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Abstract

From the emergence of isolated studies in the early 1980s to the concentrated and burgeoning research base of the present day, scholars within sport psychology have been motivated to address the problem of eating disorders in sport. Heavily influenced by the medical model of scientific inquiry, the extant literature offers important insights into prevalence and aetiology. Despite this progress, there is much that is poorly understood about athlete eating disorders and existing approaches are vulnerable to considerable critique. This paper highlights some of the fundamental problems with the medical model and argues that its current dominance has created an overly narrow knowledge base. It is proposed that an increase in qualitative, interpretive accounts, that prioritize the subjectivity of experience over the serialisation of symptoms, is necessary if we are to achieve a balanced and more complete understanding of eating disorders in sport.

Eating disorders in sport: A call for methodological diversity

Around the early 1980s, when the notion of an eating disorder was yet to infiltrate popular consciousness, a select number of academics began to make speculative connections between athletic pursuits and eating related pathology. In one of the first reports, Smith (1980) drew parallels between the "body wasting" experienced by starving young athletes and the diagnostic weight-loss criteria for anorexia nervosa. Smith outlined the now well-versed scenario of a young athlete who, as part of a bid for sporting success, suffered severe emaciation and accompanying psychological distress. In the same year, Garner and Garfinkel (1980) proposed that the overrepresentation of eating pathology in a sample of professional ballerinas could be the result of a cultural emphasis on a thin body for optimum performance. Other isolated accounts followed suit, each tentatively postulating the apparent link between sport and eating disorder development (e.g. Costar, 1983, Katz, 1986 & Leon, 1983). The popularity of this hypothesis soon gathered momentum and its inclusion in a seminal paper on eating disorder risk (Striegel-Moore, Silberstein & Rodin, 1986) served as a firm indication of its growing acceptance.

In recent times, more than two decades since these pioneering works, the body of literature pertaining to eating disorders in sport has grown exponentially. Articles regularly feature in both sport psychology and general psychology journal publications and there are now a number of text books dedicated entirely to the topic (e.g. Beals, 2004, Dosil, 2008, Thompson & Sherman, 2010). Despite these advancements much of the literature is rife with inconsistencies, casting doubt over the extent of knowledge to date and the practical applicability of this knowledge. Tellingly, intervention programmes have invariably demonstrated negligible effects (e.g. Buchholz, Mack, McVey, Feder, & Barrowman, 2008; Smith & Petrie, 2008) and there are currently no efficacious evidence-based treatment strategies specific to athletes. Although some excellent sport-based treatment guidelines exist

(e.g. Bonci et al. 2008; Sherman & Thompson, 2006), these typically offer general recommendations for management rather than actual psychotherapies. How much do we *really know* about eating disorders in sport and does our current knowledge reflect the large volume of research out there? In this paper we adopt a critical perspective over what we consider to be a plateauing and unnecessarily narrow body of knowledge. We argue the case for greater methodological diversity and discuss the potential benefits more innovative research practices may hold.

Eating Disorders: A Medical Model

We open our critique by expressing a broad discontent with the medical model of scientific research, in particular its unchallenged dominance within the study of eating disorders. The medical model of science falls firmly within a positivist paradigm, which is characterized by the underpinning philosophical principles of ontological realism and epistemological objectivism (Angen, 2000). Essentially, medical science asserts that there is a single truth out there (realism) and we can come to know that truth through the use of non-biased procedures (objectivism). Positivism is aligned with the hypothetico-deductive method, the goals of which are explanation, prediction and control (Ponterotto, 2005). Psychological science has persistently embraced these fundamental principles as indicated by the continued exalting of the experimental method above all others (Gergen, 2001). The eating disorders literature has been no exception to this rule, which for us has come at a cost to the complexity of understanding achieved thus far.

The supremacy of positivist approaches to psychological issues has not been immune to critique, both within psychology generally and the study of eating disorders specifically. On a general level, in direct rebuttal of the core tenets of positivism, Bruner (1990) argued that psychology must move beyond the conventional ideals of reductionism, causal explanation and prediction towards a concern with meaning and interpretation, a “cultural

psychology". He is not alone is his dissatisfaction, others have also questioned the capacity of positivism to depict the full complexity of issues of the mind (e.g. Gergen, 1985, 2001; Polkinghorne, 1988). The result is the emergence of more interpretive approaches that proffer the notion of reality as *relative* to each individual's construction of it and consider attempts at prediction and generalisation a futile exercise when it comes to the study of highly contextualized psychological experience.

