

Denial in Eating Disorders: Lack of insight and interoceptive awareness

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Abstract

It is widely recognised that denial affects the accuracy of self-report in eating disorders (EDs); however, there is little consensus regarding the definitions, causes, and mechanisms of denial in individuals with EDs. The aim of this study was to explore insight and interoceptive awareness (IA) as two separate components of denial in EDs, and investigate the associations between, as well as possible predictive value of, these two variables as possible risk and maintenance factors in EDs. Two hundred and twenty female participants, aged 17-30, were enrolled in this study and self-assigned into cohorts anonymously based on their diagnosis and stage of treatment. Insight was assessed using a modified version of the Schedule for the Assessment of Insights for EDs (SAID), and IA was measured using the Difficulties in Emotion Regulation Scale (DERS). As expected measures of insight and IA varied across groups based on the phase of the ED participants were in, as well as motivational states and attitudes.

Keywords: eating disorders, denial, insight, interoceptive awareness, self-disclosure, reality distortion, anosognosia, alexithymia.

Introduction

Pervasive and insidious by nature, eating disorders (EDs) have the highest mortality rate of all psychiatric disorders (Berkman, Lohr, & Bulik, 2007). Denial of illness is one of the core features of EDs and poses a significant threat to the detection, assessment, and treatment thereof. Traditionally, denial has been viewed simplistically as a binary, all-or-none phenomenon. However, more recently research suggests that denial in EDs is both a multidimensional and continuous construct that manifests in a variety of ways (Vandereycken & Van Humbeeck, 2008).

Due to its complexity, the concept of denial in relation to EDs is in need of refinement (Coutrier & Lock, 2006). This is evident when considering the definitional discrepancies across the different underlying mechanisms of denial in EDs. A clear distinction must be made between deficient self-perception and deliberate refusal of self-disclosure. Impaired insight and self-awareness are often synonymously recognised as common features of denial in EDs; however, they are different constructs and should be researched as such. There are few studies that parse and attempt to discriminate the underlying mechanisms of these concepts (Konstantakopoulos, Tchanturia, Surguladze, & David, 2011).

Although literature on denial in EDs is plentiful, to date no reliable or valid instrument to assess denial has been established. The lack of reliable measures in this domain is due largely to semantic inconsistencies and methodological restrictions. Moreover, the idiosyncratic nature of denial in EDs makes it difficult to assess in a systematic way. The greatest obstacle is that the degree and significance of denial at the moment the subject is denying is only amenable to investigation once he/she has realised the problem and is prepared to disclose it to others. Thus, denial remains an important stumbling block in assessment procedures (Vandereycken, 2006a).

This research is novel in that it implores measures of insight and interoceptive awareness (IA) as two separate underlying mechanisms of denial in EDs across different groups (i.e., those diagnosed with an ED vs. those who have not been diagnosed but suspect they may have a problem) as well as phases of EDs (i.e., those in treatment vs. those in recovery).

Aetiology of Eating Disorders

EDs have constituted part of the psychiatric nomenclature for many years; however, only in the past 20 years have they elicited extensive interest in psychology, psychiatry, and

neurology (Garner & Keiper, 2010). According to the Diagnostic and Statistical Manual of Mental Disorders (4th ed. [DSM–IV]; American Psychiatric Association [APA], 1994), EDs are limited by classification into one of the three diagnostic categories: anorexia nervosa (AN), bulimia nervosa (BN), and a third category with far less stringent diagnostic criteria, ED not otherwise specified (EDNOS) (see Appendix A for diagnostic criteria).

EDs continue to have elusive aetiologies; therefore, any argument regarding their underlying mechanisms is derived from an inadequate understanding of how they occur. The biopsychosocial perspective attempts to account for the heterogeneous nature of EDs by integrating a variety of possible factors hypothesised to play a role in the clinical presentation and manifestation of EDs (Bruch, 1978; Leung, Geller, & Katzman, 1996). These range from the broadly cultural to the narrowly biological and include familial, social, cognitive, learning, personality, and affective factors. As a result, numerous distinct ED models have been derived from the biopsychosocial perspective, each one different from the next (e.g. Polivy & Herman, 2002; Tylka & Subich, 2004). Due to lack of specificity and consistency, as well as the complex interplay of variables listed above, no one model has yet been widely accepted as comprehensive.

Certain risk factors do not easily fit into the generally accepted classes of predisposing, precipitating, or maintenance factors within the course of EDs. Although there are many agreed-upon associations and links, knowledge surrounding the risk factors for EDs is frustratingly incomplete. Moreover, conducting true experimental research in which these associated factors are manipulated and integrated into an all-inclusive framework for EDs is not only methodologically challenging but ethically unfeasible (Becker, Kamryn, & Peroe, 2009; Garner & Keiper, 2010; Striegel-Moore & Bulik, 2007).

This research aims to contribute to the understanding of the complex aetiological mechanisms underlying the development of EDs by examining denial as potential risk and maintenance factors in EDs. Denial is widely recognised as a key feature of EDs, yet is poorly understood and notably under-researched.

Denial

The construct of denial in EDs is interpreted and operationalised by researchers in such a variety of ways that not only has its original psychodynamic significance as a defence mechanism been compromised, but it has also come to be understood as a heterogeneous concept, the complexity of which is difficult to capture (Vandereycken, 2006a). Denial is defined as any consciously or unconsciously induced oversight, suppression, or distortion of

internal experience (Basile, 2004). In individuals with EDs, denial constitutes the blatant refutation of specific behaviours such as purging, laxative/diuretic abuse, and dietary restrictions; flawed perceptions of affective states and size distortions; and the attribution of symptoms to particular non-related causal factors (Becker, et al., 2009). Two major categories of denial are distinguished: intentional and unintentional denial.

Unintentional denial. Recent literature has found unintentional denial to include multiple types of distorted information processing. It may manifest as neurobiologically impaired self-awareness (anosognosia), a psychotic-like reality distortion, a dissociative phenomenon, or a coping mechanism with various meanings. The association between or, alternatively, the independence of these variants, is yet to be established (Vandereycken, 2006a, 2006b).

Intentional denial. Deliberate refusal of self-disclosure (lying and malingering) in EDs is often linked to ‘faking good’ or minimisation as a tactic for avoiding feared consequences (Coutrier & Lock, 2006). It is viewed as a psychological self-protection mechanism featuring goal-directed behaviour that results from a wilful and conscious psychological process. This form of denial is prevalent in anorectics who have an active ‘drive for thinness’ and who lack perspective on the severity of emaciation (Vandereycken, 2006a).

Research on denial is often held back by a lack of consensus as to whether it is conscious or unconscious, a trait versus a state, an indication of psychological disturbance or a functional coping mechanism (Vandereycken, 2006a). In psychiatry, a lack of insight is consistently associated with psychosis, whereas denial (anosognosia) is applied to psychologically healthy individuals with physical illness. However, the independent and appropriate use of these terms is yet to be studied in individuals with EDs (Coutrier & Lock, 2006; Konstantakopoulos et al., 2011).

