

DEVELOPMENT AND EXPLORATION OF THE SHAPE, WEIGHT AND EATING
SCALE WITH AN EATING DISORDER POPULATION

Thesis submitted to the University of Leicester
Faculty of Medicine & Biological Sciences,
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Doctorate in Clinical Psychology

By

Anita Holtom-Viesel BSc
Department of Clinical Psychology
University of Leicester

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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.

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population

Anita Holtom-Viesel

Thesis Abstract

Eating disorders are difficult to treat which may partly be due to limited understanding of maintaining factors. Research has explored maintaining factors for eating disorders and this thesis focused on a number of these. A systematic literature review was conducted to explore the role of family functioning in eating disorders and an empirical paper considered the role of shame and pride.

The systematic literature review identified and evaluated quantitative research investigating family functioning in eating disorder families and its relationship with outcomes from the disorder. Fourteen studies were reviewed and findings indicated that eating disorder families reported poorer family functioning than control families, patients consistently rated their family more dysfunctional than their parents, but the notion of a typical pattern of family dysfunction was not supported. In relation to outcome, those with positive perceptions of family functioning had more positive outcomes, irrespective of eating disorder severity. Conclusions of the review were limited by conflicting, variable findings and methodological issues.

An empirical study was conducted with 73 adults with an eating disorder to explore the component structure and psychometric properties of the Shape, Weight and Eating Scale (SWES) and investigate differences in responses for participants who restrict or binge-purge. A three component structure was retained; 'Lack of Pride in Attractiveness', 'Pride in Control' and 'Shame around Eating'. The reliability and validity of the SWES were assessed and discussed. 'Pride in Control' significantly contributed to variance of restricting cognitions and behaviours whilst 'Shame around Eating' significantly contributed to variance of binge-purging cognitions and behaviours and restricting cognitions. The findings supported the notion of shame-shame and shame-pride cycles (Goss & Gilbert 2002) in eating disorders and highlighted the need for a measure of shame and pride specific to eating, body shape and weight. The study limitations, clinical implications and future research were discussed.

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Table of Contents

Thesis Abstract	iii
Acknowledgements.....	iv
Word Count.....	v
List of Tables	ix
List of Figures	x
List of Appendices	xi
Literature Review	1
1. Abstract.....	2
2. Introduction.....	3
2.1 Family Functioning and Eating Disorders	3
2.2 Models of Family Functioning and Family Characteristics.....	4
2.3 Aetiology vs. Maintenance	5
2.4 Previous Literature Reviews	5
2.5 Review Aims and Rationale	7
3. Method	9
3.1 Search Terms	9
3.2 Selection Criteria	9
3.3 Procedure for the Identification and Selection of Studies	9
3.4 Full Text Retrieval	10
3.5 Data Extraction	11
3.6 Data Synthesis.....	11
4. Results.....	12
4.1 General Description	12
4.2 Comparisons of Family Functioning between Clinical and Control Samples.....	25
4.3 Comparisons of Family Functioning between Eating Disorder Subgroups	28
4.4 Comparisons of Family Functioning between Family Members.....	28
4.5. Relationship between Family Functioning and Outcome/Recovery	30
4.6 Study Quality	31
5. Discussion.....	35
5.1 Differences in Family Functioning between Eating Disorder Families and Controls.....	35

5.2. Differences in Family Functioning between Eating Disorder Subgroups	37
5.3 Differences in the Perspectives of Family Members	38
5.4 Summary of Family Functioning in Eating Disorder Families.....	39
5.5 Family Functioning and Outcome/Recovery	39
5.6. Quality Assessment.....	40
5.7 Further Investigation and Clinical Implications	41
5.8 Review Critique	42
5.9 Conclusion	42
References.....	44
Empirical Paper.....	48
1. Abstract.....	49
2. Introduction.....	50
2.1 Shame and Pride	50
2.2 Shame and Eating Disorders.....	51
2.3 Pride and Eating Disorders	52
2.4 A Model of Shame and Pride in Eating Disorders.....	53
2.5 Measures of Shame and Pride.....	56
2.6 Study Rationale.....	57
2.7 Study Aims	58
3. Method	60
3.1 Phase 1- Scale Development.....	60
3.2 Phase 2 – Focus Group	60
3.3 Phase 3 – Clinical Sample	62
3.4 Phase 4 – Test-Retest Reliability	65
4. Results.....	66
4.1 Psychometric Properties of the SWES.....	66
4.2 Comparisons between Diagnostic Groups and Eating Disorder Presentations	73
5. Discussion.....	77
5.1 Summary of Findings.....	77
5.2 The Component Structure and Psychometric Properties of the SWES	78
5.3 Exploring the Relationship between the Components of the SWES and Different Eating Disorder Diagnoses and Presentations.	81
5.4 Clinical Implications.....	82
5.5 Study Limitations.....	84

5.6 Future research.....	86
5.7 Conclusion	87
References.....	89
Critical Appraisal	95
1 Origins of the study.....	96
2 Peer review, ethics and procedural considerations	97
3 Scale development	98
4 Focus group.....	99
5 Data collection	99
6 Team working	101
7 Analysis	101
8 Research supervision	103
9 Combining research and clinical practice	103
10 Main learning points	104
References.....	105
Appendices	106

List of Tables

Literature Review

Table 1 - Summary of study characteristics.....	page 12
Table 2 - Sample characteristics and methodology.....	page 13
Table 3 - Methodological controls and results.....	page 19
Table 4 - Summary of findings for comparisons of different aspects of family functioning between ED families and controls	page 27
Table 5 - Findings for significant differences in aspects of family functioning between eating disorder subgroups.....	page 28

Empirical Paper

Table 1 - Pattern matrix for PCA with direct oblimin rotation of three factor structure solution of SWES items.....	page 69
Table 2 - Descriptive statistics.....	page 70
Table 3 - Pearson's correlation coefficient for the test-retest reliability.....	page 71
Table 4 - Pearson's correlation coefficient for LPA, PC and SE with the OAS, ISS and ISSE.....	page 73
Table 5 - Descriptive statistics for diagnostic groups and eating disorder presentations.....	page 74
Table 6 - Correlation matrix for components of the SWES and subscales of the SEDS.....	page 75
Table 7 - Beta values from the four multiple regression analyses.....	page 76

List of Figures

Figure 1 - Representation of Shame-Pride Cycles (Goss & Gilbert, 2002).....page 54

Figure 2 - Representation of Shame-Shame Cycles (Goss & Gilbert, 2002).....page 55

List of Appendices

Appendix A - Definitions of Elements of Family Functioning

Appendix B - Selection Process

Appendix C - Data Extraction Form

Appendix D - Abbreviations

Appendix E - Participant Information Sheet and Consent Form – Focus Group

Appendix F - The Stirling Eating Disorder Scale, The Other As Shamer Scale and The Internal Shame Scale.

Appendix G - The Shape, Weight and Eating Scale

Appendix H - Participant Information Sheet and Consent Form – Clinical Sample

Appendix I - Participant Information Sheet and Consent Form – Test-retest

Appendix J - PCA initial Eigenvalues

Appendix K - Scree Plot

Appendix L - Parallel Analysis

Appendix M - PCA Component Matrix

Appendix N - Complete Structure and Pattern Coefficients and Communalities

Appendix O - Results of the two ANOVA

Appendix P - Full correlation matrix

Appendix Q - Epistemological Position

Appendix R- Chronology of research process

Appendix S - Letter of Ethical Approval

Appendix T - Target Journal - British Journal of Clinical Psychology, Guidelines to Authors.

Literature Review

Family Functioning and Eating Disorders

Family Functioning and Eating Disorders

1. Abstract

1.1 Objectives

The objectives of this review were to systematically identify and evaluate quantitative research comparing family functioning 1) in eating disorder families with control families, 2) in families with different eating disorder diagnoses 3) perceptions of different family members and 4) the relationship between family functioning and outcome. Findings were considered in relation to models of family functioning.

1.2 Method

A systematic search of electronic databases and consideration of the inclusion and exclusion criteria resulted in 14 research papers being reviewed.

1.3 Results

Findings indicated that eating disorder families reported poorer family functioning than control families, though the notion of a typical pattern of family dysfunction was not supported. There were no consistent patterns of family dysfunction for different diagnoses, however, patients consistently rated their family as more dysfunctional than one or both of their parents. In relation to outcome, those with a more positive perception of family functioning had more positive outcomes, irrespective of severity of the eating disorder.

1.4 Conclusions

Findings were more consistent with the McMaster Model (Epstein, Bishop & Levin, 1978) and Process Model of Family Functioning (Steinhauer, Santa-Barbara & Skinner, 1984) than the notion of a Psychosomatic Family (Minuchin, Rosman & Baker, 1978). However, conclusions were limited by conflicting and variable findings and methodological issues. Further investigation into the relationship between family functioning and outcome is required as is the assessment of family functioning using observational or objective methodology.

2. Introduction

The role of the family in the development and maintenance of eating disorders has long been a subject of interest and research. Earlier research focused on the causal influence of the family, whilst more recently, the impact that eating disorders can have on family functioning, and the role family functioning may have in the maintenance of the disorder has been explored. The current review focused on research that considers family functioning as a maintaining factor.

The aims were to critically appraise the research evidence exploring family functioning in eating disorder (ED) families. It considered evidence that compares the family functioning in ED families with control families. These findings were considered with respect to different models of family functioning. Differences in family functioning for the range of eating disorder diagnoses were reviewed along with differences in the perspectives of family members. The influence family functioning has on the maintenance of eating disorders was explored by considering its relationship to outcome and recovery.

2.1 Family Functioning and Eating Disorders

Family functioning can be defined as “the interactions of family members that involve physical, emotional and psychological activities” (Commonwealth of Kentucky, 2001) and “the process by which the family operates as a whole, including communication and manipulation of the environment for problem solving” (Mosby, 2009). Research into family functioning has either aimed to measure general family functioning, which is considered to be the overall health or pathology of the family (McDermott, Batik, Roberts & Gibbon, 2002), or has split it into several elements that are considered separately. Examples of these elements are *cohesion*, *adaptability*,

communication and affective responsiveness. For a list of the different aspects of family functioning discussed in the current paper and definitions for these, refer to Appendix A. The different components of family functioning considered relevant to ED families are best described in relation to the following models of family functioning.

