly even with only one more female (87) than males (86). This does not reflect the proportions of males and females estimated to be experiencing AOD problems nor those accessing treatment in the national problem drug prevalence statistics. The most recent statistics (ISD, 2019b) provide estimates for those aged between 15-64yrs living in Scotland in the year between April 2015 and March 2016. Within these statistics, problem drug use is defined as the problematic use of opioids (including illicit and prescribed methadone use) and/or the illicit use of benzodiazepines. The authors suggest the number of people experiencing problem drug use (as per this definition) is between 55,000 and 58,000, representing a prevalence rate of approximately 1.62% and where 71% of these is male. The report notes that that 64% of individuals were aged between 35 and 64 years. This compares to 26% for those aged 25 to 34, and 10% for those aged 15 to 24.

In terms of those accessing drug treatment, the report finds 67.7% of these were male and in relation to age distribution, 70% were aged between 35 and 64yrs. A

number of caveats should be noted: the data includes only drug treatment (not alcohol); the data includes only treatment for drug problems as per the aforementioned definition and therefore omits anyone seeking treatment for drugs which are neither opiates nor benzodiazepines. Other examples of how caution should be employed when interpreting these statistics is noted in the publication (ISD, 2019).

Notwithstanding these caveats, when considered alongside the sample in the current study, it can be seen that the current study is not representative of the estimated population experiencing AOD problems nor the treatment population, particularly in relation to gender. Given this, it is possible to argue such a limitation may restrict the generalisability of the results given the sample is not representative of the treatment population.

Such an argument would perhaps hold more weight if the current study looked to comment more definitively on the levels of recovery capital in the treatment population at large. However, such a study would require a different design and sampling frame. The fact that the sample in the current study is more equal than the estimated distribution of AOD problems in the population at large is perhaps a strength, albeit an unintended one. For example, if the study sample comprised 70% males (which would better reflect treatment populations) then this might limit the extent to which the results could be applied to both genders i.e. comments regarding validity and reliability would need to be observed through a lens whereby the sample was skewed in a particular direction. Although speculative, it is possible that reasons the sample in the study is more equally distributed in relation to gender could be that although more men than women are 'in treatment', perhaps more women attend appointments (and so could be interviewed for the study) or that staff involved in data collection were more inclined to invite women to participate. In relation to age, the prevalence study noted the biggest proportion of those in treatment were aged 35-64yrs. This is similar to the sample in the current study where the average age of participants was 40yrs old.

Finally, in relation to gender and exploring the data with a view to understanding whether the gender distribution in the sample impacts on the results, analyses were undertaken to examine whether there were any differences in validity and reliability findings for males or females. The data were split by gender and equivalence reliability, stability reliability and criterion related concurrent validity statistics were compared to each other and to the results calculated when the sample as a whole was analysed.

In relation to equivalence reliability, Cronbach's Alpha statistics for the RCQ Total scores for males and females (.85 and .86 respectively) were similar to each other and to the Alpha value for the whole sample (.88). Retest correlation statistics for the RCQ Total scores for males and females (0.891 and 0.894) were almost identical to each other and the sample as a whole (0.889). This allows us to conclude that the RCQ is equally reliable for males and females.

In relation to criterion related concurrent validity and the respective correlations between the RCQ constructs of Social, Physical, Human and Community Capital and the WHOQOL BREF constructs of Social, Physical, Psychological and Environmental QoL, and RCQ Total and WHOQOL Overall and WHOQOL Health Satisfaction and between RCQ Totals and CD-RISC ratings, the results are similar to those reported above. There are no example where the correlation was substantial and high ( $\geq .45$ ) for the whole sample but less for males or females. However the correlation between RCQ Social Capital and WHOQOL Social Domains was lower for males than females and lower than the whole sample correlation (0.372, 0.517 and 0.442 respectively). Similarly the correlation between RCQ Community Capital and WHOQOL Environment domains were lower for men than women and lower than the whole sample (0.261, 0.516 and 0.401 respectively). The converse was found to be true in relation to the correlation between RCQ Total and WHOQOL Health Satisfaction ratings where the correlation between these was lower for females than males and lower than the whole sample correlation (0.396, 0.488 and 0.443 respectively). Despite these slight deviances between genders in a minority of the relationships tested, the fact that none of these affect the relationships between

the RCQ and the other instruments i.e. that relationships remain substantial and high regardless of gender, does not undermine conclusions drawn regarding the RCQ's validity as a whole.

### **7.3 Psychometric Properties**

#### *7.3.1 Equivalence Reliability*

In relation to the psychometric properties of the RCQ, these will now be considered in more detail in the context of the psychometric literature, for example, benchmarks for appraisal, as well as compared to similar tests and/or previous research where appropriate.

The first test of reliability examined equivalence or internal reliability using the Cronbach's Alpha statistic. The four sub scales of the RCQ were found to have different levels of internal consistency ranging from  $\alpha = .52$  (CI, .40 - .62) for Social Capital through to .73 (CI, .66 - .78), .85 (CI, .82 - .88) and .85 (CI, .82 - .85) for Physical, Human and Community Capital respectively. The strongest Alpha value was that of the RCQ Total ( $\alpha = .88$ ; CI, .85 - .90). It was noted that a possible explanation for the high level of random error (approx. 48%) in the Social Capital domain could be due to how it was defined in the RCQ. Conceptually, social capital has been accused of being concise yet capacious, meaningless and meaningful (Farr, 2004; Fine, 2007). Fine (2007) has argued that social capital has been diluted and stretched to the extent that it has become very difficult to measure. This has perhaps impacted upon the conceptualisation of Social Capital and, subsequently, the difficulty with quantifying it within the RCQ, and has led to somewhat low equivalence reliability.

An important finding which supports this thinking comes from the EFA where there was very little evidence that the items which constitute the construct of Social Capital within the RCQ formed a coherent factor. Indeed, Social Capital was the poorest performing construct in both its internal consistency and factor loading. However, that is not to say that the items therein are not important. None of the items were identified by subject matter experts in the content validity analysis as being 'unnecessary'. The correlation between Social Capital within the RCQ and the social component of the WHOQOL Bref ( $r = 0.44$ ) only just falls below DeVon et al.'s (2007) threshold ( $r = \geq 0.45$ ) for consideration as 'substantial and high' and slightly

lower ( $r = 0.41$ ) in its correlation with CD-RISC Total. Finally, in relation to the Alpha value of Social Capital, Alpha is sample specific where best practice would see it calculated and reported each time an assessment is used. It is possible that future research will herald a different value.

It is perhaps also worth noting that the 'social' component of the WHOQOL Bref, a tool discussed in more detail in the concurrent validity section below, was also found to have a lower alpha value than the other sections of the WHOQOL Bref (but still a higher value than the social component within the RCQ). Values of 0.68, 0.82, 0.81 and 0.80 were found for the Social, Physical, Psychological and Environment domains respectively (Skevington, Lotfy and O'Connell, 2004). It would appear that when defined in a particular way, arguably in a way which tries to be too specific, social capital, when separated from other forms of capital which, some might argue is also 'social' in nature, it can provide lower (relative to other constructs) equivalence reliability.

The Alpha values for the Physical, Human and Community Capital constructs exceed the benchmark suggested by Kline (2000) of .70 for equivalence reliability. When considering the equivalence reliability of RCQ Total scores, it can be seen to hold the highest value ( $\alpha = .88$ ; CI, .85 - .90). This is a satisfactory level of internal consistency for a psychometric assessment when considered within the psychometric literature (e.g. DeVellis, 2017).

Within the RC measurement literature, it is possible to compare the RCQ equivalence reliability with the Assessment of Recovery Capital (Groshkova et al., 2013) though it should be done with some caution. The differences between the research studies (e.g. sample size) and philosophy of the tools (e.g. purpose) do not make for straightforward comparisons. While best practice would see Alpha values reported in each sample (alongside confidence intervals), finding the statistics in relation to the ARC in order to make any comparison was not a straightforward exercise. The data is not reported by Groshkova et al (2013), while only a cursory mention is provided by Vilsaint, Kelly and Bergman et al (2017) in their efforts to produce an abbreviated ARC. Indeed, Mawson, Best and Beckwith et al. (2015) note that, "ARC (internal validity statistics)...have not been previously reported, and were good in the current study ( $\alpha = .89-96$ )". With alpha being a sample specific

statistic (DeVellis, 2017) i.e. it varies in different samples, it is important to report it each time a measurement (e.g. the ARC or RCQ) is used, otherwise authors can be accused of being selective about which values they publish.

To this end, and the only other reported internal reliability data on the ARC comes from McPherson, Boyne and MacBeth et al (2017). These authors reportedly undertook “*A Pilot Study to Validate Utility...*” and report subscale reliability as being low to moderate with Cronbach Alpha statistics ranging from 0.225 – 0.710. There are three noteworthy points from this. The first being that these authors only report ‘subscale reliability’ but arguably do so in a way which suggests Cronbach’s Alpha is the only type of reliability or even the most important kind. It may well be the only kind reportable within the study design in question but to talk about ‘reliability’ without any context or qualification could be misleading to readers. The second and third points are linked; these Alpha statistics are quite different from those reported by Mawson et al. (2015) i.e. the  $\alpha = .89 - .96$  noted above, suggesting the internal reliability of the ARC has varied significantly which emphasises the third point, that Cronbach’s Alpha statistics should be reported each time a measure is used in research. In the absence of it being reported clearly in Groshkova et al (2013), it is not possible to provide a clearer comparison. However, based on the available data, it would appear that the ARC has demonstrated variable internal reliability. In one study (Mawson et al, 2015) it appears stronger than the RCQ while another (McPherson et al, 2017) it is weaker. A final comment on Alpha statistics is that scales with many items can potentially inflate the Cronbach’s Alpha statistic (DeVellis, 2017). It may then be expected that a scale with 50 items (e.g. the ARC) could have a higher Cronbach’s Alpha statistic than one with 36 items (e.g. the RCQ).

