



The influence of intolerance of uncertainty on the relation between body image disturbance and symptoms of eating disorder psychopathology

Master Thesis Clinical Psychology

R. L. Kars

Student number: 4157486
Supervisor: U. Danner
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Abstract

Body image and intolerance of uncertainty (IU) are important factors in eating disorder psychopathology. Recent findings suggest that less structured assessment of body image could evoke uncertainty and influence the outcomes. The current study investigates what the influence of IU is on the relation between body image disturbance and symptoms of eating disorder psychopathology. It was hypothesized that (1) if women show a more disturbed body image, they will show more symptoms of eating disorder psychopathology, compared to women with a less disturbed body image. (2) If women show more symptoms of eating disorder psychopathology, they will also report more IU compared to women with less symptoms of eating disorder psychopathology. (3) Women with more IU will show a worse outcome on a less structured (Rope) than on a more structured (Hoop) task compared to women with lower IU levels. Participants completed questionnaires about body image (LAV), IU (IUS) and eating disorder psychopathology (EDDS) and performed two tasks (Rope and Hoop). Results revealed that women who showed a more negative attitude towards their body image, also showed more symptoms of eating disorder psychopathology. Second, if women showed more symptoms of eating disorder psychopathology, they also reported more IU. Women with more IU did not show a worse outcome on the less structured than on the more structured task compared to women with less IU. Future research should provide more (validated) ways to assess body image and include clinical and non-clinical participants to deviate the influence of structure and IU.

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Introduction

Eating disorders are considered as psychiatric disorders with severe mental and physical consequences (Mehler & Andersen, 2017). In the USA, Anorexia Nervosa (AN) has a prevalence of 0,5 to 1%, and this is up to 5% for young women who have symptoms but do not meet the diagnostic criteria (Schwitzer, Bergholz, Dore, & Salimi, 1998; Sadock, Sadock, & Ruiz, 2015). The mortality rate for people with AN is higher than the mortality rate in all other mental disorders in young and middle-aged adults (Fichter & Quadflieg, 2016). Etiology is still largely unknown and it is suggested that biological, personality and environmental factors contribute to the development of AN (Abbate-Daga, Quaranta, Marzola, Amianto, & Fassino, 2015). With women, several factors are of importance in symptoms of eating disorder psychopathology. Fixation on weight, shape, and their body (also referred to as body image) causes functional psychosocial impairment, and influences the development of a 'healthy identity' in young women (Mehler & Andersen, 2017). Not only is body image an important topic, it is potentially influenced by feelings of anxiety and uncertainty which are characteristic for people with AN (Abbate-Daga et al., 2015). Only few studies have examined this relation. The aim of this study is therefore to explore the relation between eating disorder psychopathology, body image and uncertainty.

Body image

Body image disturbance is one of the diagnostic criteria of AN in the DSM-5 (Frank et al., 2012; Keizer et al., 2013). Body image was characterized by Slade (1988) as the picture we have in our minds of the shape, size and form of our bodies, and our feelings in relation with these characteristics and our combining body parts (Skrzypek, Wehmeier, & Remschmidt, 2001). According to the DSM-5 people with AN have a disturbance in the way they perceive their body image (American Psychiatric Association, 2013), indicating the perception that one's body is larger than it actually is (Stice & Shaw, 2002).

Body image disturbance can be divided into several domains: perception or attitude for example (Cash & Deagle, 1997; Skrzypek et al., 2001; Keizer et al., 2011). Perceptual body image disturbance refers to the difficulties people experience with accurately appraising their body size. Eating disorder patients tend to estimate their size as bigger than it actually is, which Slade (1988) characterized as the visual picture we have in our minds. Attitudinal body image is seen more as a subjective attitude towards the body, which could be referred to as body dissatisfaction (Cash & Deagle, 1997). Slade (1988) characterized this as the attitudinal

experience.

Besides the visual and attitudinal experience, AN patients also overestimate tactile distances of their body (Keizer et al., 2011; Engel & Keizer, 2017). Tactile distances are the distances in touch between the person him- or herself and another object (such as a door). An example could be that AN patients tend to walk through door openings rotating their shoulders as if they are bigger-sized than they actually are, compared to healthy controls (Keizer et al., 2013). People with AN therefore not only experience themselves visually and attitudinally bigger, but they also behave and move as if they are bigger than they are. These are multiple domains of experiencing the body image (Engel & Keizer, 2017).