2.2 Models of Family Functioning and Family Characteristics

2.2.1 Family Systems Theory and the psychosomatic family.

A core principle of Family Systems Theory is to consider family systems as a whole rather than looking at members individually. A central assumption is that a family's structure and organisation influences the behaviour of the family members. Minuchin, Rosman and Baker (1978) highlighted a group of family system characteristics which they believed were representative of families with a patient with Anorexia Nervosa (AN). These characteristics were: *enmeshment, over-protectiveness, rigidity, avoidance of conflict and lack of conflict resolution*. Families with these characteristics were labelled as 'psychosomatic'.

2.2.2 The McMaster Model of family functioning.

The McMaster Model (Epstein, Bishop & Levin, 1978) is also based on Family Systems Theory. This model does not profess to cover all areas of family functioning but identifies six dimensions relevant to clinical families: *problem-solving, communication, roles, affective responsiveness, affective involvement and behaviour control*. These are the dimensions assessed using the Family Assessment Device (FAD) (Epstein, Baldwin & Bishop, 1983).

2.2.3 The Process Model of family functioning.

The Process Model (Steinhauer, Santa-Barbara & Skinner, 1984) differs from the McMaster Model by its emphasis on the interaction between the dimensions of family functioning. It is a model of family process rather than family structure. It

describes seven key dimensions of family functioning: *task accomplishment, role performance, communication, affective expression, affective involvement, control, values and norms*. These are the dimensions assessed by the Family Assessment Measure (FAM) (Skinner, Santa-Barbara & Steinhauer, 1983).

2.3 Aetiology vs. Maintenance

Models of family functioning were initially used to try and establish the role families might play in the development of eating disorders. However, this was criticised for making unfounded assumptions about cause and effect and presuming that the dysfunction observed in the families was a cause rather than a response to the eating disorder (Jack, 2001; Treasure et al., 2008). In addition, this view of the development of eating disorders was unnecessarily blaming of families. Whitney and Eisler (2005) recommended that it is clinically more beneficial to gain knowledge and understanding of current family functioning and the impact the illness has had on the family. Hence the focus now is on how family functioning may be maintaining the disorder, rather than blaming the family for its development. For these reasons, empirical papers considering the causal role of family functioning are not included in the current review.

2.4 Previous Literature Reviews

A recent literature review of family functioning in ED families was conducted by Eisler (2005). There were two aims of his review: the first was to review evidence from family treatment studies; the second was to review studies of family functioning in AN families. The findings in relation to treatment studies were systematically selected and reviewed. However, Eisler (2005) stated there was a considerable body of research on family functioning in AN families but that the findings were not easily summarised, so these were briefly described but not systematically reviewed. The majority of research on family functioning relied on self-report measures and were typically

comparisons of clinical samples and controls. The findings suggested poorer family functioning in clinical samples for *communication* and *affective responsiveness*. Eisler (2005) concluded that there was no consistent pattern of family functioning in AN families, that there was a lack of support for the psychosomatic family model, and that understanding how families reorganise themselves around a problem is more important for treatment than knowing how the problem developed.

Whitney and Eisler (2005) reviewed literature on the experience of caring for someone with an eating disorder, how the family reorganises itself and inter-personal maintaining factors. This narrative review did not report on the methods of selection or evaluation of the research and consisted mainly of qualitative research papers. The main conclusions of that review were that families could become stuck in unhelpful interactions and lose sight of their strengths and resources, which otherwise would help the family member overcome their disorder. Whitney and Eisler's (2005) review was not conducted systematically and although reviewing maintaining factors, did not explore the maintaining effect of family functioning by considering its impact on recovery.

A systematic review by Kog and Vandereycken (1985) explored evidence for three aspects of family characteristics in ED families: demographics, individual pathology and family relationships. The findings for the first two topics focused on the aetiology of eating disorders so are not discussed here. The review of family relationships excluded studies which focussed on therapy process or treatment outcome. They found that compared to controls, mothers and daughters from ED families reported more difficulties with *task accomplishment*, *role performance*, *communication* and *affective expression*. They also found that Bulimia Nervosa (BN) families had higher levels of *conflict* and *negativity*, whereas AN families had higher levels of

cohesion, organisation and structure, dependency, interpersonal boundary problems and cross generational blurring. The results were variable when looking at *enmeshment, over-protectiveness, rigidity and conflict avoidance* within diagnostic groups as well as across them, rejecting the notion of the psychosomatic family. Kog and Vandereycken (1985) highlighted a number of limitations in the studies reviewed. This included that some data was collected from medical records or clinical experience, not systematically, and there were few well-controlled studies. The review concluded the need for systematic studies of family functioning between ED families and controls and within ED subgroups, preferably using both observational and self-report measures.

2.5 Review Aims and Rationale

Kog and Vandereycken (1985) recommended further systematic research into family functioning in ED families, across the range of eating disorder diagnoses and including family members. The current review included research after 1985, to determine if these recommendations had been considered and compared the findings with those of Kog and Vandereycken (1985). The review by Whitney and Eisler (2005) lacked findings from research using quantitative research methods and research looking at the impact of family functioning on recovery and outcome. This research therefore has been included in the current review. The review by Eisler (2005) was not conducted systematically and only included research with AN families. The current review was conducted systematically, giving a description of search methodology and including research with participants across the range of eating disorders.

In summary, the aims of the current review were to systematically review the research evidence on family functioning in ED families and use this evidence to answer four questions:

- 1) is there evidence of significant differences in family functioning between ED families and control families and do these differences reflect models of family functioning?
- 2) are there significant differences in family functioning between different ED diagnoses?
- 3) are there significant differences in perceptions of family functioning between family members?
- 4) is there a relationship between family functioning and recovery from an eating disorder?

3. Method

3.1 Search Terms

The search terms were: (Eating Disorder AND Family Funct*) OR (Eating Disorder AND Family Maint*). These were searched for in the full text to increase the probability of accessing relevant literature. They were informed by a scoping review of the literature and the common key words of relevant articles. Family Funct* was included as this is the main focus of the review and Family Maint* was included to find literature of family maintaining factors as opposed to aetiological factors.

3.2 Selection Criteria

The current review included quantitative empirical papers with a focus on family functioning in eating disorders. The studies also had to address one of the four questions of the review. Papers were restricted to those with quantitative methodology as the comparative nature of the review questions lends itself to this. It also allowed for comparisons to be made between studies that used the same methodology and measures. Studies were not restricted by the ED diagnoses or which family members they included. Literature reviews, case studies and commentaries were excluded, as were studies that did not include participants with a diagnosed eating disorder. Commentaries and case studies were excluded as they are low on the hierarchy of evidence (Greenhalgh, 1997) and generalisability of the findings would be low. With the exception of case studies, studies were not excluded due to quality criteria. The quality of the studies included was variable and the impact of this on the conclusions is discussed later in the review.

3.3 Procedure for the Identification and Selection of Studies

A computerised search was undertaken on 26th November 2010 on Psycinfo, Web of Science and Scopus using the aforementioned search terms. The resulting

articles were refined to journal articles and excluded those about obesity, as the focus of the current review was on diagnosed eating disorders. The results from the three databases were collated and duplicates removed. A visual search of the references from previous reviews was conducted to ascertain any relevant studies not elicited through the database search: this revealed no extra studies. The remaining articles were reduced to those with full text available in English that could be accessed electronically or at the University of Leicester Library. It was understood that this excluded a number of potentially relevant studies, however this limitation was unavoidable. The remaining titles and abstracts were screened and articles were excluded if their focus was not on family functioning and eating disorders, if they were a commentary, literature review or case study or if they used qualitative methodology. This resulted in 69 studies remaining.

3.4 Full Text Retrieval

The full text was retrieved for all 69 articles selected. They were then screened and included or excluded on the following criteria. Thirty-two studies were excluded as their focus was on family functioning as solely an aetiological factor. A further five studies were excluded for not including participants with a diagnosed eating disorder using DSM or ICD criteria. An additional 15 studies were excluded as their focus was not on one of the four questions of the current review. It was also ensured that duplicate publications were not treated as separated studies, with only the study with the most recent use of the data being included. This led to the exclusion of three studies. The remaining 14 articles were included in the current critical review. A flow chart of the selection process is presented in Appendix B.

3.5 Data Extraction

Data from the 14 articles was extracted and entered into an Excel file. The data extraction categories were informed by the NHS CRD (2008) guidelines for data extraction and quality assessment and can be viewed in Appendix C. Information was extracted regarding the study characteristics (e.g. study design, inclusion/ exclusion criteria, study aims), participant characteristics (e.g. age, gender, diagnoses), results (e.g. measures, statistical tests, outcome data) and information regarding the quality of the study (e.g. sample size/power, risk of bias/internal validity and generalisability/external validity).

3.6 Data Synthesis

A narrative description of the data extracted was produced that covered a summary of the study design, sample characteristics, key findings and study quality. A meta-analysis was not conducted given the heterogeneity of the assessment measures, diagnoses, family members and control groups included.

4. Results

4.1 General Description

Of the 14 studies included in the current review, 12 used a cross-sectional design, 11 with a comparison group. The remaining two studies used a longitudinal design with no comparison group. Eleven of the studies reported data from at least one family member. Eleven of the studies used self-report measures only, two used self-report measures and observations of families and one used self-report measures and interviews.

A summary of the study characteristics are shown in Table 1. The sample characteristics and methodology are presented in Table 2 and a summary of the methodological controls and results of the studies are presented in Table 3. The abbreviations used in the tables are detailed in Appendix D.

Table 1 *Summary of study characteristics*

Sample size range - ED participants	17-126
- ED family members	0-118
- control participants	0-1462
Total number of ED participants	634
Total number of participants	3094
Mean age range (ED participants)	14.5-24.4yrs
Female % (ED participants) ¹	98.6%
Diagnoses % ²	
Anorexia Nervosa (restricting and purging type)	58%
Bulimia Nervosa	32%
EDNOS	10%

¹ Study 7 did not specify the gender of the participants but for this calculation it was assumed they were all female.

² Study 4 did not detail the number of participants for each diagnosis so they were not included in this calculation.

