Hovedoppgaven "Metakognisjoner ved spiseforstyrrelser" har vært en spennende prosess hvor jeg har opprettet og drevet mitt eget forskningsprosjekt med hjelp fra flinke og positive veiledere. Jeg skrev søknaden til REK (regionale komiteer for medisinsk og helsefaglig forskningsetikk) for omtrent ett år siden, og etter det har jeg lært mye om flere elementer innen psykologisk forskning. Jeg startet et samarbeid med Regionalt Kompetansesenter for Spiseforstyrrelser (RKSF) seksjon Stjørdal og Levanger, hvor jeg presenterte prosjektet for ansatte og pasienter, og holdt løpende kontakt over en tidsperiode for innsamling av data. Jeg gleder meg til å dra tilbake for å presentere resultatet av prosjektet. Jeg har valgt å skrive kortfattet og på engelsk ettersom målet er å publisere arbeidet, noe jeg syns er veldig inspirerende. Jeg har fått en liten forsmak på hvor tidkrevende det er å drive forskning, men samtidig har jeg funnet ut at forskning er noe jeg har lyst til å fortsette med.

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Metacognition in Eating Disorders

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Abstract

Objective: The aims of the study were to compare patients with eating disorders to healthy controls on a self-report measure of metacognitions, and to investigate the relationship between metacognitions and eating disorder pathology in the clinical group.

Method: Female patients with Anorexia Nervosa (AN), Bulimia Nervosa (BN) or Eating Disorder Not Otherwise Specified (EDNOS) (N = 48) completed the Metacognitions Questionnaire – 30 and the Eating Disorder Examination Questionnaire 6.0. The control group consisted of university females completing the MCQ-30 (N = 244).

Results: A two-tailed independent samples t-test showed the group with eating disorders scored significantly higher on dysfunctional metacognitions than the healthy controls, with especially large differences on the metacognitive subfactors "positive beliefs about worry", "beliefs about uncontrollability of thought and danger", and "need for control thoughts". The level of eating disorder pathology was positively correlated with level of dysfunctional metacognitions for the clinical group as shown by a Pearson's product moment correlations. A hierarchical regression analysis showed "need for control thoughts" as the only metacognitive subfactor significantly predicting unique variance in eating disorder symptoms.

Conclusion: Metacognitive beliefs are central in understanding eating disorders, and metacognitive treatment strategies could be a promising new approach.

Metacognition in eating disorders

The diagnostic manual DSM-IV (American Psychiatric Association [APA], 1994)

defines the criteria for three types of eating disorders labeled Anorexia Nervosa (AN),

Bulimia Nervosa (BN), and Eating Disorder Not Otherwise Specified (EDNOS). They all

share an intense fear of weight gain and a distorted perception of body image that often serve

as a basis for negative self-evaluation. The diagnostic criteria for AN also include an absence

of menstrual cycles and a body weight under 85 % of expected weight, which is typically

maintained by a highly restrictive diet. BN involves episodes of binge eating, usually

followed by compensatory behaviors such as vomiting and excessive exercise. Clinically

severe eating disorders that do not to meet criteria for AN or BN are classified as EDNOS

(American Psychiatric Association [APA], 1994). Lifetime prevalence for women is

estimated at 0.9 % for AN, and 1.5 % for BN. The prevalence for men is 0.3 % for AN, and

0.5 % for BN (Hudson, Hiripi, Pope & Kessler, 2007). EDNOS has been estimated to a

prevalence of 2.4 % in a female community sample (Machado, Machado, Gonçalves & Hoek,

2007).

These psychiatric disorders are associated with severe physical and psychosocial

consequences, and are considered difficult to treat (Fairburn & Harrison, 2003). A review on

the evidence base for the treatment of eating disorders showed varying results between the

different disorders (Fairburn & Harrison, 2003). Cognitive-behavioral therapy (CBT) for BN

is established as effective by numerous randomized controlled trials (Ghaderi, 2012), and it is

considered the preferred treatment for BN (National Institute for Health and Care Excellence

[NICE], 2004). There is insufficient evidence to conclude on a treatment of choice for AN

(Bulik, Brownley, Shapiro & Berkman, 2012). Family-based treatment for adolescents with

AN is considered effective, but less so for adults (Bulik, Brownley, Shapiro & Berkman,

2012). CBT is found to reduce the risk of relapse after weight has been normalized, but little

research is available for preferred treatment during the underweight state (Bulik, Brownley,

Shapiro & Berkman, 2012). Despite being the most prevalent eating disorder, EDNOS has

received little research attention (Fairburn & Harrison, 2003). Keel and Brown (2010)

reviewed studies on eating disorder treatment to look at outcome and prognosis. They found

that a poor prognosis is related to duration of disease and inpatient treatment in AN, and

psychiatric comorbidity in BN. Remission rates have been estimated at 50 % for AN and 75

% for BN after 10 years, and a shorter time to recovery for EDNOS (Keel & Brown, 2010).

Recovery rates increased as a function of time after treatment (Keel & Brown, 2010). This

can suggest that eating disorders require a long time to recover, or that more efficient

treatments are needed. Fairburn (2008) argues that eating disorders have more similarities

than differences, and that treatment should address the transdiagnostic mechanisms

underlying these conditions.

Understanding the pathological processes in eating disorders is important for

developing useful theoretical models and an effective treatment. Cognitive-behavioral

theories (CBT) propose that psychological disorders are developed and maintained by

dysfunctional thinking (Grant, Young & DeRubeis, 2007). CBT view cognitions, emotions

and behavior as interrelated factors, and based on these assumptions the aim in therapy is to

change cognition and behavior to improve emotional experience (Grant, Young & DeRubeis,

2007). Fairburn (2008) describes eating disorders as cognitive in nature and identifies

negative self-evaluation as an important maintenance factor, and advocates the use of

behavioral experiments to modify cognition and emotion about the self, weight and eating.

In support of a cognitive-behavioral view, patients with an eating disorder seem to differ

from healthy controls by having more dysfunctional thinking related to food and weight, and

they generally report negative core beliefs about the self (Cooper, 2005). Cooper (2005)

states that although CBT is beneficial in BN, results are not satisfactory, and CBT needs

further testing in AN to prove to be a valid choice of treatment. To summarize the current situation with CBT in eating disorders in line with the words of Cooper (2005): the model may not be valid, or the model is in need of improvement.

Metacognitive therapy (MCT) is a related, but different therapeutic approach found to be effective in treating several psychological disorders (Wells, 2009; van der Heiden, Muris & van der Molen, 2012). In MCT, negative thoughts are not viewed as dysfunctional in themselves, but dwelling on these thoughts for longer periods of time is associated with psychopathology (Wells, 2009). In effect, MCT targets the style of thinking, such as worry and rumination instead of the content of thoughts (Wells, 2009). This perspective contrasts with the traditional cognitive-behavioral view where specific thought content is challenged (Grant, Young & DeRubeis, 2007). The construct of metacognition is the cornerstone in the metacognitive view of pathological processes (Wells, 2009). Metacognition can be defined as beliefs about thoughts. They are considered to drive different thought processes by monitoring, controlling, and attaching meaning to thoughts (Wells, 2009). Metacognitions also seem to be related to improvement even in therapeutic approaches that do not target to change them. A change in metacognitions was found to be a predictor of favorable outcome in clients with OCD receiving treatment with Exposure and Response Prevention (Solem, Håland, Vogel, Hansen & Wells, 2009).

