



Delusion-like beliefs in anorexia nervosa: An interpretative phenomenological analysis

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Key words

anorexia nervosa, delusional beliefs, eating disorders, interpretative phenomenological analysis, qualitative research.

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Abstract

Objective: Quantitative evidence suggests that a subset of individuals with anorexia nervosa (AN) may hold beliefs pertaining to food, body image, and appearance that are delusional in nature. The present study extended this research through qualitatively exploring beliefs held by AN patients and the consequences of holding such beliefs.

Method: Five participants receiving inpatient treatment for AN took part in semi-structured interviews, which were transcribed and analysed according to the principles of interpretative phenomenological analysis.

Results: Two superordinate themes emerged: “*Delusion-like beliefs*,” which detailed participants’ conviction that their bodies responded to food and exercise differently to others and thus they must engage in disordered behaviours to remain at a normal weight; and “*Process*,” which captured the ways in which participants maintained their beliefs and addressed their variable relationship with insight.

Conclusions: The current findings suggest that anorectic cognitions can take a delusional quality and thus may not be overvalued ideas only.

Key points

- This study provided a nuanced account of the beliefs held by patients with anorexia nervosa (AN) regarding their eating disorder symptoms.
- Results showed that anorectic cognitions can take a delusional quality and thus may not be simply overvalued ideas.
- Two superordinate themes emerged:
 - “*Delusion-like beliefs*”—the conviction that patients’ bodies are different and thus they need to engage in disordered behaviours to remain at a normal weight.
 - “*Process*”—which captured the ways in which participants maintained their beliefs and addressed their variable relationship with insight.

Introduction

Anorexia nervosa (AN) is a severe mental illness characterised by significantly restricted food intake, an intense fear of weight gain, and skewed bodily perceptions (APA, 2013; Bornholt et al., 2005). Central to such symptomatology are distorted and firmly held beliefs pertaining to weight, shape, and body image. While the eating disorder (ED) literature has commonly referred to such beliefs as overvalued ideas (OIs), which are “unreasonable and sustained beliefs maintained with less than delusional intensity” (APA, 2013, p. 826), emerging quantitative research suggests that such beliefs may in fact have delusional qualities (Hartmann, Thomas, Wilson, & Wilhelm, 2013; Konstantakopoulos, Tchanturia, Surguladze, & David, 2011; Steinglass, Eisen, Attia, Mayer, & Walsh, 2007). The present study sought to extend this literature by qualitatively exploring the content of beliefs held by individuals with AN and the resultant lived experience of holding such beliefs.

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According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM 5; APA, 2013)*, OIs are distinct from delusions, as an individual is able to acknowledge that their belief may be inaccurate. Empirical studies comparing OIs and delusions have often contrasted samples of individuals with AN and psychosis based on the assumption that individuals with AN hold OIs and those with psychosis hold delusions (e.g., Mullen & Linscott, 2010). However, these studies have revealed greater similarities than differences. For example, Mullen and Linscott (2010) found that 59% of individuals with AN had complete conviction in their beliefs compared to 54% of individuals with psychosis. In addition, a number of case studies have reported delusional beliefs in individuals with AN, including paranoid/persecutory, referential, grandiose, and magical beliefs. For example, Mehler et al. (2001) described a patient who believed that touching food or refrigerators would lead to immediate weight gain. Reported paranoid and persecutory beliefs include that hospital scales were tampered with (Delsedime et al., 2013), that hospital food was poisoned, and that medical professionals and family were attempting to intentionally harm patients (Kelly, Kamali, & Brennan, 2004).

Recent empirical investigations have provided further support for the presence of delusional beliefs in AN. Steinglass et al. (2007) and Konstantakopoulos et al. (2011), investigated the delusionality of beliefs pertaining to food intake and body image, respectively, in individuals with AN. Whilst all participants held OIs, 28% (Konstantakopoulos et al., 2011) and 20% (Steinglass et al., 2007) of patients held their dominant belief with delusional intensity. Importantly, delusional beliefs were found to be significantly greater in participants diagnosed with AN of the restrictive type (AN-R) (46%) than those with AN of the binge-purge type (AN-BP) (9%) (Konstantakopoulos et al., 2011). Furthermore, delusionality was not related to physical markers of illness severity such as body mass index (BMI) or illness duration, but was associated with indicators of psychological illness severity such as the "drive for thinness" scale of the Eating Disorders Inventory (Konstantakopoulos et al., 2011; Steinglass et al., 2007), suggesting that delusions may be related to psychological aspects of the disorder, but independent of eating pathology or body weight.