Table 2 *Sample characteristics and methodology.*

<u>Authors</u>	<u>Title and Journal</u>	<u>Country</u>	<u>Aims</u>	<u>Design</u>	<u>Sample selection</u>	<u>Groups (N)</u>	<u>Age - mean (range)</u>	<u>Gender</u>	<u>Ethnicity</u>	<u>Measures of Family Functioning</u>
1.Casper & Troiani (2001)	Family Functioning in Anorexia Nervosa Differs by Subtype. International Journal of Eating Disorders.	USA	1. To compare FF between AN-R and AN-B. 2. To compare FF between AN and controls. 3. To compare FF between family members.	Cross-sectional	Consecutive referrals to ED unit over 16 months.	AN (22) C (45) P-AN (17) P-C (34)	AN - 16.7 C - 15.8	F	Caucasian	Family Assessment Measure (FAM)
2. Cook-Darzens et al. (2005)	Self-Perceived Family Functioning in 40 French Families of Anorexic Adolescents: Implications for Therapy. European Eating Disorders Review.	France	1. To compare FF in Fam-AN with published non-clinical norms. 2. To compare FF between family members.	Cross-sectional	Consecutive referrals to ED unit over 15 months.	AN (40) M-AN (40) F-AN (40) S-AN (31) Fam-C (98)	AN - 14.97 (12-19) C - 16.2	37 F 3 M	Not detailed	Family Adaptation and Cohesion Evaluation Scale (FACES III)

3. Dancyger et al. (2005)	Do Daughters with Eating disorders Agree with their Parents' Perception of Family Functioning? Comprehensive Psychiatry.	USA	1. To compare FF between family members. 2. To compare FF between ED subtypes.	Cross-sectional	Consecutively referred patients to an outpatient program over 5 years.	AN-R (24) AN-B (23) BN (41) EDNOS (38) M-ED(118) F- ED (96)	ED - 18.3 (13-34)	F	Caucasian	The McMaster Family Assessment Device (FAD).
4. Gillett et al. (2009)	Implicit Family Process Rules in Eating Disordered and Non-Eating Disordered Families. Journal of Marital and Family Therapy.	USA	1. To compare implicit family process rules between Fam-ED and Fam-C. 2. To compare FF between family members. 3. To compare FF between ED subtypes.	Cross sectional	Consecutive patients seeking treatment at ED unit.	Fam-ED (51) Fam-C (51)	ED - 19.39 (14-24)	F	Caucasian (92.1%) Black (5.9%) Native American (2%).	The Family Implicit Rules Profile
5. Gowers & North (1999)	Difficulties in Family Functioning and Adolescent Anorexia Nervosa. British Journal of Psychiatry	UK	1. To investigate the relationship between the severity of AN and perceived family dysfunction. 2. To compare FF ratings of AN, M-AN and clinicians. 3. To investigate the relationship between outcome and FF over the course of 12 months.	Longitudinal - initial assessment and 1 year follow-up.	Consecutive referrals to ED unit over 15 months.	AN- (35) M-AN (35)	AN - 14.9	31 F 4 M	Not detailed	The FAD The McMaster's Structured Interview of Family Functioning

6. Karwautz et al. (2003)	Perceptions of Family Relationships in Adolescents with Anorexia Nervosa and their Unaffected Sisters. European Child and Adolescent Psychiatry.	Austria	1. To compare the perceptions of FF between AN and their sisters.	Cross-sectional	Consecutively admitted patients to an ED unit with a diagnosis of AN over 4 years, who had a sister without a current or past eating disorder history.	AN (31) Sis-AN (31)	AN -15.7 (13-18) Sis - 16.2 (11-21)	F	Caucasian	The Subjective Family Image Test
7. Kog & Vandereycken (1989)	Family Interaction in Eating Disorder Patients and Normal Controls. International Journal of Eating Disorders.	Belgium	1. To compare cohesion, adaptability and conflict between Fam-ED and Fam-C. 2. To compare differences between ED subtypes.	Cross-sectional	An a-select sample of patients with "intact families" treated in an AN unit.	Fam-ED (30) Fam-C (30)	ED (15-24) C (15-24)	not detailed	not detailed	Two semi-structured tasks - decision making and conflict resolution tasks. The Leuven Family Questionnaire
8. McDermott et al. (2002)	Parent and Child Report of Family Functioning in a Clinical Child and Adolescent Eating Disorders Sample. Australian and New Zealand Journal of Psychiatry.	Australia	1. To compare FF between family members. 2. To compare FF between ED subtypes. 3. To compare FF between Fam-ED and community norms.	Cross-sectional	Consecutively referred patients to an ED clinic over 20 months.	AN (42) EDNOS (26) BN (12) P-ED (75) Fam-C (1462)	ED - 14.5 (9-18)	97.5% F	not detailed	The Family Assessment Device - General Functioning Scale (FAD-GFS)

9. Shisslak, McKeon & Crago (1990)	Family Dysfunction in Normal Weight Bulimic and Anorexic Families. Journal of Clinical Psychology.	USA	1. To compare FF between BN and AN-B. 2. To compare FF between ED and Controls.	Cross – sectional	Recruited through a university hospital and student health centre.	BN (24) AN-B (13) C (41)	BN -20.8 AN-B - 21.2 C - 20.9	F	not detailed	The Family Environment Scale (FES) The Family Dynamics Survey (FDS)
10. Stern et al. (1989)	Family Environment in Anorexia Nervosa and Bulimia. International Journal of Eating Disorders.	USA	1. To compare FF between AN- R, AN-B and BN. 2. To compare FF between ED and Controls. 3. To compare FF between family members.	Cross – sectional	Not detailed.	AN-R (20) AN-B (13) BN (24) M-ED (55) F-ED (2) Fam-C (57)	AN-R - 19.4 AN-B - 20.9 BN - 24.4 C - 21.9	F	Caucasian	The FES
11. Szabo, Goldin & Le Grange (1997)	Application of the Family Relations Scale to a Sample of Anorexics, Bulimics and Non-Psychiatric Controls: A Preliminary Study. European Eating Disorders Review.	South Africa	1. To compare FF between Fam-AN and Fam-BN. 2. To compare FF between Fam-ED and Fam-Controls.	Cross – sectional	Consecutive patients assessed at an ED unit.	AN (10) BN (7) Fam-ED (17) Fam-C (20)	AN - 20 BN - 18.7 C - 16.95	F	not detailed	The Family Relations Scale (FRS)

12. Waller, Calam & Slade (1989)	Eating Disorders and Family Interaction. British Journal of Psychiatry.	Uk	1. To compare FF between AN and BN. 2. To compare FF between ED and Controls.	Cross - sectional	Patients attending an outpatient programme and attendees at self help groups.	AN (12) BN (21) BN-S (8) C (27)	not detailed	F	not detailed	The FAD
13. Wallin & Hansson (1999)	Anorexia Nervosa in Teenagers: Patterns of Family Function. Nordic Journal of Psychiatry.	Sweden	1. To compare FF in Fam-AN with Fam-C. 2. To compare FF ratings by FAM-AN and observers.	Cross-sectional	Consecutively referred patients to an ED unit over 38 months.	AN (24) M-AN (24) F-AN (24) Fam-C (54)	AN - 15.2 C - 8.4	F	not detailed	The Kinston-Loader Family Interview, The FRS The Family Climate Scale, The CRS-Turbo, The Beavers Family Competence and Family Style. 3 observed tasks: 1. Joint answering of four questions from the FRS 2. Discussing a problem 3. Puzzle.

14. Woodside et al. (1996)	Long-Term Follow-Up of Patient- Reported Family Functioning in Eating Disorders After Intensive Day Hospital Treatment. Journal of Psychosomatic Research	Canada	1. To examine patient reported FF at 2 years post-intensive treatment. 2. Do the improvements in FF reported by patients at discharge persist over the course of the follow-up period? 3. Is patient report of FF at admission or discharge associated with clinical outcome at admission, discharge or 2 year follow-up?	Longitudinal, admission, discharge and 2 year follow up.	Data was collected from participants taking part in a larger study of the outcome of treatment and long- term follow-up being carried out by a day hospital program.	AN (5) BN (52)	Not detailed	F	Not detailed	The FAM
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Table 3 *Methodological controls and results*

<u>Study number</u>	<u>Groups (N)</u>	<u>Controls</u>	<u>Significant Results</u>	<u>Non significant and other findings</u>
1	AN (22) C (45) P-AN (17) P-C (34)	Controls were randomly selected from one school. They were screened for past or present psychiatric diagnoses. All controls and clinical participants were Caucasian.	1. AN-B rated general FF significantly worse than AN-R and controls. 2. M-AN-B rated general FF significantly worse than M-C. 3. AN-B rated task accomplishment, communication and effective expression significantly worse in their families than AN-R and controls. AN- R paralleled controls. 4. AN-B rated themselves as more impaired for affective expression, involvement and control compared with controls. AN-R rated themselves not different from controls and better than controls for role performance and adherence to values and norms.	1. AN-B felt that task accomplishment, affective expression and involvement were problems within the family. Whereas problems with control were viewed as individual.
2	AN (40) M-AN (40) F-AN (40) S-AN (31) Fam-C (98)	Controls were participants from the validation study which established French norms for the FACES III measure. The controls were not matched in any way other than having an adolescent in the family.	1. Fam-AN had significantly lower cohesion scores than Fam-C. 2. F-AN perceived significantly more adaptability than F-C. 3. Fam-AN had significantly higher ideal scores than perceived scores for cohesion and adaptability. This was the same for Fam-C. 4. In AN families fathers had the lowest levels of dissatisfaction and mothers and siblings were significantly more dissatisfied than fathers. 5. There were significant differences in the perceptions of AN family members concerning adaptability.	1. The hypothesis that AN would have higher cohesion and lower adaptability scores was not confirmed. 2. There were no trends found between FF scores and BMI, depression, number of admissions, type of treatment, age, age of onset or duration of illness. 3. There was no typical dysfunctional pattern for AN families and they ranged across a spectrum.