Metacognitive theory states that psychological disorder results from an inflexible and maladaptive response pattern to cognitive events (Wells, 2009). This response is labeled the Cognitive Attentional Syndrome (CAS). The CAS consists of persistent worry and rumination, threat monitoring and ineffective coping strategies that contribute to the maintenance of the problem (Wells, 2009). Metacognitions guides thought processes like the CAS and can be divided into beliefs, experiences and strategies (Wells, 2009). Examples of metacognitions are "it's important to monitor for harmful thoughts" and "dwelling on my

shortcomings will motivate me to improve myself." Metacognitive theory is based on the S-REF model (Self-Regulatory Executive Function) where negative emotions arise from the CAS activity, and in healthy controls this activity is transitory (Wells, 2009). Metacognitive treatment aims to eliminate the CAS to enable new learning (Wells & Matthews, 1996). The main treatment strategies include detached mindfulness techniques to separate the self from thoughts, attention training to interrupt the CAS, and challenging metacognitions verbally and by exposure (Wells, 2009). Wells (2009) lists an overview of the beneficial effects from MCT in GAD, social phobia, PTSD, OCD, and depression.

A metacognitive approach could be promising for eating disorders for several reasons. Firstly, eating disorders have a high rate of comorbidity. A national study from the United States found that 56.2 % of patients with AN, and 94.5 % with BN met criteria for one or several other diagnoses related to mood, anxiety, impulse-control, and substance use (Hudson, Hiripi, Pope & Kessler, 2007). A study by Kaye, Bulik, Thornton, Barbarich and Masters (2004) identified OCD and social phobia as the most prevalent comorbid disorders in a sample of patients with eating disorders. Since the metacognitive model focus on common psychological processes that transcend diagnostic borders, this approach could be considered especially relevant to increase the understanding of comorbid disorders (Hagen, Johnson, Rognan & Hjemdal, 2012). In the study by Kaye and colleagues (2004), the anxiety disorder preceded the eating disorder for 42 % of the sample. Swinbourne and Touyz (2007) therefore suggest that early anxiety can be a vulnerability factor for the development of eating disorders. A possible hypothesis might be that cognitive processes like excessive worry and threat monitoring take the form of an anxiety disorder in childhood, and that some individuals develop an eating disorder when these processes generalize to concerns about weight, shape and eating later in life. Secondly, eating disorders seem to have many common processes and similarities with other types of psychiatric disorders, like generalized anxiety disorder

(Konstantellou, Campbell, Eisler, Simic & Treasure, 2011), and obsessive-compulsive symptoms (Halmi et al, 2005). For example, Nolen-Hoeksema and colleagues (2007) found that rumination predicted bulimic, depressive and substance use symptoms. Bulimic symptoms in turn predicted elevated scores on rumination (Nolen-Hoeksema, Stice, Wade & Bohon, 2007). Identifying shared processes with other forms of psychopathology can therefore suggest which treatment strategies could be transferred successively to the treatment of eating disorders. Thirdly, psychological flexibility and metacognitions are suggested as change mechanisms in AN (Wollburg, Meyer, Osen, & Löwe, 2013), which are both important in metacognitive theory and therapy (Wells, 2009).

Research has been undertaken to explore the role of worry and rumination in eating disorders. Sternheim and colleagues (2012) investigated the role of catastrophic worry, and found 29 patients with AN and 15 patients with BN scoring significantly higher on the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger & Borkovec, 1990) compared to 37 healthy controls. The two groups with eating disorders did not differ from each other related to worry and rumination. The study also found the clinical groups having significantly more steps in the worry sequence than healthy controls, and a positive correlation was found between level of worry and level of eating disorder symptoms. There was no correlation between eating disorder pathology and level of worry for the healthy control group (Sternheim et al., 2012). Startup and colleagues (2013) found elevated scores on measures of worry and rumination in a sample of 62 patients with AN compared to healthy controls. Additionally, they also discovered a positive correlation for both worry and rumination related to eating disorder pathology, and that the constructs predicted severity of the eating disorder over and above measures of mood (Startup et al., 2013). These studies mentioned above strongly suggest that worry and rumination are central cognitive processes in eating disorders. Metacognitions are assumed to underlie and drive both cognitive

processes (Wells, 2009), highlighting the potential of applying the principles of MCT in work with eating disorder pathology.

There is currently a limited amount of research investigating metacognition in eating disorders. Most studies have included few participants, nonclinical samples, or have focused on only one particular eating disorder. Woolrich, Cooper and Turner (2008) used a semi-structured interview to compare 15 patients with Anorexia Nervosa to 17 dieting women and 18 non-dieting controls. Patients with AN believed to a higher degree that their thoughts were abnormal and uncontrollable. Patients with AN were also more likely to use metacognitive control strategies like mental self-punishment, worry and rumination. Woolrich et al. (2008) point out that half of the patients with AN reported using these strategies to increase negative mood. The study by Woolrich, Cooper and Turner (2008) suggests that metacognitions are important in the maintenance of anorexia nervosa. Cooper, Grocutt, Deepak and Bailey (2007) administered the Metacognitions Questionnaire - 30 to 16 patients with AN, 15 dieters, and 17 non-dieting controls. Cooper and colleagues (2007) found that patients with AN scored higher on four out of five types of metacognitions; need for control, cognitive self-consciousness, uncontrollability and danger, and cognitive confidence. The groups did not differ significantly on positive metacognitions. McDermott and Rushford (2011) compared MCQ-30 scores in a larger sample, 74 with AN, and 93 without AN. The same pattern of elevated scores on four out of five subtypes of metacognitions was found in this study. In addition, McDermott and Rushford (2011) also showed that low BMI increased the effect sizes in their study, but controlling for BMI still left significant differences. Konstantellou and Reynolds (2010) looked into factors unrelated to food, weight and shape by mapping metacognitions and intolerance of uncertainty in a nonclinical sample. Respondents were grouped into problematic or normal eating attitudes. It was discovered that the having problematic eating attitudes was related to higher scores on

three out of five groups of metacognitions, and a higher total score on the MCQ-30 (Konstantellou & Reynolds, 2010). Metacognitive treatment strategies for AN are considered a promising area for research (Woolrich, Cooper & Turner, 2008; Cooper, Grocutt, Deepak & Bailey, 2007; McDermott & Rushford, 2011).

There is a need for further studies to validate the role of metacognition in eating disorders and to continue developing new theoretical models of treatment (McDermott & Rushford, 2011; Konstantellou & Reynolds, 2010, Woolrich, Cooper & Turner, 2008; Cooper, Grocutt, Deepak & Bailey, 2007). The purpose of this study was to investigate metacognitions in a clinical sample of patients with eating disorders compared to normal controls. Based on the research described earlier in this paper related to the association between metacognitions and eating disorders, the hypothesis of the study was that the clinical group with eating disorders would have a higher total score on dysfunctional metacognitions compared to the normal controls. In addition, it was also predicted that eating disorder symptom-level would be positively correlated with the scores on MCQ-30 in a clinical sample.

Method

Participants

The control group consisted of 244 female students attending the Norwegian University of Science and Technology. The mean age of the sample was 22.14 years ($SD =$ 3.24), with a range in age from 19 to 44.