Body image measurements

Because of the complexity the construct body image entails, there are many ways to measure it; depending on the specific type of disturbance that one aims to measure. Many techniques have been developed to measure the different domains of body image (Skrzypek et al., 2001; Thompson, 2004). Often, body image is measured with body size estimation tasks (Skrzypek et al., 2001). These tasks measure the extend of overestimation of body size, which gives more insight into the subjective and objective perception of the body (Skrzypek et al., 2001). Within these measurements there is a distinction in structure: a difference can be made between structured and less structured assessment. Structured assessment is more objective, such as multiple choice questions, where the individual has to select the correct answer among a number of given alternatives (Zeidner, 1987/1993). Less structured assessment is more subjective, such as essays, permitting the individual to construct and present the answer without given alternatives (Zeidner, 1987/1993). According to Zeidner (1993), the objective and structured category are perceived more favourably than the subjective less structured category. Less structured assessment could evoke feelings of discomfort and anxiety, because of the uncertainty the answering options entail (Struyven, Dochy, Janssens, Schelfhout, & Gielen, 2006). Using less structured assessment to measure body image disturbance could therefore be an issue because possibly not only body image disturbance will be investigated, but also the influence of uncertainty and anxiety, which might give an incorrect picture of the body image disturbance.

The influence of uncertainty and anxiety is an element to take into account in the relation between body image and AN (Godart, Flament, Perdereau, & Jeammet, 2002) and is found to be the strongest risk factor of overestimation during assessment (Øverås, Kapstad, Brunborg, Landrø, & Lask, 2014). As part of her Master Thesis, Huisman (2017) found

evidence that high levels of trait anxiety (Spielberger et al., 1970) in AN patients influence the level of state anxiety directly after performing a less structured body size estimation task. Huisman (2017) concluded that this less structured task therefore may not be a valid and reliable instrument to measure body image, as anxiety influences size perception resulting in overestimation. Furthermore she hypothesized that this anxiety is a result of not being able to cope with uncertainty, which resulted from a lack structure in the task. Not being able to cope with uncertainty is known to be an underlying factor with eating disorders (Godart et al., 2002; Konstantellou & Reynolds, 2010; Brown et al., 2017) and therefore investigation of the relation between the ways of measurement of body image disturbance and this uncertainty are meaningful. The role of uncertainty might be more important than expected and possibly this can influence outcomes. Few studies have researched this relation.

Body image measurement and intolerance for uncertainty

People with AN are often intolerant for uncertainty (IU), indicating that they are having trouble dealing with uncertain situations (Frank et al., 2012; Brown et al., 2017). IU can be defined as a dispositional characteristic that results from several negative beliefs about uncertainty and its implications, and involves the tendency to react negatively on an emotional, cognitive, and behavioural level to uncertain situations and events (Buhr & Dugas, 2009). For example by reacting with increased anxiety, negative thinking and avoidance of a situation in which the individual does not know what is expected from him or her.

IU was originally associated with General Anxiety Disorder (GAD) and Obsessive Compulsive Disorder (OCD) (Boswell et al., 2013). Recent findings of Wever, Smeets, & Sternheim (2015) suggest that IU can be conceptualized as a factor which underlies more psychiatric disorders, such as AN for example (Brown et al., 2017). Pathological eating behaviours in AN (such as restrictive food intake) are thought to be a way of coping with uncertainty (Brown et al., 2017). AN patients who use restriction as a coping mechanism, may have the belief that this will evoke more control and less uncertainty, while in fact the opposite takes place. These coping behaviours increase when the uncertainty of a situation rises. Relating this idea to body image and its measurement, it can be hypothesized that IU causes AN patients or women with pathological eating behaviours to have more trouble with accurately performing less structured assessment (Brown et al., 2017).

Previous research on body image and eating disorder psychopathology focused on the different ways to measure body image (Slade, 1988; Cash & Deagle, 1997; Skrzypec et al., 2001; Thompson, 2004; Keizer et al., 2011/2013/2016). To ensure prevention, optimal

treatment, and understanding of the relation between body image and eating disorder psychopathology, it is important to know to what extent IU plays a role considering their relation with eating disorders (Godart et al., 2002; Brown et al., 2017). Specific questions in the current study are whether body image, symptoms of eating disorder psychopathology and IU in women are indeed related. The main objective is to investigate what the influence of IU is on the relation between body image disturbance and symptoms of eating disorder psychopathology. It is hypothesized that if women show a more disturbed body image, they will show more symptoms of eating disorder psychopathology, compared to women with a less disturbed body image. Second, it is expected that if women show more symptoms of eating disorder psychopathology, they will also report more IU compared to women with less symptoms of eating disorder psychopathology. Third, it is expected that women with more IU will show a worse outcome on a less structured (Rope) than on a more structured (Hoop) task compared to women with lower IU levels.

