THE DEVELOPMENT AND EXPLORATION OF THE EXPERIENCES OF HUMILIATION SCALE (EHS) IN AN EATING DISORDERED POPULATION.

Thesis submitted to the University of Leicester

Faculty of Medicine & Biological Sciences,

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Doctorate in Clinical Psychology

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Declaration

I confirm that the literature review and research contained within this thesis are my own and have not been submitted for any other degree or to any other institution.

The Development and Exploration of the Experiences of Humiliation Scale (EHS) in an Eating Disordered Population

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Thesis Abstract

Previous research has identified a range of factors which contribute to the development and maintenance of eating disorders. While there have been advances in theoretical understanding of eating disorders, they remain complex and difficult to treat. The thesis sought to expand upon the knowledge base in eating disorders by exploring the role of humiliation.

The systematic literature review evaluated the evidence for Cognitive Behavioural Therapy (CBT) as an intervention for Anorexia Nervosa (AN). Fourteen quantitative studies were identified and critically appraised. Results suggested that CBT was potentially effective at reducing dropout and improving adherence to treatment in AN. Most studies demonstrated improvements following CBT in terms of weight, eating-disordered symptomatology and broader psychopathology, however when compared with alternative treatment(s) CBT was not found to be superior. Numerous methodological issues were discussed and suggestions for future research considered.

For the empirical paper, a questionnaire (the Experiences of Humiliation Scale, EHS) designed to measure the frequency and extent of humiliating experiences was completed by 56 adults with an eating disorder. The scale demonstrated good internal consistency and test-retest reliability. The EHS demonstrated high convergent validity when correlated with an existing humiliation measure, and analysis of divergent validity suggested the EHS was similar to, but separable from measures of the related construct of shame. Preliminary analysis of the scale's component structure within the current clinical population suggested a similar underlying structure to a larger, non-clinical population. Levels of humiliation reported by the eating-disordered sample were significantly higher than those reported by a non-clinical population. There were no differences in reported levels of humiliation across different eating disorder diagnoses/presentations. Although limited by the small sample size, results suggested that humiliation appears to be important in eating disorders, and the EHS may be a useful tool for its measurement. Implications of the findings were discussed.

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Literature Review

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A Review of the Effectiveness of Cognitive Behavioural Therapy for the Treatment of Anorexia Nervosa.

1. Abstract

1.1 Objective

Evidence for the effectiveness of psychological therapies for anorexia nervosa is inconsistent. There have been no systematic reviews solely on the effectiveness for Cognitive Behavioural Therapy (CBT) for anorexia. This review aimed to synthesise and appraise the recent evidence for CBT as a treatment for anorexia.

1.2 Method

Using specific search criteria, 14 relevant articles were identified. The papers were evaluated using established quality criteria.

1.3 Results

The evidence reviewed suggested that CBT appeared to show promise as a means of improving treatment adherence and minimising dropout amongst patients with anorexia. While CBT appeared to demonstrate some improvements in key outcomes (body mass index, eating-disorder symptoms, broader psychopathology), it was not consistently superior to other treatments. Numerous methodological criticisms apply to the available evidence.

1.4 Conclusions

Further research and ongoing review is needed to evaluate the settings, patient groups and formats in which CBT may be effective as a treatment for anorexia.

Key Words: **Cognitive Behavioural Therapy; Anorexia; Effectiveness.**

2. Introduction

Anorexia nervosa (AN) continues to be associated with poor prognosis and significant physical and psychological complications. Despite advances in understanding and treatment, outcomes for AN patients have improved little in the second half of the past century (Crow & Peterson, 2003). This review intends to evaluate the evidence for one particular approach to the treatment of AN: Cognitive Behavioural Therapy (CBT). First, the clinical context of AN is introduced, followed by a discussion of psychological approaches to treatment, before focusing specifically on CBT for AN.

2.1 Clinical Context

The medical and psychological consequences of AN make recovery difficult, and for many, AN remains chronic and treatment-resistant. Longitudinal research has suggested fewer than 50% of patients recover fully from AN; 20-30% continue to experience residual symptoms, 10-20% remain significantly ill and 5-10% die from their illness (Steinhausen, 2002). Mortality rates in AN are ten times that of the general population (Morris, 2008), and are the highest of all psychiatric disorders (Harris & Barraclough, 1998). These statistics highlight the importance of research into developing effective prevention and treatment strategies for AN.

2.2 Psychological Treatments for AN

Psychological factors, such as weight phobia and disturbed body image have been acknowledged to play a part in the development and maintenance of AN (Bruch, 1962; Crisp, 1967b). Psychological features are incorporated into diagnostic

criteria (American Psychiatric Association, 1994), reflecting the role of psychology in the understanding and treatment of AN.

Numerous reviews have been conducted on the effectiveness of psychological therapies for eating disorders (Bulik, Berkman, Brownley, Sedway & Lohr, 2007; Kaplan, 2002; Lock & Fitzpatrick, 2007; Peterson & Mitchell, 1999; Rosenblum & Forman, 2002; Rutherford & Couturier, 2007; Wilson, 2005; Wilson, Grilo & Vitousek, 2007). The consensus of these reviews was of a paucity of evidence to support a particular treatment for AN. This is in contrast to bulimia nervosa, where CBT is considered the treatment of choice (National Institute for Health and Clinical Excellence [NICE], 2004). Kaplan (2002) identified fewer than 20 published controlled trials evaluating the effectiveness of psychological therapies for AN, and only family therapy (for children and adolescents) emerged positively compared to other treatments. Lock and Fitzpatrick (2007) and Rutherford and Couturier (2007) corroborated the findings of Kaplan (2002).

Bulik et al. (2007) reviewed randomised clinical trials of AN treatments, and rated the strength of the evidence for psychological treatments as weak. There are methodological difficulties in conducting RCT's in AN, particularly with respect to recruitment and compliance (Treasure & Kordy, 1998), so RCT's are relatively rare, "making the attempt to reach for a 'gold standard' of treatment for AN difficult to achieve" (Goldstein et al., 2011, p.29). NICE (2004) made over 100 recommendations for eating disorders. CBT for bulimia and binge-eating disorder received strong empirical support, however no specific recommendations were made for AN.

2.3 Cognitive-Behavioural Therapy for AN

CBT is effective in treating many of the problems which are often a feature of AN (depression, anxiety, low self-esteem, obsessions/compulsions). The stylistic features of CBT (structured, time-limited, directive, focused on the present) appear suited to the 'typical' anorexic patient who is described as comfortable with order and control, and not prepared to delve into the past (Freeman, 2002). Therefore CBT would appear to be a logical choice for the treatment of AN. CBT appears to have been accepted by professionals as a useful intervention for AN; 88-92% of clinicians at eating disorder conferences considered CBT (alone or combined with a psychodynamic approach) to be indicated in AN (Herzog et al., 1992). However, despite the apparent theoretical suitability and acceptability of CBT for AN, evidence for its effectiveness is limited.

2.4 Previous Reviews of CBT for AN

Reviews have evaluated the evidence for a range of treatments for AN. Kaplan (2002) reported three RCT's which included CBT. Two suggested a positive effect on outcome for recipients of CBT compared to other treatments, while the third study showed no difference in outcome between treatments. These studies were criticised on methodological issues (small samples, power issues, the impact of dropout on results). A Cochrane review evaluating multiple psychotherapies for AN failed to identify any additional studies to those presented by Kaplan (2002), and unsurprisingly drew similar conclusions (Hay et al., 2003). A third review (Bulik et al., 2007) identified one additional RCT, which suggested that outcomes in the CBT condition were superior to one comparison treatment but inferior to a second comparison treatment. After considering the methodological issues relating

to the reviewed papers, Bulik et al. (2007) concluded there was "tentative evidence that CBT reduces relapse risk for adults, after weight restoration has been accomplished" (p.317).

These previous reviews are subject to a number of methodological criticisms. Kaplan's (2002) paper is a descriptive rather than systematic review. It lacks a method section, making it impossible to know how papers were selected and appraised. Failure to report on procedures for assessing quality affects its credibility. While Bulik et al. (2007) appeared to approach their review with greater scientific rigour, authors employed a subjective and unvalidated rating scale to evaluate strength and quality of evidence. All three reviews excluded studies which deviated from strict RCT procedures, which may have been overly limiting in this under-researched area.

2.5 Rationale & Aims of the Present Review

No specific psychological therapy has emerged as the treatment of choice for AN. Previous reviews of the evidence for CBT for AN have been inconclusive, methodologically unsound, and based on studies published between 1989-2005, which leaves more recent literature unexplored.

In an attempt to overcome some of the limitations of previous reviews and to provide an up-to-date synthesis of the evidence, the current paper sought to review the recent literature in order to appraise the evidence for CBT for AN. This should contribute to a more informed understanding of the effectiveness of CBT in the treatment of this important disorder. Unlike previous reviews, the current paper sought to include studies which utilised designs other than the RCT, given that such

highly controlled procedures are often not pragmatically or ethically possible in clinical practice.

3. Method

3.1 Development of search terms

A scoping exercise was conducted prior to the main search, in order to gauge the amount, type and breadth of the available literature and to identify previous reviews. This exercise informed the search terms and shaped the focus of the review. The scoping exercise also identified that much of the research in this area combined adolescent and adult samples, making it difficult to focus upon a specific age group.

Keywords selected for searches included the terms *anorexia* and *CBT* or *cognitive behav* therapy* (truncation applied to include variations on cognitive behaviour therapy such as *behavioural,* and also to include the American spelling of *behavior/behavioral).* At the initial search stage, specific study outcomes (e.g. effect of CBT on weight, dysfunctional thoughts etc.) were not included within the search terms given their heterogeneity (as revealed by the scoping exercise).

3.2 Inclusion/Exclusion Criteria

The following *a priori* limits were set:

- Papers must be in English (for pragmatic reasons)
- Papers must be peer-reviewed journal articles (with the expectation that minimum quality standards have been met through the peer review process)
- Papers must be published between 1995-present (to expand upon previous reviews by including more recent studies)
- Papers employ quantitative designs (to allow for objective measurement of treatment effectiveness)

- Papers needed to include at a minimum measurements at two time points (pre and post-intervention)
- Papers describe methodologies at a higher level than the single clinical case (for increased generalisability).

3.3 Identification of relevant papers

The search terms and *a priori* limits were applied within the databases Scopus, PsycInfo (incorporating PsycArticles and PsycExtra), Science Direct and Ovid SP (incorporating Ovid Medline and Embase). The Cochrane Library database was searched for existing reviews. Searches were conducted between 10-26 August 2011 (see Appendix A for summary of searches).

3.4 Shortlisting

Figure 1 shows the shortlisting process. References suggested by each database were examined, and obviously irrelevant titles removed. Remaining references were exported into RefWorks web-based bibliographic management software. Here all references were collated, and following the removal of duplicates, abstracts were retrieved. Articles which did not meet inclusion criteria were rejected. Articles solely about cognitive behavioural *theory* were excluded at this stage for the purpose of the review (although some have been cited as theoretical background information). Papers which described prospective studies were discarded. Reviews were excluded so that only papers containing actual trials (evaluations of a CBT treatment programme) remained.

At this point, full texts were retrieved and read more thoroughly; reference lists identified further relevant articles which did not appear in the original search.

Only articles dealing with anorexia were considered for focus; however articles which discussed anorexia treatment *separately* (within a paper on general eating disorders) were included. If evaluation of a treatment programme was presented as part of a wider paper, this was included. Further papers were excluded if found to group ED diagnoses together (i.e. preventing analysis for AN separately) or if they described multidimensional treatment programmes which did not allow for CBT to be examined in isolation.

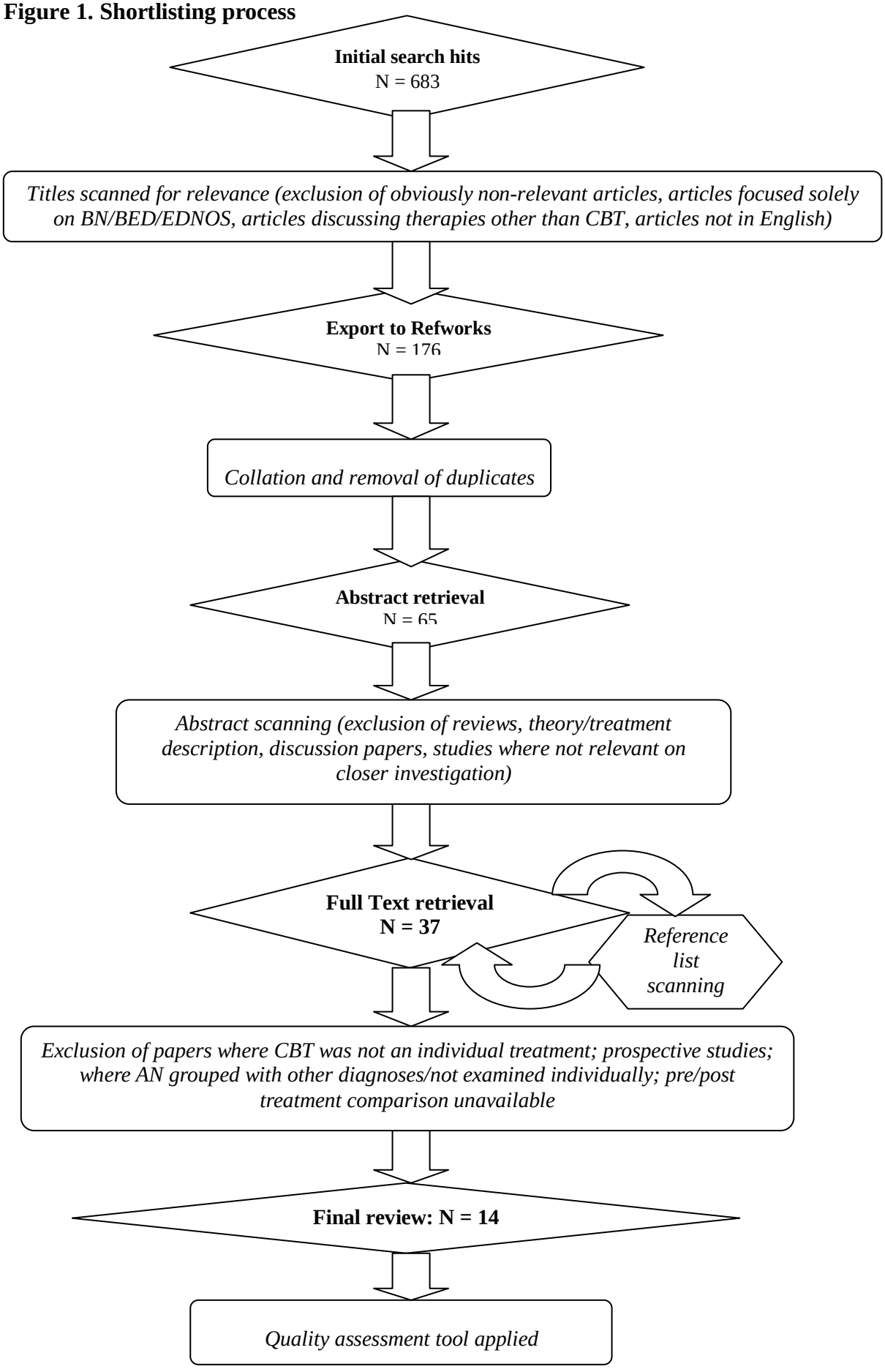
3.5 Data Synthesis & Appraisal

The remaining articles were reviewed in depth. Key features of each paper (aims, design, procedure, sample, outcomes measured, analysis and key results) were extracted and summarised in tabular format (see Tables 2, 4, 5). More thorough appraisal was guided by a quality assessment tool (see Appendix B)[1]. Articles were also appraised in terms of their general stylistic features (clarity and transparency) and acknowledgement of shortcomings.

Due to variations in therapeutic content and length, age of samples and other heterogeneous features, meta-analysis was not possible. A narrative discussion of papers follows.

[1] There was no specific tool available for the appraisal of non-comparative trials, however relevant quality criteria from the tool presented in Appendix B were applied.

Figure 1. Shortlisting process



4. Results

The final 14 papers consisted of 5 RCT's, 2 non-randomised controlled trials and 7 individual clinical trials (case series trials, no comparison group). A summary of the CBT programmes delivered in each study is presented in Table 1. Papers are then presented grouped by design type, with an outline of the sample studied and nature of the treatment setting and intervention, the outcome(s) measured and findings related to these outcomes, and finally a critique of the papers.

Table 1. Key features of CBT as described in papers.

	Study & Location	Format	Number/ length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
RCT's	Ball & Mitchell (2004) Sydney, Australia	• Outpatient • Individual • Manualised • Based on Garner & Bemis (1982) • Modified to address core beliefs akin to Young's schema approach	• 25 x one hour sessions • 1 x weekly for 3 months, 1 x fortnight for 3 months, 1 x month for final 6 months	• 12 months in total	• Normalising eating behaviours • Working with maladaptive core beliefs	• 6 female psychologists • Post-graduate qualifications in CBT and ED's	• Not described
	Serfaty et al. (1999) Sheffield, U.K.	• Outpatient • Individual • Manualised	• 20 x one hour sessions • 1 x weekly	• 6 months	• Engagement and assessment • Promoting understanding of model • Collaborative case formulation • Weight gain targets • Dietary plans/binge reduction strategies • Address cognitions re: weight gain • Education re: body image distortion • Correct affect misidentification • Work on self-esteem • Schema-level work • Techniques to reduce guilt/anxiety • Relapse prevention	• Mixed professional backgrounds • All trained in CT/CBT for general affective disorders	• Joint supervision on a weekly basis

	Study & Location	Format	Number/length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
RCT's	McIntosh et al. (2005) Christ-church, New Zealand	• Outpatient • Individual • Manualised	• 20 x one hour sessions • 1 x weekly	• Min. 20 weeks	Phase one: • Introduction to CBT, rationale, core techniques (self-monitoring, homework) • Addressing motivation/ambivalence • Normalisation of eating • Weight range goals negotiated Phase two: • Specific skills (challenging dysfunctional thoughts, thought restructuring) • Psychoeducation Phase three: • Preparation for termination • Relapse prevention strategies	• Mixed professional backgrounds • Experienced in treating ED's	• Not described
	Gowers et al. (2007) Multiple sites across North-West England, U.K.	• Outpatient • Individual • Manualised • Programme devised specifically for trial	• 12 sessions • Length and frequency of sessions not described	• 6 months in total	• Aimed to demonstrate association between weight gain and reduced psychopathology • Motivate patient to take the next steps to recovery	• Trained member of the eating disorder team • Pilot experience of the specifically-designed treatment	• Parental feedback • Feedback to the patient every 6 weeks

	Study & Location	Format	Number/length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
RCT's	Pike et al. (2003) New York, U.S.A.	• Outpatient • Individual • Manualised	• 50 sessions • 1 x weekly • Length of sessions not described	• One year	• Maintenance and consolidation of gains • Continued improvement/ recovery • Focus on cognitive and behavioural features associated with the maintenance of eating pathology • Schema-based approach to address self-esteem, self-schema, interpersonal functioning • Relapse prevention	• Doctorate-level licensed psychologists • Experienced therapists • Extensive training and supervision, met competency criteria for delivery of therapy	Monthly monitoring of physical condition
Non-Randomised Clinical Trials	Fernández et al. (1995) Barcelona, Spain and Bad Pyrmont, Germany	• Inpatient basis • Combination of individual and group formats • Multimodal CBT with additional body therapy (psychomotor therapy and video confrontation)	• Not described	• Varied; mean length 20.5 months (SD 5.4 months)	• Restoration of weight • Reintroduction of normal eating • Change eating-disordered thinking • Improve body image/ reduce body dissatisfaction	• Not described	• Not described

	Study & Location	Format	Number/length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
Non-Randomised Clinical Trials	Carter et al. (2009) Toronto, Canada	• Outpatient • Individual • Manualised • Based on that used in Pike et al. (2003)	• Up to 50 x 45 minute sessions • Average number of sessions=38	• One year	Phase one: • Strategies to address behavioral dysfunction pertaining to eating and weight Phase two: • Cognitive restructuring techniques Phase three: • Application of schema-based approach to address a broad range of relevant issues (interpersonal problems, developmental issues, self-esteem)	• Experienced psychologist • Trained by author of treatment manual	• Supervision from author of treatment manual
Non-Comparative Clinical Trials	Leung et al. (1999) Birming-ham, U.K.	• Outpatient • Group • Manualised • Based on existing CBT models for AN (Freeman, 1995; Garner & Bemis, 1982)	• 10 x weekly sessions plus 4 follow-up sessions	• 4 months	• Detailed description of session by session themes provided Overall aims: • Develop motivation for change • Increase knowledge • Teach behavioural techniques to overcome anorectic behaviours • Equip with cognitive skills to challenge maladaptive thoughts • Provide opportunity for mutual support and understanding	• Clinicians experienced in CBT for bulimia	• Not described

	Study & Location	Format	Number/length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
Non-Comparative Clinical Trials	Bowers & Ansher (2000) Iowa, U.S.A.	• Inpatient • Involves group psychoeducation, individual cognitive therapy, group cognitive therapy and cognitive family therapy • Combines CBT and nutritional rehabilitation	• Not stated	• Not stated	• Increase understanding of AN • Identifying, understanding, challenging and altering automatic thoughts/ cognitive distortions • Working with family communication and schemas • Not directed at specific symptoms of AN	• Unit staff (nurses, psychiatrists, family therapist, occupational therapist, activities therapist) all working within cognitive model	• Not described
	Dalle Grave et al. (2007) & Brambilla et al. (2010) Garda, Italy	• Inpatient plus residential day hospital • Mixed individual and group/family work (under 18's) • Transdiagnostic protocol cf. Fairburn & Harrison (2003) adapted for inpatient treatment cf. Dalle Grave (2005), named CBT-MS • Distinguishable from CBT-E by stepped-care approach, multidisciplinary team (vs. single therapist), treatment of more severe cases not manageable by outpatient treatment alone • Multi-step programme dependent on required level of care, from outpatient CBT, intensive outpatient CBT, day hospital CBT, inpatient CBT, post-inpatient outpatient CBT – same theory/procedures at each level	• Number of sessions variable • Length of sessions not reported	• 20 weeks total • 13 weeks inpatient treatment plus 7 weeks day hospital treatment	3 phases: 1. (Weeks 1-4) – Engaging, educating; initiation of weight regain; formulation 2. (Weeks 5-17) – Content dictated by formulation, plus specific modules for self-esteem, perfectionism, mood intolerance, interpersonal difficulties. Additional CB-family therapy module for patients under 18 years 3. (Weeks 18-20) – Focus on maintenance and organising outpatient follow-up	• Multidisciplin-ary treatment team: psychologists, psychiatrists, physicians, dieticians, nurses • Entire team trained in CBT for ED (multidisciplin-ary but non-eclectic team)	• Not reported

	Study & Location	Format	Number/length of sessions	Duration of Therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
Non-Comparative Clinical Trials	Bowers & Ansher (2008) Iowa, U.S.A.	• Inpatient • Individual CT based on Beck, modified for inpatients • Group didactic psychoeducation, and group CT based on Beck within a process-oriented framework • Cognitive family work, focusing on communication and schemas	• Not reported	• Total duration of inpatient treatment 61 days	Aims: • Weight restoration • Focus on change in thoughts, feelings, behaviours (distortions, schemas, core beliefs) • Facilitate emotional expression/ communication • Increase understanding of how interpersonal interactions contribute to disorder	• Nursing staff trained in group and individual CT • Other multidisciplin-ary staff utilising cognitive model	• Not described
	Ricca et al. (2010) Florence, Italy	• Outpatient • Individual • Manualised (Garner, Vitousek & Pike, 1997)	• 40 x hour-long	• Minimum 40 weeks	• Focus on egosyntonic nature of AN and its reinforcing aspects Phase 1: • Introduction of model, rationale, techniques, homework, motivation/ ambivalence, normalized eating, negotiation of weight goal Phase 2: • Development of skills to challenge/restructure thinking Phase 3: • Relapse prevention	• 7 psychiatrists trained in CBT delivered treatment (independent to assessing psychiatrists) • All completed same training programme	• Weekly supervision of therapists • Sessions recorded and audited to ensure quality

	Study & Location	Format	Number/length of sessions	Duration of therapy	Aims/goals of therapy	Therapist characteristics/ qualifications	Supervision/ Feedback to pp's
Non-Comparative Clinical Trials	Byrne et al. (2011) Perth, Australia	• Outpatient • Individual • Manualised CBT-E cf. Fairburn et al. (2003, 2008) • Transdiagnostic, although low-weight received longer treatment period for motivation/ weight gain	• Approx. 40 x 50-minute sessions for low weight; treatment guide allows flexibility re: number of sessions required for each stage	• Variable	Stage 1: • Engaging and educating, creating individual formulation, beginning behavioural change Stage 2: • Review of progress, identifying barriers to change (forming remainder of treatment) Stage 3: • Modification of maintenance processes Stage 4: • Maintenance of gains and relapse prevention	• One of 4 full-time clinical psychologists, but high turnover – 10 therapists in total over study period • Therapists with little training/experience of treating ED patients	• Weekly supervision and team meetings including some review of video material

4.1 Randomised Controlled Trials (RCT's) (Studies 1-5)

4.1.1 Samples

Characteristics of samples are presented in Table 2. Sample size ranged from 25-167, with a total of 316. A range of ages were represented. Of the studies reporting gender (1-4), 94% were female. All studies included anorexia of varying length and subtype. Ethnicity was not reported.