Insight

From a psychiatric point of view, there is now universal consensus that insight is a multi-faceted phenomenon consisting of several overlapping dimensions. These encompass the ability to recognise that one has a mental illness, the capacity to re-label abnormal mental events as pathological, and acceptance of treatment (Aleman, Agrawal, Morgan, & David, 2006; Konstantakopoulos et al., 2011). This study examines lack of insight in relation to reality distortion as a possible feature of EDs.

Because EDs are generally considered non-psychotic disorders, research on the comorbidity of EDs with psychosis is currently lacking. There are numerous clinical case studies providing evidence suggesting the coexistence of these diagnoses; however, no study to date has investigated the distribution and prevalence of symptoms of psychosis in patients with EDs in comparison to a population without significant ED symptoms (Miotto et al., 2010). Furthermore, the DSM does not label patients' beliefs about their bodies as delusional; instead, the terms 'near-delusional' and 'intense beliefs' are used. The terminology of the DSM reflects the commonly-held view that apart from eating-related beliefs, reality testing in eating-disordered populations remains intact (Steinglass, Eisen, Attia, Mayer, & Walsh, 2007). Consequently, questions relating to reality testing (how delusional is 'near-delusional') have not yet been addressed, nor have belief systems in eating-disordered populations been examined systematically.

Reality testing. As defined by object relations theory, reality testing centres on the concept of an individual's ability to recognise and differentiate between self and others, as well as to distinguish internal distortion and fantasy from accurate representation of external events (Bruch, 1985). In individuals with AN, the conviction of 'feeling fat,' despite obvious emaciation and negation from others, is increasingly considered to be a false belief or delusion thereby situating AN within the nosology of psychosis (Vandereycken, 2006b).

This view has been heavily criticised as it does not account for the very basic level of awareness exemplified by the anorectic's attitude towards her physical appearance. Frequent mirror checking, calorie-counting, and weight measures betray some level of awareness of reality as the anorectic admires her skeletal frame, pulling at invisible folds, and insisting that her body is overweight – Casper (1998) has labelled this "self-deceptive training". The individual is thereby capable of perceiving reality but rejects its meaning; she knows she is too thin in the eyes of others, but in her own eyes it feels contrary. All other reality testing functions remain intact, implying this disavowal to be a form of emotional dysregulation (Bruch, 1978; Vandereycken, 2006b).

Interoceptive Awareness (IA)

IA is the acceptance of one's somatic and affective experience and clarity regarding emotional responses (Merwin, Zucker, Lacy, & Elliot, 2010). Extensive research on emotional dysregulation acknowledges it to be a prevalent feature in individuals with significant eating pathology, ranging from extreme food restriction to uncontrollable bingeing (see Engler, Crowther, Dalton, & Sanftner, 2006; Gilboa-Scgechtman, Avnon, Zubery, &

Jeczmien, 2006; Peck & Lightsey, 2008). A review of these studies makes it clear that there is a definitive association between ED symptoms and a diminished capacity to recognise and accurately distinguish between sensory perceptions and emotional cues.

Lack of IA is typified in anorexics who not only display an impaired ability to differentiate between hunger and satiety, but who are rarely able to separate their bodily sensations from their intimate emotions which they often struggle to identify and explain. Similarly, bulimic patients often respond to stress with bingeing and purging; however, they are scarcely able to correlate their state of distress with any emotional stimulus. They engage in self-destructive behaviours in order to avoid feeling anything other than the painful discomfort of extreme satiation and the subsequent release thereof (Bruch, 1985; Gilboa-Scgechtman et al., 2006; Heatherton & Baumeister, 1991). Deficits in IA may therefore be a result of a lack of emotional clarity, or non-acceptance – few published studies attempt to make this distinction.

Emotional clarity. The inability to assimilate different forms of information in order to correctly interpret internal experiences is often observed when the relationship between ED symptoms and IA is defined by a lack of emotional clarity (Merwin et al., 2010). The extent to which somatic sensations comprise affective experience is well-documented (i.e., Damasio's [2004] somatic-markers hypothesis); as such, trouble in recognising emotional and additional motivational states could be significant in ED pathology. For example, an eating-disordered patient who feels the uncomfortable pang of anxiety in her stomach may experience this sensation as satiety and change her eating habits accordingly. In due course, reacting to these internal cues maladaptively may result in greater confusion and, subsequently, abnormal conditioned responses such as bingeing, purging, fasting, and other compensatory behaviours (Brogan, Hevey, & Pignatti, 2010).

Non-acceptance. On the other hand, if the association between IA and ED behaviours is a matter of non-acceptance, this suggests a fear of affective arousal and the persistent avoidance thereof (Merwin, et al., 2010). Non-acceptance may add to ED symptoms as individuals stop engaging in healthy behaviours due to the distress associated with them, or carry on self-destructive behaviours if such perseverative reactions reduce the immediate anxiety associated with aversive internal stimuli (Schmidt & Treasure, 2006).

Although an individual with an ED may lack clarity and, simultaneously, be non-accepting of affective stimulation, each deficit suggests that there may be separate mechanism and principal target for intervention. This calls for research to examine issues of somatic

sensitivity in eating-disordered populations and how they relate to ED symptom onset and maintenance.

Measures of Insight and Interoceptive Awareness

An extensive search of the literature yielded no evidence of research that has concurrently explored the relationship between insight and IA as separate facets of denial in EDs. Most studies use these terms interchangeably despite semantic disparity.

Assessment of denial in AN and BN is based on parsimonious categorisations (patients are viewed as either denying or insightful) inferred during clinical evaluation or from poor scores on symptom self-report measures used to assess EDs (Coutrier & Lock, 2006). Researchers have generally made use of denial subscales of clinical instruments to investigate possible associations between denial and clinical aspects of EDs (see Vandereycken [2006b] for a review of measures used). However, as denial in ED patients is often considered ‘typical’ if not pathognomonic, its assessment is largely based on the impressions of health care professionals without much consideration of its clinical and diagnostic significance.

Insight. To date, only one study has made use of a modified version of the Schedule for the Assessment of Insight (SAI) and adapted it to a disorder-specific scale for the assessment of insight in EDs (SAI-ED) (Konstantakopoulos et al., 2011). This study found impaired insight to be a common characteristic of individuals with EDs with more patients displaying intuitional denial of illness rather than a lack of insight about their ED. A few studies have assessed insight in patients with AN through existing structured interviews typically used to assess patients experiencing psychosis (Greenfeld, Anyan, Hobart, Quinlan, & Plantes, 1991; Steinglass et al., 2007). However, most studies fail to look at lack of insight as an independent variable in EDs.

Interoceptive awareness. The Eating Disorder Inventory-3 (EDI-3) does have a subscale measuring ‘interoceptive deficits’. However, it does not distinguish between confusion/lack of clarity and non-acceptance of affective arousal; instead, these two facets of IA are reduced to a single scale. As a result, many studies fail to tease apart this distinction; this failure has substantial repercussions for identifying distinct cognitive, personal, and emotional mechanisms of IA, along with implications for treatment (Bydlowski et al., 2005; Clausen, Rosenbinger, Friborg, & Rokkedal, 2011).