The clinical group consisted of 48 females receiving outpatient or inpatient treatment at the Regional Competence Center for Eating Disorders (RKSF), at section Stjørdal or Levanger in Norway. The mean age in the clinical group was 27.58 years ($SD = 8.74$), with a range in age from 17 to 51. The eating disorders diagnoses in the clinical group were 15 with

Anorexia Nervosa (AN), 13 with Bulimia Nervosa (BN), and 19 were classified as Eating

Disorder Not Otherwise Specified (EDNOS) based on the participants listing atypical

variants, overweight and binge eating. One participant did not list any diagnosis. The

duration of their eating disorder had a mean of 11.78 years ($SD = 8.55$), and ranged from 1 to

33 years. The Body Mass Index (BMI) was calculated for both their current weight and their

lowest weight in adult age. Table 1 presents the BMI for the clinical group. A BMI between

20.0-24.9 is considered healthy, a BMI under 18.9 is associated with underweight, and over

30.0 with obesity (Fairburn, 2008).

Table 1 about here

Design

The study was of a comparative cross-sectional design, where a clinical sample of

patients with eating disorders was compared to normal controls measured at a single point in

time.

Measures

The participants were asked questions related to different demographic variables, and

about their eating disorder diagnosis. The demographic variables included gender, age,

height, current weight, lowest weight in adult age and duration of disease.

All measures used in this study were self-report questionnaires and included the

following:

The Metacognitions Questionnaire – 30 (MCQ-30; Wells & Cartwright-Hatton, 2004)

measures important constructs in metacognitive theory. MCQ-30 consists of five factors of

metacognitions, namely; cognitive confidence, positive beliefs about worry, cognitive self-

consciousness, negative beliefs about uncontrollability of thought and danger, and beliefs

about the need to control thoughts. Each item is scored from 1 to 4, a higher score indicating a higher level of dysfunctional metacognitions. In this study, the total score and factor scores are presented as both a mean score and a sum score for easier comparisons to other studies. MCQ-30 has promising psychometric properties in the form of good internal consistency, construct validity and convergent validity (Wells & Cartwright-Hatton, 2004). The internal consistency for the MCQ subscales in the current samples range from $\alpha = .64$ to $.84$ in the control sample, and from $\alpha = .80$ to $.91$ in the clinical sample.

The Eating Disorder Examination Questionnaire 6.0 (EDE-Q 6.0; Fairburn & Beglin, 2008) has 28 items and is thought to measure level of severity on different areas related to eating disorders. The items range from 0 to 6, and higher score implies more severe levels of eating disorder symptoms. The EDE-Q 6.0 consists of four subscales concerning worry about eating, shape, weight, and restriction of food intake (Fairburn & Beglin, 2008). Each subscale is presented as a mean score, and the total score for EDE-Q 6.0 is the mean score of all the four subscales. The Norwegian translation of the EDE-Q 6-0 is considered by Rø, Reas and Lask (2010) to have satisfactory reliability and validity related to clinical use. The Cronbach's alpha for the EDE-Q 6.0 subscales in the current clinical sample range from .85 to .95.

Procedure

The control group was available from a previous study where university students completed the MCQ-30 online.

The data from the clinical group was collected as follows. The inpatients were recruited by one of the authors and a contact person from each of RKSF's sections providing verbal and written information on the study. The author informed the therapists who then recruited their outpatients. It was made clear in the written consent that accepting or declining to participate would have no impact for further treatment to the patients.

Participation in the study consisted of signing an informed consent and filling out the self-report forms described above. Participants could choose themselves when to complete the questionnaires, and the filled out questionnaires were returned in a closed envelope to their therapist, the contact person or the author. The forms were numbered and contact information was distributed, so the participants could withdraw from the study at any given time. The study was approved by the Regional Committees for Medical and Health Research Ethics (REK).

Results

EDE-Q 6.0 data from the clinical sample

Table 2 presents the mean scores for the four subscales and the total score on the EDE-Q 6.0.

Table 2 about here

A few items on the EDE-Q 6.0 are not part of the subscales or total score, but still provide clinical information descriptive of the severity level of the eating disorder. These items are related to the frequency of eating disordered behavior in the last month, and relevant information is provided in Table 3.

Table 3 about here

Comparison of MCQ-30 in the samples

One of the hypotheses that were explored in the study was that the clinical group with eating disorders would score significantly higher than the control group on both the different

factors and the total score on the MCQ-30. The sample sizes were unequal, so a Levene's

test (Levene, 1960) was conducted to test for homogeneity of variance. The Levene's test

was significant for the total MCQ-30 score, and for four out of five MCQ factors equal

variances could not be assumed. The exception was for the fifth factor, cognitive self-

consciousness. This was taken into account when conducting the independent samples t-test.

The mean scores were significantly higher in the clinical than the control group on all the five

subfactors and the total MCQ-30 score (see Table 4). Especially large differences were

found on total MCQ-30 score, positive beliefs about worry, beliefs about uncontrollability of

thought and danger, and need for control thoughts (see Table 4 for further details).

Table 4 about here

Correlations between MCQ-30 and EDE-Q 6.0

The other hypothesis of interest in the study was whether the different factors and the

total score on the MCQ-30 correlated positively with the different factors on the EDE-Q 6.0.

As shown in the table, all but four correlations were significant at a 0.01 level (see Table 5).

The EDE-Q 6.0 subscale that covers "restriction of food intake" had three correlations with

the MCQ-30 that were significant at a 0.05 level, and one that was not significant. The total

MCQ-30 score correlated positively with the total score on EDE-Q 6.0 ($r = .68$). Total score

on MCQ-30 also had moderate to high correlations with the EDE-Q 6.0 subfactors "worry

over eating" ($r = .62$), "worry over shape" ($r = .68$), and "worry over weight" ($r = .69$).

Noticeably, high correlations were also found between the MCQ factor that ties to "need for

control thoughts" and the total EDE-Q 6.0 score ($r = .76$), "worry over eating" ($r = .70$),

"worry over shape" ($r = .73$), and "worry over weight" ($r = .74$). The other MCQ factors also

correlated moderately with the EDE-Q 6.0 subfactors (see Table 5 for further details).

Table 5 about here

Regression results

A hierarchical regression analysis was run to test whether the metacognitive subfactors could predict the severity of eating disorder symptoms. The EDE-Q 6.0 total score was entered as the dependent variable, and the five subfactors from the MCQ-30 were entered as predictor variables in the same step. The MCQ-30 predicted 58 % of the variance in the total EDE-Q 6.0, and "need for control thoughts" was the only metacognitive subfactor significantly predicting unique variance in the dependent variable (see Table 6). The other metacognitive subfactors were non-significant in the regression analysis. The collinearity statistics were within the acceptable range with tolerance levels of .414, .298, .485, .203, and .446 for the predictor variables, and the variance inflation factors (VIF) were 2.4, 3.4, 2.1, 4.9, and 2.2.

Table 6 about here

Discussion

This study predicted that patients with an eating disorder would score higher on dysfunctional metacognitions than the control group, and that metacognitions would be positively correlated with symptom-level severity of the eating disorder in the clinical group. The results supported the hypotheses of the study. In addition, the metacognitive subfactor "need for control thoughts" significantly predicted unique variance in the severity of eating disorder symptoms.