4.1.2 Treatment settings

Three RCT's focused solely on outpatient settings (studies 1, 2, 3); one directly compared inpatient and outpatient treatments (study 4), and one focused on outpatient maintenance following inpatient treatment (study 5).

Table 2. Randomised Controlled Trials.

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
1	Ball & Mitchell (2004)	To investigate the effectiveness of CBT for anorexia in outpatient adolescents/ young adults	• Between groups (treatment type) and within groups (time) comparisons • 2 groups: CBT vs. Behavioural Family Therapy (BFT) • Randomisation to treatment group (process not described)	• Total N=25 (13 CBT, 12 BFT) • Completers=18 (9 CBT, 9 BFT) • All female outpatients • Ages 13-23, all lived with family • CBT group: 7 AN-R, 6 AN-BP • Mean age of CBT group = 18.45 years • 64% had received some sort of treatment prior to study entry • No significant pre-treatment differences between treatment groups on demographics/BMI • DSM diagnosis met; also included subthreshold cases (individuals weighing between 85-90% of normal weight for age and height) • Included both subtypes of AN Specific exclusion criteria: • BMI<13.5 • Currently receiving other treatments • Comorbid physical/psychiatric disorder (not including depression/anxiety secondary to AN) • Current drug/alcohol abuse • Self-harm in last 12 months • Indications for hospitalisation (suicidal ideation, severe physical complications) • Untreated trauma/abuse	• Measured pre, post, follow-up Physical measures: • Primary outcome: weight and menstrual functioning classified as good, intermediate, poor • Weight gain • BMI ED-specific: • EDE – BD, IA • EDI-2 • ABOS • MRS Broader psychopathology: • BDI • STAI Other: • SSES • IBC – EC • Repeated measures ANOVA performed on completers only (21+ out of 25 sessions)	• No significant association between type of therapy and likelihood of completion Physical measures: • Primary outcome: no difference across treatments at post-treatment or follow-up • BMI: significant effect for time (improvement from pre-post treatment) however no effect of treatment type ED-specific: • Significant effect for time (improvement from pre-post treatment) on all measures in both treatment groups, however scores remained in clinical range at follow-up Broader psychopathology: • Significant improvement over time in both groups for anxiety and depression, with changes maintained at follow-up Other: • Significant differences in self-esteem over time (maintained at follow-up) for both treatment groups, although remaining below average • Trends suggestive of greater improvements in family functioning in CBT group, but BFT group showed trend towards less negative communication

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement & Analysis	Key Results of Study
2	Serfaty et al. (1999)	To evaluate the effectiveness of cognitive therapy versus dietary counselling in outpatients	• Predominantly within-groups comparisons (time) • 2 groups: Cognitive Therapy (CT) vs. dietary counselling (DC) • Randomisation to groups (process adequately described)	• Total N=35 (25 CT, 10 DC) • 33 female, 2 male (both in CT group) • Completers=23 (23 CT, 0 DC) • Only new GP referrals (excluding CMHT and interprofessional referrals) • 28 restrictive type (all DC group, 18/25 CT group); 7 in CT group bulimic subtype • No significant pre-treatment differences between treatment groups on key variables, except duration of illness (CT group significantly longer duration) Specific inclusion criteria: • 16+ years of age • DSM diagnosis met and confirmed	• Measures taken at initial assessment and 6 month follow-up Physical measures: • BMI ED-specific: • EDI Broader psychopathology: • BDI Other: • DAS • LCB • Power analysis calculated and reported • Intention to treat analysis alongside multiple statistical tests on paired data (completers) from CT group (paired data not available for DC group)	(CT completers only) Physical measures: • BMI: significant improvement from initial assessment to follow-up ED-specific: • EDI: significant improvement from initial assessment to follow-up Broader psychopathology: • BDI: significant improvement from initial assessment to follow-up Other: • DAS: no significant difference from initial assessment to follow-up • LCB: significant improvement from initial assessment to follow-up • Overall, of CT completers 70% no longer met diagnostic criteria; 87% had increased BMI

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
3	McIntosh et al. (2005)	To compare the effectiveness of CBT, interpersonal psycho-therapy vs. control treatment	• Comparison across 3 groups: CBT vs. Interpersonal psychotherapy (IP) vs. non-specific supportive clinical management (NSCM; control group) • Randomisation to treatment group (procedure not described)	• Total N=56 (19 CBT, 21 IP, 16 NSCM) • Completers=35 (12 CBT, 12 IP; 11 NSCM) • Broad referral base including self-referral Specific inclusion criteria: • Female • 17-40 years old • Primary diagnosis of AN (also included BMI 17.5-19) Specific exclusion criteria: • BMI<14.5 • Current severe major depression • Psychoactive substance dependence • Major medical/neurological illness • Developmental learning disorder/cognitive impairment • Bipolar disorder • Schizophrenia • Chronic refractory course of AN	• Measurement pre-treatment, at 10 sessions and post-treatment • Primary outcome measure: global AN rating (ordinal scale devised by authors based on extent to which pp meets AN criteria) • Secondary outcome measures: - Physical measures (weight, BMI, body fat) ED-specific: • EDE • EDI-2 General psychopathology: • GAF • HDRS • Intent to treat analysis plus multiple statistical tests	• No group differences on likelihood of completion ALL PP's • Primary outcome: NSCM superior to IP; no difference IP vs. CBT; no difference CBT vs. NSCM • Secondary outcomes: no significant difference in physical measures or EDI subscales; Restraint subscale only of EDE significantly different to baseline, with both CBT and NSCM superior to IP, but NSCM superior to CBT; significant differences on GAF, with NSCM superior to both IP and CBT, and CBT superior to IP COMPLETERS ONLY • Primary outcome: NSCM superior to both IP and CBT; no difference IP vs.CBT • Secondary outcomes: no differences in physical measures; significant differences on all EDE subscales - restraint and shape concerns NSCM superior to IP, eating and weight concerns NSCM and CBT superior to IP; EDI drive for thinness NSCM superior to IP; GAF NSCM superior to CBT and IP, no difference between CBT and IP

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
4	Gowers et al. (2007)	To evaluate the effectiveness of 3 treatments for adolescents with AN	• 3 groups: Inpatient, specialist outpatient and general CAMHS outpatient care	• Multicentre • Referral and identification via audit • Total N=167 (57 inpatient, 55 specialist outpatient, 55 treatment as usual) • Ages 12-18 • 153 (92%) female • Modified DSM diagnosis met • Mixed duration and subtype	• Measures taken at baseline and follow-up (1 and 2 years) • BMI ED-specific: • EDI-2 Broader psychopathology: • HoNOSCA & HoNOSCA-SR • MFQ Other: • MRAOS (adjusted for adolescents) • FAD • Intention to treat analysis plus statistical tests	• Treatment adherence varied between groups: inpatient 49.1% adherence, specialist outpatient 74.5%, treatment as usual 69.1% OUTCOMES AT 1 YEAR • All groups substantial improvement on weight, global measures, self-reported psychopathology • No statistically significant differences between groups on any measures • Relatively poor outcome for inpatient group • Fewer than 1 in 5 fully recovered OUTCOMES AT 2 YEARS • Further improvement in all groups • No statistically significant differences in groups on any measure • One third recovered
5	Pike et al. (2003)	To evaluate the effectiveness of CBT as a post hospital-isation treatment for AN	• 2 groups: CBT and nutritional/ dietary counselling (DC) • Randomisation to treatment group (procedure adequately described)	• Total N=33 (18 CBT, 15 DC) • Adults only, ages 18-45 • All pp's had completed inpatient weight restoration treatment prior to study • Rates of restricting vs. binge/purge subtype were not significantly different between groups; in CBT group 56% AN-R, 44% AN-BP • No significant differences between groups on baseline characteristics	• EDE at pre-randomisation and end of therapy • Modified SCID at start and end of therapy • Following first session: 4 self-report questions re: treatment credibility and expectancy • Height and weight measured at pre-randomisation, and weight calculated weekly for BMI • Kaplan-Meier survival analysis computed for time to relapse	• Significantly less relapse in CBT group ($p<.004$) and remained in treatment longer • 53% of DC met criteria for relapse in 1 year follow-up, vs. 22% CBT • Higher voluntary dropouts for DC vs. CBT ($p<.05$) • Higher total dropouts for DC vs. CBT ($p<.003$) • Higher percentage of pp's in CBT group met "good" outcome criteria

Abbreviations/Acronyms used in Table 2: ABOS = Anorectic Behavior Observation Scale; AN-BP = Anorexia Nervosa binge-purge subtype; AN-R = Anorexia Nervosa restrictive subtype; BDI = Beck Depression Inventory; BMI = Body Mass Index; DAS = Dysfunctional Attitudes Scale; EDE = Eating Disorders Examination (BD = Body Dissatisfaction subscale; IA = Interoceptive Awareness subscale); EDI-2 = Eating Disorders Inventory; FAD = Family Assessment Device; GAF = Global Assessment of Functioning; HDRS = Hamilton Depression Rating Scale; HoNOSCA = Health of the Nation Outcome Scales for children and adolescents; IBC = Interaction Behavior Code; LCB = Locus of Control of Behaviour Scale; MFQ = Mood and Feelings Questionnaire; MRAOS = Morgan Russell Average Outcome Scale; MRS = Morgan-Russell Assessment Schedule; SCID = Structured Clinical Interview for DSM-IV Axis I Disorders; SSES = State Self-Esteem Scale; STAI = State-Trait Anxiety Inventory.

4.1.3 Interventions

Three RCT's compared CBT with one other intervention (studies 1, 2 and 5); two compared CBT with two interventions (studies 3 and 4).[1] None of the RCT's included a no treatment/waiting list control group.

CBT varied in terms of format, length, therapist characteristics and provision of supervision. Key themes were similar, although not identical.

4.1.4 Outcome measures

A full list of measures used is detailed in Table 2. Three studies presented data measured at two timepoints: baseline and six-months (study 2), baseline and end of treatment (studies 3 and 5; study 3 reported additional assessment after the tenth therapy session, however results were not presented). Two RCT's provide data from three timepoints: pre- and post-treatment and six month follow-up (study 1), and baseline, one and two year follow-up (study 4).

Four RCT's used a physical measure (weight and/or BMI) as an outcome (studies 1-4). All employed at least one measure of ED symptomatology, and at least one measure of general psychopathology/mood. Two studies used a measure of family functioning (studies 1, 4). A measure of overall functioning was utilised in four studies (studies 1, 3, 4, 5); this was based on Morgan-Russell criteria (Morgan & Russell, 1975; Morgan & Hayward, 1988) and/or idiosyncratic rating tools.

[1] For the purpose of this review, these comparison treatments will be abbreviated from this point, where: BFT= Behavioural Family Therapy; DC=Dietary Counselling; IP=Interpersonal Psychotherapy; NSCM=Non-specific Supportive Clinical Management; IT=Inpatient Psychiatric Treatment; TAU=Treatment As Usual. The specialist outpatient treatment in Gowers et al. (2007) has been listed as CBT as this was its primary approach.

4.1.5 Prominent findings

Adherence/Attrition

Dropout was a factor in all RCT's; reasons included relocation, hospitalisation, treatment refusal and dropout due to perceived improvement. Study 1 reported equal dropouts in each group, with no significant pre-treatment differences between completers and non-completers and no significant association between type and likelihood of completion. Study 3 found a significant difference in mean weight at baseline for completers and non-completers; there were no group differences on the likelihood of completing therapy. In contrast, study 5 reported significantly higher voluntary dropout (before session 10) from dietary counselling (3 out of 15; 20%) compared to CBT (0). Study 4 found higher adherence (74.5%) with specialist outpatient treatment involving CBT, compared to 49.1% for inpatient treatment and 69.1% for non-specialised outpatient treatment. There were only two dropouts in the CT group in study 2, with all of the dietary counselling group disengaging.

Effect of CBT on physical outcomes

Of the RCT's reporting BMI as an outcome, all demonstrated increases following CBT (Table 3). Improvement over time was statistically significant in study 1, however there were no statistically significant differences across groups – similar improvements over time were present in the comparison treatment. Study 2 also reported a statistically significant increase in BMI following cognitive therapy. However due to attrition post-treatment BMI for the comparison group was unobtainable, so it is not possible to compare which treatment showed most gain.

Study 3 did not find increases in BMI over time to be statistically significant, nor were there differences across groups. Actual weight followed a similar pattern.

Study 4 did not analyse the statistical significance of improvement in BMI over time, however found no difference between treatment conditions. Interestingly none of these results demonstrated statistically significant differences between CBT and comparison treatment(s).

Table 3. BMI across time and treatment conditions (RCT's)

Study	Time 1 Mean (SD)	Time 2 Mean (SD)	Time 3 Mean (SD)
Ball & Mitchell (2004)	*CBT* 15.86 (1.77) *BFT* 16.42 (0.73)	*CBT* 18.73 (1.72) *BFT* 18.99 (2.04)	*CBT* 18.55 (1.78) *BFT* 19.65 (2.02)
McIntosh et al. (2005)	*(Total sample)* 17.3 (1.1)	*CBT* 18.1 (1.9) *IP* 18.1 (3.1) *NSCM* 18.8 (2.1)	N/A
Serfaty et al. (1999)	*CBT* 16.1 (1.7) *DC* 17.0 (4.0)	*CT* 17.8 (2.5) *DC* Not Reported Not Reported	N/A
Gowers et al. (2007)	*CBT* 15.3 (1.6) *IT* 15.3 (1.6) *TAU* 15.5 (1.6)	*CBT* 17.9 (2.2) *IT* 17.5 (2.2) *TAU* 18.3 (2.7)	*CBT* 18.7 (2.1) *IT* 18.7 (2.8) *TAU* 19.4 (2.7)

Effect of CBT on ED symptomatology

Study 1 found significant main effects for time on the EDE, ABOS, and IA subscale of the EDI; there were no differences between treatment conditions, and despite improvements over time, scores remained in the clinical range at follow-up. Study 2 also found those in the CT group showed significant changes in EDI scores over time. Study 4 demonstrated improvements from baseline to one and two-year

follow up on all EDI scales, although did not report statistical analysis of scores over time. There were no significant differences between the three treatment conditions on these variables.

In analysing the *total sample*, study 3 showed improvement from baseline to end of treatment with CBT on all subscales of the EDE, however only scores on the Restraint subscale reached statistical significance. Post-hoc tests showed that both CBT and NSCM were each superior to IP. There were also improvements (although not statistically significant) from baseline on all but one subscales of the EDI-2 following CBT. For *completers only*, there were significant differences on all four EDE subscales and on the Drive for Thinness subscale of the EDI; post-hoc tests indicated that NSCM was superior to IP for Restraint and Shape Concerns (EDE) and Drive for Thinness (EDI), while for Eating Concerns and Weight Concerns (EDE), both NSCM and CBT were superior to IP.

Overall, studies suggested some improvement following CBT on measures of eating disordered symptoms, but these differences were not superior to other treatments.

Effect of CBT on general psychopathology and functioning

Study 1 reported a significant decrease on both depression (BDI) and anxiety (STAI) from pre- to post-treatment with CBT (and BFT), with changes maintained at follow-up. Study 2 corroborated results for depression, and reported a significant difference on the BDI for the CT group. Study 3 also found improvements in depression (measured by the HDRS) following CBT (and both other treatments), and study 4 found a reduction over time in symptoms on the MFQ in all treatment groups.

For more global functioning, CBT (plus both other treatments) improved GAF scores in study 3, with a significant difference over time; there was also a significant overall difference among groups, with post-hoc analysis indicating NCSM to be superior to both IP and CBT. Study 1 also found statistically significant improvements over time for self-esteem (SSES) for both CBT and BFT groups, although these remained in the below average range. Study 2 reported improvement (although not significant) in scores on the DAF, and statistically significant improvement on LCB. Study 4 found improvements in both parent and child-rated HoNOSCA scores over time, but no significant differences between groups were found.

In terms of overall functioning, study 1 reported 77.8% of both CBT and BFT groups met criteria for "good/intermediate" outcome following therapy, maintained at follow-up. There were also significant main effects (for time only) on the MRS. Using similar criteria, this pattern was corroborated in study 4, with differences reported in all MRAOS scores over time, although no significant differences were reported between groups. In contrast, study 5 reported a significant difference between groups in meeting Morgan-Russell criteria for "good" outcome (44% in CBT group vs. 7% in DC); however authors' modified criteria for full recovery was not significantly different between groups (met by 17% in CBT group, none in DC).

To summarise, generally all studies reported some improvements in measures of mood following CBT. However, as with other findings, evidence for CBT as superior to other therapies was weak.

Effect of CBT on family functioning

Of the two studies which included family functioning as an outcome, results were unclear. While study 1 found trends towards improved communication in the CBT group from pre- to post-treatment, the BFT group showed greater trends from post-treatment to follow-up, suggesting slower but steadier progress. Changes on the FAD across time and treatment type in study 4 were small and no clear patterns emerged.

4.1.6 Methodological Issues

While the RCT is widely regarded as the "gold standard" in research, certain recommendations for quality (see Appendix B) were not met by these studies. Blinding was not possible: therapists were aware of which therapy they were delivering. Only studies 2 and 5 described the randomisation procedure adequately. Presentation of baseline data and outcome data was inconsistent and often incomplete, which prevented key comparisons from being made. The absence of a no-treatment or waiting list control group (presumably for ethical reasons) questions the status of these studies as 'true' RCT's and made it difficult to be certain that any differences were due to therapy and not other factors (e.g. regression to the mean, general therapeutic contact).

General criticisms of these studies included low sample sizes, increasing the risk of Type I and II errors. Moreover, the inclusion of adolescents and adults within studies made it difficult to disentangle the comparative efficacy of treatments for the younger versus the older anorexic patient.

Characteristics of the samples may have introduced additional biases threatening validity. For example mixed severity and duration of illness was present

in all studies; these variables have been shown to impact on treatability and prognosis (Steinhausen, 2002; Treat et al., 2005). More specifically, the sample in study 4 included inpatients who had already failed outpatient treatment, likely to have had poorer prognosis from the outset; study 1 reported 64% of patients had received some sort of treatment before, raising questions regarding prior exposure confounding results. Study 1 included sub-threshold cases, making comparison with other samples (where all diagnostic criteria were met) difficult.

The different outcome measures employed in the studies made it difficult to find consistent patterns in results. Alterations made to standard outcome measures also shed doubt on validity of such measures, for example modification of the MROS for adolescents in study 4. Also the large number of dependent variables (measures/subscales of measures) studied may have restricted the power to demonstrate differences between treatments.

Attrition may have introduced bias: dropouts have been shown to dilute the effect of treatment (Ellenberg, 1994), and completers from different groups may not be comparable. Analysing only those who completed therapy may undo the benefits of randomisation (thus affecting internal validity). Intention to treat analyses (as used in three RCT's) may also be misleading by virtue of the methods of imputation employed.

Overall, the results of the RCT's suggested that CBT may be more effective than other treatments in reducing treatment dropout. In terms of physical, eating-disordered and broader psychopathological outcomes, it is unclear whether CBT was more effective than other treatments, although CBT did lead to some positive change in these variables in some trials.

4.2 Non-randomised Clinical Trials (Studies 6-7)

4.2.1 Samples

Features of samples are presented in Table 4. In total, the non-randomised trials sampled 126 females with AN, 65 of whom received CBT. In study 6, participants in each treatment condition were matched for age, although ages were not reported. The mean age in study 7 was 24.1 years. Subtype of anorexia was reported in study 7, with 42% diagnosed as AN-Binge-Purge type (AN-BP) and 58% AN-Restricting type (AN-R). Ethnicity and marital status was also reported in study 7, and reflected a range of status and backgrounds; study 6 did not present demographic information, although authors reported no difference between treatment groups on these variables.