It is clear that issues around the consistency, clarity, and relevance of measures used to assess denial in EDs need to be addressed. Regardless of the scale used, one must consider that these types of self-reporting instruments are restricted by the same inevitable irony: The

assessment of self-disclosure dependent on the motivations and honesty of the individual involved. However, this is also true of, if not more relevant to, interview-based methods. Eating-disordered individuals, when asked about secretive and shameful behaviours, may be reluctant to disclose such personal information in a face-to-face setting. Self-report measures partially circumvent this issue, particularly in research settings, as the anonymity of self-report questionnaire measures may yield more valid results (Basile, 2004).

Summary and Conclusion

A gap exists in the literature on denial as a crucial risk and maintenance factor of EDs. It is thus evident that there exists a need to examine the different possible underlying mechanisms of denial in order to determine their particular influence in the aetiology of EDs. The studies reviewed above have reported widely discrepant rates of denial in EDs. This discrepancy appears to be a result of semantic inconsistencies and conflicting criteria used to diagnose patients as either denying or insightful.

Specific measures need to be developed for insight and IA as distinct components of denial in EDs. As the interplay of these risk factors may be unique to the duration of EDs, varying degrees of denial should be investigated across different phases of the illness as well as across the various types and sub-types of EDs. Such research will benefit clinicians in gaining a better conceptual understanding of the processes involved in the development of EDs.

Rationale for Research

Although literature on ED's is fairly robust, denial of illness in EDs is significantly under-researched and poses a serious threat to the detection, assessment, and treatment thereof (Vandereycken & Van Humbeeck, 2008). There is in general a poor understanding and conceptualisation of denial in EDs and of its varying underlying psychological mechanisms. Even less is understood about this concept in South Africa.

Several studies have found that EDs are becoming increasingly widespread among young African women, specifically those who are transitioning from traditional rural backgrounds towards a more Westernised standard of living (e.g., Marais, Wassenaar, & Kramers, 2003; Szabo & Hollands, 1997; Wassenaar, le Grange, Winship, & Lachenicht, 2000). This surge has been attributed to increased access to university education, and the adoption of Western fashion trends and beauty ideals (Wassenaar & Mamotte, 2012). The

growing prevalence of EDs, however, is also reported throughout the South African population and thus warrants more in-depth investigation.

This study examined denial in both ED and potential ED populations in a cohort of South African females sampled from the University of Cape Town (UCT), as well as open ED recovery support groups in the Cape Town area. It focused on different aspects of denial, specifically insight and IA, as predispositional and maintenance factors in EDs. As this is a new facet of research on EDs that has not yet been distinctively explored, this study has served as a pilot to test the viability of expanding into a larger study including a substantial clinical population.

A major shortcoming of previous research is the lack of a clear definition (and thereby adequate measures) of the construct of denial in EDs. This study attempted to address this oversight by conceptualising denial as a multidimensional construct, adapting existing measures of denial (specifically insight and IA) for ED populations, and focusing on separate aspects of denial. The envisioned contribution of this study is to enhance the understanding of how denial manifests in EDs and the different forms it may take. Such information has the potential to make a valuable impact not only on the field of ED research in general, but also has very practical clinical implications for the diagnosis and treatment of EDs.

Specific Aims and Hypotheses

The primary objective of this pilot study was to investigate insight and IA as distinct features of denial across different phases of EDs (i.e., those in full recovery vs. those in treatment) and eating-disordered populations (i.e., those who have not been diagnosed, but who experience difficulties with diet, weight, and body image), and explore the possible associations between them. Measures of insight and IA were compared across four self-allocated groups: 1. Full-recovery group - those who had been diagnosed with an ED, but were in full recovery; 2. In-treatment group - those who had been diagnosed and were currently in treatment or receiving some form of treatment, i.e. therapy, medication, etc.; 3. Suspected-problem group - those who had never been diagnosed, but suspected they had a problem; 4. Controls - those who had never been diagnosed and did not believe they had a problem. Due to potential discrepancies between self-allocation and the de facto situation (i.e., a participant perceiving themselves as fully recovered, and assigning themselves to the full-recovery group, despite the presence of an ED as determined by the ED diagnostic measure used), associations for insight and IA were further tested between groups as determined by diagnostic scale group assignment and attitudes towards eating.

The following hypotheses were tested:

H1: There will be a significant association between insight and self-allocated groups; specifically I predict that the in-treatment group will show higher levels of insight while the suspected-problem group will have lower levels of insight (the insight measure was not applicable to the full-recovery and control groups, thus predictions for these were omitted).

H2: There will be a significant association between IA and self-allocated groups; specifically I predict that IA will be equivalent in the control and full-recovery groups, but reduced in the suspected-problem and in-treatment groups.

H3: ED potential and severity (as assessed by diagnostic scale group assignment and attitudes towards eating) will be associated with insight for the in-treatment and suspected-problem groups (the insight measure was not applicable to the full-recovery and control groups).

H4: ED potential and severity (as assessed by diagnostic scale group assignment and attitudes towards eating) will be associated with IA across all groups.

Method

Design and Settings

This study employed a cross-sectional quasi-experimental design. A cross-sectional comparison was chosen as female teenagers and young adults are at a high-risk age for developing EDs (Wassenaar et al., 2000). A quasi-experimental design was employed for data collection as participants self-assigned themselves into four groups (as specified above) based on pre-existing criteria (i.e., ED diagnosis or concerns regarding eating habits), and were compared on measures of insight and IA. Due to the sensitive nature of EDs and how this impacts on disclosure, data was collected via an online survey in order to ensure anonymity and bolster the likelihood of honest disclosure.

Participants

Ethical approval was obtained from the Research Ethics Committee of the UCT Department of Psychology. Upon approval, participants were recruited from various undergraduate Psychology courses at UCT as part of the Student Research Participation Program (SRPP), as well as via outside ED support groups, and personal referrals (snowball sampling).

Two hundred and twenty participants were recruited in total. One hundred and twenty-seven participants served as controls, i.e. those who had never been diagnosed and did not believe they had a problem with their body image, food, or weight, while 56 participants suspected they had a problem although they had never been diagnosed (suspected-problem group). Of those who had been privately diagnosed with an ED, 17 were in full recovery (full-recovery group), and 20 were receiving some form of treatment (in-treatment group). Demographic information is represented in Table 1. Due to concerns of anonymity, further demographic information was not requested in order to alleviate concern around possible identification. In order to address ethical concerns, participants were provided with support and referral sources at the beginning of the questionnaire.