A third study examining delusional beliefs compared beliefs pertaining to appearance and perceived bodily flaws in individuals with AN and individuals with body dysmorphic disorder (BDD) (Hartmann et al., 2013). Although delusional beliefs were more prevalent in participants with BDD (50%) than AN (16%), results did not differ between groups with respect to the presence of delusions of reference. That is, both groups showed

similarly significant levels of delusionality when purporting that others paid special attention to their appearance or perceived flaws and/or that they received special messages regarding their appearance or flaws (Hartmann et al., 2013). However, based on the findings of Konstantakopoulos et al. (2011) and Steinglass et al. (2007), the results of this study may not accurately reflect the level of delusionality in patients with AN, as 74% of AN participants were of the AN-BP subtype, and potential AN participants were excluded as a function of their current weight. Given that delusionality may not be related to BMI (Konstantakopoulos et al., 2011), it is possible that individuals with AN who were not sufficiently underweight were unduly excluded from participation.

The three reported studies (Hartmann et al., 2013; Konstantakopoulos et al., 2011; Steinglass et al., 2007) are further limited by restricting their scope to a single dominant domain of belief (i.e., appearance, body image, and food intake, respectively). It is possible that had the studies examined the broader range of delusional presentations reported in the AN case literature, different results may have been elicited. For example, whilst Hartmann et al. (2013) reported that participants with BDD showed greater levels of delusionality than individuals with AN when describing appearance-related beliefs, this result may not have held for beliefs pertaining to food intake, weight, or paranoia/persecution. In addition, these studies did not explore the experience of living with delusional beliefs for individuals with AN. Thus, further research investigating the breadth of possible delusional beliefs in AN and the consequent experiences of living with such beliefs is required.

Qualitative techniques are well-suited to overcome some of the highlighted limitations of quantitative research in this field. By allowing for the collection of data rich in description (Denzin & Lincoln, 2005; Howitt, 2010), and removing constraints associated with specific study foci, qualitative techniques enable an in-depth examination of experiences from the unique perspective of the individual (Howitt, 2010). Qualitative research is also particularly useful for the examination of novel, complex, or under-researched topics that should be open to unexpected findings (Biggerstaff, 2012). At present, only one study has directly examined beliefs held by individuals with AN using a qualitative approach. Espeset et al. (2011) conducted a grounded theory analysis of body image disturbance in 32 participants with AN. Nine participants were identified who experienced a delusional disturbance of body image, as they were unable to integrate their subjective experience of their body as overweight and the objective reality of their body as severely underweight (Espeset et al., 2011). Other participants in the study demonstrated 'denial' or 'dissociation'. Of note, Espeset et al. (2011) did not consider that beliefs expressed

by the denying or dissociating participants may also reflect delusional qualities. For example, it was reported that some participants in the denial category expressed conviction that their low weight was due to the manipulation of scales (Espeset et al., 2011). This appears consistent with the paranoid beliefs noted in the previously reported case studies (Delsedime et al., 2013). Importantly, whilst participants' lived experiences were not directly explored, such depth of detail highlighting their attempts to make sense of their experience would not have been uncovered in a quantitative research paradigm.

The present study aimed to qualitatively analyse the content of the thoughts, beliefs, and perspectives held by individuals with AN that may be of delusional intensity. It further aimed to explore the lived experiences that result from holding such beliefs, which to date, have not been detailed in the existing literature.

Method

Design

The present study utilised a qualitative design. The construction and analysis of the semi-structured interviews was completed using principles of interpretative phenomenological analysis (IPA). The aim of IPA is to conduct a thorough, systematic analysis of the phenomena of interest as understood by the participants recruited, and as such, does not seek to make claims or generalisations at the population level (Smith, Flowers, & Larkin, 2009). As a result, small, homogenous, carefully selected and situated samples are utilised (Smith et al., 2009; Yardley, 2007).