The eating disorders literature has remained largely oblivious to this interpretive uprising but rather has served, and continues to serve, as an emphatic example of the positivist/medical bias in action. A number of scholars have aired their concerns over the possible consequences of such a univocal perspective. For example, Botha (2009) asserts that aetiological theories underpinned by positivist ideas have produced a research base overwhelmingly focused on causes, clinical features and treatment outcomes at the expense of experiential understandings. Rich (2006) is in agreement and has stated that the medical approach, although useful and necessary, offers scant consideration to the human experience element of eating disorders. She states that the narrow emphasis on measurable symptomatology can have a dehumanising effect on those who are ill. The worries of both Botha and Rich are applicable to the eating disorders in sport literature and point to its overarching shortcoming – a neglect of the human experience factor. For example, we may have detailed descriptions of key diagnostic criteria, such as extreme weight loss and amenorrhea, but we are much less aware of what it is like for the athlete to live with these symptoms. What is the emotional impact of repeated injury due to brittle bones? What fears do athletes hold regarding the health consequences associated with menstrual cessation? What is the psychological toll of an incessant preoccupation with food and weight? These very personal features represent the absent experiential element to athlete eating disorders, which can be as troublesome as the symptoms they are tied to. As argued by Greehalgh and

Hurwitz (1999), medical perspectives fail to address the "inner hurt, despair, hope, grief and moral pain which frequently accompany, and often indeed constitute, the illnesses from which people suffer" (p. 50). Yet the medical approach, with its connotations of a true and perfect science, persists as dominant. As we now go on to illustrate, there are sufficient limitations in medical perspectives to render such notions of grandeur as something of a fallacy (see table 1 for a critical summary of medical based study design).

Risks in Risk Factor Research

The study of illness causation is an important branch of medical science and therefore has featured prominently within the eating disorders literature. The goal of such research is the identification of specific risk factors that cause eating disorder related outcomes. Having argued that the term "risk factor" is often misused, Kraemer et al. (1997) offer a typology of terms that represent different levels of identified risk according to methodological rigor. The first and therefore least confident form of risk variable is termed a correlate and is defined as "a statistically significant association between factor and outcome" (Jacobi, Hayward, de Zwaan, Kraemer & Argas, 2004, p. 20). Correlates are derived from cross-sectional correlational studies, which although a useful start point are severely limited with regards to the conclusions they allow. Primarily, cause and effect cannot be established. Only once a correlate has been shown to *precede* a disordered eating variable does it warrant the term *risk factor* (Jacobi et al. 2004). The majority of studies into eating disorders in sport, despite often talking in terms of risk, in fact have invariably only addressed correlates (e.g. Monsma & Malina, 2004; Petrie, Greenleaf, Carter, & Reel, 2007). Bucking this trend, Krentz and Warschburger (in press) conducted a 1-year longitudinal study that measured key variables at two separate time points thus enabling the crucial criteria of precedence to be determined. This more complex methodology allowed the authors to conclude that the desire to lose weight for performance improvement predicted future disordered eating and not vice-versa.

Table 1.
Study Designs within Eating Disorders in Sport Research

Study Type	Key Design Features	Typical Example	Fundamental Critique
Basic correlation study	One-off, snap-shot cross-section of two or more identified variables	Validated disordered eating measure is correlated with the validated measure for a proposed risk factor such as perfectionism	Inability to establish cause and effect. Only associations identified.
Longitudinal correlation study	Cross section of two or more identified variables on two separate time points	Few examples exist (see Krentz & Warschburger, in press).	Precedence allows causal inference to be identified but still no cause and effect can be assumed.
Prevalence study	Presence of disordered eating behaviors is measured within a particular sample	Validated disordered eating measure is distributed to a hypothesized at risk group (e.g. gymnasts) and this is compared to a control group considered at less risk (e.g. non-athletes). Better examples include full diagnostic interviews.	Range of methodological flaws that prevent accurate prevalence estimates. Prevalence studies are descriptive and lack insight into the processes at play.

Note. The above study designs are all susceptible to the overarching critique of the medical approach to research which argues that the reductionist principles of positivist science do not adequately depict the complexities of psychological illness.