Inclusion and exclusion criteria. As participants had to assign themselves into pre-defined groups, inclusion criteria were as follows: For the ED groups (both those who were in full recovery and those who still receiving some form of treatment) participants had to have been independently assessed and diagnosed with some form of ED (either, AN, BN, or BED) by a qualified clinician (according to the criteria set out in the DSM-IV) at some point prior to the study. The third group included those had never been diagnosed with an ED, but felt that they may have a problem with their body image/eating habits/weight. The fourth group were the controls – those who had never been diagnosed and did not feel they had a problem. Males were excluded as they comprise a small, and perhaps distinct proportion of the ED population in general and were therefore not the focus of this study (Szabo & Hollands, 1997).

Table 1. *Demographic Characteristics of ED and Non-ED Groups.*

Demographic Information	Full-recovery (n=17)	In-treatment (n=20)	Suspected- problem (n=56)	Controls (n= 127)
Age Range	18-30	17-30	18-23	18-30
Age Mean (<i>SD</i>)	22.71 (3.55)	23.88(4.41)	19.62 (1.37)	19.92 (1.60)
<i>BMI</i>	20.27	22.42	23.04	22.33
Ethnicity				
<i>White:Black:Coloured:Indian:Asian</i>	16:0:1:0:0	18:1:1:0:0	34:2:10:10:0	68:19:27:10:3

Note. BMI = Body Mass Index.

BMI score of <17.5 is underweight

BMI score of 18-25 is within the normal range

Measures

Eating Disorder Diagnostic Scale (EDDS). The EDDS (Stice, Telch, & Rizvi, 2000) is a brief 22-item self-report measure developed for the purpose of diagnosing AN, BN, and

BED. It assesses DSM-IV ED symptoms using a combination of a 5-point Likert scale, yes-no, frequency, and write-in response formats. Stice et al. (2000) showed that diagnoses from the scale exhibited temporal stability ($\kappa = 0.80$) when compared with interview diagnoses. The EDDS also demonstrated good test-retest reliability ($r = .87$) and internal consistency ($\alpha = 0.89$).

The validity of the EDDS has been established in samples of both adolescents and adults (ages 13-65). EDDS diagnoses have also exhibited criterion validity when compared with interview diagnoses ($\kappa = 0.83$). The EDDS was found to have good internal consistency as well as criterion, convergent, and predictive validity (Stice, Fisher, & Martinez, 2004; Stice & Ragan, 2002; Stice et al., 2000). The cross-cultural validity of the EDDS has not yet been fully established, although it has been validated for use in China.

Schedule for the Assessment of Insight: modification for EDs (SAI-ED). The SAI-ED (Konstantakopoulos, et al., 2011) is an adapted version of the SAI-Expanded (SAI-E) (David, 1990) (used to measure insight in patients with psychosis). It measures awareness of psychological changes, recognition of illness, awareness of the need for psychological treatment, and awareness of the psychosocial consequences of illness. The SAI-ED consists of seven items presented as a series of questions in which each subject can give either a positive or a negative (yes/no) answer or declare they are 'unsure'.

As the SAI-ED is a newly established measure used in only one previous study, reliability and validity statistics are lacking. However, the SAI has proven validity and reliability in patients with psychosis (David, van Os, Jones, Harvey, Foerster, & Fahy, 1995; Sanz, Constable, Lopez-Ibor, Kemp, & David, 1998). The SAI-ED is the only scale available that has been modified to assess insight in ED populations. For the purpose of this study, one item will be added to this scale in order to assess visceral awareness of physical sensations such as hunger (see Appendix B).

Difficulties in Emotion Regulation Scale (DERS). The DERS (Gratz & Roemer, 2004) is a 36-item self-report questionnaire used to assess difficulties in emotion regulation in adults and adolescents. It is divided into six sub-scales (measured on a five-point Likert scale), including lack of awareness of emotional responses, lack of clarity of emotional responses, non-acceptance of emotional responses, limited access to emotion regulation strategies perceived as effective, difficulties controlling impulses when experiencing negative emotions, and difficulties engaging in goal-directed behaviours when experiencing negative emotions. Gratz and Roemer report internal consistency reliabilities (alphas) of 0.80 - 0.93, and test-retest reliabilities of .57 - 0.89. Both the overall DERS score and subscale scores

have been found to have high internal consistency within both clinical and nonclinical populations. Evidence of convergent, divergent, and concurrent validities, as well as evidence of moderate predictive validity was also found (Gratz & Roemer, 2004; Neumann, van Lier, Gratz, & Koot, 2010).

Eating Attitudes Test (EAT-26). The EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) was adapted from the EAT-40 and is one of the most widely used standardised measures used to assess eating attitudes and behaviours for the purpose of identifying ED symptoms. The EAT-26 cannot be used in isolation to diagnose an eating disorder; however, the EAT-26 has been found to be an effective screening instrument as part of a two-stage process in which those who score at or above a cut-off score of 20 are referred for a diagnostic interview. It makes use of a six-point Likert scale (with responses ranging from ‘always’ to ‘never’) and has three subscales that identify dieting behaviours, bulimia and food preoccupation, and oral control that are related to bulimia, weight, body image variables and psychological symptoms (Douka, Topoulou, Skordilid, Koutsouki, 2009; Garner et al., 1982).

The EAT-26 has good internal consistency ($\alpha = 0.90$) and good test-retest reliability ($r = 0.84$) (Carter & Moss, 1984; Garner et al., 1982). Studies in the U.S. Europe, Australia and Asia have used the EAT-26 to detect ED in different populations thereby confirming its cross-cultural validity (Douka et al., 2009).

Procedure

Participants were invited to take part in this study via e-mail through Vula, UCT's open-source online collaboration and learning environment. This invitation was extended to all first-, second-, and third year Psychology students at UCT. The e-mail included a short introductory paragraph about the nature of the study, the time it would take to complete, as well as incentive to participate. It was explained that this study fell under UCT's Psychology Department SRPP and therefore students would be credited accordingly. An electronic link was provided to the survey which was hosted by Zoomerang, a free online survey and questionnaire tool. Participants were then required to submit an online consent form (See Appendix C) – participation was entirely voluntary and anonymity was guaranteed.

Participants then proceeded to an online version of the survey which constituted a demographic section, as well as height and weight questions in order to calculate body mass index (BMI). The remainder of the survey consisted of the four measures described in the Measures section above: the EDDS, SAI-ED, DERS, and the EAT-26, constituting 94 items in total. No titles were provided so as to avoid any response bias. The full battery took

approximately 45 minutes to complete. Contact information was provided at the end of the questionnaire, both for the researcher and Student Health and Wellness services, for those who felt that they needed help or additional information. Participants were also linked to online resources for ED support/treatment.

Snowball sampling was employed towards the end of the study to increase the sample size for the ED groups. Participants were recruited via ED recovery support groups, and further referral via members of those groups. In such instances, participants completed a printed version of the questionnaire described above. All information obtained was kept strictly confidential, and the data was used solely for research purposes.