Table 4. Non-Randomised Clinical Trials.

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
6	Fernández et al. (1995)	To determine the effectiveness of multi-modal CBT with additional body therapy	• CBT with body therapy vs. BFT with no body therapy • Both within-subjects and between-subjects comparisons	• AN only • Total of 38 inpatients with AN (DSM-III criteria) – matched for age across groups • N=19 in CBT group • All female • Significant difference in height/weight across groups but not BMI • No other significant differences between groups on demographic/ clinical/ psychometric characteristics	Physical: • BMI ED-specific: • EAT, EDI Broader psychopathology: • BDI Other: • Time to reach target weight • Categorical outcome based on EAT score • Measured at pre- and post-treatment, plus 1-year follow-up	• CBT group took significantly longer to reach target weight than BFT group (14.4 months vs. 9.7 months) At post-treatment: • Significant increase in BMI for both groups • Significant reduction in EAT scores, and in 5 of 8 EDI subscales, for both groups • Significant reduction on BDI in both groups • Gains generally maintained for both groups • 'Good' outcome post-treatment (+ follow-up): 32% (30%) CBT, 10% (20%) BFT • 'Intermediate': 42% (30%) CBT, 38% (10%) BFT • 'Poor': 26% (40%) CBT, 52% (70%) BFT
7	Carter et al. (2009)	To compare the rate and timing of relapse for patients receiving one of two maintenance treatments for AN	• Two groups: CBT and maintenance treatment as usual (MTAU) • Between-groups comparison	• AN only • Total N=88 (46 CBT, 42 MTAU) • All pp's had achieved weight restoration (BMI of 19.5) following specialised hospital programme • All females • Mean age=24.1 years (SD=5.1) • 37 pp's (42%) binge/purge subtype; 51 (58%) restricting subtype • Ethnicity, marital status, age of onset, duration of illness all reported	• Assessments before and after initial weight restoration, and at 3 month intervals during maintenance period • Main outcome: time to relapse (DSM criteria: BMI or resumption of bingeing/purging) Secondary outcomes: • EDE, EDI (at baseline) • BMI (at baseline) • BDI (at baseline) • RSES (at baseline)	• 20 dropouts (8 CBT, 12 MTAU) – no significant difference in dropouts Relapse defined as BMI≤17.5 for 3 months: • Time to relapse significantly longer in CBT group than MTAU (p=.05) • At 1 year 24.4% of CBT relapsed vs. 50% of MTAU Relapse defined as above or resumption of bingeing/purging: • Time to relapse significantly longer in CBT group than MTAU (p=.007) • At 1 year 32.5% of CBT relapsed vs.65.6% of MTAU • 65% of CBT vs. 34% of MTAU remained remitted at 1 year

Abbreviations/Acronyms used in Table 4: BDI = Beck Depression Inventory; BMI = Body Mass Index; EAT = Eating Attitudes Test; EDE = Eating Disorders Examination; EDI = Eating Disorders Inventory; RSES = Rosenberg Self-Esteem Scale.

4.2.2 Treatment settings

In study 6, both treatments were delivered on an inpatient basis, but were at different sites. In study 7, both treatments were on an outpatient basis, however all participants had previously received intensive weight restoration treatment (including nutritional rehabilitation and group psychotherapy) on an inpatient or day-hospital basis.

4.2.3 Interventions

CBT formats are summarised in Table 1. While study 6 compared CBT with BFT, study 7 compared CBT with maintenance treatment as usual (MTAU), designed to reflect standard follow-up care.

4.2.4 Outcome measures

While studies utilised some similar measures (both ED-specific and measures of broader psychopathology), study 7 used these only at baseline. The primary outcome in study 7 was time to relapse (defined according to DSM criteria: BMI≤17.5 for 3 months, and/or resumption of bingeing/purging). Time to reach target weight was among outcomes in study 6 along with categorical classification of outcome as 'good', 'intermediate' or 'poor'. Study 6 also included measurement at one-year follow-up.

4.2.5 Prominent findings

Adherence/Attrition

Study 6 did not report attrition, implying all participants remained in treatment. However at follow-up data was available for only 10 participants from

each treatment group. In study 7, a total of 20 participants (22.72%) dropped out of the study, 8 from CBT treatment and 12 from MTAU. There was no significant difference in dropout from the two groups. Follow-up data were still available for the majority of CBT dropouts.

Effect of CBT on physical outcomes

There was a significant increase in BMI over time for both treatment groups in study 6, although participants in the CBT group took significantly longer to reach their target weight.

Effect of CBT on ED symptomatology

In study 6, both treatment groups showed reduced ED symptoms over time, with significant improvement on the EAT and on most subscales of the EDI. When measured categorically (based on EAT score), the CBT group showed better overall outcomes than the BFT group.

Effect of CBT on general psychopathology and functioning

Both treatment groups in study 6 showed a significant reduction in depressive symptoms over time.

Relapse rates

In study 7, 65% of participants who received CBT maintenance treatment remained remitted at one year, compared to 34% who received MTAU. Whether defined in terms of solely BMI or BMI plus eating behaviours, CBT proved

significantly more effective at preventing relapse. In study 6, both CBT and BFT groups partially maintained gains at follow-up.

4.2.6 Methodological Issues

Non-randomised trials are an important alternative to RCT's when the latter are not practically possible or ethically appropriate (Black, 1996). However, by not randomly allocating participants to treatments, the possibility that selection bias and pre-treatment differences may affect results increases. For example in study 7, it is possible that those who consented to further 'active' treatment (CBT group) were also those with greater motivation to change and so may have had a better prognosis than non-consenters. Additionally, authors did not distinguish between participants whose pre-maintenance (weight restoration) treatment was inpatient or outpatient based and therefore inherent differences in setting may have affected participants. Non-randomisation in study 6 meant that the two interventions took place in different countries. Differences in services, training of therapists and cultural differences across these two countries may therefore have influenced results.

Attrition in both studies was potentially problematic. Authors of study 7 were able to minimise missing data with the availability of follow-up data for dropouts. Elsewhere however, it is problematic to treat data for completers and non-completers in the same way (Ellenberg, 1994).

The authors of study 7 recognised that MTAU was not controlled, and does not act as a "no aftercare treatment" alternative. In fact 97.1% of the MTAU group sought at least one form of follow-up treatment (individual therapy, physician/ dietician advice, support groups). This was an obvious confound. Another potential confound lay in the fact that the CBT group simultaneously received fluoxetine (for relapse prevention) or placebo, which may have had a direct (in the case of the

active drug condition) or indirect (via expectancy effects) impact on treatment effectiveness.

Employing a categorical classification of outcome based on the results of a single measure (study 6) provides a rather one-dimensional view of what constitutes 'recovery' in AN, omitting aspects of broader functioning that may be important to consider when deciding a treatment's effectiveness. Only using measures at baseline (study 7) did not allow comparisons on key variables to be made.

Although authors in study 6 sought to investigate whether the additional element of body therapy was effective, comparing CBT with body therapy with BFT with no body therapy was not a reliable comparison, as it made it impossible to say that body therapy itself was the differential variable between treatments. Duration of treatment for each group varied dramatically.

To summarise the non-randomised clinical trials, results suggested that CBT led to greater improvements compared to MTAU in an outpatient setting once weight was restored. However for inpatients evidence suggested that although CBT was effective, it was not significantly more effective than alternative treatments.

4.3 Non-comparative Clinical Trials (Studies 7-14)

4.3.1 Samples

Sample characteristics are summarised in Table 5. Several studies sampled mixed diagnoses (including sub-threshold AN) however this review reports only on participants with AN within those samples.

Table 5. Non-Comparative Clinical Trials.

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
8	Leung et al. (1999)	To investigate the effectiveness of group CBT for AN, and whether core beliefs predict outcome	• Pre-post within-groups comparison	• AN only • Total N at start of study=30 (completers=20) • All female • Age range 17-50 • Mean age 26 (SD=7.66) • 6 (30%) binge/purge subtype; 14 (70%) restricting subtype	• YSQ pre-therapy (used as predictors of changes in anorectic cognitions/ symptoms) Measures taken pre and post therapy: • EAT-26 • MAC	Eating behaviours/ cognitions: • EAT-26 Total Score: pre-treatment mean 45.3 (SD=14.4), post-treatment 43.1 (SD=12.6) (not significant); no significant differences from pre-post treatment on any subscale • MAC Total Score: pre-treatment mean 110 (SD=22.6), post-treatment 108.4 (SD=24.6) (not significant) Association of core beliefs with changes in above: • 'Entitlement' scale of YSQ significantly associated with changes on oral control scores (EAT-26), r=-.58, p<.01 • When adjusted no significant associations
9	Bowers & Ansher (2000)	To examine cognitions (automatic thoughts and schemas) in AN, before and after treatment	• Within-groups comparison	• AN only • 32 Caucasian adults • 29/32 (91%) female • 19/32 AN-R, 13/32 AN-BP • Mean age 27.8 years • Mean education, days in hospital, age of onset, duration of illness, previous hospital admissions provided • AN diagnosed by DSM-IV criteria	Physical: • BMI ED-specific: • MAC Broader psychopathology: • Not measured Other: • ATQ, YSQ • Psychometric measures administered within 3 days of admission and approx. 7 days prior to discharge	• BMI increased from (sample mean) 16.7 at admission to 20.5 at discharge (statistics not calculated) • Significant reduction in ATQ scores following treatment • Significant reduction in all 3 subscales of the MAC • Significant reduction in scores on 6 of 16 subscales of YSQ – Abandonment, Mistrust/Abuse, Social Isolation, Defectiveness/Shame, Social Undesirability, Unrelenting Standards

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
10	Dalle Grave et al. (2007)	To investigate the effect of inpatient CBT on temperament and character of ED patients	• Pre-post comparison • 3 diagnostic groups *(NB: only AN group reported for purpose of present paper)*	• AN, BN, EDNOS sub groups • Total N=149 • 136 females, 13 males • Adults and adolescents • Active substance abuse or psychosis excluded AN group: • N=60 (40.3% of total sample) • Mean age 24.6 years, age of onset 16.9 years, 2.5 previous inpatient admissions • 12 did not complete full 20 weeks Specific exclusion criteria: • Active substance abuse • Schizophrenia/ psychosis	• BMI Primary outcome measure: • TCI on first day of admission and last day of treatment Secondary outcomes - ED-specific: • EDE 12.0D Broader psychopathology: • BDI	• Significant treatment effect on TCI subscales of Harm avoidance, persistence, self-directedness, self-transcendence • Mean BMI increased significantly from 14.5 on admission to 19.6 at discharge ($p<.001$) • Significant reduction in reporting of objective and subjective bingeing episodes, frequency of self-induced vomiting, laxative misuse, excessive exercise • Significant reduction on scores for restraint, eating concern, weight concern and shape concern subscales • Significant reduction in BDI scores
11	Bowers & Ansher (2008)	To assess changes in ED and general psycho-pathology following inpatient treatment, and at one-year follow-up	• Within-groups comparison across three timepoints	• AN only • Total N at start of study = 32 • 100% Caucasian • 29 (91%) female • 3 (9%) male • Mean age 27.8 years • Average 14.1 years' education • Mean age of onset of AN: 18.2 years • Mean duration of AN: 9.6 years • Average hospital stay at recruitment: 63.7 days • 13 (40%) binge/purge subtype; 19 (60%) restricting subtype	Measures taken at 3 timepoints: • Within 3 days of admission • Approximately 7 days prior to discharge • At one-year post-discharge. ED-specific: • EAT-26, EDI-2 Broader psychopathology: • MMPI-2, BDI, HRSD • BMI also measured at admission and discharge	Following treatment: • Significant reduction on EAT scores • Significant differences on 8 of 11 EDI-2 subscales • Significant differences on 5 of 13 MMPI-2 scales • Significant differences on BDI and HRSD scores • Mean BMI 16.7 at admission, increased to 20.5 at discharge At follow-up: • Significant change sustained on the EAT, 5 of 11 EDI-2 subscales, the Depression subscale of the MMPI-2 and the BDI

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
12	Brambilla et al. (2010)	To see whether CBT modifies the secretion of central DA, NE and 5HT and if physical/ psychological effects of CBT correlate with these changes	• Mixed within-groups (specific diagnoses) and between-groups comparison • Random recruitment	• AN-R, AN-BP and BN subgroups • Total sample N=50; AN=28 (14 AN-BP, 14 AN-R) – *remainder BN (not reported here)* • All aged 18+ • All female • AN-R mean age 27 years; AN-BP mean age 22 • AN-R mean age of onset 16 years; AN-BP 18 years • AN-R mean duration of AN 125.8 months; AN-BP 119.5 months • All previously received various outpatient psychotherapy and/or pharmacotherapy (including CBT) with no benefit Specific exclusion criteria: • Medical conditions not linked to AN (endocrine or metabolic disorders, epilepsy, head injury) • Substance abuse • Comorbid psychiatric disorders	Physical measures taken pre and post CBT: • Blood plasma and platelet tests • Psychological measures administered pre and post CBT ED-specific: • EDE 12.0D Broader psychopathology: • BDI • TCI • STAI • BIS-11 • RSES	Physical: • AN-R group pre-treatment BMI 13.7 rising to 19.4 post-treatment • AN-BP group pre-treatment BMI 16.5 rising to 20.0 post-treatment • Both BMI increases reached significance • No significant changes in DA, 5HT or NE after CBT in either AN subtype Psychological: • Significant improvements for both AN subtypes on ED symptoms, depression, anxiety, impulsiveness, self-esteem at the end of CBT

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
13	Ricca et al. (2010)	To evaluate the effectiveness of individual CBT for threshold and sub-threshold AN, and identify potential predictors for outcome	• Both within groups (measurement at different timepoints) and between groups (threshold and subthreshold AN) *Note: subthreshold AN (N=50; met all DSM criteria except amenorrhea or BMI >17.5)not included in review*	• Subthreshold and clinical AN subgroups • Total N=103 • 53 diagnosed AN (diagnostic interview for DSM-IV criteria); mean age 27.48 Specific inclusion criteria: • Female • Aged 16-45 Specific exclusion criteria: • BMI <14 • Severe physical conditions • Comorbid major depression, bipolar, schizophrenia, suicidal ideation, substance dependence • Illiteracy, cognitive impairment • Prior psychotherapeutic treatment for ED • Illness duration <1 year	• Measures taken at the beginning and end of treatment, and three-year follow up • BMI ED-specific: • EDE-Q-12 • BUT General psychopathology: • BDI • STAI • SCL-90-R	• 10/53 AN patients (18%) withdrew/did not complete treatment; 2 were not available for follow-up At end of treatment: • 19 (37%) recovered (did not meet DSM criteria for ED), 12 (22%) were sub-threshold, 22 (41%) remained AN • Significant increase in BMI from baseline to end of treatment (maintained at follow-up) • Significant reduction in scores on BDI, EDE-Q (total score) and each subscale (maintained at follow-up) • Significant reduction in BUT GSI At 3 year follow-up: • 1 pp recovered, 3 changed to subthreshold AN • BUT GSI significant increase

Study ID	Author(s) & Date	Aims of Study	Design	Sample/ Participants	Outcome Measurement	Key Results of Study
14	Byrne et al. (2011)	To examine the effectiveness of CBT-E for ED's in the community (including low weight patients, excluded from previous CBT-E trial)	• Naturalistic open effectiveness trial • Mixed AN, BN, EDNOS	• AN, BN, EDNOS subgroups • Total N=125 • AN N=*34 (BN N=40, EDNOS N=51)* • Diagnostic groups similar on baseline characteristics except AN lower min/max adult weights and more likely prior inpatient admission AN sample: • Mean age 26.82 years • 32 (94.1%) female • 88.2% White • Mean duration of ED 10.13 years • Marital and occupational status reported Specific inclusion criteria: • 16 years+ • Meet DSM-IV diagnostic criteria Specific exclusion criteria: • Acutely suicidal or psychotic • Current substance misuse • BMI<14 (inappropriate for outpatient treatment) • Mean waiting time of 22.24 weeks between referral and treatment	Authors' primary outcomes: • Categorical measures of recovery (*full remission, partial remission,* or *not recovered* – dependent upon BMI, ED behaviours and DSM criteria) • EDE-Q-12 *(outcome positive if post-treatment global score <1 SD above community norm)* • EDE-Q criteria above plus BMI≥18.5 Broader psychopathology: • RSE • EDI-Perfectionism subscale • DTS • IIP-32 • DASS • QLESQ-SF Other: • Ratings of treatment credibility – CEQ, following assessment/before first treatment session • Intent to treat analysis plus analysis of completers only	• All groups indicated treatment was credible and expected treatment to be useful • Dropout for AN 50% (vs. 35% BN, 37.3% EDNOS) Intent to treat sample: • AN sample achieving full remission = 6/34 (17.6%) • Full or partial remission = 6/34 (17.6%) • EDE-Q global score criteria: 13/34 (38.2%) • EDE-Q plus BMI criteria: 3/34 (8.8%) Completers only: • AN sample achieving full remission = 6/12 (50%) • Full or partial remission = 6/12 (50 %) • EDE-Q global score criteria: 8/12 (66.7%) • EDE-Q plus BMI criteria: 3/12 (25%) • Both completers and total sample: significant improvements (medium-large effect sizes) over time on most ED and general measures, however results by diagnosis not presented

Abbreviations/Acronyms used in Table 5: ATQ = Automatic Thoughts Questionnaire; BDI = Beck Depression Inventory; BIS = Barratt Impulsiveness Scale; BMI = Body Mass Index; BUT = Body Uneasiness Test; CEQ = Credibility/Expectancy Questionnaire; DASS = Depression Anxiety and Stress Scales; DTS = Distress Tolerance Scale; EAT = Eating Attitudes Test; EDE = Eating Disorders Examination; EDI = Eating Disorders Inventory; HRSD = Hamilton Rating Scale for Depression; IIP = Inventory of Interpersonal Problems; MAC = Mizes Anorectic Cognition Scale; MMPI = Minnesota Multiphasic Personality Inventory; QLESQ-SF = Quality of Life Enjoyment and Satisfaction Questionnaire-short form; RSES = Rosenberg Self-Esteem Scale; SCL-90-R = Symptom Checklist; STAI = State-Trait Anxiety Inventory; TCI = Temperament and Character Inventory; YSQ = Young's Schema Questionnaire.

Sample size (AN only) ranged from 28-60. A range of ages were represented, with adolescents included in 4 studies. 3 studies reported all female samples. Ethnicity was reported in 3 studies (2 of these used the same sample to produce two papers); of these, samples were predominantly White/Caucasian.

4.3.2 Treatment settings

Studies 9 and 11 were conducted in inpatient settings, while studies 8, 13 and 14 took place in outpatient settings. Studies 10 and 12 took place on an inpatient plus residential day hospital basis.

4.3.3 Interventions

CBT programmes are described in Table 1. Although all programmes were described as CBT, there were differences across treatments, with the exception of studies 9 and 11 (same sample and treatment protocol) and 10 and 12 (same manualised protocol).

The treatment programme in study 8 was delivered on a group basis, while studies 13 and 14 involved one-to-one therapy. Studies 9-12 involved a combination of individual (one-to-one), group and family elements.

4.3.4 Outcome measures

A full listing of measures utilised is presented in Table 5. All but one study measured BMI. All employed at least one measure of ED symptomatology, and at least one measure of general psychopathology. Study 12 took additional physiological measures. Study 14 included a categorical rating (based on scores on a validated measure) of outcome and a more qualitative measure of participants'

belief in the credibility/expectation of therapy. The majority of studies took measures pre and post-treatment; studies 11 and 13 also included measurement at follow-up (one and three years respectively).

4.3.5 Prominent findings

Adherence/Attrition

In studies 9 and 11 (same sample; inpatient treatment) all 32 participants finished treatment and completed pre and post measures, however at follow-up (study 11 only) return rate was only 50%. No significant differences were present on demographic variables between participants who did/did not provide follow-up data.

Attrition amongst outpatient/mixed inpatient and outpatient treatments varied. Ten participants (33.33%) failed to complete treatment in study 8. Analysis of differences between completers and non-completers showed no significant differences on demographic or psychometric variables. 12 of the AN participants (20%) in study 10 did not complete the full programme. In study 13, 18% of AN patients withdrew/did not complete treatment; 2 were not available for follow-up. In study 14 dropout amongst AN was 50%. Study 12 did not report dropouts.

Effect of CBT on physical outcomes

Of those studies which reported BMI, all reported increases from pre- to post-treatment. Significant increases were reported in studies 10, 12 and 13; no statistical tests were performed in studies 9 and 11. Study 14 reported a non-significant increase in BMI for the overall group, but did not report on AN

individually. Study 12 further subdivided into AN subtype, finding significant increases for both AN-R and AN-BP (with no difference between subtypes).

Effect of CBT on ED symptomatology

Amongst the studies conducted on an outpatient basis, results were mixed. Study 8 reported small improvements on ED measures but these did not reach statistical significance. Study 13 (using different measures) did find significant improvements post-treatment, with some gains maintained at follow-up; using one of the same measures, study 14 also found significant positive change in ED symptoms, however this was reported for the whole group (not specifically AN).

Inpatients in study 9 demonstrated significant improvements in terms of anorexic cognitions at post-treatment. Study 11 reported significant improvements on eating attitudes, plus on 8 of 11 subscales of another ED measure at post-treatment, with some of these gains maintained at follow-up.

Studies 10 and 12 (combination of inpatient and day hospital treatment) also reported significant improvement in ED symptomatology (episodes of ED behaviour and scale scores). Study 12 further subdivided into AN subtype, with both subtypes showing significant improvements.

Effect of CBT on general psychopathology & Functioning

Of 4 studies measuring depression, all found significant reductions following treatment. Study 11 suggested these gains were maintained at follow-up. On a broader measurement of psychopathology, study 13 reported significant reductions in global distress following treatment.

Study 14 also reported significant reductions in anxiety, stress and interpersonal problems, and significant improvements in self-esteem and quality of life, although these results were for the whole sample (AN results were not reported separately).

Study 9 further reported significant reductions in negative automatic thoughts and maladaptive schema. Study 10 found pre-post treatment differences on temperament variables of harm avoidance, persistence, self-directedness, self-transcendence independent of ED diagnosis. Study 11 also found significant pre- to post-treatment differences on the personality traits of Hypochondriasis, Depression, Hysteria, Psychasthenia and Social Isolation.