The group with eating disorders scored significantly higher than the control group both on the total MCQ-30 score, and on all the five metacognitive factors. These results indicate that females with an eating disorder show a heightened CAS activity compared to healthy controls, which is in line with previous research on metacognitions associated with eating disorders (Cooper, Grocutt, Deepak & Bailey, 2007; Konstantellou & Reynolds, 2010; McDermott & Rushford, 2011; Woolrich, Cooper & Turner, 2008). In contrast to previous studies done with clinical samples of people with eating disorders where the metacognitive subfactor "positive beliefs about worry" was not significantly different to the control group, this study showed substantial differences on this factor. Two of the other metacognitive factors also had especially large differences between the clinical and the healthy controls; "beliefs about uncontrollability of thought and danger", and "need for control thoughts". The pattern of metacognitions found in this study brings out two paradoxes in the clinical sample with eating disorders; they have a high need for controlling their thoughts, while at the same time thinking that worrying is uncontrollable. Another paradox of the sample is holding the belief that worrying is a helpful strategy for coping, and simultaneously thinking that worrying is harmful. Being caught up in such cognitive patterns might explain some of the emotional distress and rigidity associated with eating disorders, and a reduction of these constraining metacognitive beliefs could provide some relief for the patient.

It could be of interest to view the scores from the MCQ-30 in this sample with eating disorders in the context of other psychiatric disorders. Westra, Arkowitz and Dozois (2009) did a randomized controlled trial with patients suffering from generalized anxiety disorder where the total score from the MCQ-30 was measured at pre-treatment. Seventy-six patients with GAD were allocated into two equal-sized groups where one group had a total sum score of 72.29, and the other with 68.82 (Westra et al., 2009). These scores collected from a GAD sample are comparable to the sum score of 68.79 in the sample with eating disorders from

this study. Moritz, Peters, Larøi and Lincoln (2010) compared OCD (N = 55), schizophrenia

(N = 39), and healthy controls (N = 49) on the MCQ-30. The two clinical groups did not

differ from each other on the MCQ-30, but they scored significantly higher than the healthy

controls on all the metacognitive subfactors except "positive beliefs about worry".

Dysfunctional metacognitions about "need for control thoughts" and "negative beliefs about

uncontrollability of thought and danger" showed the largest effect sizes when the clinical

groups were compared to the control group (Moritz et al., 2010). These results are very

similar to the clinical group with eating disorders, except for finding significant differences

on "positive beliefs about worry" which was not found in the Moritz et al. (2010) study.

Taken together, the findings mentioned above support the hypothesis of dysfunctional

metacognitions serving as transdiagnostic pathological processes.

In this study, the scores on the MCQ-30 and the EDE-Q 6.0 were highly correlated.

The findings were significant, which show a higher degree of dysfunctional metacognitions is

associated with a higher level of eating disorder symptoms. The correlation matrix revealed

strong correlation coefficients within the MCQ-30, so the possibility of a multicollinearity

problem was investigated in the regression analysis to check whether the overlap should be

questioned. A tolerance value under .2 can be of concern (Menard, 1995), and a VIF above

10 can be troublesome (Myers, 1990). The collinearity statistics in the regression analysis

were within the acceptable range, and thus the potential influence of multicollinearity was

considered to be minimal. The total MCQ-30 score had strong correlation coefficients with

the total EDE-Q 6.0 score and three out of four EDE-Q 6.0 subscales: "worry over eating",

"worry over shape", and "worry over weight". The EDE-Q asks questions concerning the

individual's thoughts and behavior, and the MCQ-30 makes inquiry about the beliefs about

thoughts, which are assumed to be two different levels of cognition (Wells, 2009). It seems

that both levels of cognition are of relevance when treating patients suffering from an eating

disorder. The strongest correlations between metacognitions and eating disorder pathology were found between the metacognitive subfactor "need for control thoughts" and the three EDE-Q 6.0 subscales concerning "worry over eating, shape, and weight". This could indicate an overlap between the EDE-Q and the "need for control thoughts" subfactor. Based on the phrasing in the two questionnaires, it is plausible that that the MCQ-30 is a measure of metacognitions, a separate and relevant set of constructs for eating disorders. A larger sample is needed for a further exploration of the factors. This study indicates metacognitive beliefs about "need for control thoughts" being of especial importance, and the hierarchical regression analysis revealed this factor as the only metacognitive subfactor significantly predicting unique variance in the total score on the EDE-Q 6.0. Control is a recurrent theme in eating disorders, such as controlling food intake and activity level (Fairburn, 2008). This study provides support that even the need to control thoughts is central when it comes to eating disorder pathology. The correlation coefficients in this study related to the EDE-Q 6.0 subscale "restriction of food intake" were noticeably lower, and had a poorer significance level than the rest of the subscales and total score. This subscale may have been affected by the fact that many participants in the clinical group for this study were inpatients receiving treatment for their eating disorders, where the food intake is regulated by a mutual contract between the patient and the health care staff.

Metacognitions is assumed to drive the pathological process of worry and rumination (Wells, 2009), which puts the findings in line with previous research where the level of worry and rumination are associated with eating disorder pathology (Startup et al., 2013; Sternheim et al., 2012). The Eating Disorder Examination (Fairburn, 2008) in semi-structured interview or questionnaire version was used for measuring eating disorder symptoms in these studies mentioned above, which make the results easy to interpret in relation to the current study. To compare, eating disorder pathology had a significant correlation of $r = .32$ with the level of

worry (Sternheim et al., 2012), and $r = .59$ with rumination (Startup et al., 2013). Our study found even stronger correlations for eating disorder pathology related to the total MCQ-30 score ($r = .68$) and especially the subfactor "need for control thoughts" ($r = .76$). This could suggest metacognitions being even more proximal to the psychopathology than worry and rumination, meaning that the MCQ-30 could be capturing central elements in treatment.

Strengths and limitations

Methodological limitations of the study should be taken into consideration when interpreting the findings. Firstly, the data is based on self-report, which can be subject to demand characteristics, social desirability, and misinterpretation of questions. This is not considered problematic, because both questionnaires in this study are viewed as valid and reliable instruments (Wells & Cartwright-Hatton, 2004; Rø, Reas & Lask, 2010). Diagnostic interviews could have been applied for a thorough screening of eating disorder diagnosis, but was not performed in this study since the participants included in the clinical sample had been going through a diagnostic assessment before the entering treatment. This supported the validity of their diagnoses. Secondly, casual inferences cannot be made due to the cross-sectional design of the study, so further research is needed to see whether a change in metacognitions and a reduction of the CAS activity will result in a reduction of symptom severity of the eating disorder, as implicated by the S-REF model (Wells & Matthews, 1996). Thirdly, the results could be affected by differences based on how long the participants in the clinical group had undergone treatment. The questionnaire scores were assumed to provide a realistic picture since recovery from an eating disorder commonly takes a long time (Keel & Brown, 2010), and the sample participated in the study while currently receiving treatment. Fourth, the clinical sample is relatively small, and studies with larger sample sizes are needed. Fifth, it could also be mentioned that the sample sizes for the clinical and control group are unequal, which was corrected for by using the Levene's test (Levene, 1960), and

that the response rate was not recorded for either group. Finally, the study did not check for eating disorder symptoms in the control group, which would have added more clarity to the relation between metacognitions and eating disorder pathology. Controlling for this factor could probably have made the differences between the samples even larger. Future studies should also include psychiatric comorbidity in the clinical group for further exploration of the role of metacognitions.