3	AN-R (24) AN-B (23) BN (41) EDNOS (38) M- ED(118) F- ED (96)	No Controls	<p>1. There were significant differences between family members for 4 FAD subscales; problem solving, communication, affective responsiveness and behaviour control.</p> <p>2. M-ED and ED differed significantly on all subscales except roles.</p> <p>3. M-ED and F-ED differed significantly for problem solving and affective responsiveness.</p>	<p>1. There were no significant differences between F-ED and ED on any subscales.</p> <p>2. All ED scores on all subscales were in the unhealthy range, all F-ED scores except behaviour control were in the unhealthy range. For M-ED 5 subscales were in the unhealthy range except affective responsiveness and behaviour control.</p> <p>3. No significant differences were found between diagnostic subgroups.</p>
4	Fam-ED(51) Fam-C (51)	Control families were selected using a quota sampling method. Families were screened for eating disorder symptoms and other addictive tendencies such as alcohol or drug use. Families were matched for age, gender, income, race, family structure, religion and geographic region. This was systematically done.	<p>1. For the Fam-ED the total FIRP score, for all subscales and for the total FIRP + eating disorders scale combined were all lower (more constraining) than those of Fam-C, regardless of whose scores were being examined. All subscales were significant except for Inappropriate Caretaking of Parents.</p> <p>2. ED rated their families as having fewer facilitative and more constraining family rules than did other family members, including siblings. There were significant differences for total FIRP, total FIRP+ ED scale, Constraining Thoughts, Feelings and Self Subscale, Expressiveness and Connection Subscale and the Eating Disorder Rules Subscale. For the Monitoring subscale both the daughter and siblings were significantly different from mother.</p>	<p>1. There were no significant differences between the 3 diagnostic groups on any of the total or subscales.</p>

5	AN- (35) M-AN (35)	No control group	<p>1. The families did not have a unified view of their functioning. AN were more critical than M-AN with higher mean scores on each subscale of the FAD.</p> <p>2. FF from the FAS-GFS and the overall score for the MCSIFF were strongly correlated with Average Outcome Score (AOS). In both cases good outcome was associated with better judgement of FF.</p> <p>3. Those with good FF maintained their relatively good outcome between 1 and 2 year follow-up. Those with poor FF improve over the second year to match the outcome of the former group.</p> <p>4. Patients FF is rated as more dysfunctional at 1 year follow-up but then improves to a better level than at initial assessment by 2 year follow-up. This is significant for 4/7 subscales. Mothers scores are remain similar at all 3 time points.</p>	<p>1. Using the MROAS as a measures of severity there were no significant associations between rating of FF (by any of the raters) and severity of the disorder.</p> <p>2. In contrast to patient reports, mothers' assessment of FF was not significantly associated with outcome.</p>
6	AN (31) Sis-AN (31)	Sisters were used in place of matched controls.	<p>1. There was a significantly lower score for Individual Autonomy for AN compared with their sisters.</p> <p>2. AN had significantly higher perceived cohesion than their sisters.</p> <p>3. AN perceived that they were significantly less autonomous towards their mothers compared with their sisters and mothers also reported greater lack of autonomy in their patient daughters towards them corroborating the patients' reports.</p>	<p>1. Sisters did not differ in their perceptions of the marital relationship between mother and father and the reported scores for IA and EC between mother and father were within normal ranges.</p> <p>2. When comparing sisters perceptions of their own relationships with each parent there were no significant differences between the sisters on measures of Emotional Connectedness.</p>

7	Fam-ED(30) Fam - C(30)	Controls were selected from school records of a local high school and matched for social class, family size, sex and age of patient. They received \$45 for participating.	<p>1. Fam-ED showed significantly less disagreements between parents and children and more stability in their behavioural interaction in the family.</p> <p>2. Fam-BN showed significantly less disagreement between parent and child than Fam-C.</p> <p>3. Fam-AN-R reported more cohesion than Fam-BN and Fam-C.</p> <p>4. When Fam AN-R and Fam-AN-B were combined together they showed significantly less disagreement than Fam-C and AN patients perceived their family as more cohesive than both BN and Controls.</p>	1. Fam-AN-R did not significantly differ from Fam-BN or Fam-C on disagreement between parent and child.
8	AN (42) EDNOS (26) BN (12) P-ED (75) Fam-C (1462)	Data was used from the Western Australia Child Health Survey. The norms were based on data obtained from 2373 children and adolescents aged 4-16 living in 1462 randomly selected households.	1. Mean scores for the FAM-ED were significantly higher than for Fam-C. The number of FAM-ED falling within the clinical range was significantly more than the 12% for the community sample; 62.1% of the families scored within clinical range according to the child scores and 61.2% according to parents' scores.	<p>1. There was moderate concordance between the parent and child scores on the FAD-GFS and no significant differences were found.</p> <p>2. No significant differences were found between diagnostic groups on either child or parent ratings.</p>
9	BN (24) AN-B (13) C(41)	Controls were volunteers from university undergraduate psychology courses. Controls were not matched.	<p>1. BN and AN-B considered their families as displaying significantly less cohesion, expressiveness and orientation toward recreational activities than controls.</p> <p>2. BN families were perceived as displaying significantly more conflict than controls</p> <p>3. AN-B perceived their families as discouraging independence to a significantly greater degree than BN or controls.</p> <p>4. BN perceived their families as significantly less oriented toward intellectual-cultural activities than controls.</p> <p>5. BN and AN-B perceived their families as significantly less emotionally supportive and as needing counselling to a significantly greater degree than controls.</p> <p>6. The quality of communication in BN and AN-B families were perceived as significantly poorer than controls.</p>	1. There were no significant differences between the three groups for achievement orientation, moral-religions emphasis, organisation, control, influencing decisions, independence and acceptance.

10	AN-R (20) AN-B (13) BN (24) M-ED (55) F-ED (2) Fam-C (57)	Control subjects were matched by age, sex and race and were recruited through advertisements.	<p>1. There were significant differences found between groups on 5/10 subscales of the FES: cohesion, expressiveness, conflict, achievement orientation and active recreational orientation.</p> <p>2. The only significant difference between the three diagnostic categories was on achievement orientation where P- BN rated their families as higher than P-AN-B or P-AN-R.</p> <p>3. There were significant differences between parents and subjects on 5/10 subscales: cohesion, expressiveness, conflict, intellectual-cultural orientation and moral-religious emphasis. In each incident the parent rated the family higher than the daughter, except on conflict. These differences were regardless of diagnosis.</p>	<p>1. ED families on the whole rated themselves as less supportive of each other and less encouraging of open expression of feelings than control families as well as more likely to have conflictual interactions.</p> <p>2. In both clinical and control families parents view family functioning more positively than their children.</p>
11	AN (10) BN (7) Fam-ED (17) Fam-C (20)	Control families were randomly selected on the basis of their being a daughter between the ages of 14-27 within the family who did not have a history of an eating disorder. No further detail of the selection process is given.	<p>1. Fathers revealed a significant difference between mean scores on two subscales: flexibility and family hierarchy. For flexibility F-C scored significantly higher than F-BN for family hierarchy F-C scored significantly higher than F-AN.</p> <p>2. Daughters demonstrated significant differences for differentiation, BN higher than C, family hierarchy, C higher than AN and family idealisation, C higher than AN.</p> <p>3. Fam-Ed and Fam-C showed significant between group differences for family hierarchy and family idealisation, C scoring higher than AN in both cases.</p>	<p>1. Mothers showed no between group differences on any subscales.</p> <p>2. There are 6 subscales therefore more subscales had no significant differences between either ED groups and controls.</p>
12	AN (12) BN (21) BN-S (8) C (27)	Controls were volunteers with no history of psychiatric disorders. No demographic information was detailed.	<p>1. AN rated their families as significantly more unhealthy in affective involvement and behaviour control than controls.</p> <p>2. BN rated their families as significantly poorer for problem solving, behaviour control and affective involvement than controls.</p> <p>3. BN-S rated family interaction as significantly poorer than comparisons on all scales except behaviour control.</p>	<p>1. Generally women with ED rated their family as less healthy, particularly BN-S.</p>

13	AN (24) M-AN (24) F-AN (24) Fam- (54)	The control group were from a study in which the same methods of observer ratings were being used. The control group were not matched in any way.	<ol style="list-style-type: none"> 1. M-AN and F-AN rated cohesion higher than P-C. They also rated chaos as lower than P-C. 2. AN rated chaos as lower than controls. 3. M-AN rated closeness lower and chaos higher than M-C. 4. AN rated chaos higher than controls. 5. Fam-AN were rated lower for family competence and family style by observers 6. Fam-AN rated higher on cohesion and hierarchical organisation. 7. Differences between self report and observer ratings were most pronounced on the chaos - rigidity scale with mother and patients rating families as chaotic whilst observers rated them as rigid. 	<ol style="list-style-type: none"> 1. AN showed no difference to controls on scores of cohesion and F-AN and F-C did not differ on closeness or chaos. 2. Even though most AN families were rated high on cohesion there was a range of scores. 3. Not all AN families were rated as dysfunctional.
14	AN (5) BN (52)	No control group	<ol style="list-style-type: none"> 1. FAM scores were consistently more favourable at discharge than admission. 2. For the self rating scale of the FAM there is a significant difference between those with good or poor outcomes at 2 year follow-up but not at discharge. 	<ol style="list-style-type: none"> 1. Results are in the same direction as the self rating scale for the general scale of the FAM but they are not statistically significant. 2. Although not significant the trend for subjects with poor outcome showed deterioration between discharge and 2 year follow-up but not back to admission level.

4.2 Comparisons of Family Functioning between Clinical and Control Samples

With respect to general family functioning, three studies found that ED families rated themselves as having significantly worse family functioning than controls (1, 8, 12³). In study 8, 12% of the community sample was rated within the clinical range for family functioning compared with 62.1% of ED families. The remaining studies comparing clinical and control samples considered elements of family functioning separately.

There were mixed results when the specific elements of family functioning were considered separately (1, 2, 7, 9, 10, 11, 12, 13). For *cohesion*, AN (2), BN and AN-B participants (9, 10) scored significantly lower than controls. However AN mothers and fathers rated significantly higher on cohesion than controls (13) and AN participants rated no different to controls (13). In study 13, observational methods were used, and AN families were observed to have higher levels of *cohesion* than controls. Despite most AN families in this study being rated high on *cohesion*, there were a range of scores.

For *adaptability*, AN fathers rated higher than controls (2) and AN participants rated higher on a measure of chaos (very high adaptability) than controls (13), but control fathers rated themselves significantly higher for *flexibility* than BN fathers (11).

With respect to *conflict*, one study found BN families reported significantly higher levels than controls (9) and the parents of AN-B participants rated their families as significantly higher than controls (10). In contrast, a different study found that ED families showed significantly less disagreements between parents and children and more stability in their behavioural interactions (7).

³ Numbers refer to the study number used in Tables 2 and 3.

Regarding *affective expression* and *communication*, BN (9) and AN-B participants (1, 9) rated their families as having significantly less *affective expression* (1, 9) and being less emotionally supportive (9) than controls. AN-R participants did not differ to controls (1). AN-B (1, 9) and BN (9) participants rated their families' quality of *communication* significantly lower than controls. For *affective involvement* AN and BN participants rated themselves lower than controls (12) yet in a different study there were no significant differences found between AN and controls (1).

When considering elements around *task accomplishment*, *problem solving* and *achievement orientation*, BN families rated themselves as higher in *achievement orientation* than controls (10). In study 1, AN-B participants rated *task accomplishment* significantly worse in their families than controls, however AN- R participants did not differ from controls. In study 12, BN participants rated *problem solving* lower than controls though no significant differences were found between AN participants and controls.