Method

Participants

Fifty women participated in this study. Inclusion criteria were Dutch speaking females, aged between 18 and 28. One participant showed extremely high scores on the Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000) and was therefore excluded from this study. The average age of the participants was 21.41 (SD = 2.31). In exchange for their participation, the participants had the chance to obtain a voucher worth €25. All participants were informed about the research procedure and signed informed consent.

Materials

Body image

To measure the different body image domains (visual, attitudinal, tactile), a questionnaire and tasks were used.

- *Questionnaires*

The Dutch translation of the *Body Attitude Test* (BAT; Probst, Vandereycken, Coppinolle, & Vanderlinden, 1995; LAV; Probst, Van Coppinolle, & Vandereycken, 1998) was used to measure negative attitude towards body image and contains 20 statements about this. For example: ‘*When I compare myself with my peers’ bodies, I’m dissatisfied with my own*’. This Questionnaire contains a Likert-scale ranging from 1 to 6 indicating to which extent the participant agrees with the statement. An overall score is generated in the current study by summing up all items (Probst, Van Coppinolle, & Vandereycken, 1997). Except for the items 4 and 9, all the items measure negative attitude towards body image. A high LAV score means a more negative attitude towards body image. The LAV has an internal consistency coefficient of .89 (Woertman & Van den Brink, 2012). In the current study the LAV has a Cronbach’s alpha of .86, which indicates good reliability (Field, 2013).

- *Tasks*

The body image tasks were used to investigate whether the participants would show difficulties accurately estimating their body size.

The *Rope task*, designed by Serino and colleagues (2016), was based on the study of Slade and Russell (1973) to measure body size estimation. This task measures the percentage of misjudgement of the physical body. The participant is asked to estimate the circumference of her shoulders, waist and hips by placing a piece of rope in a circle/oval on the floor. This is

the less structured task, because of the inability to choose from other answering options or to see an example. The actual width and circumference of the body of the participant are also measured with a tapeline after this estimation. Two average body perception indexes (Slade & Russell, 1973) are calculated for the width and circumference of the body size: the estimated body size and the actual body size. The formula for the calculation of the percentage of misjudgement is as follows: $(\text{Estimated Body Size} - \text{Actual Body Size}) / (\text{Actual Body Size}) \times 100$. A negative score indicates an underestimation of the width and circumference of the body size (thin estimation), and a positive score indicates an overestimation. Values close to zero represent an estimated body size identical to the actual physical one (Serino et al., 2016).

The second task is the *Hoop task*, designed by Keizer, Bonekamp, & Van Elburg (in prep), and used in the study of Engel & Keizer (2017). This task also measures the percentage of misjudgement of the physical body and is the more structured task, because of the different hoops presented to the participant. Fifteen hoops are used, each varying two cm in size (24 cm - 52 cm). The participant is asked to stand in front of the hoop with a distance of one meter, and is then asked to estimate if she could fit through the hoop. If the participant confirms to be able to fit through the hoop, she is asked to go through the hoop. At the end, the researcher notes the smallest hoop as indicated by the participant, and the actual smallest hoop the participant fits through. The difference in cm between the indicated and actual smallest hoop is calculated with the same formula as the Rope task.

Intolerance of uncertainty

To measure IU, the Dutch translation of the *Intolerance of Uncertainty Scale* (IUS; Freeston et al., 1994; de Bruin, Rassin, van der Heiden, & Muris, 2006) was used. The questionnaire contains 27 statements and measures the belief of an individual that uncertainty is intolerable, has bad influences on a person and leads to feelings such as frustration, anxiety, distress, and the inhibition of action. For example: *'Uncertainty makes me vulnerable, unhappy, or sad'*. Participants answered statements on a Likert scale ranging from 1 to 5 indicating to which extent they agree with the statement. Despite the reported multifactor structures, the IUS is most commonly summed as a total scale score (Carleton, Norton, & Asmundson, 2007; Frank et al., 2012). An overall score is therefore generated by summing up all items. A high IUS score means more IU. The IUS has a high internal consistency, good test-retest reliability (over a five-week period) and validity (convergent and divergent) (Buhr & Dugas, 2002). In the current study the IUS has a Cronbach's alpha of .89, which indicates good reliability (Field, 2013).