The sample consists of both inpatients and outpatients with different types of eating disorders because the participants were included based on their current status as recipients of eating disorder treatment. This suggests the sample may be representative of the patients expected to meet when working with eating disorders. The clinical group had high levels of eating disorder pathology, which supports the results being valid even for patients in a severe state. The collection of questionnaires was brief, which increases the chances of getting a larger sample size and minimizes possible strain from participation in the study. The metacognitions and eating disorder symptoms of the clinical group were measured at the same point in time, which strengthens the results from the study. Correlations between eating disorder symptoms and levels of worry have been previously investigated (Sternheim et al., 2012), but to our knowledge, no correlational studies on the level of dysfunctional metacognitions has been done in the field of eating disorders. The correlational data from the MCQ-30 and eating disorder pathology obtained in this study therefore make a unique contribution.

Clinical implications and conclusions

It seems like theoretical models of the psychopathology in eating disorders need to be updated in line with empirical research for improving treatment (Cooper, 2005). The current study indicates dysfunctional metacognitions as prominent psychopathological factors in eating disorders, and contributes to earlier findings with showing an association between

metacognitions and level of eating disorder pathology. This supports Wells' metacognitive

model (2009) suggesting metacognitions as key maintenance factors in different psychiatric

disorders. Metacognitive treatment strategies should therefore be implemented to reduce

worrying, rumination, threat monitoring and ineffective coping strategies in working with

eating disorders. Treatment studies are needed to evaluate the effect of MCT for eating

disorders.

      In conclusion, metacognitive theory and therapy could be a promising new treatment

approach for eating disorders.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders, fourth edition.* Washington, DC: Author.

Bulik, C. M., Brownley, K. A., Shapiro, J. R., & Berkman, N. D. (2012). Anorexia nervosa. In Sturmey, P., & Hersen, M. (Eds.), *Handbook of evidence-based practice in clinical psychology* (pp. 575-597). Hoboken, New Jersey: John Wiley & Sons, Inc.

Cooper, M. J. (2005). Cognitive theory in anorexia nervosa and bulimia nervosa: Progress, development and future directions. *Clinical Psychology Review, 25(4)*, 511-531. doi:10.1016/j.cpr.2005.01.003

Cooper, M. J., Grocutt, E., Deepak, K., & Bailey, E. (2007). Metacognition in anorexia nervosa, dieting and non-dieting controls: A preliminary investigation. *British journal of clinical psychology, 46(1)*, 113-117. doi: 10.1348/014466506X115245

Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders.* New York, NY: The Guilford Press.

Fairburn, C. G., & Beglin, S. J. (2008). Eating disorder examination questionnaire (EDE-Q 6.0). In Fairburn, C. G. (Ed.), *Cognitive behavior therapy and eating disorders* (pp. 309-314), New York, NY: The Guilford Press.

Fairburn, C. G., & Harrison, P. J. (2003). Eating disorders. *Lancet, 361*, pp. 407-416. doi:10.1016/S0140-6736(03)12378-1

Ghaderi, A. (2012). Bulimia. In Sturmey, P., & Hersen, M. (Eds.), *Handbook of evidence-based practice in clinical psychology* (pp. 599-620). Hoboken, New Jersey: John Wiley & Sons, Inc.

Grant, P., Young, P. R., & DeRubeis, R. J. (2007). Cognitive and behavioral therapies. In Gabbard, G. O., Beck, J. S., & Holmes, J. (Eds.), *Oxford textbook of psychotherapy* (pp. 15-25). Oxford: Oxford University Press.

Hagen, R., Johnson, S. U., Rognan, E., & Hjemdal, O. (2012). Mot en felles grunn: En transdiagnostisk tilnærming til psykologisk behandling. *Tidsskrift for Norsk Psykologforening, 49*, 247-252.

Halmi, K. A., Tozzi, F., Thornton, L. M., Crow, S., Fichter, M. M., Kaplan, A. S., . . . Bulik, C. M. (2005). The relation among perfectionism, obsessive-compulsive personality disorder and obsessive-compulsive disorder in individuals with eating disorders. *International Journal of Eating Disorders, 38(4),* 371-374. doi: 10.1002/eat.20190

Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological psychiatry, 61(3),* 348-358. doi:10.1016/j.biopsych.2006.03.040

Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Masters, K. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *American Journal of Psychiatry, 161(12),* 2215-2221. doi:10.1176/appi.ajp.161.12.2215

Keel, P. K., & Brown, T. A. (2010). Update on course and outcome in eating disorders. *International Journal of Eating Disorders, 43(3),* 195-204. doi:10.1002/eat.20810

Konstantellou, A., Campbell, M., Eisler, I., Simic, M., & Treasure, J. (2011). Testing a cognitive model of generalized anxiety disorder in the eating disorders. *Journal of anxiety disorders, 25(7),* 864-869. doi:10.1016/j.janxdis.2011.04.005

Konstantellou, A., & Reynolds, M. (2010). Intolerance of uncertainty and metacognitions in a non-clinical sample with problematic and normal eating attitudes. *Eating behaviors, 11(3),* 193-196. doi:10.1016/j.eatbeh.2010.01.003

Levene, H. (1960). Robust Tests for Equality of Variances. In Olkin, I. (Ed.), *Contributions to Probability and Statistics* (pp. 278-292). Palo Alto, CA: Stanford Univ. Press.

Machado, P. P. P., Machado, B. C., Gonçalves, S., & Hoek, H. W. (2007). The prevalence of eating disorders not otherwise specified. *International Journal of Eating Disorders, 40(3)*, 212-217. doi:10.1002/eat.20358

McDermott, C. J., & Rushford, N. (2011). Dysfunctional metacognitions in anorexia nervosa. *Eating and Weight Disorders, 16(1),* e49-e55.

Menard, S. (1995). *Applied logistic regression analysis.* Sage university paper series on quantitative applications in the social sciences, 07-106. Thousand Oaks, CA: Sage.

Meyer, T. J., Miller, M. L., Metzger, R. L., & Borkovec, T. D. (1990). Development and validation of the penn state worry questionnaire. *Behaviour Research and Therapy, 28(6),* 487-495. doi:10.1016/0005-7967(90)90135-6

Moritz, S., Peters, M. J. V., Larøi, F., & Lincoln, T. M. (2010). Metacognitive beliefs in obsessive-compulsive patients: A comparison with healthy and schizophrenia participants. *Cognitive Neuropsychiatry, 15(6),* 531-548. doi: 10.1080/13546801003783508

Myers, R. (1990). *Classical and modern regression with applications* (2nd Ed.). Boston, MA: Duxbury.

National Institute for Health and Care Excellence (2004) *Eating disorders: Anorexia nervosa, bulimia nervosa and related eating disorders*. No. CG9. London: Author.

Nolen-Hoeksema, S., Stice, E., Wade, E., & Bohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology, 116(1),* 198-207. doi: 10.1037/0021-843X.116.1.198

Rø, Ø., Reas, D. L., & Lask, B. (2010). Norms for the Eating Disorder Examination Questionnaire among female university students in Norway. *Nordic Journal of Psychiatry, 64(6)*, 428-432. doi:10.3109/08039481003797235

Solem, S., Håland, A. T., Vogel, P. A., Hansen, B., & Wells, A. (2009). Change in

metacognitions predicts outcome in obsessive-compulsive disorder patients

undergoing treatment with exposure and response prevention. *Behaviour Research

and Therapy, 47(4)*, 301-307. doi:10.1016/j.brat.2009.01.003

Startup, H., Lavender, A., Oldershaw, A., Stott, R., Tchanturia, K., Treasure, J., & Schmidt,

U. (2013). Worry and rumination in anorexia nervosa. *Behavioural and Cognitive

Psychotherapy, 41*, 301-316. doi:10.1017/S1352465812000847

Sternheim, L., Startup, H., Saeidi, S., Morgan, J., Hugo, P., Russell, A., & Schmidt, U.