The only other scale within the RC literature which could have provided a comparison of Cronbach’s Alpha values is Rettie et al.’s Recovery Strengths Questionnaire (2019). However, these authors do not provide a statement about which statistic they are using when reporting ‘high internal consistency’ and report “ $\omega = 0.93$ ” (which may be McDonald’s Omega but is unclear) and, despite this clearly being a different method for measuring internal consistency, they, arguably quite inappropriately, compare it to the ARC’s Cronbach’s Alpha statistic. Such an approach is consistent with some of the other shortcomings of the RSQ research



reported in the previous chapter but given the inappropriateness of comparing whatever it might be Rettie et al. (2019) are actually reporting as internal reliability, there is little utility in comparing the RSQ's internal reliability statistic with the internal reliability of the RCQ.

Despite Alpha sometimes being the only reported measure of reliability, and certainly the most oft-cited measure (Coaley, 2014) (though even then it is often reported without caveats or confidence intervals), it is only one type of measurement for one type of reliability. To better understand the reliability of the RCQ, it is important to consider the other analyses undertaken.

### *7.3.2 Stability Reliability*

Stability reliability has historically been measured by considering the correlation between the two scores, using a measure of correlation such as Pearson correlation coefficient, and it is this which shall be considered first.

The RCQ was administered to 102 participants at time-point one, and then again at time-point two. The instructions provided to those involved in data collection requested the difference between these two time-points to be approximately one week. It would be unrealistic to assume staff within treatment settings would a) see a participant as part of their treatment on a weekly basis where that week is to the day, for example, they may see them on a Tuesday one week and a Friday the next, and b) that services could prioritise the research to the detriment of service provision, for example, by seeing a research participant on a weekly basis for two sessions when that time could be used to provide treatment to someone who requires it. In addition to these barriers to collecting data, staff have a swathe of other responsibilities and duties required by their employer, and clients – would be participants – have their own priorities and lives to lead. With no incentives provided to those involved in data collection nor those participating in the study, the research relied heavily on goodwill. It has also been noted that one of the sites underwent significant service restructuring and managerial changes which undoubtedly impacted on the de-prioritisation of the research for some time.

These issues are in no way presented as criticisms of those involved in data collection, rather it is within this context that the difference in days between the two time points of data collection must be considered. The number of days between

time-point one and time-point two ranged from six (7% of retests) through to 27 days (< 2%) where the average was just under nine days ( $M = 8.7$ ,  $SD = 3.83$ ), and where over 90% of the sample had been re-interviewed within 11 days of time-point one.

An issue linked to the time difference from time-point one and two is that the participants were recruited from treatment populations. That is to say they were actively involved in a process which tries to reduce the severity of their AOD problems. As has been noted, although RC has been correlated with addiction problem severity (Burns and Marks, 2013), treatment which acts to increase RC is arguably a different proposition. Nevertheless, participants were involved in a dynamic process which may have seen some change to their addiction problem severity and possibly their RC from time-point one and time-point two. It could be argued that this impacted on the levels of correlation between time-point one RCQ ratings and time-point two RCQ ratings. It is possible that, had participants not been involved in this process, the correlations between the two time-points would be higher.

Despite the issues identified which could be considered to somewhat limit the level of correlation between time-points in data collection, the RCQ was found to demonstrate good to excellent reliability using Spearman's correlation with correlations ranging from  $r = 0.821$  (for Human Capital) through to  $r = 0.891$  (for Social Capital) and the RCQ Total rating correlation of 0.889. It has been noted that it is possible for a test to have reliability without validity. This is somewhat evidenced by the correlation for Social Capital. As has been reported, and is elaborated below, the validity of what has been conceptualised as Social Capital within the RCQ has been challenged, but despite some uncertainty about *what* it might be measuring, it appears to be measuring it consistently.

Overall, in terms of the correlation analysis, the sub constructs of the RCQ as well as the RCQ Total rating, the RCQ was found to demonstrate very good stability reliability, with DeVon et al (2007) proposing correlations  $>0.7$  could be considered high/very good. While correlation analysis provides some insight into reliability, and has traditionally been the key way of testing it (Coaley, 2014), Intraclass Correlation Coefficient (ICC) analysis is promoted (e.g. Koo and Li, 2016) because it provides

information on the level of agreement between two measures, which Bruton et al (2000) identify as being important in reliability analysis.

The ICC analysis largely corroborates the correlation analysis. When interpreting and reporting the ICC, Koo and Li (2016) propose the following: when a confidence interval of 95% is applied, an ICC can be considered poor, moderate, good and excellent with values of less than 0.5, between 0.5 and 0.75, between 0.75 and 0.9 and over 0.90 respectively. The ICC statistics for the RCQ variables include: Social Capital ICC = .891 (CI, .843 - .925), Physical Capital ICC = .850 (CI, .786 - .896), Human Capital ICC = .815 (CI, .736 - .872), Community Capital ICC = .877 (CI, .822 - .916), RCQ Total ICC = .884 (CI, .829 - .921). When considering only the ICC statistic, it can be concluded that the RCQ has good stability reliability. However, when consideration is given to the confidence interval statistics, and due to the CI of only one of the constructs (Human Capital) falling only slightly below 0.75 (i.e. 0.74 after rounding), it is more accurate to describe this variable as moderate to good reliability. On the other hand, some confidence intervals (e.g. Social Capital, Community Capital and the RCQ Total) indeed push the reliability beyond the 'excellent' benchmark. When summarising and reporting the reliability of the RCQ, taking cognisance of the Alpha and correlation coefficient statistics, it is arguably fair and accurate to describe it as good to excellent.

When comparing the reliability of the RCQ with the Assessment of Recovery Capital (Groshkova et al., 2013), it is possible to conclude that the RCQ is more reliable. Such a conclusion is caveated with the following: how the ICC statistic was calculated and sample size. As noted, Groshkova et al. (2013) performed reliability analysis on a sample of only 45 participants while the current study (n = 102) exceeded, albeit only just, the suggested minimal sample size of >100 (Kline, 2000). The paper fails to report the methodology and rationale for the decisions taken in the ICC, for example those set out by Koo and Li (2016) regarding 'model', 'type' and 'definition'. Furthermore, Groshkova et al (2013) undertook a statistical procedure to 'transform' their data due to the assumptions involved in their statistical analysis. This could also impact on their final outputs and limit any comparisons with findings from other studies not treated in the same way.

In reporting their findings, the authors describe the ICC statistics as “generally satisfactory” but how such a level of satisfaction was concluded remains somewhat opaque and unreported; they also describe “general to substantial” reliability for the 10 subscales but offer no benchmark against which this is assessed. Given the differences in structure of the questionnaires (36 questions across four domains/50 questions across ten), a domain by domain comparison is not possible. It is only somewhat useful, given the limitations previously noted, to compare the highest, lowest and total instrument ICC statistics. Of the statistics reported by Groshkova et al. (2013), the highest ICC value was 0.73 (CI, 0.56 – 0.85) (while the highest RCQ ICC = 0.891 [CI, .843 - .925]), the lowest was 0.50 (CI, 0.23 – 0.70) (while the lowest RCQ ICC = .815 [CI, .736 – .872]). The ARC Total Score ICC statistic was 0.61 (CI, 0.35 – 0.75) (RCQ Total ICC = 0.884 [CI, .829 - .921]). Notwithstanding the caveats noted previously, it can be seen that, generally, by comparing the statistics from these two studies, the RCQ appears to hold stronger stability reliability.

### *7.3.3 Content Validity*

The RCQ has been found to possess strong content validity, demonstrated by a Content Validity Index (CVI) statistic of 0.91 when Lawshe’s (1975) Content Validity Ratio (CVR) and CVI method was applied. It is not possible to compare the RCQ’s CVI statistics to any other RC measures because there is no evidence that any other RC measure developers have applied any content validity tests. Before considering the RCQ’s CVI statistic in any detail, it is important to note some of the limitations of both the test itself and how it has been applied in this research.

In terms of the test itself, the CVI, although providing a quantifiable measure of the validity of a scale’s content, is based on a subjective assessment of the content. That is to say, although those who assess the content hold subject matter expertise, it is an approach which remains open to interpretation and bias. For example, it is impossible to consistently set a threshold for all subject matter experts (SME) when they decide between ‘essential’, ‘not necessary but useful’ or ‘unnecessary’; essential for one may be not necessary but essential for another. This is somewhat countered by the fact that more than one SME is used, indeed Lawshe (1975) sets criteria for varying numbers of SMEs but even here there could be problems. This

leads us to one of the limitations in how the method was applied in the research, SME selection.

Even if a large number of SMEs were selected, it is possible particular perspectives on the subject matter could influence raters but that these raters would still profess 'subject matter expertise'. Take for example an issue already identified as being contentious within the field – abstinence – and consider whether a position on this i.e. whether recovery requires it, and it is possible to imagine how this might influence an SME view of the RCQ. Moreover, when trying to establish who may possess subject matter expertise, Hennessy (2017) has already shown only three RC scales developed to date. And while another (Rettie, Hogan and Cox, 2019) has been identified, it remains unclear whether these authors could be considered to possess the necessary expertise required to comment on RCQ content. Regardless, it is possible to argue that the vested interests they hold in their own scales could bias any feedback on the content of the RCQ. On the other hand, those who may be thought to favour the RCQ may be more likely to rate the content in a more positive fashion. While it is not possible to describe the current reviewers as 'favouring' the RCQ, it is possible to describe them as familiar with it; they have all used it in practice settings, and were well placed to identify items they thought were superfluous.