Statistical Analysis

Descriptive statistics were analysed first for the EDDS, EAT, SAI-ED, and DERS. The main hypotheses (1 and 2) aimed to examine associations between self-assigned groups and insight and IA. Hierarchical regression was employed via the GLM to look at these associations and also at additional potential associations between EDDS results and EAT scores in relation to insight and IA. Due to the fact that severity of EDs, as measured by the EDDS and EAT, is also expected to influence insight and IA, further potential associations were examined using nested model comparisons between self-assigned groups and EDDS results, and self-assigned groups and EAT scores. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows, version 20, 2012.

Results

Prevalence and severity of EDs – EDDS and EAT

Based on the EDDS assessment, a total of 31 (14.09%) women met the DSM-IV criteria for either AN, BN, or BED across the self-assigned groups. The results are presented in *Table 2*.

Table 2 Frequencies of EDs Across Self-assigned Groups as Determined by the EDDS.

Self-assigned Group	Full-recovery (n=17)	In-treatment (n=20)	Suspected- problem (n=56)	Control (n=127)
EDDS Diagnosis				
<i>Anorexia Nervosa</i>	1 (5.88%)	3 (15%)	5 (8.93%)	3 (2.36%)
<i>Bulimia Nervosa</i>	2 (13.33%)	4 (25%)	5 (8.93%)	3 (2.36%)
<i>Binge Eating Disorder</i>	0	0	2 (3.67%)	1 (1.57%)
Total	3 (17.65%)	7(35%)	12 (21.42%)	7 (5.51%)

Note. Total number of diagnosed participants according to each group are presented with percentages in parentheses.

As shown in Table 2, a few participants in the full-recovery and control groups were diagnosed with an ED by the EDDS after the initial analysis. Despite the evident contradiction between their self-assignment and the EDDS diagnosis, these participants were retained for further analysis in order to provide more insight into the nature of denial across the different groups. Furthermore, due to certain participants having a double diagnosis, and the small numbers of EDs in general, EDDS categories (AN, BN, BED) were collapsed into either the absence or presence of an ED for the remainder of the analyses.

EAT scores were then assessed for each self-assigned group. A score of 20 or greater reflected a high level of concern about dieting, body weight, or problematic eating behaviours. The full-recovery group ($M=11.76$, $SD=13.21$) and the control group ($M=8.72$, $SD=9.42$) all scored well below the cut-off 20; however, the suspected-problem group ($M=18.96$, $SD=14.75$), were only one point off. Although more than half of the participants in the in-treatment group many did not meet all the rather stringent criteria of the EDDS, their EAT scores did reflect disordered eating ($M=27.90$, $SD=13.90$). A possible reason for the low numbers of clinical EDDS diagnosis in the in-treatment group is that participants in this group were mostly recruited from ED recovery support groups where members were at varying stages of treatment, some only a few days in and others a few months in.

Due to vastly unequal group sizes, inferential analyses, such as ANOVA, could not be used to examine between-group differences directly; however, the main effects found through the GLM regression are expanded on later.

Insight and IA

For the SAI-ED, a maximum score of 8 was indicative of good insight, whereas a score of -8 reflected lack of insight. Due to the nature of the questions in the SAI-ED, i.e. “Do you think your current condition or the problems resulting from it warrant physical help”, a “No” answer would thus have reflected a lack of insight for both those in full recovery as well as the control group, whereas in actuality the question was not applicable to those not currently experiencing a disorder. Therefore, for both the full-recovery group and control group, insight results were omitted, except for the instances in which participants were found to have an ED as determined by the EDDS. The descriptive results for the SAI-ED across self-assigned groups, further divided into the lack or presence of an ED (as determined by the EDDS) are presented in Table 3. As expected the in-treatment group had more insight into their condition than the suspected-problem group.

For the DERS, a maximum score of 180 was indicative of low IA, whereas a minimum score of 36 reflected excellent IA. Overall, higher scores suggested greater problems with emotional dysregulation. As expected, the full-recovery and control groups had higher levels of IA (reflected by lower scores), whereas the in-treatment and suspected-problem groups scored higher on IA reflecting lower IA. The descriptive results for the DERS across self-assigned groups, further divided into lack or presence of ED (as determined by the EDDS) are presented along with insight scores in Table 3.

Table 3 *Descriptive Statistics for Insight and IA Scales Across Self-Assigned Groups, Further Subdivided into Presence/Absence of an ED As Determined by the EDDS.*

Self-assigned Group	Full-recovery (n=17)	In-treatment (n=20)	Suspected-problem (n=56)	Control (n=127)
SAI-ED scores				
Total insight score	n/a	3.20 (2.63)	0.04 (3.54)	n/a
ED present	2.00 (1.00)	3.42 (2.82)	0.17 (3.58)	1.43 (3.60)
<i>Sub-sample</i>	3	7	12	7
ED absent	n/a	3.08 (2.63)	0.00 (3.57)	n/a
<i>Sub-sample</i>	14	13	44	120
DERS scores				
Total IA score	82.94 (24.57)	105.45 (25.96)	96.20 (22.53)	79.98(19.89)
ED present	115.33 (32.33)	117.00 (32.98)	96.33 (26.88)	95.28(21.24)
<i>Sub-sample</i>	3	7	12	7
ED absent	76.09 (16.97)	99.23 (20.08)	96.16 (21.55)	79.09(19.54)
<i>Sub-sample</i>	14	13	44	120

Note. Means are presented with standard deviations in parentheses.

Interpreting the SAI-ED - maximum score: 8 (indicative of excellent insight), minimum score: -8 (indicative of poor insight). A score of 0 reflects responses coded as 'maybe', suggesting uncertainty. Interpreting the DERS - maximum score: 180 (indicative of poor IA), minimum score: 38 (excellent IA)

A nested model comparison was first run to test whether there would be a significant association between self-assigned group, EDDS diagnosis, EAT scores and insight. The following nested model was tested: Insight = Self-assigned group + EDDS + EAT + self-assigned group*EDDS + self-assigned group*EAT. Self-assigned group was entered into the regression model first, as this was the original predictor. EDDS results were entered next as the absence or presence of an ED, theoretically, should provide some indication of potential

levels of insight and IA. EAT scores were entered last. The combined effects of self-assigned group and EDDS, as well as self-assigned group and EAT scores were also added into the equation.

Contrary to hypothesis 3, neither EAT scores, $F(1, 76) = 2.34, p = .13$, nor EDDS diagnosis, $F(1, 76) = .146, p = .70$, were found to be significant predictors of insight and were therefore removed from the regression. Self-assigned group, however, was found to be a significantly associated with insight, $F(1, 76) = 13.30, p < .001$, as predicted by hypothesis 1. Self-assigned group explained 15% of variance in insight ($R^2 = .15$), with the IT group displaying significantly higher levels of insight than the suspected-problem group (see Table 3).