Eating disorder psychopathology

To measure eating disorder psychopathology, the Dutch translation of the EDDS (Krabbenborg et al., 2012) was used. The questionnaire contains 22 items and is designed to screen individuals for DSM-IV (American Psychiatric Association, 1994) diagnoses of AN, Bulimia Nervosa (BN), and Bing Eating Disorder (BED). The scale consists of a combination of Likert scores, dichotomous scores, frequency scores and open-ended questions (weight and height). An overall symptom composite score was computed for the indication of participants' overall level of eating pathology, by standardizing and summing up scores across all items (except for items asking for weight, height and birth control pill use) (Stice, Fisher, & Martinez, 2004). A high EDDS score means more symptoms of eating disorder psychopathology are present. This scale has shown good test-retest reliability, internal consistency, and validity with extant eating pathology scales and interview diagnoses (Stice et al., 2000). In the current study the EDDS has a Cronbach's alpha of .78, which indicates good reliability (Field, 2013).

Procedure

Data collection was conducted in the Langeveld laboratory at Utrecht University. The participant signed up for the experiment by either sending an email to the researchers, where they received an email in return to schedule their lab session online, or via the QR code on the flyers that were handed out at Utrecht University.

This was an observational study. Once in the laboratory the researchers gave a short introduction and explanation about the experiment, and the participant was told that she could ask questions or stop with the experiment at any moment without reason. Next, the participant was asked to sign an informed consent form. Participants were asked to fill in some general information about their age, length, and highest level of education followed by the LAV, the IUS, and the EDDS.

Subsequently, the Rope task was done, followed by the Hoop task. After the explanation of the Hoop task, the participant was asked to turn around each time the researcher put down a new hoop. After completion of the task, the participant and the researcher examined what the smallest hoop was the participant could actually fit through.

At the end of the experiment the weight of the participant was measured and a debriefing form was completed.

Data analysis

Testing the hypotheses, Pearson correlations were used to explore the relations among the variables body image disturbance, IU, and eating disorder psychopathology. Regressions were used to investigate if women who showed a more disturbed body image, also showed more symptoms of eating disorder psychopathology, compared to women who showed a less disturbed body image. Second, if women showed more symptoms of eating disorder psychopathology, they also reported more IU, compared to women who showed less symptoms of eating disorder psychopathology. Furthermore, a regression was used to investigate whether higher IU results in a worse outcome of the less structured Rope task than the more structured Hoop task, compared to participants with less IU. To confirm all hypotheses, significant outcomes of $p < .05$ had to be found, which indicates a significant effect. One participant was excluded from this study due to an extremely high score on the EDDS. This resulted in a total number of 49 participants who were included in this study. The data were analysed with IBM SPSS Statistics (version 24).

Results

Participant demographics and overall scores

Table 1 shows the mean, standard deviation, minimum and maximum scores of the demographic variables age and BMI of the participants. Overall scores of the questionnaires (LAV, EDDS, and IUS) and the tasks (Hoop and Rope) can be seen in Table 1.

Table 1

Mean and SD of the demographic variables and overall scores on the questionnaires and tasks of the participants

	N	Mean	SD	Min	Max
<i>Demographics</i>					
Age	49	21.41	2.31	18	28
BMI	49	22.4	2.92	18.22	30.90
<i>Questionnaires</i>					
LAV	49	50.73	11.42	32	78
IUS	49	71.37	14.11	38	100
EDDS	49	15.16	8.29	3	33
<i>Tasks</i>					
		%	%	%	%
Hoop task	49	12.57	9.98	0	43.75
Rope task	49	28.01	11.32	-5.9	47.82

Note: BMI = body mass index; LAV = body attitude test; IUS = intolerance of uncertainty scale; EDDS = eating disorder diagnostic scale; Q = questionnaires; T = tasks; % = percentage misjudgement.

Assumptions of normality and homogeneity

Before interpreting the results of the correlations and regressions, a number of assumptions were tested, and checks were performed. Stem-and-leaf plots and boxplots indicated that the variables were normally distributed. One participant with extreme scores was deleted and the remaining outliers were only mild departures and therefore not of concern (Field, 2013). Second, an inspection of the normal probability plot of standardised predicted values indicated that the assumptions of normality, linearity and homoscedasticity of residuals were met. All the scores of the variables were roughly symmetrical and bell shaped, indicating that univariate non-normality is not a concern in this data set. Third, Mahalanobis distance did not exceed the critical chi-square (χ^2) value for any cases in the data file,

indicating that multicollinearity would not interfere with our ability to interpret the outcome of the regression. Assumptions of normality and homogeneity were not violated.

Hypothesis 1: If women show a more disturbed body image, they will show more symptoms of eating disorder psychopathology, compared to women with a less disturbed body image.