The results looking at *roles* within the family found that AN participants and their fathers scored significantly lower for *family hierarchy* than controls (11) and AN and BN scored significantly lower for *behaviour control* (12). However AN-R participants rated themselves significantly higher than controls for *role performance* and *adherence to values and norms* (1) and AN participants were rated higher for hierarchical organisation (13). When using *implicit family rules* as an element of family functioning, ED families rated their family rules as more constraining than controls (4).

In summary, when considering family functioning as a single concept, studies found that ED families had poorer family functioning than controls. However, when components of family functioning were considered separately, the results were not

consistent. The variation of the findings can be seen in Table 4, which summarises the findings for the different components of family functioning.

Table 4 *Summary of findings for comparisons of different aspects of family functioning between ED families and controls*

	Significantly higher than controls.	Significantly lower than controls.	No significant difference to controls.
General Family Functioning		ED (1,8 and 12 ⁴)	
Cohesion	AN mother and fathers (13) AN (7)	AN (2) BN (9 and 10) AN-B (9 and 10)	AN (13) BN (7)
Adaptability	AN fathers (2) AN (13)	BN fathers (11)	
Conflict	BN (9) AN-B parents (10)	ED (7)	AN-B (9)
Affective Expression		BN (9) AN-B (1 and 9)	AN-R (1)
Affective Involvement		AN (12) BN (12)	AN-R and AN-B (1)
Communication		AN-B(1 and 9) BN (9)	AN-R (1)
Task Accomplishment		AN-B (1)	AN-R (1)
Problem solving		BN (12)	AN (12)
Achievement Orientation	BN (10)		ED (9)
Role Performance	AN-R(1)		AN-B (1)
Family Hierarchy	AN (13)	AN(11)	
Behaviour Control		AN (12) BN (12)	AN-B(1) AN-R (1) ED (9)
Adherence to values and norms.	AN-R (1)		AN-B (1)
Constraining Implicit Family Rules	ED (4)		

For abbreviations used in Table 4, refer to Appendix D.

⁴ Numbers indicate the studies that had this finding and numbers are based on those used in Table 2.

4.3 Comparisons of Family Functioning between Eating Disorder Subgroups

Nine studies investigated differences in family functioning between eating disorder subgroups. Two studies found no significant differences between subgroups in general family functioning (3, 8) however one study found that AN-B families rated general family functioning significantly worse than AN-R families (1). Two studies found no significant differences between ED subgroups on any subscale of the measures used (4, 11). Five studies found one or more significant difference between subgroups on specific subscales. These findings are presented in Table 5.

Table 5 *Findings for significant differences in aspects of family functioning between eating disorder subgroups*

Cohesion	AN-R higher than BN (7) AN (R+B) higher than BN (7)
Discouraging Independence	AN-B higher than BN (9)
Achievement Orientation	BN higher than AN-B and AN-R (10)
Planning activities	AN-B and BN higher than AN-R (8)
Confiding in Each Other	AN-B and BN lower than AN-R (8)
Problem Solving	Bulimia Simplex ⁵ poorer than AN and BN (12)
Affective Involvement	Bulimia Simplex poorer than AN and BN (12)
Behaviour Control	Bulimia Simplex poorer than AN and BN (12)
Role Performance	Bulimia Simplex poorer than AN and BN (12)

The findings are again mixed, with some studies finding significant differences between diagnoses for specific elements of family functioning, yet others finding no significant differences.

4.4 Comparisons of Family Functioning between Family Members

In the majority of studies, family members did not have a unified view of their functioning. In five studies, the ED participants were significantly more critical of their families' functioning than one or both of their parents. ED participants scored more

⁵ Bulimia Nervosa with no history of restriction

critically on each subscale of the FAD (5) and rated their families as having fewer facilitative and more constraining family rules than did other family members(4). Parents rated their families as significantly higher on *cohesion*, *affective expressiveness*, *intellectual-cultural orientation* and *moral-religious emphasis* and ED participants scored higher for *conflict* (10).

When parents' views were considered separately, one study found that in AN families, mothers and siblings were significantly more dissatisfied with the family's functioning than fathers (2). Whilst a different study found that mothers and daughters differed significantly on all FAD subscales except *roles*, mothers and fathers differed significantly for *problem solving* and *affective responsiveness*, and fathers and daughters did not differ in their perceptions (3).

Three studies found significant differences between family members on specific aspects of family functioning. Differences were found for *problem solving*, *communication*, *affective responsiveness* and *behaviour control* (3), *cohesion*, *expressiveness*, *conflict*, *intellectual-cultural orientation* and *moral-religious emphasis* (10) and *adaptability* (2). In all cases the ED participants rated family functioning worse than one or both parents.

When comparing AN patients with their sister, there were no significant differences in their perceptions of emotional connectedness towards their parents, however there were significant differences in their perceptions of individual autonomy. Patients perceived they were non-autonomous towards their mothers compared with their sisters. This difference was corroborated by the mothers (6). In contrast to the six studies described above, one study found no significant differences in the perception of family functioning between family members (8).

In summary, the majority of studies found differences in perceptions of family functioning for different family members. When differences were found, the participant with the eating disorder had a poorer perception of family functioning than the other members of their family.

4.5. Relationship between Family Functioning and Outcome/Recovery

Two studies investigated the relationship between family functioning and recovery. The significant finding from these studies was that perceived family functioning was strongly correlated with outcome (5). Good outcome was associated with a more positive patient's perception of family functioning. By contrast, the mothers' perception of family functioning was not significantly associated with outcome. This study found no significant association between severity of the eating disorder and ratings of family functioning, indicating that those with good outcome and better perceptions of family functioning were not necessarily less severe at admission (5).

Those with good family functioning maintained their relatively good outcome between one and two year follow-up. Those with poor family functioning improved over the second year to match the outcome of those with better family functioning (5). In study 14 family functioning was significantly different between those with good or poor outcomes at 2 year follow-up but not at discharge.

The patients' perception of family functioning significantly improved from admission to discharge (14) however, they then perceived the family as becoming more dysfunctional at one year follow-up, but improving to above that at initial assessment by two year follow-up (5). This was significant for four of the seven subscales of the FAD. Mothers' scores however remained similar at all three time points (5).

4.6 Study Quality

4.6.1 Samples.

A potential source of bias was the sample sizes and the power to detect significant differences should they exist. The majority of studies did not report power calculations, therefore, for the purpose of the current review, samples were considered to be underpowered if they were smaller than 50, for those using ANOVA or t-tests and smaller than 25 in each group, for those using correlations. These numbers are based on a medium effect size of 0.5 and power of 0.8 (Clark-Carter, 2004). Using this criteria, studies 1, 2, 5, 6, 7, 9, 11, 12 and 13 were underpowered for at least one of the statistical calculations they conducted. In two studies this limited the statistical procedures that could be done (5, 7).

Other potential sources of bias were the recruitment procedures and response rates. The majority of studies used consecutive referrals to ED services, that met specific inclusion criteria, over varying time periods (10 out of 14). Two studies recruited from student health centres and self-help groups (9, 12), study 14 used data from a larger study looking at the outcome of a day hospital program and study 10 did not describe the recruitment procedure. As the majority of participants were patients seeking treatment, or being encouraged to access treatment by family members, this could bias results. Some studies only used participants or their family members who had completed measures at assessment, again biasing towards those motivated to complete measures and potentially more supportive family members. Response rates varied across the studies ranging from 53% (3) to 97% (5), biasing those with lower response rates towards patients willing to participate.

Other potential sample biases related to sample demographics. The majority of studies used participants from one unit or hospital site, limiting the sample to patients

from a small geographical area. Studies predominantly included families where the participant with the eating disorder was the child in the family, limiting the generalisability of findings to families where the person with the eating disorder is the partner or parent in the family. Of the studies that reported gender and ethnicity, the samples were solely Caucasian females or this was the considerable majority. This questions the generalisability of the results to other ethnicities and male patients with eating disorders. There were studies that gave no demographic information thus limiting the ability to assess potential generalisability.

The studies varied in the family members included. Five studies included mothers, fathers and siblings (2,4,6,7,11), five included mothers and fathers (1,3,8,10,13), one included mothers (5) and three did not include any family members (9,12,14). As Family Systems Theory suggests looking at the family as a whole, this would indicate that studies using information from multiple family members would have a better picture of the family's functioning.

Eleven studies used a control or comparison group. These ranged from having unmatched controls (1, 9,11,12, 13) to using sisters as a control group (6) or matching controls on a number of demographic factors (4,7,10). Two studies used norms or community samples (2, 8). Studies using matched controls on factors such as number and age of siblings, ethnicity and socio-economic status would be more successful at eliminating these potentially confounding variables.

4.6.2 Measurements.

All of the studies used validated measures with known reliability and validity. Eight studies used measures based on a theoretical framework that had previously been shown to distinguish between families with healthy or unhealthy functioning (1, 2, 3, 4,

5, 8, 12, 14). However, the reliance on self-report measures is not desirable due to the impact of denial or social desirability on responses.

Only two studies supplemented the self-report measures with observations (7, 13). Study 7 did not detail the observational tasks, however study 13 used The Beavers Family Competence and Family Style (Beavers & Hampson, 1990) observational measure which has been shown to differentiate families with and without clinical difficulties.

4.6.3 Study design.

The majority of the studies (12 out of 14) used a cross sectional design. This gives a static view of family functioning, which may be misleading. Some of the studies did not detail at what point of treatment the participants were at, whether they still lived with family members or whether they were completing the measures retrospectively. If the measures were completed retrospectively, this could reduce the reliability of the responses. Another potential difficulty of using participants at the assessment stage of treatment is that patients may be affected by starvation effects prior to any normalisation of eating.

4.6.4 Control of potentially confounding variables.

Many studies did not provide information on potential confounding variables. For example, nine studies did not detail ethnicity of participants, two did not state the age of participants and five studies did not provide information on which family members were included. The majority of the studies did not detail any testing for confounding variables. Those that did test were study 14, which reported no evidence of social desirability or defensiveness at any time point and study 7, which controlled for age when calculating differences between ED and control families.

Three studies (4, 7, 10) matched controls on a number of factors (e.g. age, gender, race, family size), reducing the effect of potentially confounding variables. However, there were seven studies that used controls or normative data where confounding variables were not controlled for.

5. Discussion

The aim of the current review was to explore the research evidence on family functioning in ED families. The evidence was used to consider whether there are significant differences in family functioning between ED families and control families, between different ED diagnoses, in the perceptions of different family members and whether there is evidence for a relationship between family functioning and recovery from an eating disorder.