Another nested model comparison was run using the same variables to predict IA. The following model was tested: IA = Self-assigned group + EDDS results + EAT + self-assigned group*EDDS + self-assigned group *EAT. As for insight, EDDS was not found to be a significant predictor of IA, $F(1, 220) = 1.66, p = .20$, but EAT scores were ($F(1, 220) = 37.80, p = <.001$) – specifically, higher EAT scores (reflecting abnormal eating attitudes) were associated with higher IA scores (reflecting poorer IA). This is in partial agreement with hypothesis 4. As predicted by hypothesis 2, self-assigned group was significantly associated with IA ($F(1, 220) = 4.74, p = .13$). A significant interaction effect was also found between EAT and self-assigned group, $F(1, 220) = 4.18, p = <.01$. This model, excluding EDDS, accounted for 32% ($R^2 = .32$) of the variance in IA scores.

As the interaction between EAT and Group was disordinal, the main effect of group could not be meaningfully interpreted. In line with theory, as evidenced by Figure 1, for the full-recovery group, the in-treatment group, and the control group as EAT scores increased (reflecting a high level of concern about weight and body image), so did DERS scores (reflecting poor IA). Although this trend was witnessed across all three of the above-mentioned groups, it was only significant for the in-treatment group ($p < .05$). For the suspected-problem group, however, as EAT scores increased, there was only a slight increase in DERS scores, suggesting that despite higher levels of concern about dieting, body weight, and problematic eating behaviours, IA remains relatively stable. The significance of these results is elaborated on further in the discussion.

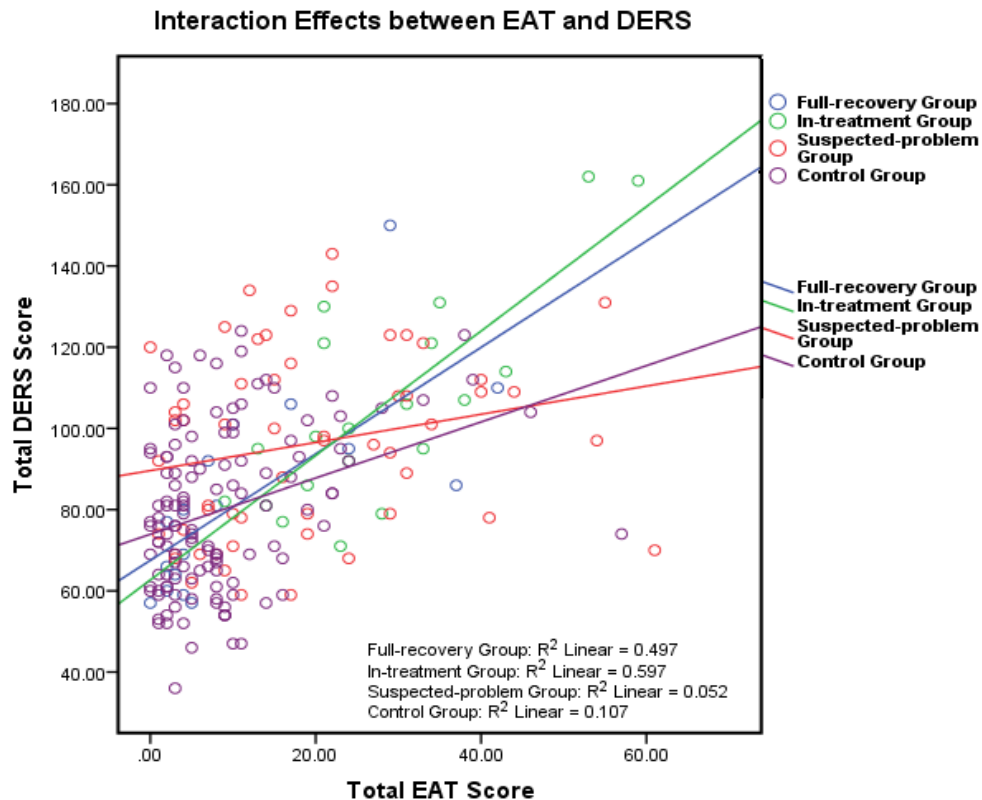


Figure 1. Interaction Effects Between Eating Attitude Scores and IA Scores Across Self-Assigned Groups.

Discussion

Theoretically, insight and interoceptive are interrelated concepts in psychiatric literature, and are used collectively to demonstrate the ability to recognise and describe one's own behaviours, cognitions, and mental state (Goldstein et al., 2006). However, insight and IA are also often mistakenly used interchangeably. IA is not synonymous with subjective insight, nor is it clear whether conscious perception of interoceptive signals is sufficient or necessary for insightful action or for acknowledgement of one's emotional, physical, or mental state. Whereas most studies have examined insight and IA awareness separately in clinical eating disorder populations, this study investigated these constructs conjointly in attempt to parse possible distinctions between levels of insight and IA across different eating-disordered populations (those in full recovery, those in treatment, and those who suspect they may have a problem). The findings from this study suggest that insight and IA point to different underlying mechanisms of denial, and that, therefore, each might offer a unique contribution to understanding the nature of denial in EDs.

Insight: Variations across stages of eating disorders

As discussed earlier, insight could only be assessed for two groups – the in-treatment group, and the suspected-problem group. Consistent with hypothesis 1, I found a significant association between self-assigned group and levels of insight. Specifically, the in-treatment group reported higher levels of insight than the suspected-problem group.

Although this finding is consistent with the hypothesis, and although it is not unlikely (or unexpected) that individuals in treatment would have more insight than those not in treatment, there are alternative explanations for the pattern of data described here. One such explanation is that the SAI-ED consisted of questions making direct reference to a ‘condition’ (e.g., ‘Do you think your eating-related problem reflects part of your current psychological condition?’). The in-treatment group had already been diagnosed with an ED, and regardless of their levels of IA or their duration of treatment, they were able to relate their current difficulties to some sort of official diagnosis or condition; this was not the case for the suspected-problem group. Furthermore, several participants in the in-treatment group were recruited from open ED support groups, and were thus already to some degree help-seekers (with the exception of those who might have been committed involuntarily). Again, this was not the case for the suspected-problem group, who were all recruited from the general student population.

Whereas the confirmation of hypothesis 1 suggests that there are variations in level of insight across stages of eating disorders, the disconfirmation of hypothesis 3 appears to argue otherwise. Neither ED diagnosis (as measured by the EDDS) nor eating attitudes (as measured by the EAT) were significant predictors of insight, thereby disconfirming hypothesis 3. A possible reason for this disconfirmation is that the criteria on the scale used to detect the presence of an eating disorder (the EDDS) were incredibly stringent, and that therefore the number of validated ED diagnoses were few. For example, all participants in the in-treatment group were, by definition, diagnosed (by an independent clinician, outside of the study) with an ED; less than half of them were, however, confirmed to have an ED by the EDDS. This discrepancy may have resulted from the fact that a BMI of < 17.5 was one of the EDDS criteria determining the presence of anorexia nervosa, and many of the in-treatment group did not meet this criterion despite meeting all other criteria. Their reasons for not meeting this criterion might, in turn, have been a result of inaccurate weight and height measures used to calculate body mass index (BMI). These height and weight measures could not be verified. Moreover, BMI scores may have been confounded by the possibility that participants in the in-treatment group were at various stages of recovery and/or were unaware

of their current weight measures as many ED treatment programmes discourage weight-checking.