To that end, the RCQ, rated by SMEs with familiarity of the RCQ, was found to possess strong content validity. While this is a useful indicator of the perceived necessity of individual items by SMEs, the limitations of the method and its application should be borne in mind. These weaknesses have been somewhat mitigated in this research by the fact that the CVI data is not presented in isolation; to analyse and present only content validity data would be inadequate. The issues pertaining to the limitations of content validity have been somewhat mitigated by taking a robust approach to reliability and validity testing, including by examining concurrent validity.

#### *7.3.4 Concurrent validity*

The RCQ was assessed against the WHOQOL Bref and the CD-RISC to examine its criterion related concurrent validity. Previous chapters have explained the rationale

for this, in terms of how QOL and resilience are both under researched but gaining growing importance in the addiction literature and treatment landscapes.

In relation to QOL, the four RCQ sub domains of Social Capital, Physical Capital, Human Capital and Community Capital were examined alongside the WHOQOL sub domains of physical health, psychological health, social relationships, and environment. The WHOQOL Bref also contains a single item measure for overall satisfaction with health and satisfaction with life. According to the World Health Organisation, the WHOQOL Bref “assesses the individual's perceptions in the context of their culture and value systems, and their personal goals, standards and concerns” (WHO, 2019).

As hypothesised, moderate to substantial and high correlations were found to exist between the four domains of the RCQ and the four WHOQOL Bref domains: the correlations between the two tests' Social domains ( $r = .442$ ) only narrowly falls below DeVon et al.'s (2007) criteria for substantial and high correlations ( $\geq .45$ ); the RCQ Physical Capital and WHOQOL Bref Physical QOL domains exceed this threshold ( $r = .588$ ), as does the RCQ Human Capital and WHOQOL Bref Psychological domains ( $r = .658$ ) while the RCQ Community Capital and WHOQOL Bref Environment domains show the weakest correlations but still reasonable strength ( $r = .401$ ). In relation to the WHOQOL Bref questions and overall satisfaction with QOL, and overall satisfaction with health, total RCQ scores correlate positively with a substantial and high correlation between RCQ Total scores and overall satisfaction with QOL ( $r = .531$ ) and moderately with overall satisfaction with health ( $r = .443$ ). All correlations were found to be statistically significant ( $p < 0.01$ ).

It has been noted already but is useful to re-state, the relationships being expressed here do not infer causality; it is not being claimed that RC causes QOL changes nor QOL changes cause RC changes. Rather, these changes are, in most cases strongly or at least moderately, positively correlated, and that probability testing suggests this is not due to chance. Furthermore, examination of effect sizes i.e. not only whether two variables are statistically significant but what size is the effect, suggests that medium to large effect sizes exist between the variables reported above when considered against Ellis's (2010) criteria for effect sizes. That is to say that changes in RC, although not causing changes in QOL, go some way to

explaining the levels in participant QOL, and that changes in one variable is positively correlated with the other (when one increases or decreases, so too does the other).

These results confirm the hypothesis that RC, as measured by the RCQ, is positively correlated with QOL as measured by the WHOQOL Bref. This hypothesis was underpinned by the literature reviewed and reported in the previous chapter(s), and validates further the concept of RC, and the RCQ as a measure of same. QOL has been found to be lower in those with AOD problems and those seeking treatment for AOD problems than in cohorts without these problems (Donovan, 2005; Smith and Larson, 2003). Similarly, when symptoms of AOD problems decrease, QOL has been found to improve, with Villeneuve, Challacombe and Strike et al. (2006) reporting increases in QOL during abstinence and decreases during relapse. The current study bolsters these findings by finding a positive correlation between RC and QOL, combined with earlier RCQ research (Burns and Marks, 2013) which found a negative correlation between addiction problem severity and RC. By combining these findings, it is posited that RC measured by the RCQ is positively correlated with QOL and negatively correlated with addiction severity. In practice, this would mean that if someone were to experience an increase in their levels of RC, they are likely to be experiencing changes in their QOL and addiction severity, where an increase in RC would be correlated with an increase in the former and a decrease in the latter.

Where there is an interesting deviation from Villeneuve et al.'s (2006) work (although this looked only at health related QOL), and also Groshkova et al.'s (2013) work is that RC, although correlated with QOL, was not correlated with abstinence but rather how participants viewed their AOD problem status which, as has been noted, could be different. For example, someone could be using alcohol or other drugs i.e. they are not abstinent but neither is their use causing them 'problems' as defined and perceived by the participant. This concurs with some of the recovery literature where more pragmatic proffers include seeing recovery as a highly individual and personal experience (White, 2007), and that someone can be 'in recovery' if they say they are (Valentine 2011: 264). This distinguishes the RCQ from the ARC (and other measures which validate themselves against the ARC) in that, in order to possess the fullest amount of RC assessed by the ARC, a person must be abstinent

(Groshkova et al., 2013). The implications for policy and practice are discussed below but before doing so it is helpful to consider the concurrent validity of the RCQ alongside the CD-RISC, and to then consider the implications collectively.

As hypothesised, all correlations between the RCQ variables (the four domains and the RCQ Total scores) and participant Connor-Davidson Resilience Scale scores were found to be statistically significant at the 0.01 level with the exception of the correlation between RCQ Community Capital and the CD-RISC Total which was statistically significant at the 0.05 level. In order of strength of correlation, it has been found that RCQ Community Capital has the weakest correlation with CD-RISC scores ( $r = .186$ ), RCQ Social Capital is moderately correlated ( $r = .413$ ), while Physical, Human and RCQ Total scores had substantial and high correlations ( $r = .510$ ;  $r = .779$  and  $r = .646$  respectively).

It appears appropriate that the strongest correlation between resilience and RC was found between RCQ Human Capital and CD-RISC totals (0.779). This may have perhaps been expected given that the RCQ Human Capital construct entails internal assets, many of which were thought to be important in resilience. That the RCQ Total correlation is lower (0.646) is perhaps an effect of combining the other constructs, which are clearly related to resilience (thus the high correlation) but do not speak to the construct of resilience as clearly as the Human Capital domain, to achieve the RCQ Total score. While the RCQ appears to have good concurrent validity with the CD-RISC, the RCQ is not an assessment tool designed solely to measure resilience. It is therefore acceptable that one component within the RCQ is more strongly correlated with resilience than the RCQ Total score while the RCQ Total score has a substantial, positive and statistically significant correlation with CD-RISC scores.

It is not possible to compare the relationship between the RCQ and CD-RISC with any other measure of RC and resilience as no other RC measure has been investigated in this way. When considering how satisfactory or otherwise the level of correlation between the RCQ and CD-RISC, it is somewhat useful to look at other research that has examined concurrent validity with the CD-RISC measure. Johnson, Polusny and Erbes et al. (2011), in their development of an assessment tool called the Response to Stressful Experiences Scale (RSES) contend that the



RSES is designed to complement existing resilience scales by helping assess responses to stressful situations immediately in their aftermath. Although unclear in the paper, it can be reasonably assumed there was a hypothesis of high correlation between the RSES and CD-RISC. And indeed, that is what is reported ( $r = 0.81$ ;  $p = < 0.01$ ). The authors report to be satisfied with this. It can be seen that the relationship between the two measures is not dissimilar to the level of correlation between the CD-RISC and Human Capital construct of the RCQ ( $r = 0.779$ ) while the RCQ Total score is at a lower level ( $r = 0.646$ ), and an explanation for why has been previously provided (i.e. the RCQ is not a measure of resilience therefore a lower strength correlation could be expected). This suggests the RCQ, in the context of other instruments which measure resilience, and when considered against benchmarks for describing correlation strength (e.g. DeVon et al., 2007) has good concurrent validity with the CD-RISC.

### *7.3.5 Construct Validity*

Exploratory factor analysis (EFA) was undertaken to explore the factor structure of the RCQ. The rationale for the decisions taken and the type of EFA undertaken was explained in the methods chapter. It will be important to bear some of this in mind in the following section as it has an impact on how factor analysis is referred to, and its relationship with 'validity' both in the literature in general but specifically in relation to RC measurement literature.

EFA was chosen, for example over confirmatory factor analysis, as this was indicated as a requirement when exploring a new data set and theoretical construct for which there is limited prior theoretical constructs (Worthington and Whittaker, 2006). This is arguably the case within the RC literature with varying attempts to define the construct(s) within the literature identified by Hennessey (2017) and examined earlier in this thesis. While it is not the subject of heated debate, there is a lack of clear consensus on construct definitions.

It could be argued that other ARC research, for example Groshkova et al (2013), Vilsaint et al (2017), and Ardnt, Sahker and Hedden (2017) might have opted to use EFA over principle component analysis (PCA) in their research but this is for different reasons. Some would describe the use of PCA as applied by these authors to be erroneous, and this stems from the tensions within the psychometrics literature about

when to use PCA, “PCA is not a true method of factor analysis and there is disagreement among statistical theorists about when it should be used, if at all” (Costello & Osborne, 2005: 1-2).

The fundamental argument proposed by Costello and Osborne (2005) which was persuasive that EFA was appropriate for use in the present study, and that it would have been apt for the aforementioned ARC research, lies in the function of the method(s). PCA is a data reduction technique, calculated without cognisance of any underlying structure caused by any latent variable(s), and produces output which includes all of the variance of the manifest (observable) variables. With the aim of factor analysis being to examine the factor structure i.e. how any latent variable cause the manifest variables to covary, it is important that only shared variance is contained in the solution. This is what factor analysis does during factor extraction by partitioning the shared variance of a variable from its unique variance and error variance (Yong and Pearce, 2013). PCA does not do this. It is for these reasons that: EFA was used in the current research; other research examining the factor structure of RC measures might have thought to use the same approach, “EFA is normally the first step in building scales or a new metrics” (Yong and Pearce, 2013:79); and the solutions yielded from the different approaches cannot be readily compared.