Participants and Setting

Five participants with *DSM-5* (APA, 2013) lifetime diagnoses of AN-R ($n = 4$) and AN-BP ($n = 1$) were recruited

from an inpatient ED Program at a specialised clinic in Australia. Demographic information is outlined in Table 1 and aliases have been utilised to protect anonymity.

Semi-Structured Interview

Development of the interview schedule was an iterative process between the authors that led to three open-ended questions and a series of prompts (see Table 2). Questions were designed to best capture the narrow focus of the research aims and to obtain the depth of detail required. Prompts were designed to be used if the participant did not respond or gave a response that required elaboration, and to ensure the interviewer did not make assumptions of the participants' thoughts, experiences, or meanings. In accordance with the participant-led focus of IPA (Smith et al., 2009), the interview schedule was flexible to the areas of discussion raised by participants to ensure they remained the "experiential expert" (Smith et al., 2009, p. 64).

Procedure and Ethical Considerations

This study was approved by the Research Ethics Committee of the Clinic where the study was undertaken and was registered with a university based in Australia. The study also complies with the Code of Ethics of the World Medical Association (Declaration of Helsinki). Patients were recruited for the study following recommendation from their treating psychiatrist. Informed consent was obtained from the research participants after the nature of the study was explained. Participants first completed a socio-demographic questionnaire. The semi-structured interview was then conducted by the first author. Interviews ranged in length from 49 to 78 min. All interviews were completed in an interview room at the clinic where the

Table 1 Participant characteristics

Name ^a	Age	Gender	Diagnosis	Current BMI ^b	Current psychopharmacology medications	Current inpatient duration at time of interview	Age at first diagnosis	Number of hospital admissions	Other mental health diagnoses
Ellie	20	Female	AN-R ^c	18.1	Escitalopram Quetiapine	7 weeks	11	11	Anxiety
Alex	31	Female	AN-R	20.5	Fluoxetine Quetiapine	1.5 weeks	16	3	Anxiety
Zoe	25	Female	AN-BP ^d	18.7	Olanzapine	4 weeks	25	2	DepressionAnxiety
Mia	19	Female	AN-R	17.6	Olanzapine Duloxetine	2 weeks	13	9	DepressionAnxiety
Bridget	24	Female	AN-R	14	None reported	2 weeks	17	1	Anxiety

^a All names are aliases to protect anonymity.

^b BMI = body mass index (BMI = body weight in kilograms divided by height in meters squared [KG/M²]).

^c AN-R = anorexia nervosa-restrictive type.

^d AN-BP = anorexia nervosa-binge purge type.

Table 2 Semi-structured interview questions with prompts

Question	Prompt (if needed)
<ul style="list-style-type: none"> • Do you have any beliefs or thoughts that are particularly strong for you that other people might disagree with? • What makes you certain that belief(s) is true? (clarifying/ deepening question) • What is that like for you? (this question may need to be modified for each participant, depending on answers already given) 	<ul style="list-style-type: none"> • These could be beliefs about your body or food, or could be about something completely unrelated to your eating disorder • If you had to explain this to someone else, what evidence would you give them? • What is it like to live thinking (insert belief)?

research was undertaken and were recorded using a handheld audio recording device.

Analysis

Data was analysed according to the steps outlined by Smith et al. (2009) and guidelines for ensuring validity of qualitative research prescribed by Yardley (2007). IPA is an inductive and iterative process that requires systematic, rigorous, and detailed engagement with each transcript (Smith et al., 2009). It has been described as a process of “double hermeneutics” in which the analyst attempts to make sense of the participants’ attempts to make sense of their lived experiences (Smith et al., 2009). Data were analysed by two authors and identified themes were reviewed for validity by other authors who are experienced clinicians and academics in their respective fields (EDs and psychosis). Verbatim responses are provided throughout the results to allow the reader to assess the themes systematically arrived at in the analysis (Smith et al., 2009; Yardley, 2007).