A standard linear regression was executed to investigate this hypothesis. Results are shown in Table 2. In combination, the LAV, Hoop and Rope test accounted for a significant 57% of the variability in eating disorder psychopathology, $R^2 = .57$, adjusted $R^2 = .56$, $F(1,47) = 62.38$, $p < .001$. Cohen's $f^2 = 1.33$, which is considered a large effect (Cohen, 1988). As can be seen in Table 2, the LAV accounted significantly for most of the variability in eating disorder psychopathology, compared to the Hoop and the Rope task. When participants scored higher on the LAV, they also had a higher EDDS overall score showing that negative attitude towards body image and symptoms of eating disorder psychopathology are positively related. No significant relations were found between the body image tasks and the EDDS.

Table 2

B and β regression coefficients, and sr^2 predicting eating disorder psychopathology with the LAV, Hoop and Rope task.

Variable	B [95% CI]	B	sr^2
LAV	.54 **	.75	.54
Hoop	.03	.03	<.01
Rope	-.04	-.05	<.01

Note: B = unstandardized; β = standardized; sr^2 = squared semi-partial correlations; CI = confidence interval.

*** = $p < .001$.*

Hypothesis 2: If women show more symptoms of eating disorder psychopathology, they will also report more IU compared to women with less symptoms of eating disorder psychopathology.

A standard linear regression was executed to investigate this hypothesis. Eating disorder psychopathology accounted for a significant 19% of the variability in IU, $R^2 = .19$, adjusted $R^2 = .17$, $F(1,47) = 11.02$, $\beta = .76$, $p = .002$. Cohen's $f^2 = .20$, which is considered a medium effect (Cohen, 1988). The direction is positive, which means that when women had a higher overall score on the EDDS, they also showed a higher overall score on the IUS.

Hypothesis 3: It is expected that women with more IU will show a worse outcome on the less structured (Rope) than on the more structured (Hoop) task. This difference is not expected for women with lower IU levels.

Three standard linear regressions were executed to investigate this hypothesis. First, a differential score was made for the difference between the Rope and Hoop task (DiffRH). This new variable was the dependent variable. The score on the IUS accounted for a non-significant 0.10% of the variability in the differential score between the Rope and Hoop test, $R^2 = .001$, adjusted $R^2 = -.02$, $F(1,47) = .059$, $\beta = .04$, $p = .809$. Cohen's $f^2 = .001$, which is considered a small effect (Cohen, 1988).

Second, a regression was executed with the Hoop task as the dependent variable. The score on the IUS accounted for a non-significant 8% of the variability in the Hoop test, $R^2 = .006$, adjusted $R^2 = -.015$, $F(1,47) = .304$, $\beta = .08$, $p = .584$. Cohen's $f^2 = .006$, which is considered a small effect (Cohen, 1988).

The last regression was executed with the Rope test as dependent variable. The score on the IUS accounted for a non-significant 1.3% of the variability in the Rope test, $R^2 = .013$, adjusted $R^2 = -.008$, $F(1,47) = .605$, $\beta = .11$, $p = .441$. Cohen's $f^2 = .013$, which is considered a small effect (Cohen, 1988).

In sum, IU did not predict a worse outcome on the Rope than on the Hoop task, as measured with the IUS, DiffRH, the Rope and Hoop task.

Correlations

Pearson correlations were calculated to explore the relations among the variables body image, IU and eating disorder psychopathology. Table 3 shows an overview of these correlations. The results showed positive relations between the LAV, IUS and the EDDS. The Hoop and Rope task did not show any significant correlations.

Table 3
Pearson correlations of the LAV, IUS, EDDS, Hoop and Rope task.

	LAV	IUS	EDDS	Hoop	Rope
LAV		.58**	.76**	.19	-.03
IUS	.58**		.44**	.08	.11
EDDS	.76**	.44**		.16	-.07
Hoop	.19	.08	.16		.21
Rope	-.03	.11	-.07	.21	

*Note: Correlation is significant at * = $p < .05$; ** = $p < .01$; *** = $p < .001$.*

Discussion

The aim of the current study was to examine the influence of IU on the relation between body image disturbance and symptoms of eating disorder psychopathology. In line with previous literature (Frank et al., 2012; Brown et al., 2017), it was found that women who reported more symptoms of eating disorder psychopathology, also reported more IU compared to women with less symptoms of eating disorder psychopathology. Second, it was found that women with a negative attitude towards their body, also showed more symptoms of eating disorder psychopathology, compared to women with a less negative attitude towards their body. Finally, it was hypothesized that women with more IU will show a worse outcome on a less structured than on a more structured body image task compared to women with less IU, but this was not found.