In addition to the aforementioned methodological differences, it should be noted that EFA should be an iterative process inasmuch as a series of EFA's, undertaken with data from different samples, can help establish a reliable picture of the factor structure of a scale, perhaps more reliably so than confirmatory factor analysis (Worthington and Whitaker, 2006). To that end, the findings of the current study are the first of what could be a series of EFA's used to work towards a fuller understanding of the factor structure of the RCQ. It is with this in mind that a four factor solution was found to best fit the data from the RCQ. These four factors have, by necessity, been discussed in the results chapter as EFA involves interpretation of the factors as opposed to only a presentation of the statistics and loadings.

Before considering the factors in any detail, the fact that four (rather than one) have been identified is an interesting finding. As mentioned, other analyses of other RC measures are not straightforwardly comparable but it might be of note that the ARC

research (Groshkova et al, 2013) found only one (although others e.g. Arndt et al, 2017, McPherson et al, 2017, also using PCA to investigate the ARC suggest alternatives). More importantly, in the context of AOD problem literature, in particular some of the theories of addiction explored in this thesis, such as Zinberg's (1984) biopsychosocial model or Griffiths and Larkin's (2004) complex systems model, it could to some extent be expected that any model of RC would be multi-factorial. While the ARC has been suggested to provide different domains of RC on a conceptual basis without any empirical support (Valsaint et al., 2017), this first EFA of the RCQ has found empirical evidence to support a four factor solution, and this is complemented by an examination of content validity and concurrent validity.

The first factor within the model was comprised of items which had previously been conceptualised within a single domain, Community Capital. Community Capital has been defined in this work to include experiences of stigma, acceptance, and community safety combined with the availability of treatment opportunities. Previous work (Burns, 2012; Burns and Marks, 2013) notes that this draws upon both the cultural capital explored by Cloud and Granfield (2008) while considering and merging the notion of community capital proposed by White and Cloud (2008). These aspects have been identified as having an important role when considering health and health inequalities. For example, Health Scotland (2019b) identify 'feeling safe' and 'identity and belonging' in their Place Standard assessment tool, a tool which identifies areas within local communities which could be adapted to improve peoples' health, wellbeing and QOL. In relation to this factor, one item was suggested to be useful but not necessary by one SME in the CVI analysis while another was identified by one SME as unnecessary. This was discussed in the results chapter, and so too the rationale for retaining these items. That these items strongly load (loadings of 0.77 and 0.92) onto the factor, and that this factor has been positively and statistically significantly correlated with total CD-RISC scores and the social, psychological and environmental domains of the WHOQOL Bref, and that the factor correlates appropriately with the other RCQ domains, provides robust evidence that this is a useful factor when considering and measuring RC.

The second factor found in the EFA comprised of seven items, six of which had previously been conceptualised as Physical Capital. Physical Capital, however, had been previously comprised of nine items so the new factor saw three of the previous

items removed (one of which subsequently loaded onto factor four) and one item added from what had been Human Capital (discussed below). Physical Capital has been defined as: physical health and wellbeing, sleep hygiene, recovery conducive housing, finances, diet, access to transport and physical appearance. Items which loaded onto factor two accounted for these things except finance (which loaded onto factor four) and transport.

The rationale for retaining an item within the RCQ in relation to transport, despite its failure to load onto any factor has been provided in the results chapter and included how the essential role transport plays to treatment and more broadly to social participation. Physical Capital, of which factor two is predominantly comprised of items proposed to measure this, performed well in content validity analysis with one item identified as unnecessary and another identified as useful but unnecessary. The former was an item around energy and the latter involved an item regarding satisfaction with physical appearance. It was noted in the results chapter that in their identification of the energy item as unnecessary, the SME failed to provide any rationale for this. By considering the item loading (0.76) i.e. it loaded strongly onto factor two, and considering how Physical Capital performed in the concurrent validity analysis, it was decided to retain this item. The RCQ domain of Physical Capital (and to almost the same extent, factor two, given its composition) has been found to have substantial and high correlations with key aspects measured within this study, including total CD-RISC scores ( $r = 0.510$ ) and the WHOQOL Bref psychological ( $r = 0.567$ ), environment ( $r = 0.550$ ) and physical ( $r = 0.588$ ), with the latter being the strongest as may have been expected. These collective findings allow us to conclude that factor two is useful when considering and measuring RC.

The third factor produced by the EFA included nine items though one loaded stronger onto factor four which subsequently saw factor three comprise eight items. Of these eight items, seven had been included in what had previously been defined as Human Capital: perception of past, present and future, self-efficacy and self-awareness, problem solving, patience, resilience, hopefulness, decision-making, knowledge, skills and abilities. As noted, an item pertaining to the latter loaded onto factor two however the other items loaded onto factor three. That these items loaded onto a single factor further bolsters the Human Capital construct and its importance in relating RC to resilience. The concurrent validity analysis found that

Human Capital had the highest correlation with the CD-RISC scores ( $r = 0.779$ ). The Human Capital construct also performed well in content validity analysis, with only one item identified as 'not necessary but useful', and this was due to an interpretation by one SME as too much of a similarity between two items which has been examined and addressed in the results chapter.

The fourth factor from the EFA saw a four items coalesce around a factor which deviated from any previous conceptualisations. In addition to the three RCQ domains which have largely seen their respective items load onto factors, the RCQ has a domain called Social Capital, defined as: family, social and intimate relationships, their existence, levels of satisfaction and conduciveness to recovery; social and relational roles; involvement in social rituals (e.g. sharing meals); emotional support; and access to recovery supporting information and advice. As noted in the results chapter, four of the eight items which accounted for Social Capital failed to load onto any factors. In this fourth factor, three items were from the Social Capital construct and one was from the Physical Capital construct. It is here that the findings are somewhat contradictory but only slightly; Social Capital, relative to the other RCQ domains performed poorly in the CVI and concurrent validity analyses but, generally, did not perform badly. For example, the correlations between Social Capital and WHOQOL Bref social and psychological domains and the CD-RISC total scores only narrowly fall below DeVon et al (2007) threshold of substantial and high ( $r = 0.45$ ) with respective correlations of 0.442, 0.435 and 0.413. Possible explanations as to why the items in the Social Capital domain performed poorly in the EFA were provided in the results chapter during their interpretation, and were noted above. In summarising these issues, it is possible that the difficulties with the theoretical conceptualisation of social capital itself (e.g. Farr, 2004; Fine, 2007) has affected the RCQ's attempt to quantify it; by providing such a narrow definition of 'social' capital, it has become somewhat difficult to measure.

Although not supported by this EFA, an alternative conceptualisation might involve two categories of RC: social capital, which could include items 'external' to the individual (e.g. social networks, housing, transport) and 'personal' capital, which could include items internal to the individual (e.g. identity, self-esteem, resilience). While such a perspective may hold some theoretical or lay explanatory value, it arguably lacks the specificity required to consider specific asset areas at a level of

granularity which could support interventions to be directed in a particular way. For example, rather than having a large number of items (called personal capital) which has something to do with resilience, it has been shown that, using the RCQ, Human Capital is well correlated with resilience which allows a more specific measure to identify an individual's assets either for deployment or development. Further research is required to examine both the RCQ Social Capital construct and this fourth factor. To that end, it is possible that this may involve at least another three samples; one study alone, unless it provided results consistent with the current findings would be insufficient to reach any firmer conclusions.

The four factor solution derived from the EFA which contains 27 of the original 36 RCQ items was found to explain approximately 45% variance. As noted above, it is not comparing like-for-like when considering the amount of variance explained by models generated by other RC measures due to the differences in methodology and application of analysis. It is possible, however, to consider this level of explained variance with other EFA's undertaken in other fields. While Tinsley and Tinsley (1987: 421) suggested often "less than 50% of the total variance is explained by a factor solution", others have suggested the variance explained should be at least 50% (Merenda, 1997). In his meta-analysis of over 800 EFA's, Peterson (2000) found the average amount of variance explained was 56.6%. At 45%, it is clear the four factor solution in the current study falls below this average, and too the suggested lower limits of 50%. It is possible, and therefore necessary to undertake further research, that a different level of variance explained could be found from a different sample. Indeed, further research may suggest different factors and different item loadings. It is therefore prudent to recommend that despite the RCQ being found to be a reliable and valid measure of RC, both when compared to other measures in the field and when considered in the context of psychometric measurement literature, it is necessary to undertake further research to examine its factor structure. This is quite common in psychometric scale development with many instruments being the subject of factor analysis despite their reliability and validity being established (or at least claimed), and their use in the field (e.g. Najafi, Sheikhvatan and Montazeri et al., 2013 for the WHOQOL Bref; Green, 2014 for the CD-RISC; Arndt, Sahker and Hedden, 2017 for the ARC).

The output from the results and analyses is that the RCQ will be revised to have the two items identified in the results chapter removed for the reasons reported. This will provide a revised version of the RCQ to be used in future research and in health and social care settings to support patients and service users. Items will not be noted in their 'factors' as there is arguably more benefit in having a model which is more easily understood in conceptual terms even if the items are not empirically supported to coalesce together – that there is empirical evidence for their inclusion in the first place is arguably sufficient. Again, this is common practice in psychometric scale design, where items can feature under headings which may hold explanatory value but lack empirical evidence that these items 'hang together' in a factor.