Following verbatim transcription of the interviews, the analysts independently “immersed” themselves in the data through a process of reading and re-reading (Smith et al., 2009). Following this, they made initial notes and comments pertaining to the descriptive, linguistic, and conceptual content of the interview (Smith et al., 2009). Emergent themes were then developed and documented that captured the psychological essence of the original data, together with the analysts’ comments (Smith et al., 2009, p. 92). The analysts then jointly explored the themes identified, revisited transcripts, discussed discrepancies, and reached consensus on the emergent themes. These themes were then mapped spatially into conceptually linked groups and superordinate theme titles were devised for each group. A table listing the superordinate themes, accompanying emergent themes, and a verbatim excerpt from the transcript to evidence the themes was developed. The above steps were repeated for each transcript. In keeping with the

idiographic approach of IPA, new emergent themes could be identified in each interview (Smith et al., 2009).

Finally, a master table of themes was devised that encompassed all five transcripts. This involved examining the patterns across all participants and developing a table that reflected the unique perspectives of the participants but also captured the common higher order concepts (Smith et al., 2009). Each master theme encompassed two to three superordinate and/or emergent themes and verbatim excerpts from each participant for which that theme was relevant.

Results

Two main themes emerged from the data analysis: “*delusion-like beliefs*,” which explored the content of beliefs held by the participants; and “*process*,” which captured participants’ lived experiences and highlighted the manner in which they believed in their beliefs.

Theme 1: Delusion-Like Beliefs

All five participants spoke of past and/or present beliefs that could be delusional in nature and have thus been referred to as delusion-like beliefs. This term was utilised as standardised, clinical assessments were not applied to confirm delusionality. It is also consistent with terminology in the ultra-high risk for psychosis literature that notes individuals at risk for psychotic symptomatology may hold with “*reasonable conviction*,” beliefs, thoughts, or perspectives that are odd, bizarre, magical, or paranoid (Yung, Phillips, Yuen, & McGorry, 2004, p. 133). Two subthemes were encompassed within this superordinate theme (1) “*exceptionality*” and (2) “*a need to act in a disordered way*.”

Exceptionality. Four of the participants spoke of believing their body was an exception to the rules of biology and physiology. Despite showing evidence of understanding normal biological and physiological body processes, participants expressed a belief that the food

intake and exercise needs of their body were greatly different to the needs of the general population. Their comments suggested that their ability to test reality was intact in perceiving others, but not themselves, as demonstrated in the following verbatim statements:

Ellie: I feel like I'm different. Like I can say to someone "yeah you need food, you need food to live." But I don't. (pause). I don't know if it's that I believe I'm not deserving of food or that I can just purely, despite past evidence, function without food. But it seems to be that I'm the exception.

Zoe: I'll always have breakfast, lunch and dinner, but it will be a big breakfast, 15 km run, a few carrots for lunch and maybe some protein for dinner.

Interviewer: *Ok and so that's right for—*For my body yes, not for, I would never say that to like my little cousin who was running 15 km, I would be like "you need to eat all this food."

A need to act in a disordered way. As a result of beliefs in exceptionality, participants believed they needed to engage in disordered eating and exercise behaviours. They expressed that because their bodies functioned differently, normal food intake would result in excessive weight gain and thus engagement in disordered behaviours was the only way to maintain what they perceived to be a normal weight. For example:

Ellie: My body doesn't treat food like it should...so on that train of logic, I don't need to eat like a normal person.

Mia: So if you gain weight you are going to continue to gain weight...you can't let yourself have that normal fluctuation in weight.

This theme was also apparent in participants' beliefs pertaining to their diagnosis. Whilst all were able to discuss the disordered eating and/or exercise behaviours they had engaged in, only one agreed that she was severely underweight due to restricted diet, had AN, and needed treatment. The other participants acknowledged their behaviours pertaining to eating and exercise were considered abnormal, but believed that such behaviours were necessary to maintain a normal body weight rather than causing AN. This aspect of the theme emerged from comparisons of multiple parts of each transcript in which participants discussed their diagnosis and disordered behaviours separately:

Ellie: (1) I do believe that I am not underweight, I don't need to gain weight, and I do say that quite vehemently. (2) I know that my eating is not...undisordered

Zoe: (1) Well I don't feel like I have anorexia. (2) I pretty much preach living a very healthy lifestyle by eating only raw, organic foods, yet I also purge them at the same time so I contradict myself.