Why were eating attitudes, as measured by the EAT, not significantly predictive of levels of insight, as hypothesised? One reason might be that, although abnormal eating attitudes have been linked to increased risk for the development of an ED (Caradas, Lambert, & Charlton, 2001), they may not necessarily be indicative of the amount of insight the eating-disordered individual has into her condition. For example, the in-treatment group displayed higher levels of abnormal eating attitudes than the suspected-problem group; however, they had greater insight into their condition than the suspected problem group.

Interoceptive Awareness: Interaction with eating attitudes

Consistent with hypothesis 2, I found a significant association between self-assigned group and IA. However, because there was a significant interaction effect between self-assigned group and eating attitudes (partially confirming hypothesis 4), the main effect for group was nuanced and strictly speaking should only be interpreted in light of the interaction with the eating attitude scores. The interaction suggests, specifically, that for individuals in the full-recovery, in-treatment, and control groups, increased eating pathology predicted poorer IA. It follows, logically, that in ED populations (as well as in those displaying disordered-eating habits), there is a greater chance of emotional dysregulation as the potential to develop an ED, or the severity of an existing ED, increases (Fassino, Gramaglia, & Abbate-Daga, 2004; Merwin, et al., 2010). This emotional dysregulation further results in a diminished capacity to recognise and accurately distinguish between sensory perceptions and emotional cues (reflected by poor IA scores).

This interaction effect did not exist for the suspected-problem group, however. In this group, levels of IA remained relatively stable even as the potential to develop an ED (reflected by greater abnormal eating pathology) increased.

A possible explanation for the above findings may be linked to research on denial and resistance to change. Although avoiding difficult thoughts, feelings, and pain is adaptive in some contexts, somatic information expresses important information regarding an individual's motivational state (Merwin et al., 2010). In the case of EDs, the egosyntonic quality of ED symptoms may contribute to the avoidance of uncomfortable feelings and thoughts, thereby facilitating certain maladaptive behaviours (i.e., purging, restricting caloric intake, resisting treatment, lying on self-report measures, etc.) (Vitousek, Watson, & Wilson, 1998). These behaviours are then further reinforced as by engaging in such maladaptive behaviours,

uncomfortable feelings, thoughts, and anxieties are temporarily ameliorated, and the eating-disordered individual is closer to reaching their ultimate, goal – weight loss (Vandereycken, 2006b). It is possible that individuals who suspect they have a problem may be more aware of their emotional states, regardless of how maladaptive their behaviour or eating habits may be, and therefore reflect higher levels of motivation to seek help and recover (and are therefore less likely to deny that they are experiencing emotional difficulties).

This interaction effect reflects the most significant contribution of this study as it points to an explicit difference between IA levels across individuals diagnosed with an ED (whether in full recovery or in treatment), and individuals who suspect they may have a problem. Thus, it is possible that stable levels of IA are associated with lower levels of denial in EDs. In order to put some of the above findings into perspective, descriptive data reflecting potential denial across self-assigned groups will now be discussed.

Presence of Denial in Both Fully-Recovered and Healthy Control Participants

Although intentional and unintentional denial could not be distinguished in this study, I found that a substantial number of participants who had been diagnosed with an ED in the past, and who currently perceived themselves to be fully recovered, still display ED symptomatology as determined by the EDDS and EAT (i.e., they displayed a level of denial in that they reported being fully recovered yet still presented with symptoms of the disorder).

This presence of denial is not surprising considering that relapse is a known difficulty for individuals with EDs, with rates ranging from 22% - 51% (Keel, Dorer, Franko, Jackson, & Herzog, 2005). Current literature on ED treatment and relapse suggests that lack of insight or denial of illness is a contributor to poor adherence, to high rates of drop-out, and, eventually, to relapse (Konstantakopoulos et al., 2011). Thus, individuals who demonstrate extreme lack of insight may not provide accurate information about their condition; the current finding, detailed above, is consistent with this proposition.

As might be expected, insight and IA scores for those who were diagnosed with an ED by the EDDS in the full-recovery group revealed considerably lower levels of both insight and IA than those who did not fall within the diagnostic range on the EDDS. Of potential concern, however, is the finding that several participants serving as controls, reporting no concern about weight, diet or body image, met the (very stringent) EDDS criteria for an ED. Although disordered eating is not uncommon among female university students (Wassenaar et al., 2000), more research on denial, specifically in non-clinical samples, needs to be conducted to

provide more knowledge about how denial manifests and contributes to the development of EDs within such populations.

Limitations and Future Directions

The results from this study should, until replicated, be interpreted cautiously and within the context of the following limitations. Perhaps the most notable limitation of this study was inadequate group size and representivity. Although the size of the control group for this study was substantial, ED groups were much smaller. This discrepancy in size points to the highly secretive and sensitive nature of EDs and the subsequent difficulties that accompany the recruitment of eating-disordered populations. Furthermore, the small number of ED participants restricted partialling out and/or investigating possible group differences between AN, BN, and BED on measures of insight and IA. This offers a potential avenue for future research, as differences in insight and IA have been found across different types of EDs (Merwin, 2010; Konstantakopoulos et al., 2011); however, they have not been examined across different stages and at different severities of illness, nor have they been examined in conjunction with measures of insight in relation to denial.

All data for this study were gathered simultaneously, thus preventing any causal or temporal inferences. Additionally, the nature of the data did not allow for the deconstruction of possibly multifarious relationships between the variables of the study. For example, measures of insight and IA could be influenced by factors such as recency of recovery, duration of illness, and whether or not the individual willingly received treatment (Brown, 2010; Konstantakopoulos et al., 2011). Furthermore, anxiety and depression were not controlled for, as this step was beyond the scope of this study. These psychiatric conditions have, however, been implicated (albeit inconsistently) as contributing factors to poor IA, and thus call for further investigation (Couturier & Lock, 2006; Paulus & Stein, 2010).

Some might argue that the use of self-assignment to pre-determined groups is a weakness of this study. Although recruiting purely clinical samples, with diagnoses confirmed objectively, is desirable in most ED research, a sample with symptoms that exist along the continuum of eating pathology, unconstrained by the imposition of a diagnostic process prior to assessment, was considered appropriate for the aims of the current research. I was interested in examining how denial manifests across various stages of ED pathology – thus, by giving participants the option of assigning themselves into group by presence or absence of an ED as well as stage of recovery, I was able to compare their current self-perception against the reality as determined by the diagnostic measures contained in the survey.

The anonymous nature of this study was intended to encourage honesty, as there was no face-to-face interaction with the researcher, and participants had nothing to lose for being truthful. However, this prioritisation of anonymity meant that no personal information (e.g., weight or height, which are critical to obtaining accurate BMI measures for EDDS criteria) could be validated. Furthermore, it remains unknown whether denial of illness was a deliberate strategy or not. A number of participants expressed a central tendency bias in their response sets – this bias suggests that even though certain participants may have been aware of their ED, they may also have been reluctant to express this awareness to an invisible other so as to maintain control over their eating behaviours and to sustain emotional homeostasis (Konstantakopoulos et al., 2011).