4.3.6 Methodological Issues

General criticisms of the size and characteristics of the sample made to other studies in this review apply and may affect generalisability. These individual trials all investigated the effectiveness of CBT alone, with no comparison treatment. While adding significantly to the evidence base, such studies are less robust in singling out specific treatment effectiveness.

The short duration of therapy in study 8 was unlikely to have enabled significant progress to be detected. While few sessions may be useful in treating less complex difficulties (e.g. the 6-8 sessions recommended by NICE to treat mild-moderate depression and anxiety), AN is likely to require extended intervention. Treatment length in study 10 was variable, making comparisons difficult.

Treatment programmes in studies 9-12 were a combination of elements (individual and group work, plus some family work), making it impossible to examine the impact of these individual components on outcome.

Consistency in programme delivery/content within studies may also be an issue. Study 13 acknowledged limited ED experience/training and high staff turnover, which may have influenced treatment quality. Study 12 included a series of specific, optional modules in the treatment programme, meaning not all participants received exactly the same treatment. Few studies explicitly reported supervision arrangements, making it difficult to ascertain therapist adherence to treatment protocols.

Again, the choice of outcome measures varied, making comparisons across studies difficult. Study 9 acknowledged that some measures had not been validated in ED populations. Despite several treatment programmes incorporating family work, no measure(s) of family functioning were included.

In summary, the non-comparative trials suggested that participants receiving CBT (both as inpatients and outpatients) made some progress in terms of weight gain/BMI and reduction in broader psychopathology, however there were mixed results in terms of ED-specific symptomatology.

5. **Discussion**

The literature reviewed in the current paper suggested a partial role for CBT in the treatment of AN. However there were inconsistencies in results across studies as to the most effective format for treatment, and also limited evidence for its superiority over other treatments. Key findings of the reviewed studies are summarised below, followed by a discussion of overall quality issues and finally the potential implications arising from this review.

5.1 Summary & discussion of key findings

CBT and treatment acceptance/adherence

Of the seven studies where CBT was compared to other treatments (i.e., the RCT's and non-randomised clinical trials), four suggested that dropout in CBT was lower than in comparison treatment(s). This included dietary counselling (studies 2 and 5), inpatient psychiatric treatment and non-specialist outpatient treatment (study 4), and MTAU (study 7). Where no improved completion for CBT was suggested, comparison treatments were IPT and non-supportive clinical management (study 3) and BFT (studies 1 and 6). From this, it may be tentatively concluded that CBT might prove more effective than certain therapies in terms of reducing dropout.

CBT and ED symptomatology

In terms of eating disordered symptoms (including standardised measures and weight/BMI) improvements over time with CBT were demonstrated in all but one of the reviewed studies. This was true for both inpatient and outpatient, individual and group formats. The single study (study 8) which failed to show improvement on ED symptomatology following CBT was the only study in which

treatment was delivered on an outpatient group basis (other studies demonstrated positive results for outpatient 1-1 and inpatient group treatment). However this study had several methodological issues (discussed previously).

In the majority of studies which compared CBT to other treatment(s), CBT did not demonstrate superiority over comparison treatment(s). In fact results of study 3 suggested a role for non-specific supportive clinical management over CBT, and proposed the most important factors (besides psychoeducation and normalisation of eating) to be empathy, regard, the therapeutic alliance and increasing autonomy. These factors have long been proposed to be the 'core conditions' for change in psychotherapy, and may explain the positive results seen in both the CBT and alternative treatments.

Improvements maintained at follow-up (where measured) and specific studies focusing on weight-restored patients also suggested that CBT may be useful for preventing relapse into AN.

CBT and broader symptomatology

In general, there was evidence for positive effects of CBT on non-eating disordered psychopathology. Improvements following CBT were noted in terms of depressive symptoms, self-esteem and negative thinking. Interpersonal difficulties and global ratings of mood also improved. Of those studies measuring anxiety, results were less clear; while studies 1 and 12 found improvement from pre-post treatment, in study 13 state and trait anxiety were the only variables which did *not* show improvement. Results using an alternative anxiety measure (study 14) corroborated significant positive effects.

These results are perhaps not surprising considering the effectiveness of CBT for these conditions individually (NICE, 2009, 2011). However in the reviewed studies CBT was not superior to other treatments (where compared), suggesting that while potentially useful, CBT was not unique in its capacity for improving broader psychopathology.

5.2 Overall quality

Much research in AN is affected by similar difficulties present here. The rarity of AN makes it difficult to recruit samples of adequate size to enable meaningful comparison and calculation of power or effect size. Furthermore, with the high risk of medical complications, it is often difficult to maintain sample size and, as studies discussed in this review demonstrated, dropout in AN treatment remains high.

There were a disproportionate number of female participants in the reviewed studies. Some studies explicitly excluded males. While these proportions may be seen as reflecting prevalence of AN among the sexes, failure to include male participants prevents exploration of potential gender differences in AN. While some research suggests similar prognoses and response to treatment for men and women with EDs (Woodside, 2002), others suggest that presentation differences mean that treatments may need to take gender-specific factors into account (Andersen & Holman, 1997). Further research is needed to evaluate outcomes for men with AN.

Some studies included adolescents and adults in the same sample. This is interesting given that current recommendations suggest family therapies should be the 'treatment of choice' for children with AN (NICE, 2004). Services are often structured to reflect differences in treatment approaches for adults and children.

Further research may seek to investigate whether there are differences in response to CBT between adults and children/adolescents.

Programme content and length was not directly comparable across studies. Apparent inconsistencies in the effectiveness of CBT may in fact be manifestations of differing programme content. Not all studies described therapist qualifications/experience, which may have affected variability of interventions. Prior exposure to therapy was not controlled for in most studies, with many reporting previous hospital stays/failed treatments amongst patients.

Inconsistencies in results may also reflect variation in the outcomes of interest (and specific measures) selected by researchers. This made it difficult to synthesise results, and suggests differences in what experts consider to be relevant outcome indicators in AN.

Due to the physical risks of AN, psychological therapy needs to occur alongside weight restoration. As such it is impossible to separate gains made as the result of purely CBT from gains that nutritional rehabilitation, and subsequent improvements on both physical and mental functioning, achieves (Goldbloom & Kennedy, 1995). Similarly, the ethical constraints of having a control (no treatment) group prevents verification of a specific effect of CBT.

5.3 Clinical Implications & suggestions for further research

Recommendations based on inconclusive evidence are difficult to make, however some promising results emerge. Firstly, CBT approaches may be useful for increasing adherence to treatment in AN. Given dropout from AN treatment is typically 50% (Lowe et al., 2001) this may prove valuable. Further analysis of

specific factors which may be responsible for this apparently improved adherence are worthy of study.

Secondly, although the evidence reviewed does not suggest superiority over other treatments, CBT does appear to demonstrate some positive results in terms of physical, ED-specific, and wider psychological outcomes, and for relapse prevention. A more longitudinal approach with extended periods of follow-up would be useful in future research to evaluate the maintenance of treatment gains.

Differences between AN subtype were little explored in the reviewed studies. While post-hoc analysis in study 2 suggested no differences in outcome for AN subtype, study 13 found differences between restricting and binge/purge subtypes (albeit in a combined clinical and sub-clinical AN sample), with different treatment responses in these groups, including a higher rate of treatment resistance in restricting compared to AN binge/purge subtype. There may be different underlying factors in the development and maintenance of anorexic subtypes, which may have implications for their treatment. Indeed, research suggests those who have AN with bulimic features are less likely to engage in treatment and have poorer prognosis (Hsu, Crisp & Harding, 1979; Steiner, Mazer & Litt, 1990). These differences warrant further investigation.

Measurement of outcome in the reviewed studies was entirely quantitative (and/or based on categorical diagnostic criteria). The inclusion of more qualitative measures (e.g. interpersonal, social and systemic factors) in future may highlight interesting differences between patients and professionals in terms of what is important in 'recovery' from AN.

Previous papers have suggested various hypotheses for the apparent 'mismatch' between theory and effectiveness in practice of CBT for AN. Johnson,

Tsoh and Varnado (1996) discussed the limiting effects of physical symptoms (and cognitive sequelae) associated with low body weight. Similarly, McIntosh et al. (2005) suggested that the amount of psychoeducational material and extensive skills acquisition required in CBT may be difficult due to the cognitive rigidity of AN patients. Perhaps these cognitive factors account for the slow progress of AN patients in therapy, and for the apparent limited improvement in short-term outcomes. An implication for treatment trials may be to extend measurement and follow-up periods. Clinical implications include lengthening treatment to take this slow progress into account; while Fairburn, Cooper and Shafran (2003) suggest extended programme length for AN, treatments should also 'pitch' content and material appropriately depending on patients' stage of treatment to ensure maximum effectiveness.

Various formats of CBT were utilised in the reviewed studies. This affirms what Goldstein et al. (2011) refer to as a "lack of commitment to a single treatment modality for AN" (p.29). This makes it difficult to conclude whether individual CBT (alone or as part of a wider treatment package) or group CBT is most effective. Further research should seek to discover the most effective treatment format for AN.

5.4 Limitations of review

This review aimed to identify, synthesise and critically appraise the recent literature on the effectiveness of CBT for the treatment of AN. Although a systematic approach was followed, the search method employed for this review (e.g. key words used and inclusion/exclusion criteria) may have overlooked potentially relevant material. In selecting only papers in English, there may have been a biased focus on Western populations. The question the review sought to answer lent itself to quantitative enquiry, discounting potentially relevant qualitative material.

Unpublished work (theses, conference proceedings, material in press) excluded due to availability may have been a useful complement. In choosing to present a 'levels of evidence' focus, certain designs were not considered for inclusion in the present review. Well-designed individual case reports may be a useful adjunct to the evidence base. For example a single case study by Karbasi (2010) demonstrated a positive effect of CBT for AN, using multiple measures of outcome (including subjective/qualitative ratings) across multiple time points.

5.5 Conclusion

In line with previous reviews, this review has demonstrated that there is inconsistent information on the efficacy of CBT for AN. Despite the lack of clear best practice standards for AN, professionals in the field believe that CBT remains a defensible candidate in treatment trials given the obvious risks of deferring treatment until the evidence base is strong enough to draw more solid conclusions (Vitousek, 2002).

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Empirical Paper

The Development and Exploration of the Experiences of Humiliation Scale (EHS) in an Eating Disordered Population.

The Development and Exploration of the Experiences of Humiliation Scale (EHS) in an Eating Disordered Population

1. Abstract

1.1 Objective

While the construct of shame has been found to be significant in the development and maintenance of eating disorders, the construct of humiliation remains unexplored. The present study aimed to develop the Experiences of Humiliation Scale (EHS) within an eating disordered population, in order to explore its psychometric properties and application in this difficult to treat client group.

1.2 Method

The EHS was completed by 56 adults with an eating disorder. Scores were compared with a non-clinical population. Participants also completed other measures including the Humiliation Inventory (HI), Internalised Shame Scale (ISS) and Other As Shamer Scale (OAS), and Stirling Eating Disorders Scales (SEDS) for validity analysis using correlations. A smaller sample of participants completed the EHS for a second time in order to explore its test-retest reliability. Reported levels of humiliation across different eating disorder diagnoses and presentations were investigated. Preliminary exploration of the scale's component structure within the clinical sample was conducted.

1.3 Results

Levels of humiliation reported by the eating-disordered sample were significantly higher than those reported by a non-clinical population. The EHS demonstrated good internal consistency and test-retest reliability. The EHS demonstrated high convergent validity when correlated with an existing humiliation measure. Analysis of divergent validity suggested the EHS was similar to, but separable from measures of the related construct of shame. Preliminary analysis of the scale's component structure within the eating disordered sample suggested a similar underlying structure to a larger, non-clinical population. There were no differences in reported levels of humiliation across different eating disorder diagnoses/presentations.

1.4 Conclusions

Although limited by the small sample size, results of the current study suggested that humiliation appears to be important in eating disorders, and the EHS may be a useful tool for its measurement. Study limitations and suggestions for future research were provided. Implications of the findings were discussed.

2. Introduction

2.1 Clinical Context

The eating disorders consist of a range of syndromes with physical, psychological and social features and consequences. Prevalence rates suggest that approximately 1 in 250 females, and 1 in 2000 males will experience Anorexia Nervosa (AN), with figures around five times higher for Bulimia Nervosa (BN) (National Institute for Health and Clinical Excellence [NICE], 2004). Figures for the "atypical" eating disorders are even higher, and incidence rates of all the eating disorders are likely to be underestimates due to the inherent "secrecy" involved (Hoek, 2002). Although prevalence rates are low compared to other psychiatric disorders, the complexity of these disorders and their physical and psychological sequelae means that prognosis remains poor for many.

The literature on aetiology in the eating disorders is extensive, and suggests a multitude of factors are involved in both the development and maintenance of these disorders. A meta-analysis by Stice (2002) identified features including negative affect, body dissatisfaction, perfectionism, perceived pressure to be thin and thin-ideal internalisation as potential risk and maintenance factors for eating pathology. The current paper focused on particular types of negative affect as potential factors involved in the development and maintenance of eating disorders. More specifically, this paper focused on the possible association of eating disorders with the experience of humiliation.

2.2 Self-Conscious Emotions: Shame

The role of what have been termed "self-conscious emotions" (Tangney & Fischer, 1995), including shame, guilt, pride and embarrassment, in psychiatric

disorders has received increasing attention in recent years. The construct of shame in particular has been recognised as destructive and highly pathogenic (Lewis, 1987a; Kaufman, 1989; Gilbert, 1999). Although commonly referred to as an affect, shame has multiple components including social, cognitive and behavioural aspects (Gilbert, 1999). Gilbert (1997a; 1999) made a critical distinction between external and internal shame. *External* shame involves being exposed to negative judgements made by others, and is thus dependent on the importance the self places on the views of others. *Internal* shame involves a more subjective judgement of one's worth based on some internalised standard. This distinction has since had important consequences in terms of how to explore and measure this complex construct.

Shame has been found to be associated with psychopathology including depression (Brown, Harris & Hepworth, 1995; Gilbert, Pehl & Allan, 1994; Tangney, Wagner & Gramzow, 1992), social anxiety (Beck, Emery & Greenberg, 1985; Gilbert & Trower, 1990) and relationship problems (Gilbert, Allan & Goss, 1996). Shame has also been linked to the eating disorders, and has been found to be a strong predictor of severity in both anorexic and bulimic symptomatology (Burney & Irwin, 2000; Troop, Allan, Serpell & Treasure, 2008). Frank (1991) and Burney and Irwin (2000) suggested that shame specifically related to eating was particularly high in individuals with eating disorders, and that this was a stronger predictor of eating pathology than global shame. More recently, Keith, Gillanders and Simpson (2009) investigated the factors which contributed to shame in an eating disordered population, and found (of several variables measured) that negative peer interactions and schema relating to social isolation explained the largest amount of shame. Experiences of poor maternal bonding, and eating pathology were also found to contribute to reported levels of shame. Goss and Gilbert (2002) and Goss and Allan

(2009) have offered further conceptualisations of the role of shame in the development and maintenance of eating pathology.

2.3 Humiliation

Another construct which may belong to the family of self-conscious emotions, but which has received comparatively little attention in the psychiatric literature is *humiliation*. Although there are some overlaps with shame, some salient differences have been identified which make this a construct worthy of study in its own right (for an overview of the similarities and differences of these constructs, see Figure 1). Key differences include the relative roles of the other and the self in the humiliation experience.

Figure 1. Similarities and differences in shame and humiliation (Gilbert, 1999).

SHAME	**HUMILIATION**
Common features	
Sensitivity to put-down/injury Desire to protect the self Increased arousal Complex affects Rumination	
Differences	
Internal attribution	External attribution
Self as bad/flawed	Other as bad
Internal sense of inferiority	Internal sense of inferiority not necessary
Heightened self-consciousness	Greater focus on the other
No obvious sense of injustice	Strong sense of injustice
No strong desire for revenge	Strong desire for revenge

Elison and Harter (2007) define humiliation as "a highly intense emotional reaction to the context of having been lowered in the eyes of others" (p.314). Unlike shame, which may be embedded in self-judgments of inferiority or inadequacy, humiliation involves an *interaction* where one feels debased or degraded by *a more powerful other* (Miller, 1988; Gilbert, 1999). Unlike embarrassment (described as a more surface-level experience), humiliation involves damage to one's core identity and sense of being (Hartling & Luchetta, 1999). As described by Klein (1991):

> Shame is what one feels when one has failed to live up to one's ideals for what constitutes suitable behavior in one's eyes as well as the eyes of others. Humiliation is what one feels when one is ridiculed, scorned, held in contempt, or otherwise degraded for what one is rather than what one does. People believe they deserve their shame; they do not believe they deserve their humiliation (p.117).

Klein (1991) further reported on the powerful impact of experiences of humiliation, describing the consequences for the 'victim' as "…feeling wiped out, helpless, confused, sick in the gut, paralyzed, or filled with rage… as if they were made small, stabbed in the heart, or hit in the solar plexus" (p.96). The size of the audience, and the importance and magnitude of the devaluation are said to mediate the intensity of the humiliation (Elison & Harter, 2007), and the impact is enduring: "No matter how many years have passed, the experience remains vivid and fresh in their minds" (Klein, 1991, p.96). Stamm (1978) and Gilbert (1999) discussed the powerful conditioning effects of humiliation on the 'victim'. Furthermore, Hartling and Luchetta (1999) suggested that the fear response evoked in *witnesses* of humiliation may equal that of the victim.

As well as the experience of humiliation leaving the 'victim' feeling exposed (having been found deficient in some way), attacked and reduced in size, Lazare (1987) wrote that humiliation is likely to lead to an avoidant response (i.e., wanting to hide or disappear). Humiliation may also provoke a desire for revenge (Gilbert, 1999). Discussing humiliation as "the traumatic emotional state triggered by the narcissistic injury of disrespect" (p.657), Trumbull (2008) suggested that humiliation drives an aggressive defensive response directed at restoration of status and justice. This sense of "humiliated fury" (Scheff, 1987) may fuel maladaptive reactions, such as vendettas and revengeful attacks. These may be directed outwards (for example, terrorism, sadistic behaviour) or inwards towards the wounded self, leading to powerful, negative internal states and potential psychopathology.

2.4 Humiliation and Psychopathology

Trumbull (2008) considered humiliation "an antecedent to pathology" (p.655). The literature linking humiliation to psychiatric disorders, although dated, suggests that humiliation may have a role in the development of a variety of difficulties including social phobia (Greist, 1995), paranoia (Klein, 1991), anxiety (Beck et al., 1985), PTSD (Grey, Holmes & Brewin, 2001), low self-esteem (Stamm, 1978) and depression (Brown et al., 1995). More recently, Farmer and McGuffin (2003) have found that loss and humiliation events, alone or in combination with feelings of loss or entrapment, are particularly relevant to the provocation of onsets of depressive symptoms. Similarly, Kendler, Hettema, Butera, Gardner and Prescott (2003) support a role of experiences of loss and humiliation in

relation to both "pure" major depression[1] and mixed depression and anxiety (but not "pure" generalized anxiety syndrome). In particular, the experience of humiliating events which directly devalue an individual in a core role were strongly linked to risk for depressive episodes.

There is no existing literature available on the role of humiliation in the eating disorders. Given the association between the similar (yet distinct) construct of shame and the eating disorders, and the role of humiliation in mood and self-esteem (constructs important in the eating disorders), experiences of humiliation may prove to be an important unexplored area in eating disorder aetiology and course.

2.5 Measuring Humiliation

Previous research linking humiliating experiences to psychopathology has been based on varying, idiosyncratic definitions and measurement of humiliation. To date, only one published paper has looked at the measurement of humiliation and humiliating experiences as a unique and separate construct to shame (Hartling & Luchetta, 1999). They developed the Humiliation Inventory, a 32-item self-report measure of the internal experience of humiliation, consisting of two related but distinct subscales (Cumulative Humiliation and Fear of Humiliation) distinguished by their orientation in time. Correlational and factor analysis found the scale to have high internal consistency and construct validity. However, the scale was not assessed in terms of its convergent and discriminant validity and so it is difficult to conclude that this is, in fact, a valid measure of humiliation, especially given the similarities with the construct of shame. Furthermore, the definition of humiliation

[1] The terms "pure" major depression and "pure" generalised anxiety are terms used by the authors to describe episodes where participants met diagnostic criteria for either Generalised Anxiety Disorder or Major Depression, without meeting the criteria for the other disorder.

upon which the authors developed the scale does not clearly focus upon one of the fundamental distinguishing features of humiliation, that of the involvement of an explicit "other" in the humiliation experience.

More recently, a new measure of humiliation was developed by two clinicians in the field of eating disorders. The Experiences of Humiliation Scale (EHS) consisted of a series of 24 examples of potentially humiliating experiences, which required respondents to rate in terms of how frequently ("how often") they had experienced these particular situations, and how intense the feelings of humiliation were in that situation ("how humiliating"). A comprehensive definition of the construct of interest was provided for clarity. The scale was administered within a non-clinical (undergraduate student) population in order to examine its psychometric properties (Lewis, 2010). The scale demonstrated good internal reliability, and appeared to measure a separate construct to shame. Furthermore, humiliation around appearance, shape, weight and eating was associated with higher reported levels of eating-related psychopathology in the non-clinical population. Lewis (2010) concluded that, with further investigation of the EHS in a clinical population, the scale could prove to be useful in exploring the link between experiences of humiliation and eating disturbances.

2.6 Rationale for Present Study

While previous research suggests that the construct of shame appears to be linked to eating disorders, the role of humiliation is not yet understood. Only one measure of humiliation exists in the literature, the Humiliation Inventory (HI; Hartling & Luchetta, 1999), which does not contain any questions relating to eating disorders. The present study aimed to further develop a new scale (the Experiences

of Humiliation Scale; EHS, which has been piloted in a non-clinical population) within a clinical population of patients with eating disorders in order to explore the relationship between the experience of humiliation and eating disordered pathology.

Being able to measure humiliation as a unique construct would have a number of potential benefits. It would contribute towards an understanding of the role of humiliation in the development and maintenance of eating disorders, for example, the extent to which humiliation may be contributing to an individual's difficulties. Disentangling humiliation from other emotions (e.g. shame) would enable this construct to be addressed more directly in therapy. Measuring humiliation may even have a preventative function, by identifying those potentially at increased risk of the development of difficulties through reported prior experiences of humiliation. Humiliation may also in some cases be a barrier to effective therapy, and increased awareness of its mediating role may overcome this block and thus potentially improve outcomes in this hard to treat client group.