## **7.4 Policy and Practice Implications**

### *7.4.1 Policy Implications*

The findings of this research perhaps have greater implications for practice than policy in that they allow the delivery of policy – in relation to alcohol and drug treatment – in an evidence-informed way which will be elaborated upon below. Nevertheless, and even, to some extent because of this, the main implication for policy is that this research provides a confident basis for policy to be more assertively orientated around strengths-based approaches and RC, not because of any Political or moral reasons that working in a strengths-based way might seem to be the 'right thing' to do but because the evidence demonstrates that by influencing RC, as measured by the RCQ, this correlates with changes in resilience, QOL and addiction severity.

Cognisance of the broader context within which alcohol and drug policy, and therein, AOD problem treatment, resides is important. In a joint response to the Scottish Affairs Committee Inquiry into problem drug use in Scotland by NHS Health Scotland, NHS Health Protection Scotland and NHS Information Services Division, which was co-authored by this author (NHS Health Scotland, 2019c), there is an identification of what the respondents consider to be the key drivers of problem drug use in Scotland, and the unique effects these drivers have had in Scotland. The response identifies poverty, deprivation and inequality as the key drivers of problem drug use, and cites evidence which reflects this (e.g. Scottish Parliament Information Centre, 2017; NHS Health Scotland, 2019). The evidence and the submission

describes how a combination of socio-economic and political decisions have led to increased inequality in Scotland, and that problem drug use is a symptom of this. That this has led to an increase in drug related deaths to record levels (National Records Scotland, 2018) is said to be due to the unique effect of these policies on the health and wellbeing of the Scottish population where excess mortality cannot be explained by the drivers of poor health – poverty and deprivation – and that, after adjusting for these, 5000 more people die in Scotland than in England or Wales (Walsh, McCartney and Collins et al, 2016). The report concludes that to have an impact in reducing drug related deaths, socio-economic and political decisions are required to be taken to reverse these conditions, and to concurrently prevent future drug related deaths and mitigate the risks faced currently by cohorts of the population. While health in all policies (Faculty of Public Health, 2018) will be important to create this shift, approaches to alcohol and drug treatment could play a key role.

It should be noted that alcohol and drug treatment are often (though not always) commissioned and provided together, best symbolised in Scotland through Alcohol and Drug Partnerships, the conduit to delivering national strategy at a local level. Monaghan and Yeomans (2016) build on Berridge's (2013) assertion that both policy areas have grown ever closer through the 20<sup>th</sup> Century, adding that the recovery agenda has arguably expedited this process. Tensions remain regarding the legislative framework within which drug policy and treatment is provided in the United Kingdom, and how this criminalises people for using certain substances and prohibits certain treatment interventions, despite evidence of their efficacy, such as safer consumption facilities (NHS Health Scotland, 2019). That legislation is a reserved power but that policy is devolved to national assemblies and parliaments does not prevent strengths-based approaches being taken by treatment providers but it does set the context within which treatment is provided. The stigmatisation inherent within the current legislative framework, at the very least, calls into question the congruence of treatment providers trying to engage with people in a meaningful way, whether that be to increase QOL, resilience or RC, when those same people are viewed as criminals. A shift in this legislative framework may support the authenticity of policies which assert treatment services should be promoting 'rights', 'respect' and 'recovery'.



Scotland's alcohol and drug treatment strategy (Scottish Government, 2018) retains a commitment to working with people in a strengths-based way. Indeed it claims, "The success of this strategy depends on our ability to take an asset-based approach to working together to plan, invest and deliver in partnership" (Scottish Government, 2018: 6). It also commits to the following action, "The Scottish Government will develop specific national guidance and standards for asset-based assessment and case management, linked to Quality Principles and the Health and Social Care Standards" (Scottish Government, 2018: 30). As can be seen, the strategy also retains the ongoing commitment to the delivery of the *Quality Principles* (Scottish Government, 2014a). The position asserted within the *Quality Principles* is that RC should be assessed at the beginning of treatment (Quality Principle 4) and when recovery care plans are being reviewed (QP 6).

While this should be a cause for optimism, it is somewhat tempered by what could be perceived as the lack of accountability within governance structures. For example, the Care Inspectorate undertook an exercise to validate ADP self-assessment of the implementation of the *Quality Principles*. They provided a national report on this work (Care Inspectorate, 2017) which, among other things, commented that there was an appetite amongst staff to work in a strengths-based way, and to measure RC, but there was little in the way of tools to assist this. Moreover though, there is little evidence of any follow-up; ADP's were asked to design action plans in response to bespoke Care Inspectorate feedback but many failed to do so. Further evidence of lack of accountability is provided by Audit Scotland (2019) where they report that there is no evidence of the impact of the former strategy, *The Road to Recovery* (2008), nor the over £700 million pounds invested in alcohol and drug treatment since 2008. Indeed, as note by Humphreys and Lembke (2014: 15), "Recovery-oriented public policies only matter if the interventions they support are beneficial", and while absence of evidence in Scotland is not absence of impact, if the RCQ – or any measure of RC – is to be used effectively, treatment services will require more than policy rhetoric and hope that it is implemented.

The new alcohol and drug treatment strategy promotes a public health and human rights-based approach, calling for improvements in QOL for the whole population and, in particular, those who are seeking treatment for AOD problems. To some

extent, this chimes with the aims of salutogenic approaches and positive psychology science briefly detailed in this thesis: the shift from pathology to wellness, the importance of resilience and self-efficacy to personal development and life satisfaction (Seligman, 2002). It must however be recognised that this takes place in the context of structures which influence social determinants of health and wellbeing, and the unequal distribution of wealth, income and power. Some of the potential key criticisms which could be levied at the RCQ via those aimed at positive psychology, include the oversimplification of the complexities and harshness of life (Lazarus, 2003), and an attempt at maintaining the status quo by increasing personal happiness and resilience to see a reduction in emotions, such as frustration and anger, required for social change (Ehrenreich, 2009). In response, it is argued that the RCQ has not be designed to be part of the anaesthesia. Rather, if used as intended, the hope and belief is that through identification and development of strengths and assets, people can identify the things which have contributed to the problems they have faced, both personally and in the social circumstances which have influenced their lives, that they can realise their ambitions and achieve their goals, and can, where necessary, be supported to act to change things for themselves and for others (e.g. LGIU Scotland, 2017).

#### *7.4.2 Practice implications*

In terms of treatment provision and practice implications of the research findings, the RCQ, a reliable and valid strengths-based assessment tool, should be used to help identify the strengths and assets someone can call upon to initiate and sustain recovery from AOD problems. To be used effectively, the RCQ should be used as part of a treatment model which recognises that alcohol and drug problem cessation – whether that includes abstinence or otherwise – requires a longer term perspective, akin to the recovery management approach described previously. A recovery management based approach is a strengths based, solution focused, medium-to-long term approach that concentrates on the global health and wellbeing of a person, recognising and treating clinical symptoms while also looking to add to and develop the existing strengths and protective factors within a persons' life to support their recovery initiation and maintenance (White, 2008). It can involve individuals realising benefits in an array of life areas, including their social relationships and networks, health, housing, employment, self-care, use of time,

community participation and well-being (ACMD, 2013; Burns & MacKeith, 2012; Neale, Nettleton and Pickering et al., 2012). And, despite not being termed as such, this is what is described in the new alcohol and drug treatment strategy (Scottish Government, 2018).

Used in this way, the RCQ, recognises the impact of the social determinants of health (Marmot, 2005; Health Scotland, 2019), and what Alexander (2010) describes as psychosocial dislocation; that the many facets of individual's social circumstances has an impact on their use of, and in turn what may become their dependence upon, AOD. It is important to be aware that problems experienced from the harms of AOD problems (i.e. in addition to their use) is socially patterned, with those in less affluent areas experiencing a disproportionate amount of harm from AOD use (Parkinson, Minton and Lewsey et al, 2018). This perspective, in terms of theories of addiction, fits well with biopsychosocial models (e.g. Zinberg, 1984) and the work of Kumpfer, Trunnell and Whiteside (1990) in developing Kumpfer's (1987) proposed 'Biopsychosocial Model of Vulnerability to Substance Abuse'. Indeed, the four factor solution suggested by the EFA in this research is a good fit with a multi-faceted approach to understanding the resolution of AOD problems in the same way that a multifactorial model arguably best explains their manifestation.

In more specific terms of how the RCQ should be used, it requires to be integrated into an assessment process in a more considered way than suggested by Smith and Massaro (2010), and noted in this thesis' review of the literature. 'Bolting on' the RCQ (or any assessment of RC) to a treatment providers existing suite of assessment instruments is only likely to irk the staff who likely already feel overworked. Staff should be supported to see the benefits of the assessment tool, recognising that it is part of a wider and coherent (to them) change within the treatment system, one which is reflective of the alcohol and drug treatment strategy (Scottish Government, 2018), the 'eight point plan for treatment and recovery' therein, and the delivery of the *Quality Principles* (2014). Such transformational change requires strong leadership within public services, evidence of which appeared to be lacking in the two examples of 'integrated' addiction treatment in Scotland noted earlier (Burns, 2016a and 2016b; Yates, Burns and McCabe, 2017, Smith, 2018).

The practical application of the RCQ should see service provider staff work with the people who use their services to systematically assess RC, and then work with the client to consider how such strengths can be developed and deployed so as to achieve the outcomes the client wants (and the service and ‘recovery oriented’ system can support) which will presumably be mapped out in the co-produced recovery care plan (Scottish Government, 2014). Mobilising client RC in the real world and producing demonstrable results will be vital to the whole process; in the absence of any practical consequence, the assessment will remain only a pencil and paper exercise, tokenism, shelved in a case file.