Theme 2: Process

Through exploration of the content of delusion-like beliefs, the cognitive and emotional processes participants engaged in to understand, justify, and maintain their beliefs were identified. This theme encompassed three subthemes: (1) justifications; (2) feeling versus logic; and (3) contradictory insight.

Justifications. Participants described a myriad of ways in which they were able to justify their beliefs of exceptionality. Often, participants would rely on their own visual and somatic experience. As experts of their own bodies, they did not trust input from others that suggested their perceptual experience may be incorrect:

Ellie: Like I can feel my body and I know it's just not, it just feels big.

Alex: You only need to look around at the other people around here. I've never been like that.

Participants also drew upon past experiences of weight gain to support the belief that their bodies engaged in abnormal processes:

Ellie: Umm I think because when I was little, my sister and I would probably have like really similar meals and that kind of thing but I became overweight and she remained tiny...

Furthermore, where participants could not deny the medical or functional complications they were experiencing, they sought alternate justifications as to why such consequences were not a function of their disordered eating or exercise behaviours:

Mia: So if the doctors share with you evidence of being malnourished and just saying your bloods, your blood tests have shown abnormalities, you always make the excuse and think well, you know, my white blood cell count's low but it might just be because I'm sick, or you know, my liver enzymes are raised but it could just be because of the medication I'm on, or you know my hair's falling out but it could just be because it's too long at the moment and it's dropping out and my skin's dry and my nails are brittle and it's just because, I don't know, you just make up an excuse and you think nothing applies to me, it's not to do with my eating disorder, it's just coming from another you know, source.

Feeling versus logic. Whilst participants initially attempted to present their beliefs as objective, when this failed, they were willing to disregard logic, rationality, and objectivity and instead appeal to their subjective emotional experience. Their experience of their belief as true thus became ample evidence of the validity of that belief:

Alex: Half the stuff I was saying I was like “am I actually saying that? Do I really believe that?” I know logically it doesn't make sense, but I believe it, but I know it's not right. I mean I've done physiology and anatomy, I've got a degree, I know it doesn't make sense, but I can't explain it. I know it all sounds crazy but I know it makes sense in my head even though it doesn't.

Contradictory insight. Many of the verbatim excerpts already included point to the tenuous, ambivalent nature of insight for the participants. Often the participants showed insight for others' experiences but not their own, accepted they had experienced past but not present symptomatology, or were capable of recognising that their beliefs might be illogical, but could not entertain this with respect to any specific belief. The contradictory nature of participants' thoughts, beliefs, and experiences presented challenges in analysis, but through discussion, the research team concluded that making assumptions pertaining to the participants' true voice may not be necessary, as a greater depth of clinically relevant data could be provided through exploration of their changing, contradictory, and confusing experience.

Contradictory statements were highly common throughout the interviews. As exemplified by Mia below, this spoke to a broader issue of difficulty in treatment engagement where participants were able to simultaneously agree and disagree with medical opinion:

Mia: I can sit there and logically examine their evidence and say “yes I do need to put on weight in order to get better” but at the same time I don't want to put on weight because I don't need to put on weight, but it shows that I need to put on weight but I believe that I don't need to put on weight because I don't want to.

Other participants' contradictions were highlighted through exploration of their experiences across the course of the interview. Where Ellie had attested greatly to her good health on multiple occasions, upon reflection of her treatment she spoke of distress at her lack of progress towards recovery:

Ellie: It's frustrating, I don't, because I have been here for a while, I feel like I'm not doing as well as I should be doing...so I can recognise that I haven't really moved much, or I feel that I'm standing still a bit, and that makes me feel more underserving of the help, because I feel like I'm just not trying hard enough.

The participants' contradictions also highlighted a broader paradoxical relationship with their ED in which they expressed their desire to continue engaging in abnormal eating or exercise in conjunction with

recognition of the negative consequences of doing so. For example:

Mia: I do want to get better and I do want to go to uni and be able to focus my energy on other things and bigger and better things, but at the same time, when I think about what I need to lose and what I need to let go of, I'm too scared to.