2.7 Study Aims & Objectives

The present study aimed to develop the Experiences of Humiliation Scale (EHS) in a clinical population. This involved administering the EHS to a sample of patients diagnosed with an eating disorder. More specifically, the aims were:

- To investigate levels of humiliation present in an eating disorder population
- To explore the psychometric properties of the EHS, including its internal consistency, divergent validity, convergent validity and test-retest reliability
- To explore levels of humiliation across different eating disorder diagnoses and presentations

- To conduct a preliminary investigation of the factor structure of the scale within a clinical sample, to see how this compares with the non-clinical sample.

3. Method

3.1 Overview

The study consisted of two main phases. The first of these (the test phase) utilised a cross-sectional design and involved recruiting participants to complete a series of questionnaires (including the measure of interest in the present study) for analysis of its psychometric properties (including internal consistency, convergent and divergent validity). The second phase (the test-retest phase) employed a repeated measures design and involved a number of participants from the first phase to complete the questionnaire for a second time in order to examine the scale's test-retest reliability. Further methodological information for each phase is detailed below.

3.2 Test phase

3.2.1 Sample/Participants

The wider sampling frame consisted of patients referred to a specialist outpatient eating disorder service which receives referrals predominantly from local general practitioners. Referrals also come from local community and specialist mental health services and (more rarely) from third-sector or private organisations. Referrals are accepted/rejected based on several criteria (see Figure 2).

Figure 2. Service Inclusion/Exclusion criteria

INCLUSION CRITERIA

- Over 18 years of age with capacity
- Primary problem of Anorexia Nervosa (AN), Bulimia Nervosa (BN), Eating Disorder Not Otherwise Specified (EDNOS)

EXCLUSION CRITERIA

- Intellectual disability
- BMI≤15
- Current diagnosis of psychosis
- Recent history of self-harm
- Misuse of illegal drugs or alcohol
- History of aggressive behaviour.

For this study, all newly referred patients who met service inclusion criteria and who were assessed between March 2011 and March 2012 were invited to participate[2]. As part of the assessment process, patients are given a provisional diagnosis based on DSM-IV criteria (American Psychiatric Association, 1994). Patients who did not meet criteria for an eating disorder were not included in the present study.

The final sample for this phase consisted of 56 participants. 52 (92.9%) were female and 4 (7.1%) male. Age ranged from 18 to 57 years (mean 28.91 years, SD 10.16). 30 participants (53.6%) had been given a diagnosis of EDNOS, 6 (10.7%) AN, and 20 (35.7%) BN. This pattern was fairly representative of general referrals to the service. Average BMI of participants was 23.4 (SD 8), and ranged from 15.1 to 62.8. Participants were predominantly White British (N = 48; 85.7%), with other ethnicities reported as: White Other (N = 3; 5.4%), Black Other (N = 2; 3.6%), Pakistani (N = 1; 1.8%), Mixed White & Black Caribbean (N = 1; 1.8%), Mixed Other (N = 1; 1.8%). Again, ethnicity in the study sample reflected that of general referral rates to the service.

3.2.2 Measures

Primary measure: The Experiences of Humiliation Scale (EHS)

The scale to be validated in the present study was developed by two clinical psychologists, Dr Ken Goss and Dr Steve Allan (see Lewis, 2010). Some items were adapted from existing measures within the literature, including the Humiliation Inventory (HI; Hartling & Luchetta, 1999) and the Sensitivity to Put Down Scale (SPD; Gilbert & Miles, 2000). A definition of humiliation was

[2] In certain circumstances, where the assessing clinician felt it inappropriate to do so (e.g. the client was particularly distressed), the client was not invited to participate in the research

provided with the scale to ensure that the difference between humiliation and the closely related construct of shame was clear to participants.

The scale consisted of three sections. The first was made up of 24 items consisting of statements of experiences that people may have found humiliating, such as: *"being ridiculed", "having your shape or weight compared negatively with others"* and *"being cruelly criticised"*. Participants were asked to rate *how often* they had experienced these scenarios, and also *how humiliating* they found these experiences. Responses were selected using a 5-point Likert scale (*never/not at all, a little, fairly, very, most of the time/extremely*). The second section of the questionnaire (using the same 5-point scale) consisted of 4 items regarding how frequent, vivid, intrusive and distressing these memories of humiliation were. The final section asked questions of participants' feelings about the humiliation they had experienced; 11 items (including *"angry/irritated", "embarrassed"*) were rated on a 5-point scale (*not at all, a little, fairly, very, extremely*).

The original scale was presented to a group of undergraduate students by Lewis (2010) in order to ascertain understanding of, and feelings towards the measure. Participants in the focus group found the scale to be generally acceptable, however there was a consensus that the location of items on the page made it hard to follow. As a result, changes were made to the physical layout of the scale, incorporating space between items to make sections clearer. Lewis (2010) piloted the revised scale in a non-clinical population. All subscales demonstrated good internal reliability ($\alpha = .61 – .87$) and there were significant positive correlations between the humiliation measure and measures of both internal and external shame. Lewis (2010) concluded that these correlations reflected the close relationship between the constructs of shame and humiliation, however reported that because

they were not perfectly correlated the humiliation scale was measuring a separate and distinct construct. The resulting factor structure made up the scale as used in the present study (see Appendix G).

For the purpose of the present study (and following Lewis, 2010), the How Often and How Humiliating subscales were the focus of investigation.

Measures used for convergent validity

- **Humiliation Inventory (HI)** (Hartling & Luchetta, 1999): This 32-item measure of the experience of internal experience of humiliation is made up of two subscales: the Cumulative Humiliation Subscale (CHS; focused on past experiences of humiliation) and Fear of Humiliation Subscale (FHS; focused on fear of future humiliation). Item analysis confirmed all 32 items had corrected item-total correlations of .50 or greater, demonstrating acceptable internal consistency. The authors report alpha reliability coefficients of .95 (CHS), .94 (FHS) and .96 (HI – full scale). The HI can be seen in Appendix H.

Measures used for divergent validity

- **Internalised Shame Scale (ISS)** (Cook, 1994, 2001): This 30-item measure of internal (trait) shame contains a 24-item Shame scale (ISS-S) and a 6-item Self-Esteem scale (ISS-SE), giving a separate score for each. It requires participants to use a five-point Likert scale to rate levels of internalised negative affect, reflecting feelings of inferiority, worthlessness, inadequacy, and alienation. Construct validity, test-retest reliability and temporal stability have been established (Rybak & Brown, 1996; del Rosario & White, 2006)

and internal consistency studies report alpha values ranging from .87 to .96 (Spies & Plake, 2005). For the purpose of the present study, only data for items on the ISS-S subscale was used for analysis. The ISS can be seen in Appendix I.

- **Other As Shamer Scale (OAS)** (Goss, Gilbert & Allan, 1994): This is an 18-item scale which modifies the ISS to incorporate an external element to trait shame. Items encapsulate negative evaluations of others (beliefs about how others see the self), such as *"People see me as unimportant compared to others", "I think that others are able to see my defects"*. The scale also employs a five-point Likert format. Cronbach's alpha is reported at 0.92 (Goss et al., 1994). The OAS can be seen in Appendix J.

Other measures

- **Stirling Eating Disorders Scales (SEDS)** (Williams et al., 1994; Williams & Power, 1995): This measure requires true or false responses to 80 statements which contribute to eight subscales measuring anorexic dietary behaviour and cognitions, bulimic dietary behaviour and cognitions, perceived external control, assertiveness, self-esteem, and self-directed hostility. Acceptable levels of internal consistency ($\alpha > 0.8$ for all subscales), reliability, group validity, and concurrent validity were reported by the original authors (Williams et al., 1994). The SEDS can be seen in Appendix K. The eating disorder subscales of this measure were used to provide an alternative comparison (based on presentation rather than diagnosis) for subsequent analyses.

3.2.3 Procedure

As is standard practice in the service, all new patients who met service criteria received a battery of measures for completion prior to assessment, including the ISS, OAS and SEDS. These were collected from the patient on their arrival for their first assessment appointment (the service runs a two-stage assessment process, with an average of 2 weeks between appointments, depending upon urgency). Between their initial and second assessment appointments, patients were provided with information which detailed the nature and purpose of the study, particulars of involvement and contact information for the researchers. Having considered this information, participants were asked to complete a consent form and hand this to their assessing clinician, along with the completed questionnaires, at their second assessment appointment. The consent form included an option for participants to indicate if they were willing to be contacted for the next phase of the study (the test-retest phase; this was designed to maximise recruitment for this next stage). Documents relating to this phase of the study can be found in Appendix L.

Data from completed questionnaires was collated and inputted into a PASW Statistics 18 (SPSS) database.

3.3 Test-retest phase

3.3.1 Sample/Participants

Participants from the previous stage who gave consent to be contacted for the next phase of the study were considered to participate in this phase. There were two additional criteria: 1. that participants were still open to the service (for ethical reasons), and 2. that participants had not begun the treatment phase of the intervention programme (as this would potentially affect the construct of interest).

A total of 13 ‘Time 2’ questionnaires were received in the period up to submission of the present paper. Participants were 12 females (92.3%) and 1 male (7.7%), whose ages ranged from 18 to 55 years with a mean of 29.46 years (SD 11.43). 10 (76.9%) were White British, with three other nationalities reported. 10 (76.9%) had a diagnosis of EDNOS, 2 (15.4%) BN and 1 (7.7%) AN. BMI ranged from 15.1 to 32.5, with a mean of 21.36 (SD 4.57). Independent samples t-tests showed that there were no significant differences in age (p = .81) or BMI (p = .33) for participants who completed a ‘Time 2’ measure and those who only completed the measure at ‘Time 1’.

3.3.2 Measures

Only the EHS was required to be completed during this phase.

3.3.3 Procedure

In order to minimise the influence of memory on test-retest results, Kline (2000) recommends at least a three month period for a reliable estimate of test-retest reliability; however this length of time in the proposed study may have overlapped with some participants beginning to receive treatment, which may have affected the construct under measurement. Therefore a more pragmatic interval of 5-7 weeks was proposed (this time period is consistent with Cook, 1994, 2001 and Goss et al., 1994 in exploring test-reliability for the ISS and OAS).

Participants received an additional information sheet detailing this phase of the research, along with a second copy of the EHS (documents relating to this phase

can be found in Appendix M).[3] A consent form was included (although consent was implied by returning the completed scale, for ethical purposes a written record of consent was necessary). In order to maximise response rates, a stamped addressed envelope was also included, however if participants had an upcoming appointment within the service (e.g. for feedback following assessment), they had the choice of bringing the consent form and completed scale with them to this appointment.

Scores on completed repeat questionnaires were inputted onto the database (matched with the initial scores) for analysis.

[3] In a small number of cases Time 1 measures had been completed but were not returned to the researcher before the maximum test-retest period had elapsed.

4. Results

4.1 Summary of Analyses Performed

The means obtained in the current clinical sample were compared with those found in the larger, non-clinical sample (Lewis, 2010) and a series of Z-scores were calculated. Several methods were employed to explore the psychometric properties of the EHS in the current clinical sample. Internal consistency (Cronbach's alpha) was calculated for each subscale and for the components generated by Lewis (2010). The test-retest reliabilities of the subscales and components of the EHS were calculated using correlational methods. Further correlations with selected established measures examined the scale's convergent and divergent validity.

Exploration of the relationship between humiliation (as measured by the EHS) and different eating disordered beliefs and behaviours was explored using correlational methods, and differences in reported humiliation scores across different diagnostic groups were investigated using Kruskal-Wallis tests. Finally, a Principal Components Analysis (PCA) was conducted on an exploratory basis in order to investigate the scale's component structure in the clinical sample.

All statistical calculations (with the exception of the Z-tests) were performed using PASW Statistics 18 (SPSS).

4.2 Preliminary Checks

Preliminary checks revealed a moderate amount of missing data. For the ISS-S and OAS, missing items were replaced with participant's mean score for that measure. Similarly, missing items on the two subscales of the HI were replaced with participant's mean score for each subscale. Due to its complex scoring structure, it was not possible to do this with the SEDS, so participants who had

missing/incomplete SEDS scores were excluded from relevant analyses on a pairwise basis.

For the EHS (the primary measure of interest in the present study), one participant had missed out the entire "How Often" subscale (with a complete set of data for the "How Humiliating" scale), and one participant had done the opposite. As these subscales were being explored separately, this data could still be used. Where EHS items appeared to be missed on a random basis, missing values were replaced with subscale means. However a large amount of missing data on the EHS could be accounted for by examining patterns in the missing data. There was considerably more missing data on the "How Humiliating" subscale, and predominantly this occurred when participants had rated the item as never having happened to them (rating of 1) on the "How Often" subscale. Where this occurred it was possible to recode missing values on the How Humiliating subscale with a 0.

4.3 Descriptive Statistics

The descriptive statistics for the sample are presented in Table 1. Due to its complex scoring procedure, internal consistency for the SEDS could not be calculated.

The means and standard deviations for the ISS and OAS in the present eating disorder sample were similar to those found in previous studies using eating disorder samples (Cook, 1994; Troop et al., 2008). Means for the subscales of the SEDS in the present sample were all above clinical cut-offs, and similar to those reported in a previous study (Gamble et al., 2006).

Means for the HI in the current eating disordered sample were higher than those reported by the authors from a student sample (Full Scale mean = 78, SD =

25; CHS mean = 32, SD = 10; FHS mean = 46, SD = 17) (Hartling & Luchetta, 1999). In particular, the fear of humiliation appeared to be much higher in the present eating disordered sample than that reported in the original non-clinical sample.

Table 1. Descriptive Statistics (all to 2 d.p.)

	N	*Mean*	*Standard Deviation*	*Cronbach's Alpha*
EHS-How Often (All items)	46	66.06	19.14	0.95
Less serious humiliation	48	21.48	6.91	0.91
Appearance, shape & weight	54	11.76	4.10	0.89
Serious mental humiliation	53	14.87	5.32	0.83
Physical humiliation	52	7.21	2.73	0.64
Rejection	54	5.94	2.15	0.78
EHS-How Humiliating (All items)	47	82.21	22.85	0.95
Appearance, shape, weight & eating	52	23.00	6.36	0.88
Serious mental & physical humiliation	49	26.16	9.85	0.88
Rejection	54	14.70	4.67	0.85
Less serious humiliation	51	14.53	4.55	0.87
HI – Full Scale	51	100.06	31.48	0.97
HI – CHS	51	36.69	12.26	0.95
HI – FHS	51	63.37	20.59	0.96
OAS	53	35.75	15.86	0.95
ISS-S	53	58.16	21.07	0.95
SEDS – ***ADC***	50	27.86	9.85	----
SEDS – ***ADB***	50	15.67	9.42	----
SEDS – ***BDC***	50	30.82	10.81	----
SEDS – ***BDB***	52	21.97	13.82	----

4.4 Humiliation in the clinical and non-clinical sample

In the non-clinical study, Lewis (2010) divided the subscale and component totals by the number of items making up each subscale/component to obtain mean scores and standard deviations that were comparable to each other and on the same metric as the original scale (1-4). This was also done with the clinical data in order to compare both sets of data. Following this a series of Z-tests were conducted to check for differences between the clinical and non-clinical groups (Clark-Carter, 2010). The means and standard deviations using that scoring method for the clinical and non-clinical data are presented in Table 2, along with the obtained Z-scores and their associated significance levels.

Table 2. Means, SD's, Z-scores and their associated significance levels.

	Clinical mean (SD)	***Non-Clinical mean (SD)***	***Z-Score***	***Sig.(p) (2-tailed)***
EHS-How Often (All items)	2.75 (0.80)	2.06 (0.55)	8.51	**<.001**
Less serious humiliation	2.68 (0.86)	2.16 (0.64)	5.57	**<.001**
Appearance, shape & weight	2.94 (1.03)	1.96 (0.78)	9.23	**<.001**
Serious mental humiliation	2.48 (0.89)	2.01 (0.64)	5.35	**<.001**
Physical humiliation	2.40 (0.91)	1.81 (0.68)	6.32	**<.001**
Rejection	2.97 (1.07)	2.32 (0.83)	5.75	**<.001**
EHS-How Humiliating (All items)	3.43 (0.95)	2.43 (0.81)	8.46	**<.001**
Appearance, shape, weight & eating	3.83 (1.06)	2.29 (0.99)	11.22	**<.001**
Serious mental & physical humiliation	2.91 (1.09)	2.24 (0.89)	5.27	**<.001**
Rejection	3.68 (1.17)	2.63 (0.98)	7.87	**<.001**
Less serious humiliation	3.63 (1.14)	2.51 (0.88)	9.09	**<.001**

Clinical N = 46-54; Non-clinical N = 301-313

These results suggested that the clinical (eating-disordered) sample reported significantly higher levels of humiliation on the EHS across all subscales/components.

4.5 Psychometric Properties of the EHS: Internal Consistency

Cronbach's alpha was calculated for the How Often and How Humiliating subscales, and for the components within these subscales. These can be seen in Table 1. Both the How Often and How Humiliating subscales (including all items) demonstrated high internal consistency, with similar alpha values in the present clinical sample to those reported in the non-clinical sample (How Often $\alpha = 0.91$; How Humiliating $\alpha = 0.94$; Lewis, 2010). Separate components also demonstrated acceptable alpha coefficients (i.e. above .7; Pallant, 2010) with the exception of How Humiliating: Physical humiliation ($\alpha = 0.64$; the corrected item-total correlations for items on this component were all above .3, and removal of any item would not have improved the alpha value).

4.6 Psychometric Properties of the EHS: Test-Retest Reliability

The relationships between scores on the different subscales/components of the EHS at Time 1 and Time 2 were explored using correlations. The data was checked for normality, linearity and homoscedasticity. Data for total How Often and How Humiliating subscales appeared to be normally distributed, and so these variables were analysed using Pearson product-moment correlation coefficient (*r*). Data on many of the components of these two subscales violated the assumption of normality, and so these variables were analysed using Spearman Rank Order

Correlation (rho). Results are shown in Table 3 (statistically significant correlations are shown in bold).

Table 3. Correlations for test-retest reliability.

	N	*Correlation Coefficient*	*Strength of relationship**	*Significance (p) (2-tailed)*
EHS-How Often (All items)	9	.948	Large	**<.0001**
Less serious humiliation	10	.871	Large	**.001**
Appearance, shape & weight	12	.886	Large	**<.0001**
Serious mental humiliation	11	.982^	Large	**<.0001**
Physical humiliation	10	.788^	Large	**.007**
Rejection	12	.911^	Large	**<.0001**
EHS-How Humiliating (All items)	9	.924	Large	**<.0001**
Appearance, shape, weight & eating	12	.841^	Large	**.001**
Serious mental & physical humiliation	9	.901	Large	**.001**
Rejection	12	.498^	Large	.099
Less serious humiliation	12	.919	Large	**<.0001**

** = strength of relationship based on guidelines by Cohen (1988)*
^ = Spearman's Rho

Scores at Time 1 were strongly positively correlated with scores at Time 2 for all subscales/components. For all pairs of variables, except for the Rejection component of the How Humiliating subscale, correlations were statistically significant. In terms of shared variances, scores at Time 1 and Time 2 shared 89.87% variance for the How Often subscale, and 85.38% for the How Humiliating subscale. Shared variance for the different components of the subscales ranged from 24.8%-96.43% (excluding the Rejection component of the How Humiliating subscale, the range was 62.09%-96.43%). Although based on small numbers, as a preliminary result this suggested good test-retest reliability for the EHS in a clinical (eating disordered) sample.

4.7 Psychometric Properties of the EHS: Divergent Validity

The relationships between humiliation (as measured by the EHS) and both external shame and internal shame (as measured by the OAS and ISS-S) were investigated using correlations. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Data for the OAS, ISS-S and How Often and How Humiliating subscales of the EHS met criteria for parametric correlations and so for these variables Pearson's product-moment correlation coefficient (*r*) was reported. As discussed previously, data for many of the separate components of the EHS violated the assumption of normality, so for correlations using these variables Spearman Rank Order Correlation (rho) was reported. The results can be seen in Tables 4 and 5.

Table 4. Correlations for divergent validity: EHS and ISS-S.

	N	***Correlation Coefficient***	***Strength of relationship****	***Significance (p) (2-tailed)***
EHS-How Often (All items)	43	.548	Large	**<.0001**
Less serious humiliation	45	.571	Large	**<.0001**
Appearance, shape & weight	51	.443	Medium	**.001**
Serious mental humiliation	50	.631^	Large	**<.0001**
Physical humiliation	49	.453^	Medium	**.001**
Rejection	51	.492^	Medium	**<.0001**
EHS-How Humiliating (All items)	44	.553	Large	**<.0001**
Appearance, shape, weight & eating	49	.367^	Medium	**.010**
Serious mental & physical humiliation	46	.579	Large	**<.0001**
Rejection	51	.531^	Large	**<.0001**
Less serious humiliation	48	.567	Large	**<.0001**

** = strength of relationship based on guidelines by Cohen (1988)*
^ = Spearman's Rho

There was a positive and statistically significant correlation between internal shame (as measured by the ISS-S) and humiliation (as measured by the EHS), with higher

scores for internal shame associated with higher scores for humiliation. Although the strength of the relationships were all medium or large, the amount of shared variance was only moderate, ranging from 13.47% to a maximum of 39.82%.

Table 5. Correlations for divergent validity: EHS and OAS.

	N	*Correlation Coefficient*	*Strength of relationship**	*Significance (p) (2-tailed)*
EHS-How Often (All items)	43	.501	Large	**.001**
Less serious humiliation	45	.523	Large	**<.0001**
Appearance, shape & weight	51	.448	Medium	**.001**
Serious mental humiliation	50	.548^	Large	**<.0001**
Physical humiliation	49	.361^	Medium	**.011**
Rejection	51	.449^	Medium	**.001**
EHS-How Humiliating (All items)	44	.378	Medium	**.011**
Appearance, shape, weight & eating	49	.287^	Small	**.045**
Serious mental & physical humiliation	46	.449	Medium	**.002**
Rejection	51	.402^	Medium	**.003**
Less serious humiliation	48	.362	Medium	**.012**

** = strength of relationship based on guidelines by Cohen (1988)*
^ = Spearman's Rho

Similarly to internal shame, results suggested a significant and positive correlation between humiliation (as measured by the EHS) and external shame (as measured by the OAS). Higher scores for external shame were associated with higher scores for humiliation. Most correlations were of medium strength. However, shared variance ranged from 8.24% to 30.03%, which suggested that while statistically significant the subscales/components of the EHS and the OAS did not greatly overlap.