(2012). Understanding catastrophic worry in eating disorders: Process and content

characteristics. *Journal of Behaviour Therapy and Experimental Psychiatry, 43*,

1095-1103. doi:10.1016/j.jbtep.2012.05.006

Swinbourne, J. M., & Touyz, S. W. (2007). The co-morbidity of eating disorders and anxiety

disorders: A review. *European Eating Disorders Review, 15(4)*, 253-274.

doi:10.1002/erv.784

van der Heiden, C., Muris, P., & van der Molen, H. T. (2012). Randomized controlled trial on

the effectiveness of metacognitive therapy and intolerance-of-uncertainty therapy for

generalized anxiety disorder. *Behaviour Research and Therapy, 50(2)*, 100.

doi:10.1016/j.brat.2011.12.005

Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. New York, NY: The

Guilford Press.

Wells, A., & Cartwright-Hatton, S. (2004). A short form of the metacognitions questionnaire:

Properties of the MCQ-30. *Behaviour Research and Therapy, 42(4)*, 385-396.

doi:10.1016/S0005-7967(03)00147-5

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF

    model. *Behaviour Research and Therapy, 34(11/12),* 881-888. doi:10.1016/S0005-

    7967(96)00050-2

Westra, H. A., Arkowitz, H., & Dozois, D. J. A. (2009). Adding a motivational interviewing

    pretreatment to cognitive behavioral therapy for generalized anxiety disorder: A

    preliminary randomized controlled trial. *Journal of Anxiety Disorders, 23,* 1106-1117.

    doi:10.1016/j.janxdis.2009.07.014

Wollburg, E., Meyer, B., Osen, B., & Löwe, B. (2013). Psychological change mechanisms in

    anorexia nervosa treatments: How much do we know? *Journal of clinical psychology,*

    0(0), 1-12. doi:10.1002/jclp.21945

Woolrich, R. A., Cooper, M. J., & Turner, H. M. (2008). Metacognition in patients with

    anorexia nervosa, dieting and non-dieting women: A preliminary study. *European*

    Eating Disorders Review, 16(1), 11-20. doi:10.1002/erv.802

Table 1.

BMI means and standard deviations for the clinical group by eating disorder diagnosis (N =48).

	AN	BN	EDNOS
BMI current	18.5 (3.3)	25.2 (5.3)	28.9 (11.0)
BMI lowest	14.9 (2.8)	17.2 (2.1)	18.1 (5.0)

Note. BMI = Body Mass Index, AN = Anorexia Nervosa, BN = Bulimia Nervosa, EDNOS = Eating Disorder Not Otherwise Specified.

Table 2.

Mean scores and standard deviations from the EDE-Q 6.0 (N = 48).

	Restriction	Worry over eating	Worry over shape	Worry over weight	Total score
Mean	2.59	2.94	4.20	3.70	3.37
SD	1.84	1.83	1.90	1.97	1.69

Note. The scores range from 0 to 6, where a high score indicates a higher level of eating disorder symptoms.

Table 3.

Percentage of women engaging in eating disordered behaviors (N = 48).

Behavior	Any occurrence (%)	Regular occurrence (%)
Subjective binge eating episodes	37.5	29.2
Self-induced vomiting	33.3	27.1
Laxative misuse	12.5	8.3
Excessive exercise	60.4	33.3
Dietary restraint	33.3	10.4

Note. Regular occurrence was defined as an average of five times per week or more for excessive exercise (feeling forced to exercise for controlling weight or burning calories: EDE-Q 6.0 item 18), three times per week or more for dietary restraint (going without food for over 8 hours: EDE-Q 6.0 item 2), and at least once per week for the remaining items.

Table 4.

Two-tailed independent samples t-test, mean scores, sum scores and standard deviations for the clinical and the control group on the MCQ-30 (clinical group N = 48, control group N = 244).

	Eating disorder N = 48		Healthy control N = 244				
	M (sum)	SD	M (sum)	SD	t	df	P value
MCQ total	2.29 (68.79)	.70 (20.85)	1.68 (50.28)	.35 (10.53)	6.00	51.9	.000
Positive beliefs about worry	2.06 (12.35)	.79 (4.74)	1.44 (8.62)	.39 (2.36)	5.32	51.8	.000
Beliefs about uncontrollability and danger	2.59 (15.53)	.88 (5.28)	1.77 (10.61)	.65 (3.89)	6.08	56.2	.000
Cognitive confidence	2.15 (12.89)	.92 (5.53)	1.66 (9.96)	.57 (3.42)	3.47	51.9	.001
Need for control thoughts	2.34 (14.06)	.90 (5.41)	1.47 (8.79)	.43 (2.56)	6.60	51.4	.000
Cognitive self-consciousness	2.33 (13.98)	.65 (3.91)	2.05 (12.30)	.65 (3.90)	2.70	284.0	.007

Note. The sum scores are presented in parentheses.

Table 5.

Pearson's product moment correlations for MCQ-30 with EDE-Q 6.0 total scores and subfactors, N = 48 clinical group with eating disorders.

	MCQ total	MCQ1	MCQ2	MCQ3	MCQ4	MCQ5	EDEQ1	EDEQ2	EDEQ3	EDEQ4
MCQ1	.80**									
MCQ2	.87**	.54**								
MCQ3	.81**	.52**	.62**							
MCQ4	.94**	.71**	.82**	.69**						
MCQ5	.82**	.65**	.69**	.50**	.72**					
EDEQ1	.39**	.33*	.25	.32*	.48**	.28*				
EDEQ2	.62**	.45**	.60**	.45**	.70**	.39**	.58**			
EDEQ3	.68**	.55**	.57**	.50**	.73**	.52**	.60**	.73**		
EDEQ4	.69**	.53**	.56**	.53**	.74**	.51**	.66**	.76**	.94**	
EDEQ total	.68**	.53**	.57**	.50**	.76**	.48**	.82**	.88**	.93**	.95**

Note. MCQ1 = positive beliefs about worry; MCQ2 = beliefs about uncontrollability and danger; MCQ3 = cognitive confidence; MCQ4 = need for control; MCQ5 = cognitive self-consciousness; EDEQ1 = restriction, EDEQ2 = worry over eating, EDEQ3 = worry over shape; EDEQ4 = worry over weight. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed)

Table 6.

Hierarchical regression analysis showing the total score on EDE-Q 6.0 as predicted by the five factors of metacognition in MCQ-30 (N = 48).

	FCha	R^2Cha	β	t
	10.39	.58		.54
MCQ1			-.05	-.29
MCQ2			-.11	-.57
MCQ3			.01	.08
MCQ4			.91	3.89**
MCQ5			-.06	-.39

Note. *p < 0.05, **p < 0.01. MCQ1 = positive beliefs about worry; MCQ2 = beliefs about uncontrollability and danger; MCQ3 = cognitive confidence; MCQ4 = need for control; MCQ5 = cognitive self-consciousness.

Appendix A

Forespørsel om deltakelse i forskningsprosjektet
"Metakognisjoner ved spiseforstyrrelser"

Bakgrunn og hensikt
Dette er et spørsmål til deg om å delta i en forskningsstudie for å kartlegge tankers betydning ved spiseforstyrrelser. Ulike typer av tankestiler ser ut til å spille en viktig rolle i opprettholdelsen av mange ulike psykologiske problemer. Vi ønsker derfor å undersøke hvilken rolle slike tankestiler (metakognisjoner) kan ha i forhold til spiseforstyrrelser. Denne forespørselen om deltagelse deles ut til alle pasienter ved Regionalt Kompetansesenter for Spiseforstyrrelser (RKSF) seksjon Levanger og RKSF; seksjon Stjørdal. Forskningsstudien er et samarbeid mellom Psykologisk Institutt, NTNU og RKSF.