5.1 Differences in Family Functioning between Eating Disorder Families and Controls

When general family functioning was considered, it was found that ED families had poorer family functioning than controls and a higher proportion were rated above clinical cut-offs for family functioning. However, when different components of family functioning were considered separately, the evidence was conflicting.

5.1.1 Findings in relation to models of family functioning.

According to Minuchin et al. (1978) psychosomatic families were thought to be *enmeshed, over-protective, rigid, avoidant of conflict* and lacking *conflict resolution skills*. The studies in the current review did not measure *enmeshment* as a concept, however it was felt that this would be represented by having high *cohesion* and less defined *roles* within a family.

Findings that supported the notion of the ‘psychosomatic’ family (Minuchin et al., 1978) were that, compared with controls, AN families were observed to have more *cohesion* and lower *family hierarchy* and ED families had more constraining family rules and less *conflict*. Participants with AN lacked individual autonomy compared with their sisters and BN families were less *flexible* than controls.

However, there were findings that did not support the notion of the ‘psychosomatic’ family. In the majority of studies, ED families reported lower or

similar *cohesion* to controls. AN families scored higher for *role performance* and a number of studies found no differences between ED families and controls on measures of *adaptability* and *rigidity*. One study found BN families to have more *conflict* than controls and other studies found no differences.

The majority of the current findings did not support the notion of a ‘psychosomatic’ family and the general picture indicated that these characteristics were variable across ED families and between diagnostic groups. This was a similar finding to Eisler (2005) and Kog and Vandereycken (1985) who concluded there was no consistent pattern of family functioning in ED families and reported a lack of support for the ‘psychosomatic’ family model.

The aspects of family functioning believed to be relevant to eating disorders according to the McMaster Model (Epstein et al., 1978) and the Process Model (Steinhauer et al., 1984) are: *problem-solving /task accomplishment, communication, affective responsiveness, affective involvement, behaviour control, role performance* and *adherence to values and norms*. Findings that supported these models were that AN-B and BN participants rated *task accomplishment* significantly worse than controls, as did BN participants for *problem solving*. The quality of *communication* within the family was rated lower by participants with AN-B and BN. Both BN and AN-B families were rated poorer for *affective responsiveness* and *affective involvement*. AN-R families scored higher for *role performance* and *adherence to values and norms* and AN and BN families scored lower for *behaviour control*.

Findings that did not fit with these models were that a number of studies found no significant differences between at least one ED subgroup and controls for *task accomplishment, affective expression, affective involvement, communication, problem solving, role performance, adherence to values and norms* and *behaviour control*. In

general, the findings were supportive of these models, however, in the majority of studies the scores on different aspects of family functioning ranged across a spectrum and there was often inconsistency between family members.

5.2. Differences in Family Functioning between Eating Disorder Subgroups

Findings relevant to family functioning and eating disorder diagnoses were also mixed. When considering general family functioning, two studies found no significant differences between the diagnostic groups. The one study that found differences, found that those with binge-purge behaviours rated family functioning significantly worse than those with restricting behaviours. An explanation given for this was that AN-R participants may have been influenced by denial, idealisation and conflict avoidance when reporting a lack of dysfunction within the family (Casper & Troiani, 2001).

When looking at specific areas of family functioning, AN families reported significantly more *cohesion* but less *achievement orientation* than BN families and BN participants reported greater difficulty in planning family activities and confiding in each other than AN-R participants. Findings were similar to those of Kog and Vandereycken (1985) who found that AN families reported higher levels of *cohesion*, however they also reported differences between AN and BN families on aspects of family functioning that were not observed in the current review, for example *conflict*. Possible explanations for the lack of significant differences and the inconsistent findings are the range of diagnoses included and how they were defined, for example, whether studies distinguished between AN-R and AN-B. Patients can move between diagnoses, and the inclusion of the diagnosis EDNOS in some of the studies, which includes elements of both AN and BN, may have contributed. It may therefore be misleading to try and compare the diagnostic groups as separate entities and unlikely that a distinct pattern of family functioning would be found.

5.3 Differences in the Perspectives of Family Members

The most consistent finding from the current review was that patients had a more critical view of their family's functioning than one or both of their parents. There is a possibility that the ED patients' responses reflected cognitive misrepresentations or were being influenced by starvation effects. However, the same trend was true for control families but not to as great a degree.

There were discrepancies in the views of different parents, though this varied between studies. One study reported that AN mothers and siblings reported more dissatisfaction with family functioning than fathers. Whilst a different study found that fathers and daughters agreed on the family's difficulties but mothers rated less dysfunction. One study found no significant differences in the perceptions of family members, however, this study did not separate the perspectives of mothers and fathers and combined them into a parent score. As other studies found differences between perspectives of mother and fathers, combining them may have eliminated these differences. The review by Kog and Vandereycken (1985) detailed few differences between family members as they were often not included in the studies, however, when they were, it was reported that mothers and daughters perceived more dysfunction than did fathers.

The differences in the perspectives of family members have implications for treatment. The discrepancies could be having a maintaining influence over the disorder and it could be implied from the findings that parents may not be aware of how their child perceives the family's functioning. These issues could be addressed in family therapy.

5.4 Summary of Family Functioning in Eating Disorder Families

The overall findings from the current review suggest that ED families perceive themselves and are observed to be more dysfunctional than do control families. However, the areas of dysfunction vary and there does not appear to be a consistent pattern of family dysfunction for ED families as a whole or for different types of eating disorder. This could suggest that the difficulties in family functioning are in the family prior to the eating disorder but become more pronounced when the family has to cope with and adjust to having a member with a potentially life threatening illness. The particular areas of family dysfunction may vary from family to family although there is some evidence that areas identified by the McMaster and Process models of family functioning have particular relevance in ED families. This is not to suggest however, that these areas of dysfunction were causal, as the studies included families with an existing eating disorder and causality cannot be inferred.

5.5 Family Functioning and Outcome/Recovery

The relationship between family functioning and outcome or recovery from eating disorders has not, to the author's knowledge, previously been included in a literature review. The current review however, included two studies with this focus. This was too small a number to make generalisations and it is recommended that further research be conducted in the area. The findings of the two studies were that a more positive view of family functioning by the patient correlated with better outcome, irrespective of the severity of the disorder. However, the mother's perception of family functioning was not significantly associated with outcome. No other family members were included in these studies.

Both studies found that patients' perceptions of family functioning improved from admission to discharge. Those with good perceptions of family functioning at

assessment maintained their relatively good outcome between one and two year follow-up. Those with poor family functioning at assessment had poorer outcome at one year follow-up but improved over the second year to match the outcome of those with better family functioning. This could suggest that poor perceptions of family functioning may act as a maintenance factor for the eating disorder.

For those with poor treatment outcomes, perceptions of family functioning deteriorated between discharge and two year follow-up but not back to the level it was at admission, however the mothers' perceptions remained similar at all time points. This could suggest that the families' functioning had not changed, however having active symptoms of an eating disorder may influence the patients' perceptions of family functioning. Another possibility is that the mothers were less aware of changes in family functioning or were being influenced by social desirability when completing the measures.

5.6. Quality Assessment

The main factor reducing the quality of the studies was that nine of the 14 studies had sample sizes limiting the power of the statistical analyses used. This would have increased the chance of a Type 2 error and could account for some of the variability in the findings. The samples were also biased due to the recruitment process to those seeking treatment.

The measures used were reported as having good reliability and validity, however, Folse (2007) has criticised the use of these measures in eating disorder research for their lack of reliability and validity testing and for not being designed specifically for eating disorders. Folse (2007) stated they do not consider relevant factors such as family concerns about shape, weight and eating, consistency in fostering open expression of emotions and maintaining boundaries. As these measures (e.g. the

FAD, FES and FACES) are not specific to eating disorders, they can be used to compare family functioning across different psychiatric diagnoses. However, for future research in family functioning and eating disorders, it could be more informative to use a measure which includes these other factors, such as the Family Experience with Eating Disorders Scale (FEEDS) (Folse, 2007).

The quality of reporting was poor for a number of the studies, particularly regarding the characteristics of the sample and potentially confounding variables. This limited the ability to assess the strength of the findings. There were however, studies with a higher quality of reporting, for example, studies 4 and 6, enabling greater quality assessment of the research.

5.7 Further Investigation and Clinical Implications

Kog and Vandereycken (1985) highlighted the need for more systematic studies comparing ED families and controls and within ED subgroups, preferably using both observational and self-report measures and including family members. Since these recommendations were made, systematic studies have been conducted, however they still predominantly rely on self-report measures. Considering the weaknesses of using solely self-report measures, there is still a need for more research using observational methods. If self-report measures are used, then future research could include measures of family functioning developed for an eating disorder population, for example the FEEDS (Folse, 2007). Studies have started to include more family members, however, there is still a need for studies assessing family functioning over time and considering the maintaining influence of family functioning and its relationship with outcome and recovery.

The findings that ED families rate themselves as having poorer family functioning than do the controls, the lack of consensus between family members and the

links between good family functioning and better outcomes have a number of clinical implications. The areas of dysfunction and differences in perspectives between patients and parents could be maintaining the eating disorder and would need to be addressed in any treatment offered. The lack of a clear pattern of dysfunction highlights the need to assess each family individually and not make assumptions about the areas of difficulty. The findings from the longitudinal studies highlighted the need to consider family functioning even after initial recovery to prevent relapse, particularly following a discharge from inpatient admission.

5.8 Review Critique

The aim of the current literature review was to be systematic, within the time and practical constraints faced by the author. It is good practice to have two researchers involved at all stages of a review to minimise bias and error (NHS CRD, 2008) however this was not a practical possibility. The selection criteria of the full text being available in English and available electronically or at the University of Leicester is likely to have led to a selection bias for more recent studies and those from western countries. For the studies that were included, the heterogeneity of the measures of family functioning used and the sample and control characteristics made a clear synthesis of the research findings difficult. This review excluded qualitative methodologies and was therefore limited to a quantifiable representation of family functioning. Future reviews could aim to combine quantitative findings with experiential data.

5.9 Conclusion

The current review aimed to systematically review the literature on family functioning in ED families, including the impact of family functioning on recovery and outcome. There was evidence to suggest that ED families have poorer family functioning than controls, however there was little evidence found for a typical pattern

of dysfunction for ED families or the diagnostic categories. The evidence suggests that ED families vary in their family functioning and there are often discrepancies in the perceptions of the different family members. This should encourage clinicians to assess each family thoroughly and explore the perceptions of each member to establish a greater understanding of the family functioning as a whole. The current findings are limited as a high proportion of the studies were underpowered and did not control for confounding variables. The samples were predominantly Caucasian females thereby limiting the generalisability of the findings.