The success of the RCQ will, among other things, rely on the culture of the treatment provider using it. It was noted that social determinants of health were recognised in the development of the RCQ but this is somewhat undermined if the staff using it are not aware of the same i.e. they are not providing inequalities sensitive practice (NHS Ayrshire and Arran, 2019). Indeed, stigmatising views and behaviours continues to be endured by users of public services demonstrated by those who provide them both generally (e.g. Hattenstone and Allison, 2019) and in relation to AOD drug use specifically (Lloyd, 2012; Care Inspectorate, 2017). But to only ask that staff are ‘inequalities sensitive’ or that they interact with people in non-stigmatising ways arguably sets a relatively low bar in terms of expectations and impact; people accessing health and social care services do not only want to be treated with dignity and respect, they want these services to improve their lives. An extension of this is that people who access AOD treatment services don’t simply aspire for a less harmful life, they expect treatment to deliver improvements in their QOL (Laudet, 2011) – which does not necessarily equate to abstinence. To achieve these aspirations, the service culture is required to reflect the policy rhetoric “It’s (asset-based approaches) everywhere in policy” is a participant quotation in McLean, McNeice and Mitchell (2017).

McLean, McNeice and Mitchell (2017) provide some excellent insights into asset-based approaches in services in Scotland. Through case studies with services, senior manager, operational staff and service users, they highlight some of the key challenges and opportunities in this area, as well as helping identify some of the unique differences between asset and deficit based approaches. They identify the importance of leadership, how people who receive services from an asset-based

perspective feel empowered to achieve their goals, and how staff also reap benefits from this approach. Importantly though, they found that it is an approach that does not always suit all staff, suggesting it to be diametrically opposed to the philosophy underpinning some staff values and ways of working. By considering the clear differences in approaches presented in Table 12 it can be understood why some staff, trained in methods and values which support traditional, deficit-based approaches would struggle to accept, let alone embrace and practice, asset-based approaches.

**Table 12:** A Deficit Approach as Compared with an Asset-Based Approach (McLean, McNeice and Mitchell, 2017)

Starts with deficiencies and needs (in the community)	Starts with assets/resources (in a community)
Responds to problems	Identifies opportunities and strengths
Provides services to users	Invests in people as active participants
Emphasis on the role of services	Emphasises the role of civil society
Sees people as clients and consumers receiving	Sees people as participants and co-producers with something to contribute
Treats people as passive and 'done-to'	Helps people take control of their lives
Fixes people'	Supports people to develop their potential
Implements programmes as the answer	Sees people as the answer

The required shift in power is apparent even without going into more detail than is provided in Table 12. When this is then considered within an addiction treatment context, the scale of the challenge is perhaps more striking. See, for example, the experiences of “integration” from the statutory addiction service site in this study reported by the local press (Smith, 2018). Meeting these challenges will, in part, rely upon the workforce development strategy being designed to accompany the alcohol and drug treatment strategy (Scottish Government, 2018), and the wider ROSC coming to fruition. It is possible that a ROSC founded upon inequalities sensitive practice, where practitioners display compassion because of their understanding of how someone’s life has been impacted upon by social circumstances largely outwith

their control, while not negating the opportunity to exercise personal agency, support people in an asset-based, evidence-informed way could lead to a sustainable, empowering system of care. The introduction of the RCQ however, to an otherwise unchanged treatment system, is akin to what the evidence suggests of the removal of alcohol or drugs from an otherwise unchanged lifestyle (of someone experiencing AOD problems): insufficient for lasting change and positive outcomes. It is incumbent upon those with the power to do so to make the changes required, and to act in the best interests of the people they are paid to serve by delivering on policy promises.

### **7.5 Limitations of the RCQ**

Although the successful implementation of the RCQ will rely on those using it and the culture within which it is used, it would be remiss to discuss this without also highlighting the limitations of the tool itself. The RCQ is not an exhaustive list of all things which could impact on AOD problem resolution. This is in part due to its purpose: the RCQ is a strengths-based assessment designed to illuminate strengths and assets which have been correlated with addiction problem severity, QOL and resilience. It is not, for example, an 'outcomes tool'. It can help systematically, reliably and robustly identify the assets people can use and develop to achieve their outcomes. And, indeed, an outcome for a service user (and a service) might be that a client has increased their RC (or components of their RC).

Depending on perspective, a further limitation is that the RCQ is not designed for self-completion. While some staff may see it as an inconvenience that they are required to complete this with service users, it has been designed as an aide for all treatment staff to learn more about the people to whom they provide a service in a way that develops rapport and highlights the many areas of an individual's life which can be both supported as well as be a support in their efforts to resolve AOD problems. While each question is only answerable in a Likert scale type format, each question is also an opportunity for discussion and elaboration, to strengthen the relationship between client and practitioner through a discussion about what is strong and how to increase this, rather than placing primacy on what is wrong and trying to decrease this.

A final limitation might lie in the length of the RCQ but this again depends on perspective, and whether services and staff are provided with the time and resources to deliver quality assessment and interventions. While an assessment with 50 items (Groshkova et al, 2013) is arguably too long, a briefer version with ten items (Vilsaint et al, 2018) is arguably too short, particularly if the goal is to identify strengths and assets to be mobilised. Feedback in relation to the length of time taken to complete the RCQ will continue to be monitored. Any changes to the length of the questionnaire will be based on empirically supported reasons identified through research evidence. To that end, it is important to consider the limitations of this research more broadly.

## **7.6 Study Limitations**

While this study has competently answered the research questions intended, the findings must be considered alongside some limitations. Limitations are noted in the order of possible impact and include: researcher bias, sample size, study design, sample selection and population, instrument design, and lack of previous research.

In relation to possible researcher bias, it should be noted that the RCQ has been designed, developed and tested for the most part by a single researcher. It is possible that this could have influenced, if not the findings themselves then at least the way these have been reported. For example, tone and framing might have been different if the researcher felt less 'ownership' of the RCQ. Indeed, the intellectual property rights of the RCQ belong to the author, and the RCQ has been commissioned (prior to the commencement of the research) by Alcohol and Drug Partnerships for use in treatment settings. Such limitations are felt to have been adequately mitigated by a number of points: the research was subject to rigorous ethical oversight, which involved full disclosure of the intellectual property rights and the use of the RCQ by third parties, and was provided with ethical approval by the University of Stirling; the research project was supervised by well-experienced academics who were able to appropriately challenge any detections of bias; the research monitored by University of Stirling's progress review protocols providing opportunity for appropriate challenge and support; the methods and analysis within the study are robust and transparent, giving opportunity for readers and reviewers to identify and challenge any researcher bias.

Regarding sample size and study design, it has been noted within the methods and results chapters that the sample sizes for each of the components of analysis were slightly smaller than that which might have been preferred. Drawing on the various psychometric literature allowed for benchmarking, and comparing to other studies allowed for comment on the strength of the study relative to others. While the sample sizes may have been large enough to provide reliable conclusions and do not undermine the findings, a power analysis prior to undertaking the research would have perhaps allowed a more confident position to be taken in terms of sample sizes, particularly in relation to the exploratory factor analysis. To somewhat mitigate, confidence intervals and effect sizes have been provided to help contextualise and qualify the findings where appropriate. While the study allows for comment on the reliability, criterion related concurrent validity and construct validity of the RCQ, there have been other properties which have been outwith the scope of the design. For example, predictive validity has not been considered and divergent validity has not been examined in this study (but has been, to some extent in previous RCQ research [Burns and Marks, 2013]). That this could be considered in future research is noted below.

An additional limitation in terms of study design pertains to the inability to provide a conclusive position in relation to construct validity. Although this is inherent when using exploratory factor analysis, and that a series of EFA's are required to help create a reliable picture of the factor structure of a psychometric assessment, it may be, for some, a slightly dissatisfying position.

In relation to sample selection and the population, there are a number of noteworthy points. The sample was originally intended to be recruited from a single statutory service. By relying on only one site, the research was delayed significantly due to the organisational changes described previously. In cognisance of this, a sample was recruited from third sector site which also provided some opportunity to compare levels of variables between the two samples. However, it is not possible to say that the sample is representative of the population of people with AOD problems in Scotland nor of the different treatment populations. In terms of participant selection, this was largely at the discretion of those working in the treatment centres/communities. While reports of population saturation were received (i.e. everyone who could be interviewed had been interviewed in the time available), it is



possible that participants who agreed to take part might have had higher levels of RC (and resilience and QOL) than those who chose not to participate. Future studies should recruit from different areas, and larger sample sizes, to provide comment on more representative samples.

The penultimate limitation identified pertains to instrument design, and specifically to the collection of demographic data, and, to a lesser extent the reporting of same. While it is obvious that only those data collected can be analysed and reported, it is also the case that restrictions exist in terms of appropriateness in relation to the research questions posed. In terms of the former, it may have been interesting to collect data on employment status, socio-economic status, the length of time in treatment and previous efforts to resolve AOD problems, for example. However, at the same time, it has not been possible to fully analyse all the data that has been collected in a way that could answer additional questions of interest. For example, there could be questions in relation to whether there are patterns in age, gender, substitute medication and/or time in recovery which the current research questions did not set out to answer, and, within this research project, there was limited scope to do so; to answer these questions would have reduced the capacity to robustly answer the primary research questions.

A final limitation is in relation to being able to contextualise and compare the research findings with other RC measurement research. Of the limited studies identified, methodological differences and, in some cases, deficiencies, render meaningful comparison impossible. On the other hand, this research has provided some illuminating insights to the RC measurement literature and, as the literature continues to grow, it is possible that more credible studies will be available for comparison in future.