4.8 Psychometric Properties of the EHS: Convergent Validity

The relationship between humiliation as measured by the EHS, and humiliation as measured by the HI was investigated using correlational methods. Due to the EHS focusing on past experiences of humiliation, only scores on the Cumulative Humiliation Subscale of the HI (HI-CHS) were used for analysis. Data on the HI-CHS met the assumptions for parametric analysis using Pearson's product-moment correlation (*r*), however as some components of the EHS appeared to violate the assumption of normality necessary for the use of parametric tests, where appropriate Spearman's Rho is reported. Results are presented in Table 6.

Table 6. Correlations for convergent validity: EHS & HI-CHS.

	N	*Correlation Coefficient*	*Strength of relationship**	*Significance (2-tailed)*
EHS-How Often (All items)	44	.707	Large	**<.0001**
Less serious humiliation	45	.724	Large	**<.0001**
Appearance, shape & weight	50	.594	Large	**<.0001**
Serious mental humiliation	49	.691^	Large	**<.0001**
Physical humiliation	48	.508^	Large	**<.0001**
Rejection	50	.568^	Large	**<.0001**
EHS-How Humiliating (All items)	44	.814	Large	**<.0001**
Appearance, shape, weight & eating	49	.681^	Large	**<.0001**
Serious mental & physical humiliation	46	.663	Large	**<.0001**
Rejection	50	.692^	Large	**<.0001**
Less serious humiliation	48	.801	Large	**<.0001**

** = strength of relationship based on guidelines by Cohen (1988)*
^ = Spearman's Rho

The two humiliation measures showed a significant positive correlation, with high scores on one measure associated with high scores on the other. The strength of the correlations were large, and shared variances ranged from 25.81-66.26%, which suggested substantial overlap.

4.9 Humiliation and different Eating Disorder diagnoses & presentations.

All participants in this sample had received an eating disorder diagnosis at assessment. Descriptive statistics for the different diagnostic groups are shown in Table 7.

Table 7. Descriptive statistics (medians and interquartile ranges) for diagnostic groups.

	AN (N = 6)	**BN (N = 17-20)**	**EDNOS (N = 23-29)**
EHS-How Often (All items)	71.5 (31.3)	62.5 (22.25)	71.05 (34)
Less serious humiliation	21 (9.55)	21 (8.75)	24 (10.5)
Appearance, shape & weight	13.5 (5)	12 (4.75)	12 (7.25)
Serious mental humiliation	18.5 (9.25)	14.5 (7.5)	16 (8.25)
Physical humiliation	7.5 (6.25)	7 (3.75)	8 (4.5)
Rejection	6 (3.25)	7 (2.75)	6.5 (3.25)
EHS-How Humiliating (All items)	84 (24.75)	77.65 (27.17)	89.5 (25.75)
Appearance, shape, weight & eating	24 (6.25)	22 (10.75)	24 (9.25)
Serious mental & physical humiliation	28.5 (15.5)	24 (7.95)	28.5 (18)
Rejection	15.5 (5.5)	13.5 (6.5)	16.5 (5.5)
Less serious humiliation	14.5 (4.25)	14 (8.75)	16 (5.25)

Medians across groups appeared similar for all subscales/components of the EHS. Potential differences in EHS scores across diagnostic categories were further explored. Due to the size of the sample, unequal numbers in each group and scores on some variables (certain components of the EHS) appearing to be non-normally distributed, non-parametric analysis was considered appropriate. A series of Kruskal-Wallis tests were performed. These revealed no significant differences across diagnostic groups for any subscale/component of the EHS. This suggested

that reported humiliation on the EHS was similar across all eating disorder diagnostic categories.

Where totals could be calculated for SEDS Anorexic and Bulimic Dietary Cognitions and Behaviour subscales, the relationship between EHS scores and SEDS scores was investigated using correlational methods. As scores on the SEDS appeared to violate the assumption of normality necessary for parametric statistics (Pearson's *r*), Spearman's rho was calculated for all variables. Correlation coefficients are shown in Table 8.

Table 8. Spearman's Rho Correlations for EHS & SEDS.

	SEDS-ADC	**SEDS-ADB**	**SEDS-BDC**	**SEDS-BDB**
EHS-How Often (All items)	.106	.056	.060	-.040
Less serious humiliation	.160	.018	-.035	.004
Appearance, shape & weight	.036	.014	-.162	-.143
Serious mental humiliation	.156	.045	-.038	-.064
Physical humiliation	.124	.064	.016	-.040
Rejection	.153	-.067	.034	.073
EHS-How Humiliating (All items)	.132	.124	.014	-.186
Appearance, shape, weight & eating	.121	.022	-.004	-.050
Serious mental & physical humiliation	.034	.057	-.088	-.257
Rejection	.188	.106	.092	.064
Less serious humiliation	.217	.060	.098	.115

Results suggested that there was little or no relationship between scores on the different eating disorder subscales of the SEDS, and scores on the EHS. None of the correlations reached statistical significance.

4.10 Preliminary Exploration of Component Structure of the EHS

In scale development, Principal Components Analysis (PCA), rather than Factor Analysis is considered the more suitable method of determining the underlying scale structure (Stevens, 1996; Field, 2009). Tabachnick and Fidel (2007) recommend a minimum sample size of 150 (ideally 300) for PCA. The obtained clinical sample was too low for these recommendations. However, having previously been used with a larger, non-clinical sample (N=301 for How Often, N=313 for How Humiliating; Lewis, 2010) the component structure of the EHS across clinical and non-clinical samples could be compared on an exploratory basis.

The 24 items of the How Often and How Humiliating subscales were subjected to PCA using PASW18 (SPSS). For both subscales, examination of the correlation matrices revealed many correlations of $r = \geq.3$. Bartlett's Test of Sphericity (Bartlett, 1954) was statistically significant ($p<0.001$), and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy values exceeded the recommended value of 0.6 (Kaiser, 1970).

PCA produced solutions that were difficult to interpret despite the use of rotational methods. Given the sample sizes involved, it was not unreasonable to expect these results. A one-factor solution was forced to see whether (as in the non-clinical population) a total subscale score was valid in the clinical population. All items loaded onto a single factor for both the How Often ($\geq.4$) and How Humiliating ($\geq.3$) subscales (see Appendix N).

5. Discussion

The aims of the present study were to investigate the psychometric properties of the Experiences of Humiliation Scale (EHS) in a clinical, eating disordered population, and to begin to explore the potential role of humiliation in eating disorders.

5.1 Summary & Discussion of Findings

Participants who presented with an eating disorder in the current study reported high levels of humiliation, and this was the case with all types of humiliating experiences (mental, physical, rejection, and humiliation specific to appearance, shape, weight and eating). This suggested that the construct of humiliation appeared to be significant in people with eating disorders, and that measuring humiliation in eating disorders may indeed prove to be worthwhile. Comparison of the mean scores obtained by the current clinical sample and the non-clinical sample (Lewis, 2010) suggested that humiliation was more frequently reported by the eating disordered sample than the student sample. In particular, the *intensity* of these experiences appeared higher in the clinical population. Linking this to conditioning theory, it may be that individuals in the clinical sample experienced more traumatic humiliating events than the non-clinical sample (or that they perceived these events to be more traumatic), rather than experiencing more frequent but less serious (cumulative) humiliation.

It was not possible to determine whether the humiliating experiences reported by the sample in the current study had occurred 'pre-morbidly', i.e. whether they may have played a part in the aetiology/development of eating

disordered psychopathology, or whether they were a consequence of eating disordered psychopathology. However the indications were that these events (whenever they had occurred) had been appraised as highly humiliating, which is likely to have a significant impact for a significant length of time (Klein, 1991; Elison & Harter, 2007). Humiliating experiences may continue to influence an individual's psychological state, and potentially serve as a maintaining factor for psychopathology (e.g. through processes of rumination and increased sensitivity for further put-down, key parts of the humiliation experience; Gilbert, 1999).

As a candidate tool for measuring humiliation in eating disorders, the psychometric properties of the EHS were explored and preliminary results (although based on a small sample) supported its use in this population. The EHS demonstrated high internal consistency ($\alpha = .95$) for both the How Often and How Humiliating subscales, and acceptable internal consistency for the individual components generated by Lewis (2010) (α values from .65-.91). The scale demonstrated good test-retest reliability which suggested that humiliation (as measured by the EHS) appeared to be a relatively stable construct. This may be further evidence to support the idea that the impact of humiliating experiences is enduring without intervention (Elison & Harter, 2007; Gilbert, 1999; Klein, 1991).

Another aim of the current study was to investigate whether humiliation (as measured by the EHS) was distinguishable from the similar construct of shame. By correlating scores on the EHS with scores on the OAS and ISS-S, the divergent validity of the EHS was explored. Scores on the EHS were significantly and positively correlated with scores on both the OAS and ISS-S, with high levels of humiliation associated with high levels of both internal and external shame. This was expected given the similarity between the constructs of shame and humiliation

(Gilbert, 1999). However, with relatively low levels of shared variance between the EHS and both the OAS and ISS-S, it may be deduced that while constructs are similar, the EHS may be measuring a separate and distinct construct to internal and external shame. Correlations were stronger between the EHS and ISS-S than between the EHS and OAS, suggesting that humiliation may potentially be more closely related to internal shame than external shame. This result was interesting given that humiliation is proposed to involve external attribution. Perhaps, when it comes to eating, shape and weight, the concept of 'the other' is more complex than referring to a particular person/group of people. Perhaps, at a broader level, societal expectations and pressures relating to the 'ideal' shape and weight ("a culture of slenderness"; Vandereyceken & Meerman, 1984) may act as the external attribution involved in the humiliation experience.

With large correlation coefficients found for the relationship between the EHS and the HI (ranging from .568-.814), the EHS appeared to demonstrate good convergent validity, that is the HI and EHS appeared to be measuring a similar underlying construct. This was expected, as many items on these two scales were very similar. However, the two scales are different in their focus, with the HI including both past experiences of humiliation (CHS subscale) and the anticipation and fear relating to future humiliating experiences (FHS subscale). The EHS relates only to previous humiliating experiences and the frequency and intensity of these experiences. It also contains a clear definition of humiliation, which is important to provide to respondents given the overlap with similar constructs. The EHS also includes eating, shape and weight-specific questions which make it more relevant for use within an eating disordered population. Previous research has suggested that shame around eating should be differentiated from global shame in people with

eating disorders (Frank, 1991; Burney & Irwin, 2000), with the former likely to be more clinically relevant in this population. Given that experiences of humiliation related to appearance, shape, weight and eating appeared to be a significant issue in the current study, separate consideration of more global versus more specific humiliation may also be worthwhile, and the EHS may prove to be a reliable and valid tool for doing this.

Exploration of levels of reported humiliation revealed no differences across various eating disorder diagnoses. There also did not appear to be a relationship between levels of reported humiliation and 'severity' of presentation (i.e., scores for the various subscales of the SEDS). This suggested that humiliation was a feature which existed across all eating disorder diagnoses and levels of presentation. Previous research on shame in the eating disorders has suggested that individuals who binge and purge (a presentation more consistent with BN) are more prone to report eating-related shame than individuals who restrict (a presentation more consistent with a diagnosis of AN) (Goss & Gilbert, 2002). While there are no similar models for humiliation in the eating disorders, the results of the current study do not suggest that distinguishing between eating disorder diagnosis/presentation is useful when considering humiliation. Instead, humiliation may be better considered as a potential underlying construct common to all eating pathology. In this sense, humiliation may be seen as congruent with 'transdiagnostic' models of eating disorders (Fairburn, Cooper & Shafran, 2003), which assume similar underlying features and processes across eating disorder diagnoses, and from which successful treatments have been generated.

5.2 Study Limitations

Although results suggested that the EHS appeared to be reliable and valid in an eating disordered population, results of the current study should be interpreted with some caution. In particular the effect of the relatively low sample size on the power of the statistical tests employed in the current analyses should be considered. For correlations, Clark-Carter (2010) advises that for a medium effect size (r=.3) with probability set at .05 for 2-tailed test and power of .8, a minimum sample of 85 is needed. For the non-parametric equivalent of a between-subjects one-way ANOVA (i.e., the Kruskal-Wallis test), Clark-Carter (2010) advised a minimum of 55 subjects in each condition for adequate power. While the current sample is not large enough for statistical power, data collection is ongoing and it is hoped that with increased numbers, more firm conclusions can be drawn from the data. The sample used to calculate test-retest reliability was particularly small, despite procedures being utilised to maximise return rates. It is expected that test-retest data will increase with ongoing data collection.

Particular demographic characteristics of the present sample could be considered a strength, for example the sample represented a range of ages and nationalities. However there was a very low ratio of males to females in the sample. These proportions for gender were representative of referral rates for the service, and also relatively consistent with prevalence rates for eating disorders reported in the literature (with males constituting approximately 5-10% of the clinical population; Hoek, 2002). However this does not allow for exploration of any differences in humiliation between males and females. In a non-clinical population, Lewis (2010) found that while males and females reported similar levels of humiliating experiences on the EHS, females reported being more affected and

distressed by these experiences than males, particularly if the humiliation was related to appearance, shape, weight and eating. It would be interesting to see if similar results appear in a clinical population with further data from male participants.

Another limitation of the sample in the present study was the low proportion of anorexic presentations/diagnoses relative to other diagnostic categories/presentations. While this may be seen to reflect prevalence rates for anorexia (versus other ED diagnoses) reported in the literature (e.g. Hoek, 2002), the low proportion of anorexic presentations may have also been due to the nature of the service, i.e. an outpatient service with a BMI cut-off point excluding those of very low BMI (≤15). Subsequently, analysis of differences between different diagnostic groups in the current study was limited.

People's choice whether or not to participate in the research is an interesting point of discussion. While informed consent was important, there may have been a selection bias with people choosing not to participate because of the emotional resonance of the research. Therefore potentially some of the most 'humiliated' individuals (those with the most painful memories of humiliation) may have deliberately opted out. In addition, it was also possible that some of the most humiliated individuals with eating disturbances may not have been in the process of seeking treatment for their eating disorder (i.e., those who were not in contact with the service at all).

5.3 Clinical Implications

Results from the current study suggested that humiliation may be an important construct in eating disordered psychopathology. As a tool for measuring

humiliation, the EHS appeared to be reliable and valid in this population. This has several implications for understanding and treating eating disorders.

With appropriate measurement of the construct of humiliation, this construct can be considered separately to similar constructs linked to eating disordered psychopathology (e.g. shame) as part of the process of assessment and formulation. As well as enhancing understanding of its role in the development and maintenance of eating disturbance, the identification of the role of humiliation can also guide appropriate interventions. Given the differences in the experience of shame and humiliation discussed earlier in this paper, it is likely that these require a different therapeutic response. With the literature suggesting that memories of humiliation are particularly vivid and distressing, working with these past experiences of degradation in therapy is likely to be beneficial in 'undoing' some of the pain which may be associated with current psychopathology.

The EHS further distinguishes between the *frequency* (How Often subscale) and *intensity* (How Humiliating subscale) of humiliating events, which may also be an important consideration in therapy. The focus of treatment may need to be different depending upon whether experiences of humiliation are cumulative (high frequency, low intensity) or linked to a particularly intense single event. In the eating disorders, it may be that past experiences of humiliation relating to appearance, shape, weight and eating may be particularly salient.

Humiliation, as a relational and dynamic construct, may also be important to consider in the therapeutic relationship. Given that humiliation involves a power imbalance between the 'victim' and the other (Gilbert, 1999; Klein, 1991), professionals working with individuals who report humiliation need to be aware of

how humiliating experiences in a client's past may be replayed in the present (transference).

With a valid and reliable measure of humiliation, therapeutic progress related to this construct can also be monitored. With increasing demands on clinicians in mental health to provide evidence of outcomes, the EHS may prove to be a useful addition to the range of available outcome measurement tools.

Measuring humiliation may also have a preventative function, by identifying individuals who may be at risk of developing psychopathology. By addressing these issues at an early stage (e.g. within primary care), more severe psychopathology may be avoided. This has obvious benefits for both service users and health services themselves, in terms of the disease burden and cost of treatment.

5.4 Suggestions for Future Research

Data collection is ongoing and it is hoped that with an increased sample size, more explicit conclusions may be drawn regarding the role of humiliation in eating disorders. However the current research suggests some interesting ideas for future research to explore.

The current research was conducted within a purely outpatient setting. Future research may wish to investigate the role of humiliation in people with eating disorders in inpatient settings, which may capture the lower end of BMI/more AN presentations which the current study lacked. Additionally, researching humiliation in BED presentations and obesity clinics may also capture the upper BMI ranges and provide potentially interesting comparisons across a broader range of diagnoses.

As has been discussed, it was not possible to ascertain whether the humiliating experiences reported by the sample in the current study occurred prior

to, or after the onset of eating disturbance. Further research may seek to place humiliating events chronologically in order to explore their relationship in terms of the development of eating disordered psychopathology.

5.5 Conclusion

The EHS was developed in response to the need for a measure of humiliation which was relevant and applicable to people with eating disorders. The current study examined the psychometric properties of the EHS in a clinical population, and utilised this scale to begin to explore the role of humiliation in eating disorders. The EHS demonstrated good internal consistency and test-retest reliability in the eating-disordered sample. Analysis of the scale's divergent validity suggested that the EHS was related to, but distinct from, measures of shame. Exploration of the scale's convergent validity suggested that the EHS appeared to measure a similar construct to an existing measure of humiliation, although the EHS includes eating-specific items. These results suggested that the EHS was a reliable and valid measure. No differences were found between different eating disorder diagnoses/presentations and levels of humiliation. The EHS may prove to be a useful assessment tool for measuring humiliation in eating disordered populations, and may also help guide formulation and intervention within this complex and difficult to treat client group.

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Critical Appraisal

The reflections presented in this critical appraisal are a combination of my thoughts having reached the end of the project, as well as those issues raised and challenges faced along the research journey which were noted in my research diary.

1. Project Selection

Having had an interest in eating disorders prior to training (my undergraduate dissertation looked at the cognitive consequences of restrained eating) I was drawn towards this general area for my doctoral research, however I had no particular idea in mind. My main priorities from the outset were to select a project that would sustain my interest over the three years of study, something that I would learn from and which would hopefully prove to be useful in clinical practice.

After attending the university's research fair and meeting with several tutors/clinicians to discuss potential projects, my interest was sparked by the opportunity to conduct research whilst simultaneously undertaking a specialist eating disorder placement. This fitted my clinical interests as well as offering pragmatic and logistical benefits, and initially I reasoned that this would 'ease' the research process somewhat, and may help make the inevitably anxiety-provoking task of doctoral research slightly less so.

After visiting the service early on for informal discussions I was able to select a project that fit with my interests and research strengths/experience (primarily quantitative approaches). Choosing a project 'off the shelf' meant that many of the design/methodology practicalities had been considered with the 'host' service in mind. Knowing that the research had been conceived by experts in the field gave me confidence that the topic would be of real clinical significance, which

was essential in my choice of project, and more important to me than designing something myself 'from scratch'. Together these factors helped me feel satisfied that I had made the right decision in my choice of project, despite having to make this decision so early on in training.

2. Peer & Ethical Review

The university peer review process consisted firstly of submitting a research proposal, which was then discussed at a panel meeting with the trainee in attendance for questions/clarifications. More detailed written feedback followed, which raised some important considerations for discussion with my supervisor. There were no significant procedural recommendations at this stage. I was happy with my progress and quietly confident that by being proactive early on, I would maximise the available time for data collection.

Submission to NHS ethics involved a lengthy and complicated process which was entirely new to me, and parts of the process did not appear particularly relevant to psychological research. It was interesting that at my Research Ethics Committee (REC) meeting, of 10 or 11 people around the table, not one had any background in psychosocial or behavioural research. I saw this as an opportunity to 'sell' the potential benefits of psychological research, and of my particular study. I was relieved when no major amendments were suggested at the REC meeting, and I was excited that I would soon be starting my research, with over a year to collect data.

Unfortunately, submission to the local Research and Development (R & D) department led to unexpected delays, and numerous clarifications needed to be made before approval was granted. These delays were incredibly frustrating.

However, it was a chance to justify the procedural decisions my supervisors and I had made earlier in the study design process, which strengthened the credibility of the research.

3. Focus Group

As part of my original research plan, the project was to include a small discussion group where service users had the opportunity to comment on the scale, for example how readable and easy to understand it was. This was intended to take place prior to handing out questionnaires to new referrals. Two attempts were made to arrange this. The first of these coincided with one group coming to the end of treatment and not wishing to be involved in something that might "bring them down". The second group did not attend on the arranged date/time. This was discussed in both research and clinical supervision, where supervisors had differing views on the usefulness of a focus group. I had to make a decision whether or not to proceed. In the end I felt that it had reached a point where it was no longer useful to continue with arranging the focus group, as this was limiting the window for the next stage of data collection. Also, the scale had previously been discussed in terms of its acceptability (albeit in a non-clinical population). I have since thought about the usefulness of a similar exercise for people who have completed the scale i.e., qualitative reflections on what it was like to complete. This may be a useful extension to the research in future.

4. Data Collection

I had imagined (somewhat naively in hindsight) that data collection, after the complexity of the ethical approval process, would run relatively smoothly. Indeed,

whilst I was on placement within the service, data collection appeared to progress without difficulty. There were some (expected) peaks and troughs in terms of new referrals (e.g., quieter summer months due to the university break, given the high rate of student referrals). As my placement drew to a close I made sure to set up clear and explicit procedures for the ongoing collection of data in my absence, circulating this amongst all staff via e-mail as well as outlining these within the team meeting. My plan was to return to the service at periodic intervals to input data, recruit participants for the test-retest phase and more generally to maintain my presence in the department and ensure my research was kept 'on the radar'.

Despite regular visits the data returns were very disappointing. Non-attendance for assessment was found to be a major issue (DNA rates appeared particularly high). In addition there were a number of significant changes to the service being planned and a number key staff changes at this time (unrelated to the research) which may well have had a significant impact on data collection. In an attempt to maximise numbers, I began to personally attach copies of the questionnaire to each file awaiting second assessment, to minimise the administrative burden associated with the research. This downturn in numbers of completed questionnaires caused me considerable concern (did I have enough data? Would I fail due to lack of power?) which only subsided with reassurance from both supervisors. On reflection, this was a lesson in the realities of conducting clinical research (particularly given the time constraints and several factors which were completely out of my control), and I tried various different ways to increase the sample size without huge success. However, if I were to conduct the research again, prior to data collection it might be a good idea to give more consideration to the

potential barriers to recruitment of participants and think with supervisors as to the best way to overcome these barriers.