The evidence suggests links between good perceptions of family functioning and better outcomes. This supports the notion that poor family functioning may be maintaining the disorder and emphasises the importance of working with the families with the aim of improving their functioning in a way that is supportive to the patient's initial and sustained recovery.

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⁶ Asterisks denote references for studies included in the review.

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Empirical Paper

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population

1. Abstract

1.1 Objectives

The aims of the current study were to a) develop the Shape, Weight and Eating Scale (SWES) for a clinical population, explore its factor structure and psychometric properties and b) explore differences in scores on the SWES for participants who restrict and those who binge-purge.

1.2 Method

The SWES was completed by 73 participants with a diagnosed eating disorder. Participants completed The Other As Shamer Scale, The Internal Shame Scale and The Stirling Eating Disorder Scale. Principal Components Analysis (PCA) was conducted to determine the component structure of the SWES, the scale's reliability and validity were assessed and the relationship between components of the SWES and Anorexic and Bulimic cognitions and behaviours were explored.

1.3 Results

Following PCA, three components were retained: 'Lack of Pride in Attractiveness'; 'Pride in Control'; and 'Shame around Eating', each with acceptable internal reliability. The test-retest reliability was significant for 'Pride in Control' only. 'Lack of Pride in Attractiveness' significantly positively correlated with external shame and internal shame, and correlated negatively with self-esteem. 'Shame around Eating' significantly positively correlated with internal shame. 'Pride in Control' did not significantly correlate with internal shame, external shame or self-esteem. 'Pride in Control' significantly contributed to the variance of restricting cognitions and behaviours whilst 'Shame around Eating' significantly contributed to the variance of binge-purging cognitions and behaviours and restricting cognitions.

1.4 Conclusions

The findings of the current study supported the notion of shame-shame and shame-pride cycles (Goss & Gilbert, 2002) in eating disorders and highlighted the need for a measure of shame and pride specific to eating, body shape and weight. The study puts forward a new measure which can be used clinically, for monitoring purposes, as an outcome measure or in future research. The study limitations, clinical implications and future research are discussed.

2. Introduction

Eating disorders are very difficult to treat and this may partly be due to our limited understanding of the factors maintaining the disorder. Research has looked at many aetiological and maintaining factors for eating disorders, however, it has been suggested by Goss and Gilbert (2002) that a number of processes interact differently in different types of eating disorders. They believe that shame and pride are significant in the onset and maintenance of all eating disorders, but the way in which they contribute can vary.

2.1 Shame and Pride

Shame is a self-conscious emotion and as such comes from the same family as guilt, humiliation and embarrassment. It involves affective, social, cognitive, behavioural and physiological components. It combines the different emotions of anger, anxiety and disgust and involves social comparison (Goss & Allan, 2009). Shame is an intense emotion and involves feeling self-conscious, powerless and inferior and feeling that one is flawed in some way, which needs to be hidden from others (Tangney, Miller, Flicker & Barlow, 1996).

A distinction has been made between internal and external shame (Gilbert, 1998). Internal shame refers to the self-evaluation that one is flawed and inadequate, similar to severe self-criticism (Gilbert, 2002), whereas external shame is the perception that others see the self as flawed and inadequate (Gilbert 1998). Significant positive correlations have been found between measures of internal and external shame (Allan, Gilbert & Goss, 1994). Shame has been considered and measured in both a global sense and contextually for specific situations or behaviours.

Pride, like shame, is a self-conscious emotion. It is associated with social success and the feeling that one's own attributes and talents are approved of or admired by others (Mascolo & Fischer, 1995). Pride often involves social comparison and can have a competitive element, feeling that one has outperformed others (Gilbert, 1998). Like shame, pride can be split into external and internal pride: internal pride being one's own positive feelings about attributes and talents and external pride focussing on how one believes others perceive their attributes (Mascolo & Fischer, 1995). Goss and Gilbert (2002) suggested that shame and pride, specifically pride in eating behaviours and resistance to authority, may have an important role in the onset and maintenance of eating disorders.

2.2 Shame and Eating Disorders

Shame has been linked with various psychopathologies and has been found to have significant implications for a number of clinical problems, including depression (Allan et al., 1994), personality disorders (Schoenleber & Berenbaum, 2010), aggression (Thomaes, Bushman, Stegge & Olthof, 2008) and anxiety disorders (Fergus, Valentiner, McGrath & Jencius, 2010).

Shame has also been linked to eating disorders. A study by Frank (1991) found that both depressed and eating disorder patients experienced high levels of shame, however, the eating disorder population experienced significantly higher levels of shame about eating compared to the depressed group. This study not only highlighted the link between shame and eating disorders in general but also the specific focus of shame about eating behaviour for women with an eating disorder.

A further study looking at the role of shame in eating disorders was conducted by Burney and Irwin (2000). They considered the predictive value of global shame and guilt, and shame and guilt associated with eating, for eating disorder symptomatology.

They found that shame associated with eating was the strongest predictor of the severity of eating disorder symptomatology. Eating disturbance was unrelated to shame and guilt in a global sense.

A study by Troop, Allan, Serpell and Treasure (2008) looked at shame in women with an eating disorder diagnosis at different stages of the illness. After controlling for depression, shame was associated with eating disorder symptoms. External shame was associated with severity of anorexia symptoms and internal shame with severity of bulimia symptoms. They also found that shame levels were higher in women with a current eating disorder than those in remission. But those in remission had higher levels of external shame compared with non-clinical samples.

The results of these studies highlight the relationship between shame and eating disorders. The findings of Frank (1991) and Burney and Irwin (2000) emphasised the clinical importance of assessing shame levels around eating in patients with an eating disorder and imply that contextual measures of shame, focussing on eating behaviours and attitudes, may be more clinically relevant than global measures of shame.

2.3 Pride and Eating Disorders

Qualitative studies have given accounts of how individuals can feel a sense of pride over their food restriction (Bruch, 1973; MacCloed, 1981) and that restriction and control can lead to increased self-esteem (Vitousek, 1996). Thus the restricting behaviour used to reduce shame about one's body image can lead to pride and become a valued ideal. Quantitative research into the link between pride and eating disorders is limited, and this may be due to the lack of measures available.

Dignon, Beardsmore, Spain and Kuan (2006) found that eating disorder patients reported low mood and addressed their negative affect by adopting a strategy of control over food. This control gave them a sense of enjoyment and pride. The pride led patients to

restrict food further in order to experience more enjoyment. Patients then became caught in a spiral of restriction and pride, which led patients to describe their illness as an obsession. Patients reported that they would often express anger at those trying to help them because they saw it as an attempt to remove both their way of coping and something that provided them with a sense of pride.

2.4 A Model of Shame and Pride in Eating Disorders

Goss and Gilbert (2002) offered a model of shame and pride in eating disorders based on the functional role of eating disordered beliefs and behaviours in the management of shame. It outlines the role of shame and pride in the onset and maintenance of eating disorders. The model differentiates between restrictive behaviours and binge-purging behaviours and suggests that restriction involves shame-pride cycles whereas bingeing and purging involves shame-shame cycles. Goss and Gilbert (2002) suggest that various predisposing factors (e.g. personality, attachment history) can lead to external and internal shame. For food restrictors it is hypothesised that when an individual feels shame they cope by controlling their weight and food, and success in this can lead to a sense of pride. However, this sets up a self-perpetuating cycle of shame-pride, where their ability to control food intake and weight becomes a reward in itself. Thus, to begin eating again could be seen as giving into pressure from others and giving up that control. If they began to eat again they may fear a return to a shamed self and lose their sense of pride and positive social comparison. This model is represented in Figure 1.

For those with binge-purge behaviours the background factors lead to shame in the same way as for restrictors, however, for those who binge and purge, these behaviours may be an attempt to control these negative feelings. Following a binge or purge the person may feel disgusted by their behaviour, leading to a fear of being found out and consequently a greater sense of shame. The binge-purging behaviour does not address the underlying

problems and a self-defeating shame-shame cycle is set up and maintained. This model is represented in Figure 2.