Hva innebærer studien?
Prosjektet innebærer at du som deltager skriver under på et samtykkeskjema dersom du ønsker å delta etter å ha fått lest dette informasjonsskrivet om hva studien innebærer. Vi vil deretter at du skal fylle ut noen spørreskjemaer som spør etter demografiske opplysninger, problemer knyttet til mat og vekt, og ulike typer av tankestiler.

Mulige fordeler og ulemper
Spiseforstyrrelser medfører mange psykologiske og fysiologiske problemer, for de som lider under dette. Vi anser det derfor som viktig å få en bedre forståelse av hva som kan føre til bedring for personer som sliter med denne typen av vansker. En kartleggelse av tankestilers betydning ved spiseforstyrrelser kan bidra til å øke forståelsen av problemet, og være med på å gjøre behandlingen bedre for dem som plages av dette. En mulig ulempe ved deltagelse i studien er at utfylling av skjema kan vekke til live noen tanker og følelser knyttet til disse problemene.

Hva skjer med informasjonen om deg?
All informasjon som samles inn i forbindelse med forskningsprosjektet vil oppbevares innelåst i journalskap på Psykologiske Poliklinikker ved NTNU. Det er kun autorisert personell knyttet til prosjektet som har adgang til informasjonen som samles inn. Samtykkeskjemaet med navnet ditt på vil oppbevares separat fra selvrapportskjemaene. Data vil bli overført til en datafil, slik at det finnes ingen opplysninger som er av personidentifiserbar karakter. Det vil si at informasjonen som samles inn vil være anonymisert og kan ikke spores tilbake til deg. Det vil ikke være mulig å identifisere deg i resultatene av studien når disse blir publisert.

Frivillig deltakelse
Det er frivillig å delta i studien. Du kan når som helst og uten å oppgi noen grunn trekke ditt samtykke til å delta i studien. Dette vil ikke få konsekvenser for din videre behandling. Dersom du ønsker å delta, undertegner du samtykkeerklæringen på neste side. Om du nå sier ja til å delta, kan du senere trekke tilbake ditt samtykke uten at dette påvirker din øvrige behandling. Dersom du har spørsmål til studien, kan du kontakte undertegnede (kontaktinformasjon på siste side).

Med vennlig hilsen

Roger Hagen   og   Siri Olstad
Førsteamanuensis   Forskningsmedarbeider

Samtykke til deltakelse i studien "Metakognisjoner ved spiseforstyrrelser"

Jeg er villig til å delta i studien

(Signert av prosjektdeltaker, dato)

Jeg bekrefter å ha gitt informasjon om studien

(Signert, rolle i studien, dato)

Kontaktpersoner for studien:

Førsteamanuensis Roger Hagen, Psykologisk Institutt, NTNU, 7491 Trondheim, mobil 48109789,   e-post: roger.hagen@svt.ntnu.no

Forskningsmedarbeider Siri Olstad, Psykologisk Institutt, NTNU, 7491 Trondheim, mobil 90962113,   e-post: siriols@stud.ntnu.no

NTNU

Appendix B
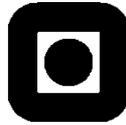
Psykologiske poliklinikker,
Psykologisk Institutt, NTNU

Forskningsprosjektet "Metakognisjoner ved spiseforstyrrelser"
Skjema for demografiske opplysninger:

Kjønn: _____

Alder: _____

Høyde: _____

Nåværende vekt: _____

Laveste vekt i voksen alder: _____

Spiseforstyrrelsesdiagnose: _____

Varighet av sykdom (antall år): _____

Appendix C

Eating Disorder
Examination Questionnaire
(EDE-Q 6.0)

From "Cognitive Behavior Therapy
and Eating Disorders"
By Christopher G. Fairburn

Orginal English version available online at:
www.psych.ox.ac.uk/credo/cbt _and_eating_disorders

**Norsk godkjent oversettelse
v/D.L. Reas og Ø. Rø
september 2008**

Instruksjoner: Dette spørreskjemaet handler kun om de siste 4 ukene (28 dager). Les hvert spørsmål nøye. Svar på alle spørsmålene.

Spørsmål 1 til 12 : Tegn en sirkel rundt det tallet til høyre som du synes passer best. Husk at spørsmålene kun handler om de <u>siste 4 ukene </u>(28 dager)

På hvor mange av de siste 28 dagene ;	Ingen dager	1-5 dager	6-12 dager	13-15 dager	16-22 dager	23-27 dager	Alle dager
1 Har du bevisst <u>prøvd</u> å begrense mengden mat du spiser for å påvirke din figur eller vekt (uavhengig av om du har klart det eller ikke) ?	0	1	2	3	4	5	6
2 Har du i lengre perioder (8 våkne timer eller mer) ikke spist noe i det hele tatt for å påvirke din figur eller vekt ?	0	1	2	3	4	5	6
3 Har du <u>prøvd</u> å utelukke noen Typer mat du liker, for å påvirke din figur eller vekt (uavhengig av om du har klart det eller ikke) ?	0	1	2	3	4	5	6
4 Har du <u>prøvd</u> å følge bestemte regler for hva eller hvordan du spiser (f.eks en kalorigrense) for å påvirke din figur eller vekt (uavhengig om du har klart det eller ikke) ?	0	1	2	3	4	5	6
5 Har du hatt et klart ønske om å ha <u>tom</u> mage for å påvirke din figur eller vekt ?	0	1	2	3	4	5	6
6 Har du hatt et klart ønske om å ha en <u>helt flat</u> mage ?	0	1	2	3	4	5	6
7 Har du opplevd at tanker om <u>mat,</u> <u>spising</u> eller kalorier har gjort det veldig vanskelig å konsentrere deg om ting du er interessert i (f.eks å arbeide, følge en samtale eller lese) ?	0	1	2	3	4	5	6
8 Har du opplevd at tanker om <u>figur eller vekt</u> har gjort det veldig vanskelig å konsentrere deg om ting du er interessert i (f.eks å arbeide, følge en samtale eller lese) ?	0	1	2	3	4	5	6
9 Har du hatt en klar frykt for å miste kontroll over spisingen din ?	0	1	2	3	4	5	6
10 Har du hatt en klar frykt for at du kan gå opp i vekt ?	0	1	2	3	4	5	6
11 Har du følt deg tykk ?	0	1	2	3	4	5	6
12 Har du hatt et sterkt ønske om å gå ned i vekt ?	0	1	2	3	4	5	6

Revidert 06/09 hl

Spørsmål 13 til 18 : Fyll inn passende antall i boksene til høyre. Husk spørsmålene kun handler om <u>de siste fire ukene</u> (28 dager).