For all participants, contradictory beliefs generated confusion, frustration, and mental exhaustion. Through the use of metaphors such as “brick walls” and “internal conflicts,” they spoke to the difficulty of engaging constantly with beliefs that were in direct opposition, as well as the impossibility of having others understand such views. It was apparent however, that despite such contradictions, participants felt safety, comfort, and psychological ease when engaging with thoughts consistent with ED maintenance compared to those that challenged it:

Mia: [ED thoughts are] definitely easier to believe. Because you have such strong beliefs around what you should do and how you should do it and umm, the ED is just so entrenched and even though people tell you otherwise and they have evidence to support the other, you know, to support what they're saying, and if what they're saying is opposed to what you believe, you still sort of stick with what you believe because it's what you believe.

Discussion

The present study examined the content of beliefs of delusional intensity and the resultant lived experience for five participants receiving inpatient treatment for AN. As with past qualitative studies exploring experiences for individuals with AN, the participants were reflective and generous in detail and information (Bell, 2003; Offord, Turner, & Cooper, 2006). Two main themes emerged from the data analysis. These themes captured the content of participants' beliefs and the processes they engaged in to maintain their beliefs.

Theme 1: Delusion-Like Beliefs

The beliefs expressed by participants related overwhelmingly to themes characterised by their ED diagnoses. Whilst the study design allowed for the emergence of beliefs unrelated to weight, food intake, or body image, participants did not express beliefs outside of these domains that may have also been delusional in nature. Although this was consistent with previous quantitative work (Hartmann et al., 2013; Konstantakopoulos et al., 2011; Mountjoy, Farhall, & Rossell, 2014; Steinglass et al., 2007), a greater breadth

of beliefs has been reported in the case study literature. It is important to note that no clinical instruments were used to confirm the presence of delusions as an inclusion criterion in this study. Thus, whilst we aimed to purposefully recruit participants holding delusions, consistent with past research, our small sample of participants expressed beliefs that likely spanned the range of obsessions, OIs, and delusions (Konstantakopoulos et al., 2011; Mountjoy et al., 2014). The present results add to the growing body of literature suggesting that the beliefs held by individuals with AN are not only OIs (Konstantakopoulos et al., 2011; Mountjoy et al., 2014; Powers, Simpson, & McCormick, 2005).

Exceptionality. Of most prominence in the present study was the belief that participants' bodies were exceptions to rules of biology and physiology. Participants drew from past experiences, attended selectively to evidence that aligned with exceptionality, and relied on their visual and somatic perceptual experiences to justify their belief that healthy food intake and exercise were inappropriate for their body and would cause weight gain such that they would become overweight. A conviction of physical exceptionality was not raised in previously reported studies of delusions in AN (Espeset et al., 2011; Hartmann et al., 2013; Konstantakopoulos et al., 2011; Mountjoy et al., 2014; Steinglass et al., 2007), and has only been briefly considered in related literature. For instance, Vitousek and Hollon (1990) and Vandereycken (2006) described ED-related beliefs as being of specific relevance to the individual holding them, rather than as universal rules that apply to all people. This is consistent with participants' present convictions that only their bodies respond differently to food and exercise.

A need to act in a disordered way. As a result of their belief in biological and physiological exceptionality, participants firmly impressed that they needed to engage in behaviours that would be considered abnormal for others. Such behaviours were characteristic of AN diagnoses and included restricted food intake, purging, and excessive exercise (APA, 2013; Bornholt et al., 2005). Importantly, participants were able to recognise such behaviours would be considered abnormal for all other people though did not believe these resulted in extremely low body weight or AN for themselves. Theoretical literature was not identified to explain the phenomenon by which participants could deny ill-health and simultaneously agree the behaviours they engage in are considered disordered. Past qualitative research exploring illness perceptions, however, noted a similar phenomenon themed "*impaired judgment/insight*" (Higbed & Fox, 2010). The authors reported participants

could both accept and reject diagnostic and medical information. Consistent with present results, it was further noted that a subset of participants acknowledged that they had a problem, but did not accept this resulted in AN (Higbed & Fox, 2010).