Although the work of Krentz and Warschburger (in press) represents a welcome methodological advancement, contrary to other schools of thought (e.g. Petrie and Greenleaf, 2007) we stop short of recommending that the search for risk factors, or indeed causal-risk factors, should form the foundation of future research in the area. Our chief concern is that such aetiological approaches invariably depict an eating disorder as an *individual* psychopathology. The emphasis on person-specific risk factors such as personality traits indirectly places responsibility for the illness, somewhat unfairly, at the door of the sufferer. It is an insinuation that, wittingly or otherwise, is regularly made by those researching athlete eating disorders. For example, studies have claimed associations between eating pathology and athletes' with increased levels of perfectionism (Hasse, 2011), high social physique anxiety (Bratrud, Parmer, Whitehead, & Eklund, 2010) and low self-esteem (Petrie, Greenleaf, Reel, & Carter, 2009), all of which may be considered personal afflictions. Indeed, the hypothesis that sport is a risk factor for eating disorder development is frequently followed by the disclaimer *in vulnerable individuals* – the suggestion being something was *wrong* with the athlete in the first place. As Andersen (2008) warns, for too long sport psychology has conceptualized eating disorders as a problem athletes *have*, a symptom of *their* problems. Constructing an eating disorder in this way may actually perpetuate the condition leading to further psychologically destructive consequences (Lock, Epston, & Maisel, 2004). For example, viewing an eating disorder as a failing of the self can lead to an athlete experiencing feelings of shame, self-loathing and identity crisis (Papathomas & Lavallee, 2010). Further, an emphasis on personal vulnerabilities can demotivate recovery efforts as individuals become resigned to the view that it is "just the way I am".

Aside from the discussed moral concerns, risk factor studies do not represent a direct path to understanding eating disorders. For example, models of risk have been criticized for predicting without explaining (Leung, Geller, & Katzman, 1996). Essentially, even if we

identify that, for example, perfectionism can lead to disordered eating behaviors in athletes, we are none the wiser as to how and why this causal relationship works. The absence of such developmental insight is a significant black spot on this pervasive line of inquiry. Ultimately, most aetiological perspectives can only really speculate as to the mechanisms at play between a given risk factor and the onset of disordered eating. Without accurate knowledge of process the capacity for intervention becomes somewhat stunted. Additionally, most experts acknowledge eating disorders as multi-causal, a consequence of various combinations of *biopsychosocial* factors (Breuner, 2010). As Jansen (2001) has pointed out, much to her distress, if there is a changing spectrum of causes then general laws to predict the occurrence of eating disorders are duly impossible to find. The only reasonable solution is to focus on individual circumstances and let go of reductionist tendencies, something Jansen dismisses as outside the realms of empirical science. We are much less troubled by such a scenario and although we do not suggest risk-factor research is totally redundant, we see great merit in an accompanying focus on deeply personal experiences.

Reducing the Prevalence of Prevalence Studies

The obsession with prevalence studies in the eating disorders in sport literature is severely limiting progress in the area. There is now sufficient evidence to suggest that athletes, usually elite female ones participating in lean sports, are *probably* at an increased risk of disordered eating (e.g. Smolak, Murnen, & Ruble, 2000; Torstveit, Rosenvinge, & Sundgot-Borgen, 2008). It is a task of gargantuan proportions for this to ever become more than “probably” given the reluctance of athletes to disclose eating issues and the varied stringencies by which researchers define disordered eating in their work. These methodological difficulties will ensure that prevalence estimates will often conflict across studies and will rarely represent the true extent of the problem. Yet prevalence studies are continually churned out, with researchers seldom resolving the methodological issues that

have undermined the findings of their predecessors (e.g., Martinsen, Bratland-Sanda, Eriksson, & Sundgot-Borgen, 2010). A recent systematic review, the most up to date at the time of writing, posed the now tiresome question; are female athletes at increased risk of disordered eating and its complications? (Coelho, Soares, & Ribeiro, 2010). Unsurprisingly, the predictable conclusion from this review was that due to the heterogeneity of studies, definitive answers regarding prevalence prove elusive. This uncertainty echoes the conclusions of Smolak et al. ten years earlier, suggesting very little has been achieved in the time in between.