5. *Strengths and difficulties of being on placement within the service where the research was conducted*

Combining my research with a clinical placement gave me the opportunity to make explicit theory-practice links, which can often be lacking where researchers are more separated from the day-to-day running and reality of the service. The literature search and review process helped me to familiarise myself at a deeper level with theoretical models in eating disorders and the range of interventions that have been proposed and evaluated. This was invaluable knowledge which I could apply to my clinical work. In addition, working therapeutically with people who reported experiences of shame and humiliation and who spoke of the devastating psychological consequences of these events reinforced the importance of the consideration of these issues. This made me feel that my research was indeed worthwhile. Furthermore, the opportunity to work within a compassion-focused approach on placement offered useful ways of formulating and working with these experiences.

A working understanding of the complexity of presentations, and empathy towards incredibly anxious and often vulnerable patients seeking help created a different type of dynamic than if I had been purely a (more detached) researcher in the department. Holding both researcher and clinician roles was sometimes a difficult balance, with the need to boost sample size and recruit participants as well as being sensitive to the therapeutic needs of patients. Clinical supervision was

particularly helpful in reflecting on this dilemma and making best decisions regarding the suitability of particular patients for participation in the research.

6. Data Analysis

Data analysis required many decisions to be made that I had not foreseen or given much thought to before. While I was confident using basic statistics, getting to grips with the assumptions for particular tests and issues of sample size and power was much more complicated than I had expected. Deciding on the best way forward when faced with non-normally distributed data required consideration of several alternatives and significant reading around these various options. While complicated and time-consuming, this considerably developed my knowledge of important issues in quantitative research methods.

Having never been involved in the process of scale development before, I also had to do a lot of background reading into factor analysis and PCA, so that I could be clear on the differences between the techniques and be confident that I had chosen the most appropriate method to analyse the scale.

7. Choice of research methodology

The choice of research methodology and design was guided by the primary objectives of the research, i.e., to explore the psychometric properties of the EHS. Therefore this lent itself to a quantitative approach. It was also decided that the secondary objectives of the research (to begin to explore the potential role of humiliation in eating disorders) were also best suited to a quantitative approach, as this allowed comparison with the non-clinical data (from a previous quantitative project). However, future research may wish to explore the potential role of

humiliation in eating disorders from a qualitative perspective, for example it might be interesting to ask people with an eating disorder to talk in more depth about their experiences of humiliation and their thoughts on the impact of these experiences.

The limitations of the current study related mainly to the small sample size, and how representative the sample was of the wider population of people with eating disorders. The sample was limited to a cross-section of patients referred to a particular service which has a particular set of referral criteria, and therefore may not be generalizable beyond that service. In hindsight, it may have been useful to have sought to recruit from additional sites (e.g. inpatient units) which would have increased the sample size and potentially may have provided a broader range of severity and presentations for more detailed comparisons. Future research may wish to investigate this, although it would require careful consideration and planning to ensure that similar procedures were followed to those in the present study.

8. Use of Supervision

As has been discussed in previous sections, I was fortunate enough to have received both academic/research supervision and clinical supervision during my research. This gave me the opportunity to discuss practical and procedural considerations and the implications of particular decisions on the research, as well as linking research and clinical knowledge to my work with people with eating disorders on placement.

Research supervision was especially useful for support with issues concerning design, data analysis and the development of my academic writing style, and I benefited from the guidance and feedback offered. In hindsight I believe that my supervisor's strong recommendation to complete the literature review before the

write-up of the empirical paper was very helpful. While this meant some sacrifices in terms of my time, given the amount work involved in the literature review I soon appreciated why this was suggested.

Clinical supervision allowed a deeper consideration of the theoretical underpinnings of the research topic and how this presented in practice. It was also a forum for discussion of the balance between my role as a researcher and as a clinician, which was important to ensure informed and more ethical decision-making throughout the research process.

9. Overall Learning Points

The project as a whole, especially in parallel to the clinical placement, developed my theoretical and clinical understanding of eating disorders from a merely 'curious' position at the start, to a place where I acquired knowledge and skills in a specialist area. The eating disorders remain an area of interest for me and something I wish to develop further in my career as a clinical psychologist.

One of the key reflections on the research process was the realisation that there is no such thing as 'perfect' research. Ideas and research designs thought up in an academic setting may not always be feasible or practical in the clinical setting. It is the reality in clinical practice that patients don't turn up, or don't want to fill in another questionnaire (which is, of course, their right, and arguably demonstrates commendable assertiveness towards 'professionals' in a position of power). This was a very different experience to my undergraduate research, where participants were much more consistent and 'dependable' (albeit motivated by the reward of research credits). Clinical populations, unlike undergraduate student populations, are rarely 'normal' statistically (by their very nature, skew is much more likely) and

so difficult decisions needed to be made regarding how best to analyse data. The research process was a considerable learning curve involving reflection, discussion and modification throughout. 'Real world' research proved to be a much more dynamic, rather than static process.

With the knowledge and skills gained throughout the research process, I developed confidence in my ability to design and carry out research that is meaningful in clinical practice, and an increased awareness of some of the practical issues this involves. I also developed my ability to collate and critically appraise the evidence base and apply these findings to my clinical practice. These skills will be invaluable in my future career as a clinical psychologist.

Something which really surprised me during the research was the fact that participants were genuinely interested in the results of the study, and requested to be informed of the outcome of the research. As well as motivating me at times where the research journey seemed daunting and never-ending, this prompted me to consider the ethical obligations to research participants, which can be easily 'lost' when caught up in writing for assessed work (I will be writing a summary of the results for participants who requested this). This reminded me that the purpose of my research was as much for participants and patients as it was to pass an academic course.

APPENDIX A: Searches performed for Literature Review.

Database	***Dates searched***	***Key words***	***Limiters***	***Number of hits***
Scopus ***In keywords***	10.08.11-26.08.11	**CBT OR** *cognitive behav* therapy* **AND** *anorexia*	• 1995-present • Articles	273
PsycINFO (Incoporating PsycArticles and PsycExtra) ***In subject terms/keywords***	10.08.11-26.08.11	**CBT OR** *cognitive behav* therapy* **AND** *anorexia*	• 1995-present • Articles • Peer reviewed • Human • English • Exclude dissertations and book reviews	110
Science Direct ***In abstract/title/keywords***	10.08.11-26.08.11	**CBT OR** *cognitive behav* therapy* **AND** *anorexia*	• 1995-present • Journals	65
Ovid SP (Incorporating OvidMedline and Embase) ***In Abstract***	10.08.11-26.08.11	**CBT OR** *cognitive behav* therapy* **AND** *anorexia*	• 1995-present • Humans • English	188
Cochrane Library ***In Title/Abstract/Keywords***	10.08.11-26.08.11	**CBT OR** *cognitive behav* therapy* AND ***anorexia***	• 1995-present	47

APPENDIX B: Data Quality Assessment Tool.

SIGN	**Methodology Checklist 2: Controlled Trials**

Study identification (*Include author, title, year of publication, journal title, pages*)

Guideline topic:	Key Question No:

Before completing this checklist, consider:

1. Is the paper a **randomized controlled trial** or a **controlled clinical trial**? If in doubt, check the study design algorithm available from SIGN and make sure you have the correct checklist. If it is a **controlled clinical trial** questions 1.2, 1.3, and 1.4 are not relevant, and the study cannot be rated higher than 1+
2. Is the paper relevant to key question? Analyse using PICO (Patient or Population Intervention Comparison Outcome). IF NO REJECT (give reason below). IF YES complete the checklist.

Reason for rejection: Reason for rejection: 1. Paper not relevant to key question ☐ 2. Other reason ☐ (please specify):

Checklist completed by:

SECTION 1: INTERNAL VALIDITY

	In a well conducted RCT study…	***In this study this criterion is:***	
1.1	The study addresses an appropriate and clearly focused question.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.2	The assignment of subjects to treatment groups is randomised	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.3	An adequate concealment method is used	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.4	Subjects and investigators are kept 'blind' about treatment allocation	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.5	The treatment and control groups are similar at the start of the trial	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.6	The only difference between groups is the treatment under investigation	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable

1.7	All relevant outcomes are measured in a standard, valid and reliable way	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.8	What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?		
1.9	All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention to treat analysis)	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.10	Where the study is carried out at more than one site, results are comparable for all sites	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
SECTION 2: OVERALL ASSESSMENT OF THE STUDY			
2.1	How well was the study done to minimise bias? *Code ++, +, or –*		
2.2	Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention?		
2.3	Are the results of this study directly applicable to the patient group targeted by this guideline?		
2.4	**Notes.** Summarise the authors conclusions. Add any comments on your own assessment of the study, and the extent to which it answers your question.		

APPENDIX C: Guidelines for Authors for the International Journal of Eating Disorders

Guidelines taken on 25 April 2012 from:
http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1098-108X/homepage/ForAuthors.html

Submission

To submit your manuscript online, please:

Prepare your manuscript and illustrations in appropriate format, according to the instructions given here.

If you have not already done so, create an account for yourself in the system at the submission site, http://mc.manuscriptcentral.com/ijed/ by clicking on the "Create an Account" button. To monitor the progress of your manuscript throughout the review process, just log in periodically and check your Author Center.

Please be sure to study the Instructions and Forms given at the site carefully, and then let the system guide you through the submission process. Online help is available to you at all times during the process. You are also able to exit/re-enter at any stage before finally "submitting" your work. All submissions are kept strictly confidential. If you have any questions, do not hesitate to contact us at support@scholarone.com .

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Manuscripts are received by the editorial office with the understanding that they represent original works, have not published previously, and are not under simultaneous review by another publication. If parts of the manuscripts have been presented at a scientific meeting, this should be indicated on the title page.

Manuscripts are evaluated by one to three members of the Editorial Board, or outside reviewers selected by the Editor. Accepted manuscripts become the permanent property of The International Journal of Eating Disorders and cannot be printed elsewhere without prior permission of the publisher.

Preparation of Manuscript

Number all pages of the manuscript except the figures (including title page and abstract) consecutively. Parts of the manuscripts should be arranged in the following sequence:

(1) Title page. (numbered 1) should include the full names, titles, and affiliations of all authors, and an abbreviated title (Running Head) that should not exceed 50 characters, counting letters, spacing, and punctuation. This Running Head should be typed in upper case letters centered at the bottom of the title page. Each page of the manuscript (excluding figures) should be identified by typing the first two or three words of the full title in the upper right-hand corner above the page number.

(2) Abstract. (150-word maximum) should be started on a separate page, numbered 2. Type the word "Abstract" in upper and lower case letters, centered at the top of page 2. Authors of articles submitted to the Journal involving research data or reviews of the literature must now include the following information in the form of a structured abstract, under the headings indicated. The abstract should be typed as a single paragraph on one page: **Objective:** briefly indicate the primary purpose of the article, or major question addressed in the study. **Method:** indicate the sources of data, give brief overview of methodology, or, if review article, how the literature was searched and articles selected for discussion. For research based

articles, this section should briefly note study design, how subjects were selected, and major outcome measures. **Results:** summarize the major or key findings. Discussion**:** indicate main clinical, theoretical, or research applications/implications. The *Journal* will continue to use unstructured abstracts for case reports.

(3) Text. Begin the text on page 3 and be sure to identify each page with the short title typed in the upper right-hand corner above the page number. Type the full title of the manuscript centered at the top, and then begin the text. The full title appears on page 3 only. Indent all paragraphs. While there is no maximum length for article submissions it is advisable that research be conveyed as concisely as possible.

(4) References. Begin on separate page, with the word "References" typed in upper and lower case letters, centered at the top of the page.

(5) Appendixes. Typed each appendix on a separate page labeled "Appendix A, B", etc., in the order in which they are mentioned in the text.

(6) Footnotes. Start on separate page.

(7) Tables. Tables should be double-spaced, including all headings, and should have a descriptive title. If a table extends to another page, so should all titles and headings. Each table should be numbered sequentially in Arabic numerals and begin on a new page. Be sure to explain abbreviations in tables even if they have already been explained in-text. Consider the tables and figures to be self-contained and independent of the text. They should be interpretable as stand-alone entities.

(8) Figure captions. Start on separate page. Each figure caption should have a brief title that describes the entire figure without citing specific panels, followed by a description of each panel. Figure captions should be included in the submitted manuscript as a separate section. Be sure to explain abbreviations in figures even if they have already been explained in-text. Consider the tables and figures to be self-contained and independent of the text. They should be interpretable as stand-alone entities. Axes for figures must be labeled with appropriate units of measurement and description.

Manuscript Form and Presentation

All manuscripts are subject to copyediting, although it is the primary responsibility of the authors to proofread thoroughly and insure correct spelling and punctuation, completeness and accuracy of references, clarity of expression, thoughtful construction of sentences, and legible appearance prior to the manuscript's submission. Preferred spelling follows *Webster's New Collegiate Dictionary* or *Webster's Third New International Dictionary* . The manuscript should conform to accepted English usage and syntax.

Microsoft Word is the preferred format for the creation of your text and tables (one file with tables on separate pages at the end of your text). Refrain from complex formatting; the Publisher will style your manuscript according to the Journal design specifications. Do not use desktop publishing software such as Aldus PageMaker or Quark XPress.

Use headings to indicate the manuscript's general organization. Do not use a heading for the introduction. In general, manuscripts will contain one of several levels of headings. Centered upper case headings are reserved for Methods, Results, and Discussion sections of the manuscript. Subordinate headings (e.g., the Subjects or Procedure subsection of Methods) are typed flush left, underlined, in upper case and lower case letters. The text begins a new paragraph.

Presenting statistical data in text: For additional detail regarding statistical requirements for the manuscript see IJED Statistical Formatting Requirements. For more detailed background information on statistical analyses and their rationale authors are referred to IJED Statistical Reporting Guidelines.

Referencing in the text. Wiley's Journal Styles Are Now in EndNote (Wiley's Journal Styles and EndNote) . EndNote is a software product that we recommend to our journal authors to help simplify and streamline the research process. Using EndNote's bibliographic management tools, you can search bibliographic databases, build and organize your reference collection, and then instantly output your bibliography in any Wiley journal style. If you already use EndNote, you can download the reference style

for this journal. To learn more about EndNote, or to purchase your own copy, click here . If you need assistance using EndNote, contact endnote@isiresearchsoft.com , or visit www.endnote.com/support

Referencing follows the Vancouver method of reference citation. In this system, references are numbered consequtively in the order in which they are first mentioned in the text. Indentify each reference in text, tables, and legends by Arabic numbers. All references cited should be listed numerically at the end of the paper. Prepare citations according to the style used in Index Medicus and the International list of periodical title word abbreviations (ISO 833).

All reference citations in the text should appear in the reference list. When there are less than seven authors, each must be listed in the citation. When seven or more authors, list the first six followed by et al. after the name of the sixth author.

Preparation of figures. To ensure the highest quality print production, your figures must be submitted in TIFF format according to the following minimum resolutions:

- 1200 dpi (dots per inch) for black and white line art (simple bar graphs, charts, etc.)
- 300 dpi for halftones (black and white photographs)
- 600 dpi for combination halftones (photographs that also contain line art such as labeling or thin lines)

Vector-based figures (usually created in Adobe Illustrator) should be submitted as EPS. Do not submit figures in the following formats:JPEG,GIF,Word, Excel, Lotus1-2-3, PowerPoint, PDF.

Graphs must show an appropriate grid scale. Each axis must be labeled with both the quantity measured and the unit of measurement. Color figures must be submitted in a CMYK colorspace. Do not submit files as RGB. All color figures will be reproduced in full color in the online edition of the journal at no cost to authors. Authors are requested to pay the cost of reproducing color figures in print. Authors are encouraged to submit color illustrations that highlight the text and convey essential scientific information. For best reproduction, bright, clear colors should be used.

Supplementary materials. Supplementary materials will be made available to readers as a link to the corresponding articles on the journal's website.

APPENDIX D: Statement of Epistemological Position

The research reported upon in the present paper was conducted from a positivist standpoint. This assumed that humiliation is a construct that is observable and quantifiable through scientific measurement. This position suggested a quantitative methodology to investigate the role of humiliation in the development and maintenance of eating disorders.

APPENDIX E: Chronology of Research Process

Date	Activity
October-December 2009	Initial meetings and discussion with potential supervisors
December 2009	Decision of topic area
	Placement visit and discussion of potential projects
February 2010	Final decision made on project
May 2010	Draft research proposal submitted
June 2010	Review panel; research proposal redrafted for peer review
September 2010	Peer review
October 2010	Commencement of placement
November-December 2010	Preparation for ethical approval process
January 2011	REC meeting and approval obtained; submission to R & D
March 2011	R & D approval obtained; data collection began
March 2011-March 2012: ongoing data collection and data entry	
June 2011	Literature search and critical review started
September 2011	First draft of literature review completed
October 2011	End of placement; procedures finalised for ongoing data collection
November 2011	Second draft of literature review completed
January 2012	Final draft of literature review completed
	Write-up of research project started
March 2012	Data analysis
	First draft of research report completed
April 2012	Second draft of research report completed
	Critical appraisal written
	Abstract written
	Final draft and submission of thesis

APPENDIX F: Research Ethics Committee Approval letter

The Black Country Research Ethics Committee
Prospect House
Fishing Line Road
Redditch
Worcestershire
B97 6EW

Telephone: 01527 582535

20 January 2011

Dr Kenneth Goss
Consultant Clinical Psychologist
XXXXXXX
XXXXXXX

Dear Dr Goss

Study Title: **The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder population**
REC reference number: **11/H1202/6**

The Research Ethics Committee reviewed the above application at the meeting held on 10 January 2011. The Committee wish to thank you and Mrs Galsworthy-Francis for attending to discuss the study.

Ethical Issues Discussed

The committee had a number of questions to which you gave the following answers:

- The Committee asked that the first sentence in the Phase One Participant Information Sheet under 'What are the possible advantages of taking part?' be removed. You agreed.
- The Committee asked if the 3rd Participant Information Sheet is necessary. You said that it was possibly not.
- The Committee noted that the Participant Information Sheets and Consent Forms should be on headed paper. You said they would be on headed paper.
- The Committee asked that the name of the Black Country REC be put in the Participant Information Sheet. You agreed.
- The Committee asked how many participants would be in Phase Three. You said that there would be half the participants from Phase Two.

Ethical opinion

The members of the Committee present gave a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, subject to the conditions specified below.

1. The first sentence in the Phase One Participant Information Sheet (PIS) under the heading 'What are the potential advantages of taking part?' - *'This is an opportunity for people with an eating disorder to have their voices heard in a research study'* to be removed.

2. The PIS and Consent Form to be on headed paper.

3. The Black Country REC to be named in PIS.

Contact for further advice: Co-ordinator

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where the only involvement of the NHS organisation is as a Participant Identification Centre (PIC), management permission for research is not required but the R&D office should be notified of the study and agree to the organisation's involvement. Guidance on procedures for PICs is available in IRAS. Further advice should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

It is responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Approved documents

The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
Protocol	v5	19 November 2010
Participant Information Sheet: PIS Phase Two	v1	19 November 2010
Letter of invitation to participant	v1	19 November 2010
Letter of invitation to participant	v1	19 November 2010
Letter of invitation to participant	v1	19 November 2010
GP/Consultant Information Sheets	v1	19 November 2010
REC application		10 January 2011
Participant Consent Form: Consent Phase Three	v1	19 November 2010
Questionnaire: Internalised Shame Scale validated questionnaire	v1	19 November 2010
Questionnaire: Humiliation Inventory validated questionnaire	v1	19 November 2010
Questionnaire: Sterling Eating Disorder validated questionnaire		09 December 2010
CV Academic Supervisor		09 December 2010
Participant Information Sheet: PIS Phase One	v1	19 November 2010
Questionnaire: Other as Shamer Scale validated questionnaire	v1	19 November 2010
Questionnaire: Experience of Humiliation Scale questionnaire	v1	19 November 2010
Referees or other scientific critique report		06 September 2010
Covering Letter		07 December 2010
Summary/Synopsis	v1	19 November 2010
CV Student		19 November 2010
Investigator CV		09 December 2010
Participant Information Sheet: PIS Phase Three	v1	19 November 2010
Participant Consent Form: Consent Phase One	v1	19 November 2010
Participant Consent Form: Consent Phase Two	v1	19 November 2010

Membership of the Committee

The members of the Ethics Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

11/H1202/6	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project

Yours sincerely

Jenny Tyers (Mrs) for and on behalf of
Dr Jeff Neilson
Chair

Email: jenny.tyers@westmidlands.nhs.uk

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*
"After ethical review – guidance for researchers"

Copy to: *Mrs Lisa Galsworthy-Francis*
Department of Clinical Psychology
The University of Leicester
104 Regent Road
Leicester
LE1 7LT

Dr. Kelly Spencer
West Midlands South CLRN
CLRN Office
Fourth Floor Rotunda
University Hospital
Clifford Bridge Road
Coventry
CV2 2DX

The Black Country Research Ethics Committee

Attendance at Committee meeting on 10 January 2011

Committee Members:

Name	*Profession*	*Present*	*Notes*
Dr Joseph Arumainayagam	Consultant and Honorary Senior Clinical Lecturer in HIV and GUM	Yes	
Mrs Chris Bell	Lay Member	Yes	
Dr N Erb	Consultant Rheumatologist	No	
Dr Jeff Neilson	Consultant Haematologist	Yes	
Mr Nanak Sarhadi	Consultant Plastic Surgeon	Yes	
Dr David Vallance	Clinical Biochemist	Yes	
Mrs Jennifer Walton	Retired Research Nurse	Yes	
Mrs Veronica A Wells	Lay Member	Yes	
Dr Tony Zalin	Lay Member	Yes	

Also in attendance:

Name	*Position (or reason for attending)*
Mrs Jackie Sedgwick	
Mrs Jenny Tyers	Assistant Co-ordinator

APPENDIX G: The Experiences of Humiliation Scale (EHS)

THE EXPERIENCES OF HUMILIATION SCALE (EHS).

This scale is interested in people's experiences of humiliation. These experiences are likely to be familiar to you as everyone experiences these feelings at some time. If these feelings occur regularly then you may find it painful just reading them. Try to have a go and be as honest as you can in your responses.