Several of the limitations of this study point to the intricate nature of the topic at hand and the difficulties that accompany the recruitment and assessment of the relevant populations. Nevertheless, this was an exploratory study, and its findings suggest there is much promise in following this course of research in a much larger, and less resource-constrained, research programme.

Conclusion

In 1978, Bruch, famous for her seminal work on EDs, wrote that denial of illness in ED patients “may be a negativistic refusal to communicate but it may also express disturbed perception and abnormal interpretation of experiences” (p. 2, as cited in Vandereycken, 2006a). Currently, literature on denial is sparse. Although denial is widely acknowledged to affect the accuracy of self-report measures, and thereby diagnosis and treatment, little is known about its extent and implications (Vitousek, Daly, & Heiser, 2006). There is, in general, a poor understanding and conceptualisation of denial in EDs and of its various underlying psychological mechanisms. This study was the first of its kind to attempt to untangle some of the ambiguity around the construct of denial by examining facets of potential underlying mechanisms of denial, specifically insight and interoceptive awareness (IA). In doing so, I distinguished between a lack of lucid awareness (insight) in relation to having an ED, or disordered eating habits, and a lack of acceptance of one’s somatic and affective experience and clarity regarding emotional responses (IA).

Levels of insight and IA were found to differ across various ED groups based on severity (assessed by eating attitudes) and awareness of the problem. Specifically, individuals who have been diagnosed with an ED (whether they are in full recovery or in treatment), express levels of IA that are contingent on the severity of their ED, whereas individuals who

have never been diagnosed, yet openly express that they have a problem, show stable levels of IA, regardless of severity. These findings suggest that insight and IA represent different facets of denial that might have different implications for both assessment and treatment. Further investigation of these concepts in relation to EDs is needed to gain a clearer understanding of how they contribute to the aetiology of eating-related pathology.

Hilde Bruch acknowledged the significance of denial and implications of poor IA in understanding EDs as early as the 1960s. The envisioned contribution of this research is that it will serve as a catalyst for future studies that combine the knowledge from yesterday with the theoretical and technological advancements of today to elucidate the mechanism by which lack of insight and interoceptive awareness contribute to disordered eating.

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Appendix A

DSM-IV Eating Disorder Diagnostic Criteria

Anorexia Nervosa

A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of that expected).

B. Intense fear of gaining weight or becoming fat, even though underweight.

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.

D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles (a woman is considered to have amenorrhea if her periods occur only following hormone, e.g., oestrogen, administration).

Specify type:

Restricting Type: During the current episode of Anorexia Nervosa, the person has not regularly engaged in binge eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

Binge-Eating/Purging Type: During the current episode of Anorexia Nervosa, the person has regularly engaged in binge eating or purging behaviour (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).

Bulimia Nervosa

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

(2) A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviours both occur, on average, at least twice a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Specify type:

Purging Type: during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

Nonpurging Type: during the current episode of Bulimia Nervosa, the person has used other inappropriate compensatory behaviours, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas.

Eating Disorder Not Otherwise Specified

The Eating Disorder Not Otherwise Specified category is for disorders of eating that do not meet the criteria for any specific Eating Disorder. Examples include

1. For females, all of the criteria for Anorexia Nervosa are met except that the individual has regular menses.
2. All of the criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
3. All of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.
4. The regular use of inappropriate compensatory behaviour by an individual of normal body weight after eating small amounts of food (e.g., self-induced vomiting after the consumption of two cookies).
5. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.
6. Binge-eating disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviours characteristic of Bulimia Nervosa (see Appendix B in DSM-IV-TR for suggested research criteria).

Appendix B

Schedule for the Assessment of Insight: modification for eating disorders (SAI-ED)

1. Do you think you are experiencing any emotional or psychological changes or difficulties?

Yes/Unsure/No

2. Do you think your condition amounts to a psychological disorder?

Yes/Unsure/No

3. Has your nervous /psychological condition led to adverse consequences or problems in your life? (For example, conflict with others, neglect, financial or accommodation difficulties, irrational, impulsive or dangerous behaviour, physical deterioration, work difficulties)

Yes/Unsure/No

4. Do you think your current condition or the problems resulting from it warrant (need) physical treatment?

Yes/Unsure/No

5. Do you think your current condition or the problems resulting from it warrant (need) psychological treatment?

Yes/Unsure/No

6. Do you think that eating-related problems represent a part of your current nervous/psychological condition?

Yes/Unsure/No

7. How do you feel when people think you are overly preoccupied with your weight, shape, eating?

That's when I know I'm sick/I'm confused and I don't know what to think/They're wrong

8. Are you aware of when you are hungry?

Always/Sometimes/Never

Appendix C

Informed Consent Form



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Department of Psychology Eating Disorder Research

Researcher:

Maja Kwiatkowski

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Contact number: 0820611552

Eating disorders and disordered eating

You are invited to take part in a research study investigating various attitudes, feelings, and beliefs around food, body weight, and body image. Young adulthood, particularly during the transition to a university setting, can be a vulnerable time for the development of eating disorders and disordered eating behaviours. As young university students, many of you may, to a greater or lesser extent, be experiencing pressure to look a certain way. Such pressure may be influencing the way you feel about yourself, your body, and your relationship with food.

This study will investigate self-awareness and insight in relation to issues around dissatisfaction with body image and weight preoccupation. The purpose of this research is to gain a better understanding of eating disordered attitudes, beliefs, and behaviours, and how they manifest.

Participation in this study is entirely voluntary. It will take the form of an online questionnaire (to follow) and there will be no face-to-face contact with the researcher at any stage of this study. This questionnaire should take no more than 45 minutes to complete. You are free to withdraw at any point should you feel uncomfortable with answering any of the questions. All the information you provide is anonymous and will be used for research purposes only. You have the option of providing your student number in order to secure your SRPP points -none of the data you provide will be linked to your student number. Should you have any questions before continuing with this study, please contact me (the researcher) -my contact information is provided above. If you would like to receive further information on the outcomes of this study, please feel free to provide your e-mail address, or contact me.

If you feel that you are at risk for developing an eating disorder, or have an eating disorder and would like to receive more information and/or help, please contact:

UCT's Student Wellness Services:

Tel: 021 650 1017 / 1020

Website: <http://www.uct.ac.za/students/health/wellness/clinical/contact/>

Consent Form

The study has been explained to me, and my questions have been answered.

I understand that participation in this study is voluntary, and that I may withdraw at any point.

I understand that I will not be identified with the exception of my student number being used for administrative purposes only (should I choose to provide it).

Please tick the box below in order to continue to the online questionnaire.

I consent to participate in this study and give permission for my information to be used for research purposes only.

Student number (**optional**): _____

E-mail address for research feedback (**optional**): _____