Theme 2: Process

Results highlighted a number of processes that participants engaged in to believe in their beliefs. These processes allowed participants to reject contrary evidence and continue with belief conviction despite often being aware of the illogical nature of their thoughts.

Justifications. Participants utilised a number of strategies to justify their beliefs of exceptionality. Such strategies included drawing from past experiences of being overweight or perceived weight gain, seeking alternative explanations for the medical evidence they were provided, and relying on their own visual and somatic experience rather than feedback from others. Through these processes, participants were able to generate a pool of evidence that suggested when they engaged in normal food intake or exercise, their body gained weight in an unpredictable manner. Such evidence reinforced that they must employ strategies of excessive exercise or restricted food intake to achieve a normal body weight. These processes maintained both their personal theory of exceptionality and their diagnosis of AN.

Feeling versus logic. Throughout analysis, it was apparent that participants could not rely on such justifications for exceptionality in all situations. Results indicated that where participants could not draw on what they considered to be objective evidence, they resorted to their subjective experience of "*feeling*" that their belief was true. In such situations, participants acknowledged that they could disregard logic and rationality, as their emotional, and likely accompanying physical experience, was enough evidence that they were exempt from normal biological and physiological rules. These findings are consistent with theory provided by Vitousek and Hollon (1990). In an investigation of weight-related schema, the authors reflected that participants with AN granted their own ideas "*special dispensation*" from internal and external criticisms that may suggest they are incorrect (Vitousek & Hollon, 1990, p. 208). The phenomenon has also been raised in past qualitative research. In an examination of treatment refusal, Tan and Hope (2008) reported that participants with AN understood logically that scales represented their weight, though reported they did not feel the number to be a true representation of their body. Both Vandereycken (2006) and Melamed, Mester, Margolin, and Kalian (2003) hypothesised that

the ability to reject evidence based on feeling likened the experience of individuals with AN to delusional states.

Contradictory insight. Participants' processes for believing in beliefs highlighted the contradictory and changing expression of insight in AN. In addition to disregarding logic for feeling, participants showed further insight irregularities. Specifically, participants could simultaneously agree and disagree with medical opinion, reflect on their past difficulties while asserting current health, and express conviction in a belief they also acknowledged was illogical.

Results of the current study can deepen the understanding of the concept of insight in the context of AN. The analysis revealed that participants' capacity for rationality may not be akin to the unitary construct of insight. That is, the ability to express a rational understanding of the implications of continued disordered behaviour did not mean participants showed insight into, or acceptance of, their illness and associated consequences. Rather, participants appeared able to engage in a process of "*parallel cognitions*" through which they both accepted and denied illness and medical opinion.

No existing literature has spoken directly to the concept of "*parallel cognitions*" as described in the present study. Both Vandereycken (2006) and Vitousek and Hollon (1990), however, queried whether the ability for individuals with AN to engage in rational thought and show an ability for reality-testing when it pertains to other people, highlighted an implicit recognition of the irrationality of their own beliefs. Results of the present study provide greater insight into this debate. Participants' awareness of their need to engage in behaviours that would normally be considered disordered, coupled with their acknowledgement that their beliefs sounded "crazy" and inconsistent with their education, suggested an explicit understanding of the irrationality of their thoughts. They demonstrated knowledge of the way food and exercise affect other people, though had conviction that such knowledge was not applicable to themselves. Importantly, participants impressed understanding of the confusion this raised for themselves and others though this did not weaken their belief adherence. Whilst an explicit understanding of irrationality may suggest the presence of insight, as was evidenced in the results, participants showed a contradictory and changing relationship with insight.

Although recognised clinically, very little empirical research has studied the phenomenon of insight for individuals with AN. Konstantakopoulos et al. (2011) suggested this is because insight is a concept believed to have most clinical relevance for the field of psychosis. The findings of the present study, however, appear consistent with the multidimensional model of insight,

routinely referred to in the field of psychosis. Whilst several definitions and models of insight exist, of most prominence in the literature is that provided by David (1990). According to this model, insight involves the ability to recognise that one has a mental illness, the ability to comply with treatment, and the ability to re-label unusual mental events as pathological (David, 1990). The present results suggest that participants displayed different deficits across and within these domains. For example, some participants could retrospectively label past beliefs as pathological, though could not do this with current beliefs. Conversely, other participants could comply with treatment, without acceptance that the disordered behaviours being treated were a function of a mental illness. Of the five participants, only one described illness recognition, was compliant to treatment requirements, and expressed understanding that beliefs of a delusional nature and accompanying tactile perceptual experiences were likely pathological.