The scale has three parts. The slightly longer first part asks about experiences of humiliation. The second part is quite short and asks about your memories of being humiliated. The third part is also quite short and asks about your feelings associated with being humiliated.

Please take a little time to read the definition of humiliation below.

Humiliation is when you feel powerless to respond to other people who have hurt you by treating you unjustly or unfairly. For example; others may have hurt you by unjustly putting you down, criticising you or attacking you.

Try to keep this definition in mind when you are answering the questions below. Please note we are ***not*** talking about those situations when you believe you deserved or were to blame for the put downs, criticisms, or attacks.

Please turn over

Experiences of Humiliation

Instructions

Here we are interested in your experiences of being humiliated. Please indicate how often you experienced each of the following events in your life and how humiliating you found them. Please circle the numbers that apply to you on the scale below:

Key:
1 = Never (Not at all) 2 = A little 3 = Fairly 4 = Very 5 = Most of the time (Extremely)

How often?	Items	How Humiliating?
1 2 3 4 5	1. Being teased	1 2 3 4 5
1 2 3 4 5	2. Being made to feel like an outsider	1 2 3 4 5
1 2 3 4 5	3. Being laughed at	1 2 3 4 5
1 2 3 4 5	4. Being put down	1 2 3 4 5
1 2 3 4 5	5. Being ridiculed	1 2 3 4 5
1 2 3 4 5	6. Having negative comments made about your shape and weight	1 2 3 4 5
1 2 3 4 5	7. Being harassed	1 2 3 4 5
1 2 3 4 5	8. Being cruelly criticised	1 2 3 4 5
1 2 3 4 5	9. Being shown up in public	1 2 3 4 5
1 2 3 4 5	10. Having negative comments made about how or what you eat	1 2 3 4 5
1 2 3 4 5	11. Being made to look weak or stupid	1 2 3 4 5
1 2 3 4 5	12. Having a joke made at your expense	1 2 3 4 5
1 2 3 4 5	13. Being rejected	1 2 3 4 5
1 2 3 4 5	14. Having negative comments made about the way you look	1 2 3 4 5
1 2 3 4 5	15. Being called names or referred to in derogatory terms	1 2 3 4 5
1 2 3 4 5	16. Being bullied	1 2 3 4 5
1 2 3 4 5	17. Being discounted	1 2 3 4 5
1 2 3 4 5	18. Having your shape or weight compared negatively with others	1 2 3 4 5
1 2 3 4 5	19. Being cruelly disciplined	1 2 3 4 5
1 2 3 4 5	20. Being treated as invisible	1 2 3 4 5
1 2 3 4 5	21. Being treated like a child	1 2 3 4 5
1 2 3 4 5	22. Being treated disrespectfully	1 2 3 4 5
1 2 3 4 5	23. Being assaulted by another person	1 2 3 4 5
1 2 3 4 5	24. Being made to feel unattractive because of your shape or weight	1 2 3 4 5

Please turn over

Memories of Humiliation

Instructions

In this section we are interested in your memories of being humiliated. Please use the following key to help you respond and circle the number that most closely matches your experience.

Key:
1 = Never (Not at all) 2 = A little 3 = Fairly 4 = Very 5 = Most of the time (Extremely)

Many people remember being humiliated in the past. If you remember being humiliated:

Do these memories occur *frequently*?	1 2 3 4 5
How *vivid* are the memories (how clear in your mind?)	1 2 3 4 5
How *intrusive* are the memories?	1 2 3 4 5
How *distressing* are the memories?	1 2 3 4 5

Feelings of Humiliation

Instructions

In this final section we are interested in the feelings you have when you have been humiliated.

Please use the following key to help you respond and circle the number that most closely matches your experience.

Key:
1 = Not at all 2 = A little 3 = Fairly 4 = Very 5 = Extremely

When you have been humiliated do you tend to feel:

Embarrassed	1 2 3 4 5
Angry or irritated with yourself	1 2 3 4 5
Anxious	1 2 3 4 5
Angry or irritated with the person(s) who humiliated you	1 2 3 4 5
Inferior	1 2 3 4 5
Angry or irritated with others who saw you being humiliated	1 2 3 4 5
Small and/or insignificant	1 2 3 4 5
Inadequate	1 2 3 4 5
Want to get your own back on the person(s) who humiliated you	1 2 3 4 5
Helpless and/or paralysed	1 2 3 4 5
Self-conscious	1 2 3 4 5

Thank you for completing this questionnaire.

APPENDIX H: Humiliation Inventory

HUMILIATION INVENTORY

This questionnaire asks you to summarize your feelings about the following questions. Please read each item below carefully and circle the rating that best describes your feelings.

Example: Throughout your life to what degree have you felt...	Not at all					Extremely
...happy?	1	2	3	4	5	
Throughout your life how seriously have you felt harmed by being..	Not at all					Very Seriously
(1.) ...teased?	1	2	3	4	5	
(2.) ...bullied?	1	2	3	4	5	
(3.) ...scorned?	1	2	3	4	5	
(4.) ...excluded?	1	2	3	4	5	
(5.) ...laughed at?	1	2	3	4	5	
(6.) ...put down?	1	2	3	4	5	
(7.) ...ridiculed?	1	2	3	4	5	
(8.) ...harassed?	1	2	3	4	5	
(9.) ...discounted?	1	2	3	4	5	
(10.) ...embarrassed?	1	2	3	4	5	
(11.) ...cruelly criticized?	1	2	3	4	5	
(12.) ...called names or referred to in derogatory terms?	1	2	3	4	5	
At this point in your life, how much do you fear being...	Not at all					Very Much
(13.) ...scorned?	1	2	3	4	5	
(14.) ...bullied?	1	2	3	4	5	
(15.) ...ridiculed?	1	2	3	4	5	
(16.) ...powerless?	1	2	3	4	5	
(17.) ...harassed?	1	2	3	4	5	
(18.) ...put down?	1	2	3	4	5	
(19.) ...excluded?	1	2	3	4	5	
(20.) ...laughed at?	1	2	3	4	5	
(21.) ...cruelly criticized?	1	2	3	4	5	
(22.) ...cruelly disciplined?	1	2	3	4	5	
(23.) ...made to feel like an outsider?	1	2	3	4	5	
At this point in your life, how concerned are you about being...	Not at all					Extremely
(24.) ...teased?	1	2	3	4	5	
(25.) ...embarrassed?	1	2	3	4	5	
(26.) ...treated as invisible?	1	2	3	4	5	
(27.) ...discounted as a person?	1	2	3	4	5	
(28.) ...made to feel small or insignificant?	1	2	3	4	5	
(29.) ...called names or referred to in derogatory terms?	1	2	3	4	5	
(30.) ...unfairly denied access to some activity, opportunity, or service?	1	2	3	4	5	
How worried are you about being...	Not at all					Extremely
(31.) ...viewed by others as inadequate?	1	2	3	4	5	
(32.) ...viewed by others as incompetent?	1	2	3	4	5	

APPENDIX I: Internalised Shame Scale

I.S.S. SCALE

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below.
DO NOT OMIT ANY ITEM.

SCALE

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

SCALE

0 1 2 3 4	1. I feel like I am never quite good enough
0 1 2 3 4	2. I feel somehow left out
0 1 2 3 4	3. I think other people look down on me
0 1 2 3 4	4. All in all, I am inclined to feel that I am a success
0 1 2 3 4	5. I scold myself and put myself down
0 1 2 3 4	6. I feel insecure about others opinions of me
0 1 2 3 4	7. Compared to other people, I feel like I somehow never measure up
0 1 2 3 4	8. I see myself as being very small and insignificant
0 1 2 3 4	9. I feel I have much to be proud of
0 1 2 3 4	10. I feel intensely inadequate and full of self-doubt
0 1 2 3 4	11. I feel as if I am somehow defective as a person, like there is something basically wrong with me
0 1 2 3 4	12. When I compare myself to others, I am just not as Important
0 1 2 3 4	13. I have an overpowering dread that my faults will be revealed in front of others

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

SCALE

0 1 2 3 4	14. I have a number of good qualities
0 1 2 3 4	15. I see myself striving for perfection only to continually fall short
0 1 2 3 4	16. I think others are able to see my defects
0 1 2 3 4	17. I could beat myself over the head with a club when I make a mistake
0 1 2 3 4	18. On the whole, I am satisfied with myself
0 1 2 3 4	19. I would like to shrink away when I make a mistake
0 1 2 3 4	20. I replay painful events over and over in my mind until I am overwhelmed
0 1 2 3 4	21. I feel I am a person of worth at least on an equal plane with others
0 1 2 3 4	22. At times I feel like I will break into a thousand pieces
0 1 2 3 4	23. I feel as if I have lost control over my body functions and feelings
0 1 2 3 4	24. Sometimes I feel no bigger than a pea
0 1 2 3 4	25. At times I feel so exposed that I wish the earth would open up and swallow me
0 1 2 3 4	26. I have this painful gap within me that I have not been able to fill
0 1 2 3 4	27. I feel empty and unfulfilled
0 1 2 3 4	28. I take a positive attitude toward myself
0 1 2 3 4	29. My loneliness is more like emptiness
0 1 2 3 4	30. I always feel there is something missing

APPENDIX J: Other As Shamer Scale

OAS SCALE

DIRECTIONS: Below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below.
DO NOT OMIT ANY ITEM.

SCALE

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

SCALE

0 1 2 3 4	1. I feel other people see me as not good enough
0 1 2 3 4	2. I think that other people look down on me
0 1 2 3 4	3. Other people put me down a lot
0 1 2 3 4	4. I feel insecure about others opinions of me
0 1 2 3 4	5. People see me as not measuring up to them
0 1 2 3 4	6. Other people see me as small and insignificant
0 1 2 3 4	7. Other people see me as somehow defective as a person
0 1 2 3 4	8. People see me as unimportant compared to others
0 1 2 3 4	9. Other people look for my faults
0 1 2 3 4	10. People see me as striving for perfection but being unable to reach my own standards
0 1 2 3 4	11. I think others are able to see my defects
0 1 2 3 4	12. Others are critical or punishing when I make a mistake
0 1 2 3 4	13. People distance themselves from me when I make mistakes

0 = NEVER 1 = SELDOM 2 = SOMETIMES 3 = FREQUENTLY 4 = ALMOST ALWAYS

0 1 2 3 4	14. Other people always remember my mistakes
0 1 2 3 4	15. Others see me as fragile
0 1 2 3 4	16. Others see me as empty and unfulfilled
0 1 2 3 4	17. Others think there is something missing in me
0 1 2 3 4	18. Other people think I have lost control over my body and feelings

APPENDIX K: Stirling Eating Disorders Scales (SEDS)

APPENDIX L: Covering Letter, Participant Information Sheet & Consent Form: Test Phase (Time 1)

Research study: The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.

Dear…….

My name is Lisa Galsworthy-Francis, I am a Trainee Clinical Psychologist and I am writing to invite you to be involved in a research study which forms part of my training at the University of Leicester.

I am looking at the role of humiliation in the eating disorders, and I am developing a scale to measure this. The purpose of this phase of the study, which I am inviting you to be part of, is intended to gather information from people who have been diagnosed with an eating disorder about their experiences of humiliation. This will help to determine how reliable (consistent) and valid (meaningful) the new scale is. This will involve filling in a series of questionnaires.

I would be grateful if you could take a moment to read the enclosed Information Sheet, which explains the study in more detail.

If you choose to take part in this particular phase of the study, please complete and sign the enclosed consent form, and bring it with you to your next appointment.

Thank you for taking the time to read this letter.

Yours sincerely,

Lisa Galsworthy-Francis
Trainee Clinical Psychologist.

Participant Information Sheet.

I would like to invite you to take part in a research study, entitled:

The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.

Before you make a decision whether or not to be involved in this study, please read the following information carefully.

Purpose of study
The purpose of this study is to better understand the role of humiliation in the development and maintenance of eating disorders. This would have a number of potential benefits for both people with eating disorders, and the professionals who work with them. For example, it might lead to a new focus for treatment programmes, and provide insight into how people with eating disorders see different aspects of their illness.

Who is involved in this study?
Lisa Galsworthy-Francis, Trainee Clinical Psychologist at the University of Leicester
Dr Ken Goss, Consultant Clinical Psychologist and Head of XXXX Service
Dr Steve Allan, Academic Tutor at the University of Leicester.

Why have I been asked to take part?
As a current patient of XXXX you have been invited to be involved in this research. The results of the research might help the service gain a better understanding of different aspects of eating disorders.

Do I have to take part?
You do not have to take part in this research if you do not wish to.
Whether or not you decide to participate in this research will not affect the treatment you receive.
Furthermore, if you agree to take part however later decide you do not wish to be involved anymore, you have the right to withdraw at any point, and any information provided so far will be destroyed. Similarly, this will not affect the treatment you receive.

What happens if I agree to take part?
In addition to the questionnaires given to you by XXXX that form part of your assessment, you will be asked to complete the Humiliation Inventory and the Experiences of Humiliation scale, which will ask questions about any humiliating experiences you have had. It should take no longer than 15 minutes to complete these. Some participants will be contacted at a later date to complete one of these scales for a second time; if you are happy to be contacted to do this, please indicate on the consent form.

What are the potential disadvantages of taking part?
Some people may find it an inconvenience to be asked to complete additional questionnaires. It is expected that completion of these additional scales should take no longer than 15 minutes.
Thinking about shape, weight, eating and previous humiliating experiences may cause some people distress. The researcher will aim to minimise the potential for any emotional distress during this stage of the research and if she feels any extra support is needed following this, she will be available to discuss this with you individually.

What are the potential advantages of taking part?
The overall aim of this study is to improve understanding of the role of humiliation in eating disorders, and taking part may enhance this understanding.

Has this research study been approved?
During its development, this research study has been through several review stages including peer review at the University of Leicester, and an NHS Research Ethics Committee. This is a group of independent people designed to protect the interests of potential participants in a study. This study was reviewed and given favourable opinion by the Black Country Research Ethics Committee on 20 January 2011.

What happens to the information I provide?
A copy of your completed consent form will be kept on your file, and the original in a separate file held by the primary researcher. Both will be stored in a lockable cabinet on NHS property.
Completed questionnaires will also be kept in your file, in a locked cabinet. In line with NHS protocols, your individual file will be kept for seven years after your discharge from the service.
Data from the results of the questionnaires (the Internal Shame Scale, Stirling Eating Disorder Scales, Other As Shamer Scale – all from your standard assessment pack – and the Humiliation Inventory and Experiences of Humiliation Scale, specific to this study) will be inputted onto a database on a password-protected computer. This will be backed up on a USB memory stick, which will be kept in a locked cabinet when not in use. Data will undergo statistical analysis.
There will be nothing to identify you when the results of this research are written up.

What happens to the results?
When complete, the results of all stages of the research will be written up and submitted to the University of Leicester as a doctoral thesis.
It is also the author's intention that the results will be written up for submission to a journal publication, to share the understanding gained from the research with the wider community of practitioners working with people with eating disorders.

What do I do next?
Having read this information and made a decision whether or not to participate, please complete the enclosed consent form, and bring it with you to your next appointment.

What if I have any questions/issues?
Please do not hesitate to contact Lisa Galsworthy-Francis on Telephone: 02476521130.

Consent Form.

Title of study: ***The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.***

Lead Researchers: Dr Ken Goss and Lisa Galsworthy-Francis

Before you make a decision whether or not to be involved in this study, please ensure you have read the Participant Information Sheet.

Please place a tick in the box and write your initials beside it

I confirm that I have read and understood the Information Sheet detailing the outline of this study, and I have had the opportunity to ask (and have clarified) any questions I might have.	
I understand that my participation in the study is entirely voluntary and I am free to withdraw at any point without having to provide a reason, and without my treatment being affected in any way.	
I understand that the data collected from my participation in this study will be held securely.	
I understand that the information I provide will be anonymous when written up for submission as a thesis and for publication.	
I give my permission for the research team (as identified on the Information Sheet) to have access to my records.	
I agree to participate in the above study.	
I agree to be contacted regarding the next stage of this research.	

Signature of Participant…….. Date……..

Print name……..

If you would like your GP to be informed of your participation in this study, please place your initials in this box.	
If you would like to receive information detailing the results of this study, please place your initials in this box.	

APPENDIX M: Covering Letter, Participant Information Sheet & Consent Form: Test-Retest Phase (Time 2)

Research study: The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.

Dear…….

I would like to take the opportunity to thank you for your contribution to this study so far. As stated at the beginning of this research, a number of people who completed the questionnaires would be contacted again – I am writing to you because at that time you gave your consent for me to do so.

This phase of the study which I am inviting you to be part of, will involve you filling in those questionnaires for a second time. The purpose is to compare your answers on the questionnaires at two different time points.

I would be grateful if you could take a moment to read the enclosed Information Sheet, which explains the study in more detail.

If you choose to take part in this particular phase of the study, please complete and sign the enclosed **consent form**, and **bring it with you to your next appointment/send it in the pre-paid envelope along with the completed questionnaires.**

Thank you for taking the time to read this letter.

Yours sincerely,

Lisa Galsworthy-Francis
Trainee Clinical Psychologist.

Participant Information Sheet.

I would like to invite you to take part in a research study, entitled:

The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.

Before you make a decision whether or not to be involved in this study, please read the following information carefully.

Purpose of study
The purpose of this study is to better understand the role of humiliation in the development and maintenance of eating disorders. This would have a number of potential benefits for both people with eating disorders, and the professionals who work with them. For example, it might lead to a new focus for treatment programmes, and provide insight into how people with eating disorders see different aspects of their illness.

Who is involved in this study?
Lisa Galsworthy-Francis, Trainee Clinical Psychologist at the University of Leicester
Dr Ken Goss, Consultant Clinical Psychologist and Head of XXXX Service
Dr Steve Allan, Academic Tutor at the University of Leicester.

Why have I been asked to take part?
As a current patient of XXXX you have been invited to be involved in this research. The results of the research might help the service gain a better understanding of different aspects of eating disorders.

Do I have to take part?
You do not have to take part in this research if you do not wish to.
Whether or not you decide to participate in this research will not affect the treatment you receive.
Furthermore, if you agree to take part however later decide you do not wish to be involved anymore, you have the right to withdraw at any point, and any information provided so far will be destroyed. Similarly, this will not affect the treatment you receive.

What happens if I agree to take part?
You will be asked to complete the Experiences of Humiliation scale for a second time, which will ask questions about any humiliating experiences you have had. It should take no longer than 15 minutes to complete this scale.

What are the potential disadvantages of taking part?
Some people may find it an inconvenience to be asked to complete an additional questionnaire. It is expected that completion of this additional scale should take no longer than 15 minutes.
Thinking about shape, weight, eating and previous humiliating experiences may cause some people distress. The researcher will aim to minimise the potential for any emotional distress during this stage of the research and if she feels any extra

support is needed following this, she will be available to discuss this with you individually.

What are the potential advantages of taking part?
The overall aim of this study is to improve understanding of the role of humiliation in eating disorders, and taking part may enhance this understanding.

Has this research study been approved?
During its development, this research study has been through several review stages including peer review at the University of Leicester, and an NHS Research Ethics Committee. This is a group of independent people designed to protect the interests of potential participants in a study. This study was reviewed and given favourable opinion by the Black Country Research Ethics Committee on 20 January 2011.

What happens to the information I provide?
A copy of your completed consent form will be kept on your file, and the original in a separate file held by the primary researcher. Both will be stored in a lockable cabinet on NHS property.
Completed questionnaires will also be kept in your file, in a locked cabinet. In line with NHS protocols, your individual file will be kept for seven years after your discharge from the service.
Data from the results of the questionnaires will be inputted onto a database on a password-protected computer. This will be backed up on a USB memory stick, which will be kept in a locked cabinet when not in use. Data will undergo statistical analysis.
There will be nothing to identify you when the results of this research are written up.

What happens to the results?
When complete, the results of all stages of the research will be written up and submitted to the University of Leicester as a doctoral thesis.
It is also the author's intention that the results will be written up for submission to a journal publication, to share the understanding gained from the research with the wider community of practitioners working with people with eating disorders.

What do I do next?
Having read this information and made a decision whether or not to participate, please complete the enclosed consent form, and bring it with you to your next appointment, or if you are no longer involved with the service, please return it in the pre-paid envelope so that the questionnaire can be sent out to you.

What if I have any questions/issues?
Please do not hesitate to contact Lisa Galsworthy-Francis on Telephone: 02476521130.

Consent Form.

Title of study: ***The development, validation and exploration of a scale to measure Humiliation within an Eating Disorder Population.***

Lead Researchers: Dr Ken Goss and Lisa Galsworthy-Francis

Before you make a decision whether or not to be involved in this study, please ensure you have read the Participant Information Sheet.

Please place a tick in the box and write your initials beside it

I confirm that I have read and understood the Information Sheet detailing the outline of this study, and I have had the opportunity to ask (and have clarified) any questions I might have.	
I understand that my participation in the study is entirely voluntary and I am free to withdraw at any point without having to provide a reason, and without my treatment being affected in any way.	
I understand that the data collected from my participation in this study will be held securely.	
I understand that the information I provide will be anonymous when written up for submission as a thesis and for publication.	
I give my permission for the research team (as identified on the Information Sheet) to have access to my records.	
I agree to participate in the above study.	

Signature of Participant…….. Date……..

Print name……..

If you would like your GP to be informed of your participation in this study, please place your initials in this box.	
If you would like to receive information detailing the results of this study, please place your initials in this box.	

APPENDIX N: Forced One-Factor Principal Components Analysis

1. How Often subscale

Component Matrix[a]

	Component
	1
HO1	.640
HO2	.565
HO3	.705
HO4	.805
HO5	.790
HO6	.588
HO7	.661
HO8	.806
HO9	.697
HO10	.495
HO11	.715
HO12	.750
HO13	.694
HO14	.826
HO15	.890
HO16	.646
HO17	.838
HO18	.742
HO19	.642
HO20	.742
HO21	.676
HO22	.843
HO23	.484
HO24	.742

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

2. How Humiliating subscale

Component Matrix[a]

	Component
	1
HH15	.868
HH5	.846
HH4	.836
HH7	.831
HH2	.823
HH9	.810
HH8	.801
HH24	.767
HH17	.765
HH22	.762
HH13	.743
HH11	.730
HH12	.728
HH14	.724
HH18	.719
HH16	.664
HH21	.634
HH3	.631
HH6	.602
HH20	.600
HH1	.584
HH19	.543
HH10	.485
HH23	.391

Extraction Method: Principal Component Analysis.

a. 1 components extracted.