The core rationale for prevalence work can also be considered somewhat ethically dubious. The inherent motivation for these studies is that identifying certain athletic risk groups can help focus preventative measures. For example, on discovering increased eating disorder prevalence in lean sports, Byrne and McLean (2002) suggested it is these athletes that should be the focus of treatment and prevention efforts. There is clearly logic and pragmatism in directing resources this way, particularly given Byrne and McLean identified 31 female athletes with an eating disorder from lean sports compared with just five from nonlean sports. On the other hand, what about these five athletes? Who are they? The reader is told nothing about them, other than that they compete in hockey, volleyball, basketball or tennis. Are we to assume their struggles with eating are less worthy of our attention because they belong to a minority? What conceptual insights are hidden in this faceless and apparently negligible statistic? Each time researchers dispel atypical cases as the "insignificant few" they inadvertently turn their backs on the lives of real people with real experiences. There is great value in the study of cases that betray the norm and therefore help depict the true complexities of disordered eating in sport. Researchers must begin to taper their nomothetic focus on prevalence and risk so that more attention can be afforded to

idiographic approaches. Without more methodological parity, progress in our understanding of athlete eating disorders will continue to stall.

The Case for Interpretive Methodologies

Our call for methodological diversity within eating disorders in sport research essentially translates as a call for more interpretive, qualitative methodologies. Positivist approaches are not, as we have outlined, without limitations, yet they continue to dominate the literature. As a result, current understanding of the illness represents just one side of the coin. There are other ways of knowing that, given the uncertainty surrounding eating disorders in sport, cannot be ignored. A variety of interpretive approaches can provide a focus on personal meanings and experiences not possible through traditional methods. Typically, this qualitative work adopts what is referred to as a purposive sampling procedure, whereby a small number of participants are selected based on their personal experience of the topic under investigation. The emphasis on personal subjectivities serves as an alternative lens through which to understand athlete eating disorders. We take this opportunity to highlight some of the novel insights to be gleaned from these innovative but rare research practices.

We begin with an interpretative phenomenological analysis we conducted on the experiences of four elite female athletes who had experienced eating pathology (Papathomas & Lavallee, 2010). During this exploratory study we were eager to give voice to athletes and provide a counter-perspective to that of risk and prevalence. The athletes addressed issues important to them and these proved very different to what is available in the medical based literature. The three major themes identified pertained to the broader life challenges associated with living with eating problems. For instance, some of the athletes expressed an inner conflict between a desire to disclose their illness to significant others and a contrasting fear of the stigma that might come with such a disclosure. This tension was difficult to resolve and athletes rarely made a disclosure before a severe deterioration in psychosocial

health forced them to do so. Even once a disclosure had taken place, the athletes rarely perceived their social support needs to be met as they feared burdening others with their problems and anticipated a lack of understanding of mental health issues. Perhaps the most troublesome problem for athletes was the various ways eating pathology impacted on identity. Specifically, an athletic identity seemed incompatible with an identity as a mentally ill person. Unable to integrate a new self with the old self, athletes experienced identity loss and the associated psychological distress. These interpretations clearly offer a valuable perspective on the wider consequences of athlete eating problems.

Autoethnography is a further method used by some scholars to address eating disorders in sport. This work involves scholars producing deeply personal accounts of experience and situating these accounts within a social and cultural analysis (Ellis & Bochner, 2000). Typically such accounts use an emotive and engaging writing style, more common in creative rather than scientific literature. The production of more sensual texts is often motivated by a desire to absorb the reader in how it feels to live with an eating disorder and encourage an understanding outside formal symptomatology (see Saukko, 2008 for a non-athlete example). Jenny McMahon, a former international swimmer, produced an autoethnography of her experiences with disordered eating (McMahon & Dinan-Thompson, 2008). Her first person accounts describe a culture of body surveillance that she perceives led to her illness. She articulates the fear and panic that accompanied her daily weigh-in and regular skin-fold measurements. She expresses the shame and embarrassment associated with minute weight increases and the intense guilt that came with eating. The conflicting feelings of relief and shame that characterized episodes of purging through self-induced vomiting and laxative abuse are also documented. Jenny's personal focus on her emotional experience, interweaved with theoretical insights and conceptual musings, sheds new light on disordered

eating in sport both in terms of its psychosocial impact as well as the mechanisms by which it might manifest itself.