Other aspects of insight encompass the difference between symptom awareness and attribution (Amador et al., 1993). When describing insight for patients with psychotic illnesses, Amador et al. (1993) noted that some could recognise signs of psychotic illness though attributed such signs to reasons other than mental illness. This appears to be of specific relevance to the present study and provides greater awareness into the contradictory nature of insight evidenced by the participants. Consistent with their reported needs to engage in disordered behaviours, many participants acknowledged physical and psychological symptomatology though did not attribute such experiences to mental illness. Importantly, results of the present study also add to the body of work noting that differentiating OIs and delusions by a unitary construct of insight (i.e., insight present or absent) is simplistic and dismissive of the various ways in which individuals with AN can express insight (Mountjoy et al., 2014).

Implications

This research has implications for the clinical treatment of AN. At present, psychoeducation is employed as a component of treatment in group and individual settings (Waller et al., 2007). Psychoeducation is utilised to explain malnutrition and bodily responses to food intake and exercise (Waller et al., 2007). Results of the present study suggested participants understood the psychoeducative material they had been presented and could apply this knowledge to all others. However, their belief of exceptionality meant that they were unable to apply the same knowledge to their own experience. Further research is necessary to explore the prevalence of beliefs

in exceptionality, how this can be assessed in clinical settings, and how components of treatment can be adapted for those with a conviction that their bodily processes are exempt from normal rules. The research also suggests that insight is not a concept that should be of clinical and research significance for those with diagnosed psychotic illnesses only. Results highlight that individuals with AN can both accept and deny ill-health, as well as purposefully reject rationality in order to maintain their beliefs. This may provide further understanding into the difficulties associated with engaging individuals with AN in behaviour change despite reported desires to get better. Continued research into the multidimensional elements of insight for individuals with AN is required to extend this field.

Limitations

The qualitative research methodology necessitated the use of a small, homogenous sample. Whilst this methodology allowed for the collection and analysis of data that was rich and in-depth, caution must be taken when generalising conclusions beyond the current sample. Furthermore, all participants were engaged in a voluntary inpatient treatment regime and four were utilising anti-psychotic medication at the time of the interviews. One participant astutely reflected that the medication helped to dull the intensity and prevalence of her thoughts. Delusions may thus be better explored in clinical samples not engaged with services as individuals with delusions may avoid help-seeking or deny treatment. The cross-sectional design is a further limitation. A longitudinal study would have afforded opportunities to examine beliefs prior to engagement with psychological and psychiatric treatment. Finally, the study aimed to keep the participant as the experiential expert. As such, standardised measures were not utilised to confirm the presence of delusions. To do so would suggest that a quantitative tool could provide deeper insight into the participants' experiences than they could themselves. Instead, recruitment relied on treating psychiatrists' impressions that patients referred held delusions. Although not all participants recruited may have held present delusions, this is not necessarily a weakness as results were likely consistent with past empirical research noting individuals with AN can present with beliefs that include obsessions, OIs, and delusions.

Conclusion

This study qualitatively examined the content and lived experience of delusion-like beliefs for a group of inpatients with AN. Of most prominence was participants'

conviction that their body responded to food and exercise in a manner different to all other bodies. As such, they described the importance that they alone engage in normally disordered behaviours such as food restriction and excessive exercise. Exploration of participants' lived experiences spoke to the processes they engaged in to maintain their beliefs. These processes captured participants' ability to disregard logic in favour of the evidence they drew from their emotional experience and highlighted their contradictory and changing relationship with insight. Whilst future research is needed pertaining to all findings, this research adds qualitative evidence to the body of work noting that beliefs held by individuals with AN may extend beyond OIs to an intensity consistent with delusions.

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