Structure of body image assessment

In contrast to the expectations, no relation was found between IU and the type of body image task (more or less structured) as scores on the IUS did not account for a significant variability in the difference between scores on the tasks. There could be several reasons for this.

First, the structure of the task did not provoke uncertainty in a way that it influenced the results, and therefore it did not matter whether people were more or less intolerant of uncertainty. This might suggest the differentiation between ‘structured’ and ‘less structured’ should have been better executed. One way to address this, is by the way instructions are provided during the assessment (Thompson, 2004). During the assessment of the tasks in the current study, the researcher observed that some participants took more time and asked questions during the performance of the tasks than during the questionnaires, possibly to increase their level of certainty. According to Ladouceur and colleagues (1997) this could be due to less structured instructions, which provokes uncertainty. Thus, the uncertainty possibly lies in the instruction, not in the task itself. Future research should better differentiate this difference in instructions. The interaction with the researcher might have influenced the testing of the hypothesis, and therefore the researcher should not be too close to the participant, to investigate whether structure actually has an influence. In this case, uncertainty could be present but then it can be related to the task instead of the researcher. Furthermore, experiences (such as anxiety and uncertainty), the amount of time taken and questions asked during the performance of the tasks, can be taken into account as moderation on the outcomes of the tasks in further research.

Another possible explanation for the lack of difference between the tasks is the use of a non-clinical sample. Eating disorder patients tend to show higher percentages of misjudgement on the Hoop and Rope task than healthy controls (Engel & Keizer, 2017). Participants in the current study did not seem to have eating disorders since 1) BMI scores were not pathological (American Psychiatric Association, 2013), and 2) the overall EDDS scores were below the overall symptoms composite cut-off score used by Krabbenborg and colleagues (2012). However, the maximum EDDS score in the current study lies above this cut-off score and the IUS scores were somewhat higher than the mean values in studies of Buhr and Dugas (2002) and Sexton and Dugas (2009). This indicates the group showed some variation in ED symptoms and IUS scores: relations were found between the LAV, EDDS, and the IUS. Relations between IU and the structure of the body image tasks might only exist within people with actual eating disorders as their levels of IU and body image disturbances will be more extreme. This gives rise to the question whether there are really no relations between IU and the performance on tasks, looking at structure, or that it was mainly because of the non-clinical group.

Negative attitude towards body image

In the current study it was found that body image disturbance was only related to symptoms of eating disorder psychopathology in an attitudinal way, considering the LAV measures negative attitude towards body image (Probst et al., 1995) and no relations with the body image tasks were found. Reasons for this finding could be because of the following.

First, participants might only have shown a negative attitude towards their body image considering they were in general women without eating disorders. Negative attitude towards body image is a risk factor for eating pathology (Stice & Shaw, 2002) but this does not indicate that there is an actual disturbance in body image, which is a diagnostic criteria of AN in the DSM-5 (Frank et al., 2012; Keizer et al., 2013). With the group in the current study, the chance of the occurrence of a full-blown eating disorder is small, which could explain the fact that relations between symptoms of eating disorder psychopathology and the body image tasks were not found. Second, the LAV and the EDDS both are self-report measurements with statements about negative attitude towards body image and possibly partly measuring a similar construct.

Eating disorder psychopathology and IU

In line with expectations (Frank et al., 2012; Brown et al., 2017) it was found that women who reported more symptoms of eating disorder psychopathology, also reported more IU compared to women with less symptoms of eating disorder psychopathology. The same was found for IU and negative attitude towards body image. This indicates direct relations between these concepts in women who do and do not meet diagnostic criteria, and it shows IU might still have an influence on the relation between body image and symptoms of eating disorder psychopathology.

Limitations and future directions

The first limitation concerns the generalizability of the results. The experiment took place at Utrecht University, and most of the participants were highly educated. Although AN patients often have the same age and education (Schwitzer, Bergholz, Dore, & Salimi, 1998; Sadock et al., 2015), still not all women who meet the diagnostic criteria for AN have these characteristics and it is thus important to be careful generalizing results. Furthermore, the sample size was small, and because of the non-clinical sample, a larger variety in symptoms may be found when using a larger group.