## **7.7 Conclusions and Future Research**

In answering the research questions, the key findings of this research include: a simplified structure of the Recovery Capital Questionnaire (RCQ) involves four factors which, with the exception of one factor, closely reflects the previously hypothesised conceptualisation of RC; the RCQ, has been found to possess strong content validity, good criterion-related concurrent validity with a measure of QOL (the WHOQOL Bref) and with a measure of resilience (the CD-RISC); the RCQ

possesses excellent test-retest reliability and appropriate equivalence reliability. It can be concluded that the RCQ is a psychometrically sound strengths-based assessment which should be used to identify the strengths and assets in people who access addiction treatment. The RCQ has been demonstrated to have moderate to high positive correlations with QOL and resilience and, as demonstrated by Burns and Marks (2013), a negative correlation with addiction problem severity.

The international drug prohibitionist policies in the form of the United Nations treaties (United Nations Office on Drugs and Crime, 2017) provides for the UK legislative framework, via the Misuse of Drugs Act 1971 (Home Office, 1971), which is the context within which Scottish drug policy is enacted. Theories of addiction have been examined, recognising that for some time, researchers were looking to, and some continue to try to, identify single locust areas to explain the manifestation of addiction, for example, as a brain disease (e.g. Leshnar, 1997) or a personality disorder (e.g. Eysenck, 1997), and continue to debate whether it is a brain disease or moral deficit (Heather, 2017) or similar. More credible rationales were seen to emerge which recognise the interplay between the individual, the substance and the setting within which the substance is consumed, both at a micro and macro level (e.g. Zinberg 1984 and Kumpfer, Trunnell and Whiteside, 1990 on the former; Alexander, 2010, as an example of the latter). The macro level allowed for reflection on the social determinants of health and the structural inequalities which, to some extent, explains the socially patterned harms caused by AOD (Marmot, 2005; Wilkinson and Pickett, 2009).

The term 'recovery capital' was found to be applied to process of mobilising and deploying strengths and assets to overcome challenges relating to AOD problems (Granfield and Cloud, 1999), and that most people are able to do this without the assistance of treatment (Sobell, Ellingstad and Sobell, 2000). Those who enter treatment have been found to experience some of the more traumatic life experiences and/or often experience multi-morbidities i.e. they have experienced a host of health and social harms (Best et al, 2010), the effects of which are often quite apparent. It has been argued that this has, in part, resulted from a combination of socio-economic and political decisions made since the 1940's which has seen a steady growth in inequalities in Scotland and an unequal distribution of power, income, wealth and opportunity (Walsh et al, 2016). For many people this has

resulted in the experience of psychosocial dislocation (Alexander, 2010). AOD problems are arguably another symptom of the wider problem. It has been proposed that taking a strengths-based approach, of which working to develop RC in people with AOD problems is an example, can be empowering (McLean, McNeice and Mitchell, 2017).

There is growing support for strengths-based approaches in the literature, both within the addictions literature and more broadly, for example in positive psychology, the recovery literature and in public health in the form of salutogenic approaches. Salutogenesis was identified as a similar type of approach to that of working with RC in that it could improve peoples' sense of coherence of their circumstances and, to some extent, their sense of control. This is an area which would be useful to research further.

Asset or strength-based approaches feature strongly in Scotland's policy worlds but, as has been described by others, practice settings are somewhat more limited in their provision of this type of support (McLean, McNeice and Mitchell, 2017). Some have argued that these types of approaches attempt to plaster hope over despair (e.g. Boyt, 2013), while others could may argue to blame the individual for their own short-comings, and emphasise that it is their problem to sort if only they could tap into their strengths. It has been argued here however that this is not the case, and is certainly not the perspective from which the RCQ has been developed. Rather, many of the people who access addiction treatment have experienced multiple barriers, been deprived of the opportunities to develop skills, strengths and assets which can be deployed by others in the population when facing adversity – those who have been found to recover without needing treatment, for example – and so it is the role of addiction treatment to prevent further harm coming to people but also to support them to develop strengths and assets, to be able to not only cope but to live well in the presence of challenges, and to help them lead not only a less harmful life but a life they believe is worth living, and that they are worthy of living. It is argued that given all that has been presented, there is a requirement for all involved to redouble our efforts to support people to improve their QOL, and that the RCQ can play a small role in this.

Areas of future research involve the implementation of the RCQ within and across different addiction treatment settings, identifying facilitators and barriers to implementation. There could be timeous opportunities to do this; it has been noted above that Scotland's alcohol and drug treatment strategy and the associated guidelines on standards promotes the general approach outlined and specifically the measure of RC. However, it is also noted that some caution should be taken to consider the wider system and the whole system approach required to affect the level of change needed to move in the desired direction.

Future research will also involve exploratory factor analysis to better understand the factor structure of the RCQ, and a research design which facilitates predictive validity i.e. whether RCQ scores predict an outcome on a different measure. This does not preclude the use of the RCQ in practice, indeed many assessment tools considered to be gold standard in their fields continue to be interrogated by researchers to understand and hypothesise their factor structures and predictive validity.

In relation to understanding RC more broadly (albeit within the limitations mentioned above regarding the RCQ), further research should consider the importance of different elements, at different times for different people. For example, socio-economic status is likely to have a large impact on the amount of RC someone possesses and the quantity of different types of RC (for example, Physical Capital may be high but Human Capital may be low). Similarly, primacy might be placed on different types of capital across the life-course; what is important in relation to supporting a younger person will almost inevitably be different from the types and levels of RC important to an older individual. While it is unlikely to be so straightforward, some people may find their levels of Human Capital are more important than their Physical Capital (or vice versa) or it may be discovered that increasing one, for example Human Capital, can be a catalyst for broader life changes, where change comes from both the need for it as well as the belief that it is achievable.

A final area thought to be of significant importance is the effect of treatment, and different types of treatment, on levels of RC. It might, for example, be the case that 12 step support has a greater impact on RC than the treatment commonly commissioned in Scotland. And in relation, to community based, 'professional',

addiction treatment, while a reduction in addiction problem severity is important, it could be argued that this is not the same as an increase in RC i.e. if someone is homeless, providing them with housing reduces the severity of the problem but if that housing is not, for example, conducive to their efforts to resolve their AOD problems or to significantly improve their QOL then it could be argued it is unlikely to be sustainably impactful. On the other hand, if a decision was taken to appropriately house someone based on their needs *and* strengths (by considering, for example, access to their social supports, access to treatment, access to transport, and participation in recovery conducive activities), this could see both an increase in their RC and a decrease in their addiction problem severity. The opportunities to improve peoples' QOL while also reducing their addiction problem severity via building their RC requires further exploration. While it is not being proposed that treatment providers should be judged, for example in fiscal terms, in relation to how they impact on RC, how treatment contributes to RC it is certainly an area worthy of future research.

Notwithstanding the requirement for more research, this study has found the RCQ to be a valid and reliable measure of recovery capital. The uniqueness of the RCQ comes from the philosophical and methodological differences from the very few other measures of RC inherent throughout its development, and that it has been found to possess concurrent validity with a measure of resilience.

The RCQ is well positioned to support the delivery of part of Scottish Government's alcohol and drug treatment strategy (2018), to support the delivery of the *Quality Principles* (2014), to support the delivery of the recommendations in the *Independent Review of Opiate Substitute Treatment* (Kidd et al., 2013), and can align assessment and treatment with the *UK Clinical Guidelines on Substance Misuse* (2017). Each of these important contributions note the importance of measuring RC and for this to inform treatment. While the introduction of the RCQ requires to be recognised as part of a much broader piece of work on addiction treatment assessment and management, that Scottish Government (2018) assert that addiction treatment should also impact on QOL links clearly to RC given the correlations between the RCQ and QOL. If addiction treatment can increase recovery capital, this will be positively correlated with changes in QOL and resilience. While debates may continue in many areas of the drug and alcohol discourse, it is possible there could

be broad support in committing to improve the recovery capital, and linked to this the quality of life and resilience, of our most vulnerable people who require to access alcohol and drug treatment in Scotland.

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## Appendix 1: The Recovery Capital Questionnaire

### Recovery Capital Questionnaire (RCQ)

**People do recover from problematic substance misuse and recovering is often linked to recognising the positives in your life, and building on these.**

---

**This questionnaire is broken down into 4 sections and asks you some questions about things which may help in recovery from problematic substance misuse. Please take time to consider the questions carefully and answer as honestly as possible.**

**Section 1:** Social Capital – Becoming and staying connected with people has been proven to support recovery, and your recovery is likely to not only improve your own quality of life but the lives of the people who care about you. In this section you will consider people in your life who matter and may be central to your recovery.

**Section 2:** Physical Capital considers your physical and financial health, access to transport and housing which have been evidenced to support recovery.

**Section 3:** The Human Capital section helps you to consider where your strengths are in relation to dealing with difficult situations and how aware you are of how your behaviour affects others.

**Section 4:** Perceived Community Capital - Recovery support can come in many forms, not only professional Support Workers. The community in which you live can play a very important part of your recovery. This section helps you to look at how your community may support your recovery.

A trained member of staff will ask the questions within the RCQ. Please answer the questions using the following scale provided. We ask that you consider your life in the last **four weeks** when answering the questions.