In a similar vein, Stone (2009) produced a powerful autoethnographic account of his experiences with anorexia nervosa and obsessive running. Stone's reflections are skilfully and artfully crafted to provide a rich, evocative perspective on what he describes as a traumatic experience. The short story produced, entitled "Running Man", is so fluid and so intrinsically captivating that it reads like a piece of creative fiction. He contends that in writing such a piece, one that spurns traditional academic styles in favor of more artistic forms, there is scope to utilize intuition and feeling and provide new and strange understandings of experience. Stone himself declares that he, through the process of writing, discovered new aspects of his experience that were surprising to him. He suggests that such insights serve as his "research findings" (p. 68) and asserts that further findings are possible through each subjective reading by others. Our own reading of Stone's work taught us much about the experience of mental illness and the impact it can have on a life. For us, Stone's prose captured continued pain, loss and regret. It spoke of the harrowing uncertainty and confusion that comes when attempts to comprehend illness and suffering prove unsuccessful. It showed us that despite this hurt, the continued pursuit and construction of meaning is vital if a sense of self is to be preserved and future experiences are to be manageable ones.

Many of the themes of Stone's (2009) short story were echoed in our own recent work with a former tennis player named Beth who had experiences of anorexia nervosa (Papathomas & Lavallee, 2012). Beth engaged in more than 9 hours of unstructured interviews over the course of a year. Each interview provided her with an opportunity to talk openly and extensively about her life as she saw it. The freedom this approach offered Beth resulted in her disclosing that she was sexually abused by her coach, a traumatic issue we had not foreseen. On a surface level, Beth's story is important because of its particularity. It

expands our knowledge through the details it provides on eating disorders in a sport outside those usually documented (see also Papathomas & Lavallee, 2006). In this way it reminds us that sometimes athletes other than figure skaters and gymnasts get eating disorders and that it is important to learn about these individuals too. Similarly, the possibility that sexual abuse played some role in the eating disorder warns us not to be too confident as to the mechanisms that lead to eating disorders in sport. Extreme weight loss as a means to better performance may be but one explanation of process. On a deeper level, our narrative analysis of Beth's life stories provided a novel perspective on experiences with mental illness and the impact it can have on life. Narrative theorists proclaim that the stories we tell of ourselves give meaning to life and determine our experiences and identities (Polkinghorne, 1988). When our lives are too traumatic to story, when life events betray explanation, crisis can ensue and identity may be lost (McLeod, 1997). Beth was in such a position of crisis, her search for a narrative explanation proving elusive. The emotional consequences of this lack of understanding were multiple and she described persistent feelings of shame, guilt, anger, confusion and continued eating disturbances. For Beth, how she interpreted her eating disorder was as crucial to her psychological wellbeing as the disorder itself.

Applied Considerations

The positivist's critique that interpretive approaches lack generalizability, and hence practical applicability, fails to acknowledge that the treatment process is often a dynamic one that is matched to individual needs and circumstances. As stated by Andersen (2008) "People are never randomly assigned to treatment…Therapy, is, if anything, almost always idiographic, and the key components of treatment are often left out of research (p. ix). As such, the emphasis of qualitative research on real-world experiences and situated contexts can often result in a closer relationship between research and practice than is the case in more traditional approaches to psychological science (Rennie, 1994). Athletes engaged in treatment

for eating disorders bring with them a range of personal experiences, hopes and fears that a therapist must consider. These are the types of subjective concerns that interpretive research can explore and document. The more athlete accounts available in the literature, the more color added to our understanding of the many facets of life with an eating disorder. Although no two cases will ever be the same, applied practitioners can become more aware of the abundance of intricacies that constitute the full scope of living with such an illness. This may go some way to changing athletes' perceptions that mental health professionals do not understand them or their eating problems (Sherman & Thompson, 2001). Listening to patients' stories, prompting personal histories, is after all the norm in real-life counselling and psychotherapy (Polkinghorne, 1988). Why then should personal accounts not figure in the research that informs these therapeutic practices? The answer is that they should and they must.

Summary and Conclusion

We have argued that medical approaches, underpinned by positivistic ideology, have dominated eating disorders in sport research resulting in a dogmatic knowledge base that is approaching stagnation. Interpretive insights, gleaned from qualitative data, offer new ways of understanding the phenomenon. The little that is known about athletes' experiences of eating disorders tells us that that it is an illness with destructive consequences beyond its primary symptoms. The emotional impact on day to day life is often forgotten by the medical world but can be as troublesome as any clinical manifestations. There is, therefore, much to learn from the deeply personal, idiosyncratic stories people tell. It is our vision that personal stories continue to be explored and that research into eating disorders moves in a more interpretive direction. We look forward to a time when the mention of eating disorders, in sport and more generally, does not automatically conjure images of starvation or purging but rather the inherent human suffering that accompanies these acts.

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