Second, future research should focus more on the different domains of body image (visual, attitudinal, tactile). Body image is a complex construct (Skrzypek et al., 2001; Thompson, 2004) and is easily used in a variety of contexts. It is of importance what defines ‘body image (disturbance)’. Since body image is mostly used in a visual context (Smeets, 1997; Keizer et al., 2011;), this could lead to a narrow-minded perspective of the way the body is experienced (Skrzypek et al., 2001). Therefore, the broader concept of ‘body experience’ might be more applicable (Skrzypek et al., 2001). A distinction should also be made between an actual distortion of body image, occurring in eating disorder patients, and a negative attitude towards body image, which is a risk factor for the development of eating disorders and more applicable to the current non-clinical sample. A next step will be to investigate which domains and types of body image assessment potentially provoke anxiety (Huisman, 2017) and uncertainty (current study), and how this influences body image and eating disorder symptomatology outcomes. Since self-report measurements cannot measure all the domains of body image, more instruments should be used, and the body image tasks should be further validated in patient and non-clinical populations because of their recent development (Thompson, 2004; Keizer et al., 2013; Engel & Keizer, 2017; Keizer et al., in prep).

Strengths and implications

This study is the first to investigate the influence of IU on the relation between body image disturbance and symptoms of eating disorder psychopathology. Although no relations were found between IU and the body image tasks, future research should continue studying this topic, because of the finding that IU, negative attitude towards body image and symptoms of eating disorder psychopathology are related. Since IU is related to these concepts, its influence should be further studied. Treatment of eating disorders could address these high levels of IU (Konstantellou & Reynolds, 2010), and since negative attitude towards body image is a risk factor for the development of eating disorders, improving this study might prevent possible eating disorders to develop (O'Dea & Abraham, 2000).

Conclusion

The present findings did not support the hypothesis that women with more IU will show a worse outcome on a less structured than on a more structured body image task compared to women with less IU. Nevertheless, several interesting results were found. If women showed a more negative attitude towards their body image, they also showed more symptoms of eating disorder psychopathology. Second, if women showed more symptoms of eating disorder psychopathology, they also reported more IU. Possibly there is an indirect link between these concepts indicating that IU influences the performance on tasks. Continuing research on IU and body image disturbance is of importance, especially because negative attitude towards body image is a risk factor for the development of eating disorders. It is likely that more (validated) assessment methods will contribute towards a better understanding of the nature of body image disturbance, eating disorder psychopathology, and IU, to promote the development of more effective prevention and treatment techniques.

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Appendix

Informatie brief

Universiteit Utrecht
Faculteit Sociale Wetenschappen, Klinische Psychologie
Heidelberglaan 1
3584 CS, Utrecht

Informatiebrief voor deelnemers aan het onderzoek:

‘Verschil lichaamsbeeld bij vrouwen’

Geachte mevrouw,

Via deze brief willen wij u uitnodigen om deel te nemen aan het volgende onderzoek.

In deze brief bieden wij u informatie aan over het doel en de inhoud van het onderzoek. U kunt op basis van deze informatie beslissen of u wel of niet wilt meedoen aan het onderzoek. Als u nog vragen heeft, kunt u die stellen aan de onderzoekers die aan het eind van deze informatiebrief genoemd staan. Wanneer u interesse heeft in deelname aan het onderzoek, kunt u dit aangeven aan de onderzoekers. Zij zullen vervolgens een afspraak met u maken voor uw deelname aan het onderzoek.

Waarom dit onderzoek en waar gaat dit onderzoek over?

Voor deelname aan dit onderzoek worden vrouwen tussen de 18 en 35 jaar uitgenodigd. In dit onderzoek willen wij kijken naar het verschil in lichaamsbeeld bij vrouwen die meer of minder last hebben van abnormale eetpatronen. Wij willen daarom graag vrouwen laten meedoen die zich herkennen in het hebben van een abnormaal eetpatroon, maar ook vrouwen die dit niet herkennen. Dit kan in de toekomst van nut zijn voor de voorlichting en behandeling van eetproblematiek. Wij hopen met die reden dat u wilt meewerken aan dit onderzoek.

Wat wordt er van de deelnemers van het onderzoek gevraagd?

Het gehele onderzoek zal lopen tussen september 2017 en februari 2018. Wanneer u besluit deel te nemen kunt u dit aan de onderzoekers laten weten. Een van hen zal rustig de tijd nemen voor het onderzoek en zal duidelijke uitleg geven. Tijdens het onderzoek zal u gevraagd worden om enkele vragenlijsten in te vullen en een aantal taken te doen, waarvan sommige taken betrekking hebben op het beeld dat u van uw lichaam heeft. Ook uw gewicht en lengte worden gemeten.

Wat zijn de voor- en nadelen van deelname aan het onderzoek?