**0** = Do not wish to answer      **1** = Untrue                      **2** = Somewhat untrue  
**3** = Neither true nor untrue      **4** = Somewhat True      **5** = True

Name		Date of Birth:	
Date			

**1 Social Capital**

(a)	I have access to information and advice which supports my recovery	[ ]
(b)	I have a routine which supports my recovery efforts	[ ]
(c)	I have people who rely on me to continue in recovery	[ ]
(d)	I have people who support me in my efforts to recover	[ ]
(e)	I have an intimate partner who supports my recovery	[ ]
(f)	I am happy with the relationships I have with the people who matter to me in my life	[ ]
(g)	I have at least one friend and/or family member with whom I can share my thoughts and feelings	[ ]
(h)	On average how many days in a week do you eat meals with one or more people? (1-7 days)	[ ]
(i)	I feel I have responsibilities to someone/thing other than myself (e.g. friend/family/pet)	[ ]
<b>Total</b>		[ ]

**2 Physical Capital**

(a)	I have access to personal and/or public transport	[ ]
-----	---	-----





(c)	I can deal with unexpected situations	
(d)	I have been able to make up my own mind about things recently	
(e)	I can be patient when need be	
(f)	I can draw upon previous successes to give me confidence for new challenges	
(g)	I consider myself a strong person	
(h)	I am aware of how what I do impacts on other people	
(i)	I can see the funny side of life	
(j)	I am happy with my current set of skills and abilities	
<b>Total</b>		

#### 4 Perceived Community Capital

(a)	I do not feel stigmatised as an alcohol and/or drug user in my local community	
(b)	I have not been a victim of crime in my local community	

(c)	I feel comfortable in my local community	
(d)	Members of my community do not treat me badly	
(e)	I do not feel under any threat in my local community	
(f)	I am treated as an equal and with respect in my local community	
(g)	I feel accepted within my local community	
(h)	There is accessible treatment to support recovery within my community	
<b>Total</b>		

## 5 Recovery Capital Outcomes

1	Social Capital	
2	Physical Capital	
3	Human Capital	
4	Perceived Community Capital	
<b>Overall Total</b>		<hr/> <hr/>

Provisions for use: This version of the RCQ is for research purposes only and only in relation to the research your organisation has agreed to participate in. For further information please contact John Burns – [John.Burns@stir.ac.uk](mailto:John.Burns@stir.ac.uk) Intellectual property rights pertaining to the RCQ are retained by John Burns.

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## Appendix 2: Staff Information Sheet

### Information sheet for interviewers

#### *Development of a measure of addiction recovery capital*

#### **Brief research background and aim of study**

Recovery capital (RC) is the collective resources which impact upon a persons' recovery from alcohol and other drug problems (Granfield and Cloud, 1999). The Scottish Government, through local Alcohol and Drug Partnerships, have charged Local Authorities with designing Recovery Orientated Systems of Care (ROSC). One of the key tasks for service providers is to develop an instrument to measure RC. This has been identified by other researchers, such as Granfield and Cloud (2008), Laudet and White (2007) Best et al.,(2010) and Burns and Marks (2013) as being pivotal in providing effective service delivery. The proposed research aims to build on previous research on the development of a measure of recovery capital, and will seek to investigate the validity and reliability of this measure.

#### **Procedure and the role of staff**

Staff are asked to use the Recovery Capital Questionnaire (RCQ), World Health Organisation Quality of Life scale (WHOQOL) and the Connor Davidson Resilience Scale (CD-RISC) which they will be provided with for clients from existing caseloads.

When conducting interviews/appointments staff are asked to –

- Read the (Service) confidentiality statement
- Read and hand a copy of the participants' information sheet to participants inviting them to take part. Participants may keep this.
- When a service user agrees to participate they will be asked to sign two consent forms. Participants will keep one copy, staff the other. Staff will countersign any sheet signed by participants.
- Once informed consent has been received staff will conduct the interviews as per questionnaires. Staff are asked to follow the questionnaires verbatim.

- The questionnaires follow a similar but important to note, slightly different response scale. Each of them require numerical responses but can vary from a 1-5 or 0-4 scale for example. Its important to emphasise when the scale changes. It may also be beneficial to take 5 mins between each questionnaire to allow respite between each questionnaire.
- Once the interview is complete staff are to ask the interviewee if they would like to take part in a follow up interview one week from the date of initial interview. This follow up will use only the RCQ and should be explained that this is to test the reliability of the tool, not the service user. This phase of the project requires 31 participants. Staff will be notified when this threshold has been reached and all interviews thereafter will be 'one offs'.
- Please return completed questionnaires and consent forms to John Burns as soon as possible. In terms of the RCQ, this is being completed as part of your assessment and so a copy should be retained for your records. Either the original or copy can be retained. If staff keep these forms overnight they are to be stored in a lockable filing cabinet.

The information sheets for participants explains confidentiality and anonymity for participants. Staff should note that the service users are agreeing to be involved research and that this is not a substitute for normal assessment/interventions. Service users' refusal to be involved in the study will have no prejudicial effect on the treatment and support offered to them by (the service).

A briefing session will take place (date and venue to be confirmed pending ethical approval) with the principal researcher to discuss any questions and staff will be provided with the participant information sheet, consent form, and relevant questionnaires in advance to familiarise themselves with these.

The completion of these scales in practice is expected to take no longer than 20-30mins (and discussion should take less than 5mins should a service user choose not to be involved).

Thank you for your participation and support with this research project.

John Burns

[John.burns@stir.acuk](mailto:John.burns@stir.acuk)

## Appendix 3: Participant Information Sheet

### **Participant Information Sheet**

#### **Development of a measure of addiction recovery capital**

You are being invited to take part in a research study. Please read the information below before deciding to take part.

#### **What is the purpose of this study?**

This research aims to measure what factors help support recovery from problematic substance use. Recovery is where an individual can move on from their problem drug use towards a drug free life, and become an active and contributing member of society.

We aim to design a questionnaire which will help measure what factors support recovery, known as recovery capital, using the information provided by participants.

#### **Who is organising and conducting the research?**

John Burns who is an employee of (the Service) is undertaking a PhD with University of Stirling (UoS). John has asked the worker you are seeing to invite you to participate in this research. If you agree to do so they will ask you questions from a questionnaire designed by John along with questions from two other questionnaires.

#### **Why have I been chosen?**

You have been chosen to take part due to your attendance at (the Service). Anyone who attends (the Service) is eligible to take part in this study.

#### **Do I have to take part?**

No. The decision to take part is completely up to you. This decision will not impact on the treatment and support you can expect from (the Service). If you do decide to take part, you will be given this information sheet to keep and will be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. You are also free to not answer any of the questions asked, without giving a reason. If you decide to take part you may be asked if you could be interviewed again in one weeks' time from the initial interview. This is not to test you but to try and increase the reliability of the assessment tool. At that time you will only be asked the questions from the Recovery Capital Questionnaire.

#### **What would I have to do?**

If you agree to take part you will be asked some questions about your recovery capital and lifestyle during your appointment.

### **Will my involvement and answers be confidential?**

(The Service) confidentiality policy remains applicable to this research. In addition:

The only person to know you are involved in this research will be the interviewer and the principal researcher.

Your name will not be used to identify you. Instead you will be asked to provide your date of birth and your initials which will be used to match your two questionnaires (if you are part of the 'test retest' group).

The paper copies of questionnaires will be recorded by the principal researcher onto computer where they will be password protected. Once this has been done the paper copies will be destroyed. The only person with access to all the data will be the principal researchers.

### **How will the data be used?**

The data will be collected, analysed and written up as part of a research paper. Findings may also be presented in journal articles, conferences and (the Service) publications however the data will be anonymous and so cannot be linked to you.

The data will be used to try and design an assessment tool which will help change the way treatment can be offered from (the Service) making services more helpful and centred round the needs of service users.

Your decision to take part will not change the level of support you can expect from (the Service).

### **Questions?**

If you have any questions or comments either before or after your participation please contact the principal researcher on the details below.

Principal researcher details:

John Burns

XXXXXXX Health and Social Care Partnership

07768 557247

[JohnBurns@XXXXX.gcsx.gov.uk](mailto:JohnBurns@XXXXX.gcsx.gov.uk)

## Appendix 4: Participant Consent Form

### Participant Consent Form

#### Development of a measure of addiction recovery capital

Please tick box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my relationship with the Service being affected.
3. I understand that the information I give will be treated confidentially as per participant information sheet
4. I understand that the results of this study will be written up for a report which may be submitted to academic journals and conferences. I understand that it will not be possible for anyone to link anything in the report to me.
5. I agree to take part in the above study

\_\_\_\_\_  
Name of Volunteer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

Thank you for your help with this research project



## Appendix 5: Demographic Information

Study title: Development of a Measure of Addiction Recovery Capital

### Demographic and substance use information

1. Date interview undertaken:
  
2. Participant date of birth:
  
3. Participant initials:
  
4. Gender (delete as appropriate):      Male                      Female
  
5. Are you currently using any illicit substances or alcohol at a level you would consider problematic?  
  
Yes                      No
  
6. Are you currently abstinent from illegal substances?  
  
Yes                      No
  
7. Are you currently abstinent from alcohol?  
  
Yes                      No
  
8. How long have you been 'in recovery' (where recovery means not to have used any substances problematically)?
  
9. Are you currently prescribed any substitute medication for problem drug use?  
  
Yes                      No

**THE WORLD HEALTH ORGANIZATION**

**QUALITY OF LIFE (WHOQOL) -BREF**

The World Health Organization Quality of Life (WHOQOL)-BREF

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## WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good

1. How would you rate your  
quality of life?

1                      2                      3                      4                      5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied

16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

**Do you have any comments about the assessment?**

---



---



*[The following table should be completed after the interview is finished]*

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	<b>Domain 1</b>	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ † + † + †+†+†+†+†	a. =	b:	c:
28.	<b>Domain 2</b>	$Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)$ †+†+†+ †+ †+ †	a. =	b:	c:
29.	<b>Domain 3</b>	$Q20 + Q21 + Q22$ †+†+†	a. =	b:	c:
30.	<b>Domain 4</b>	$Q8+Q9+Q12+Q13+Q14+Q23+Q24+Q25$ †+†+†+†+†+†+†+†	a. =	b:	c:

\* See Procedures Manual, pages 13-15