I løpet av de siste fire ukene (28 dager)

13 I løpet av de siste 28 dagene, hvor mange ganger har du spist det andre ville betrakte som en <u>uvanlig stor mengde mat</u> (omstendighetene tatt i betraktning) ?	…………………..
14 Ved hvor mange av disse episodene hadde du en følelse av å ha mistet kontrollen over spisingen din (mens du spiste) ?	………………….
15 I løpet av de siste 28 dagene, hvor mange <u>DAGER</u> har slike episoder med overspising forekommet (dvs. der du har spist uvanlig store mengder mat <u>og</u> hatt en følelse av å miste kontrollen mens du spiste) ?	………………….
16 I løpet av de siste 28 dagene, hvor mange <u>ganger</u> har du kastet opp for å kontrollere din figur eller vekt ?	………………….
17 I løpet av de siste 28 dagene, hvor mange <u>ganger</u> har du brukt avførings-midler for å kontrollere din figur eller vekt ?	…………………
18 I løpet av de siste 28 dagene, hvor mange <u>ganger</u> har du følt deg drevet eller tvunget til å trene for å kontrollere din vekt, figur eller fettmengde, eller for å forbrenne kalorier ?	…………………

Spørsmål 19 til 21 : Tegn en sirkel rundt det tallet som du synes passer best. Vær oppmerksom på at i disse spørsmålene brukes begrepet **" overspisingsepisode"** om å spise det andre ville synes var en **uvanlig stor mengde mat i den situasjonen du var i, samtidig med en følelse av å ha mistet kontrollen over spisingen.**

19) I løpet av de siste 28 dagene, hvor mange dager har du spist i hemmelighet (skjul)? Tell ikke med overspisingsepisoder.	Ingen <u>dager</u> 0	1-5 <u>dager</u> 1	6-12 <u>dager</u> 2	13-15 <u>dager</u> 3	16-22 <u>dager</u> 4	23-27 <u>dager</u> 5	Alle <u>dager</u> 6

20) Hvor mange av de gangene du har spist, har du hatt skyldfølelse (følt at du har gjort noe galt) fordi det kan påvirke din figur eller vekt? Tell ikke med overspisingsepisoder.	Ingen dager 0	Noen få ganger 1	Færre enn halvparten 2	Halv-parten 3	Mer enn halv-parten 4	De fleste gangene 5	Hver gang 6

21) I løpet av de siste 28 dagene, hvor bekymret har du vært for at andre mennesker ser deg spise ? Tell ikke med over-spisingsepisoder.	Ikke i det hele tatt 0	 1	Litt 2	 3	Ganske mye 4	 5	Veldig mye 6

Spørsmål 22 til 28 : Tegn en sirkel rundt det tallet til høyre som du synes passer best. Husk at spørsmålene kun handler om **de siste fire ukene** (28 dager)

I løpet av de siste 28 dagene ………………..	Ikke i det hele tatt		Litt		Ganske mye		Veldig mye
22 Har <u>vekten</u> din påvirket hvordan du tenker om (bedømmer) deg selv som person ?	0	1	2	3	4	5	6
23 Har <u>figuren</u> din påvirket hvordan du tenker om (bedømmer) deg selv som person ?	0	1	2	3	4	5	6
24 Hvor opprørt ville du bli hvis du ble bedt om å veie deg en gang i uken (ikke mer, ikke mindre) de neste fire ukene ?	0	1	2	3	4	5	6
25 Hvor misfornøyd har du vært med <u>vekten</u> din ?	0	1	2	3	4	5	6
26 Hvor misfornøyd har du vært med <u>figuren</u> din ?	0	1	2	3	4	5	6
27 Hvor mye ubehag har du følt ved å se kroppen din (f.eks når du se figuren din i speilet, reflektert i et butikkvindu, ved klesskift, eller når du bader eller dusjer) ?	0	1	2	3	4	5	6
28 Hvor mye ubehag har du følt ved at <u>andre</u> ser figuren din (f.eks i offentlige omkledningsrom, når du svømmer, eller når du har på deg trange klær) ?	0	1	2	3	4	5	6

Kjønn: ……………

Alder: ………….

Hva er din nåværende vekt ? (vennligst anslå så godt som mulig) ………………………

Hvor høy er du ? (vennligst anslå så godt som mulig)   ....

Hvis kvinne: Har noen menstruasjon uteblitt de siste 3-4 månedene ? ……………………

Hvis ja, hvor mange ? …………………

Har du brukt p-piller, p-ring, eller lignende ? …………………

Appendix D

MCQ-30

Denne undersøkelsen handler om forestillinger personer har om egne tanker. Under finner du et utvalg av forestillinger personer har uttrykt. Vennligst les hvert spørsmål og si hvor mye du <u>vanligvis</u> er enig ved å sette en ring rund det riktige tallet. Vennligst svar på alle spørsmålene. Det finnes ikke noe riktige eller gale svar.

Kjønn:_____   Fødselsår:_____

		Ikke enig	Litt enig	Ganske enig	Svært enig
1.	Å bekymre meg hjelper meg å unngå problemer i fremtiden.	1	2	3	4
2.	At jeg bekymrer meg, er farlig for meg.	1	2	3	4
3.	Jeg tenker mye om tankene mine.	1	2	3	4
4.	Jeg kan gjøre meg selv syk av å bekymre meg.	1	2	3	4
5.	Jeg er oppmerksom på at måten sinnet mitt arbeider når jeg tenker gjennom et problem.	1	2	3	4
6.	Dersom jeg ikke kontrollerte en bekymringstanke, og det så skjedde, ville det være min skyld.	1	2	3	4
7.	Jeg trenger å bekymre meg for å forbli organisert.	1	2	3	4
8.	Jeg har lite tiltro til min hukommelse for ord og navn.	1	2	3	4
9.	Mine bekymringstanker går ikke bort uansett hvordan jeg forsøker å stoppe dem.	1	2	3	4
10.	Å bekymre meg hjelper meg å sortere ting i sinnet mitt.	1	2	3	4
11.	Jeg kan ikke ignorere bekymringstankene mine.	1	2	3	4
12.	Jeg holder oversikt over tankene mine.	1	2	3	4
13.	Jeg burde ha kontroll over tankene mine hele tiden.	1	2	3	4
14.	Hukommelsen min kan fra tid til annen villede meg.	1	2	3	4
15.	Mine bekymringstanker kan gjøre meg gal.	1	2	3	4

16.	Jeg er konstant oppmerksom på hvordan jeg tenker.	1	2	3	4
17.	Jeg har en dårlig hukommelse.	1	2	3	4
18.	Jeg følger nøye med på hvordan sinnet mitt fungerer	1	2	3	4
19.	Bekymringer hjelper meg å holde ut.	1	2	3	4
20.	At jeg ikke er i stand til å kontrollere tankene mine, er et tegn på svakhet.	1	2	3	4
21.	Når jeg starter å bekymre meg, kan jeg ikke stoppe.	1	2	3	4
22.	Jeg kommer til å straffes for at jeg ikke kontrollerer visse tanker.	1	2	3	4
23.	Å bekymre meg hjelper meg å løse problemer.	1	2	3	4
24.	Jeg har lite tillit til min hukommelse for steder.	1	2	3	4
25.	Det er dårlig å tenke visse tanker.	1	2	3	4
26.	Jeg stoler ikke på hukommelsen min.	1	2	3	4
27.	Dersom jeg ikke kunne kontrollerer tankene mine, ville jeg ikke være i stand til å fungere.	1	2	3	4
28.	Jeg trenger å bekymre meg for å arbeide bra.	1	2	3	4
29.	Jeg har lite tillit til min hukommelse for handlinger.	1	2	3	4
30.	Jeg gransker tankene mine konstant.	1	2	3	4

Oversatt med tillatelse Bjarne Hansen & Patrick A. Vogel