Voor studenten vanuit de Universiteit Utrecht kunnen voor dit onderzoek proefpersoonuren toegekend worden en alle participanten maken kans op een bijenkorf tegoedbon ter waarde van €25. Door mee te doen levert u een bijdrage aan de wetenschap. Met deze kennis hopen wij in de toekomst mensen met eetstoornissen beter te begrijpen en te behandelen. Er zijn geen risico's verbonden aan deelname aan dit onderzoek.

Vertrouwelijkheid van gegevens

Voor dit onderzoek is het nodig dat uw gegevens worden verzameld en gebruikt. Elke deelnemer krijgt een code die bij uw gegevens hoort. Uw naam en andere persoonlijke gegevens die direct naar u herleidbaar zijn worden daarbij weggelaten. De onderzoekers betrokken bij dit project zullen vertrouwelijk met uw gegevens omgaan en alleen zij weten welke code u toebehoort.

De onderzoeksgegevens zullen gebruikt worden voor wetenschappelijke publicaties. Tevens zullen de gecodeerde onderzoeksgegevens minstens 15 jaar bewaard worden, conform de wettelijke termijn hiervoor.

Vrijwillige deelname en beëindiging

Deelname aan dit onderzoek is geheel vrijwillig en u kunt, op ieder moment tussentijds en zonder opgave van redenen, besluiten te stoppen.

Wie voeren het onderzoek uit en welke mensen worden hiervoor gevraagd?

Het onderzoek wordt uitgevoerd en is opgezet door Masterstudenten van de Universiteit Utrecht, afdeling Klinische Psychologie. In totaal zullen er ongeveer 50 mensen deelnemen aan het onderzoek.

Waar kunt u terecht voor meer informatie?

Mocht u vragen hebben over het onderzoek, aarzelt u dan niet om vrijblijvend contact op te nemen met de onderzoeksleider, Dr. Unna Danner (e-mail: U.N.Danner@uu.nl). Als u klachten heeft over het onderzoek, kunt u dit melden aan de onderzoekers.

Wilt u meedoen aan het onderzoek? U beslist zelf

Bij deze informatiebrief is een formulier bijgesloten dat u kunt invullen wanneer u geïnteresseerd bent in deelname aan het onderzoek.

Wij hopen op uw deelname en danken u bij voorbaat hartelijk voor uw medewerking!

Met vriendelijke groet,

Rosanne Kars en Eegii Monhtsetseg

Master studenten klinische psychologie, Universiteit Utrecht

Informed consent

Universiteit Utrecht
Faculteit Sociale Wetenschappen, Clinical Psychology
Heidelberglaan 1
3584 CS, Utrecht

Beste deelnemer,

Welkom! Allereerst willen wij je hartelijk danken voor jouw deelname aan dit onderzoek. In dit onderzoek wordt onderzocht in hoeverre lichaamsperceptie verschilt tussen vrouwen. In dit onderzoek word je gevraagd om vier vragenlijsten in te vullen. Vervolgens word je gevraagd om een aantal taken uit te voeren. In totaal zal dit ongeveer 45- 60 minuten van je tijd in beslag nemen. Dit onderzoek is deel van een Master Thesis die wordt uitgevoerd door Rosanne Kars en Eegji Monhtsetseg aan de Universiteit Utrecht met betrekking tot de studie Clinical Psychology.

Jouw gegevens en de resultaten van het onderzoek worden anoniem en vertrouwelijk behandeld. De bovengenoemde onderzoekers hebben toegang tot de gegevens samen met de thesisbegeleider Unna Danner. Belangrijk om te weten is dat je deelname aan dit onderzoek vrijwillig is. Je kunt te allen tijde stoppen met het onderzoek. Er hoeft geen reden opgegeven te worden bij het willen stoppen van het onderzoek. Je bent niet verplicht om deel te nemen aan activiteiten waar je jezelf niet prettig bij voelt.

Na het afronden van het onderzoek krijg je 1 proefpersoon uur en/of maak je kans op een waardebon van €25 voor de Bijenkorf.

Mocht je nog vragen of opmerkingen hebben over het onderzoek, stuur gerust een email naar masteronderzoek17@gmail.com.

Toestemmingsformulier

Ik stem geheel vrijwillig in met deelname aan het onderzoek. Ik behoud daarbij het recht om te allen tijde te stoppen met het onderzoek.

Ik weet dat mijn gegevens en resultaten van het onderzoek anoniem en vertrouwelijk worden behandeld. Mijn gegevens worden niet gepubliceerd en zullen niet gedeeld worden met derden.

Ik begrijp de bovenstaande tekst en ga akkoord met deelname aan het onderzoek.

Datum:

.....

Handtekening:

.....