Figure 1 *Representation of Shame-Pride Cycles (Goss & Gilbert, 2002)*

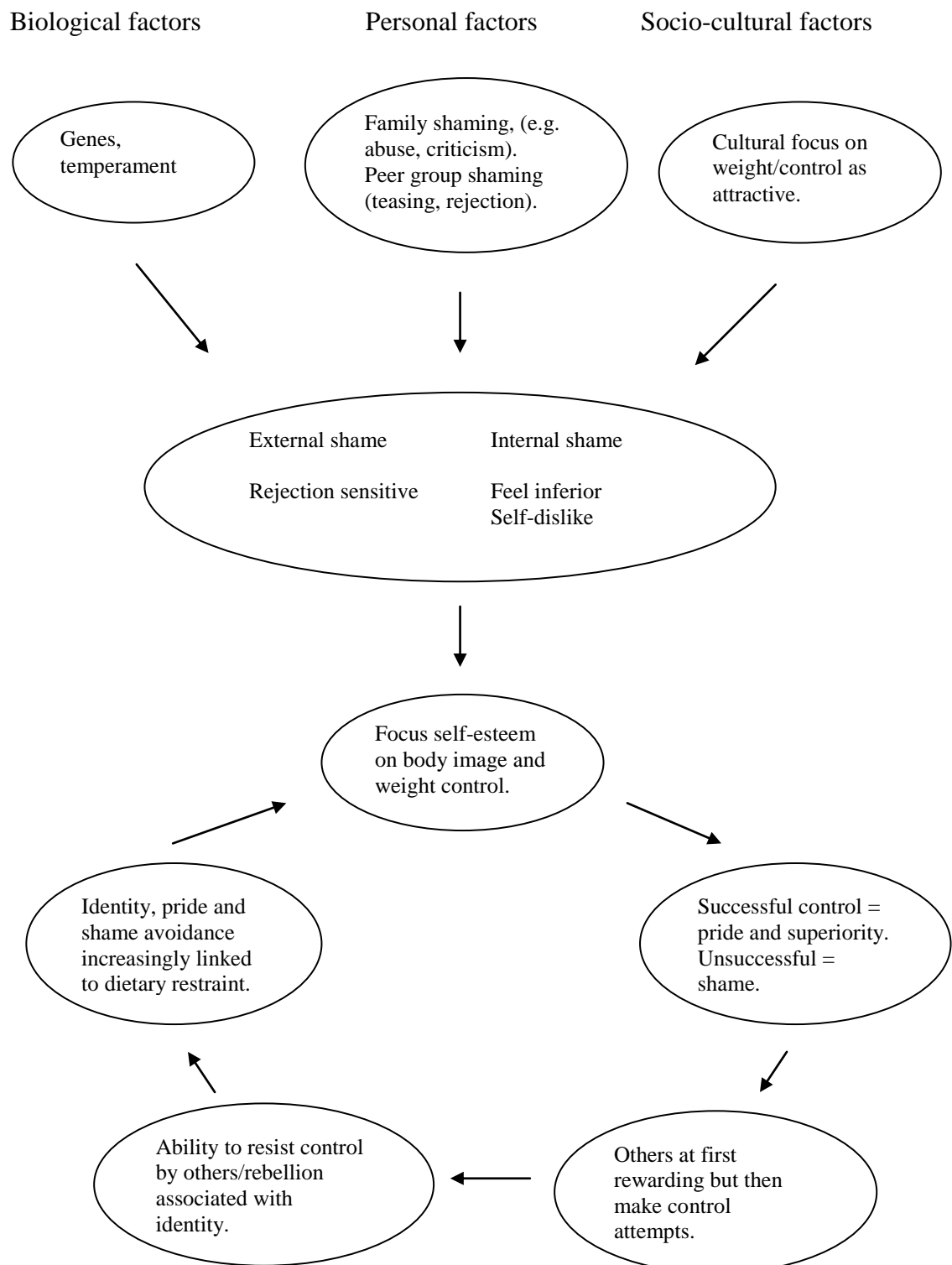
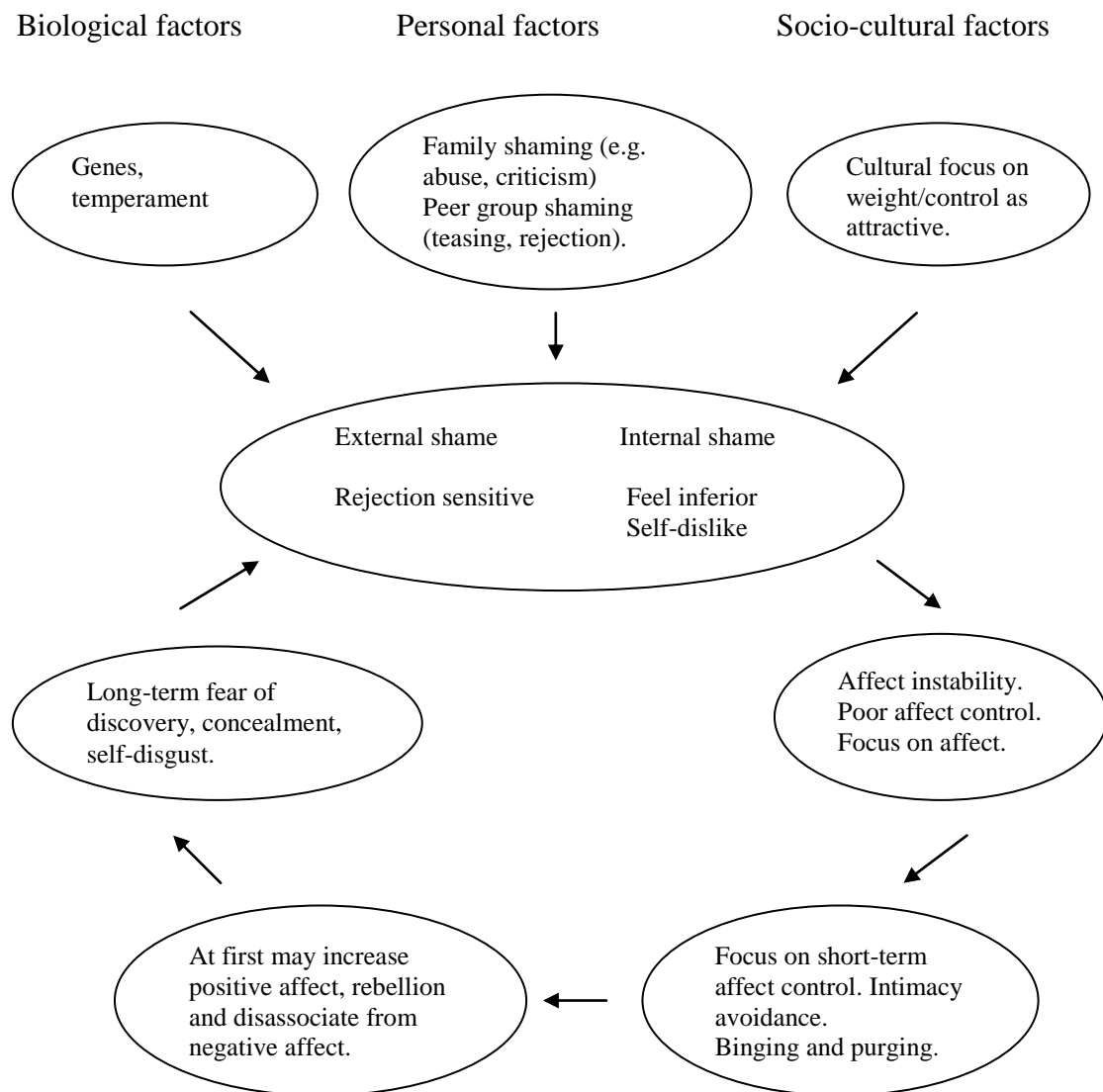


Figure 2 *Representation of Shame-Shame Cycles (Goss & Gilbert, 2002)*



So far, two qualitative studies have explored this approach. Both studies interviewed patients with an eating disorder diagnosis and focussed on their conceptions of shame and pride. Elsworth (2006) reported five themes present in all interviews. These were shame, pride, shame responses, control and recovery. Shame was further categorised into: external shame, body weight shame, and internal shame. Pride was split into pride in body weight, pride in restriction and pride in others' compliments. Skarderud (2007) categorised shame into globalised internal shame and various foci of

shame which related to different aspects of the self. These shame foci were: feelings and cognitions; achievement failures; body shame; self-control; self-destructive behaviour; shame related to sexual abuse; and shame of having an eating disorder. Feelings of pride were also reported by this sample. The themes that emerged were related to pride in self-control, being extraordinary, appearance, rebellion and protest.

The results from both studies supported the notion that shame may be a risk factor for eating disorders as well as a consequence and that pride is a consequence of eating disorders. Furthermore they provided support for the shame-shame cycles and the shame-pride cycles. However, there were indications that the cycles may not be mutually exclusive, as some participants made statements supporting both cycles. Although these qualitative studies are valuable, further research is needed on both shame and pride in eating disorders, using larger clinical populations.

2.5 Measures of Shame and Pride

Numerous measures of shame have been used in the literature, including the Internal Shame Scale (ISS) (Cook, 1994), the Personal Feelings Questionnaire (PFQ) (Harder, 1987) and the PFQ-2 (Harder & Zelma, 1990), the Other As Shamer Scale (OAS) (Goss, Gilbert & Allan, 1994), the Shame and Guilt Eating Scale (SGES) (Frank, 1991), the Experience of Shame Scale (ESS) (Andrews, Qian & Valentine, 2002) and the Test of Self-Conscious Affect -3 (TOSCA-3) (Tangney, Dearing, Wagner & Gramzow, 2000). The ISS, PFQ, TOSCA-3 and OAS are measures of trait internal, external or global shame and are not specifically targeted to assess shame around eating behaviours or shame in body shape, weight or appearance. Contextual shame measures which focus on factors relevant to eating disorders are the SEGS and the ESS as they have elements specific to shame around eating or body image. To the author's knowledge there are no validated measures of global pride currently being used in the

literature and no measures of pride focussed on eating behaviours, body shape or weight.

A significant proportion of the research exploring shame in eating disorders has viewed shame as a global construct and assessed shame as a trait. However, it may be more clinically relevant to focus on specific aspects of shame that are changeable rather than shame as an enduring trait. Gilbert (1997) stated that when working clinically with shame, it is preferable to work on the aspects of the self that are the focus of the shame. For patients with eating disorders this may be shame about their body, shame in perceived failure to control their eating or shame about purging behaviours (Goss & Gilbert, 2002).

In response to the need for a measure of pride in factors relevant to eating disorders, and the benefit of measuring shame specific to eating behaviours, the Shape, Weight and Eating Scale (SWES) was developed by two clinicians in the field. The items of the SWES were guided by the findings of the qualitative research (Skarderud, 2007; Elsworth, 2006), and the models of shame-shame and shame-pride cycles (Goss & Gilbert, 2002). The aim was to enable the quantitative assessment of shame and pride around the individual's body shape, weight and eating behaviours. An initial 22-item SWES was administered to a non-clinical sample, in order to explore the psychometric properties, and amendments were made (Palmqvist, 2010).

2.6 Study Rationale

Shame has been linked with eating disorders but the role of pride is far less understood. Recent qualitative research in this area indicated that both shame and pride may play an important role in the aetiology and maintenance of eating disorders. Goss and Allan (2009) recommended more research exploring shame and pride in eating disorders, using larger clinical populations to allow for comparisons to be made

between diagnostic groups or symptom presentations. The present study aimed to use the SWES with a clinical population and utilise the findings to explore the relationship between shame and pride, specific to body shape, weight and eating, for participants with different eating disorder presentations. The evidence supporting the notion of shame-shame and shame-pride cycles in the onset and maintenance of eating disorders indicates that they should be a prime focus for treatment (Skarderud, 2007). Having a measure of shame and pride in body shape, weight and eating behaviours would allow for the monitoring of progress in dealing with these maintaining cycles. To the author's knowledge, there are no measures of both shame and pride for eating disorder patients. It was felt that the data collected from a clinical sample would increase the understanding of shame and pride specific to eating disorders, which could inform clinical practice and improve treatment outcome.

In summary, the opportunity to measure shame and pride specific to eating disorders would have a number of potential benefits for patients, clinicians and for future research. It could indicate potential target areas for therapy and increase the understanding as to why there can be less improvement than expected. It may give clinicians more insight into how patients view different aspects of their illness. The measure could be used in future research to further investigate the contribution of shame and pride, specific to body shape, weight and eating behaviours to eating disorder aetiology, maintenance and presentations.

2.7 Study Aims

A) To develop the SWES for a clinical population, using a focus group with a clinical sample to assess the acceptability of the SWES and distributing the SWES to participants with an eating disorder in order to:

- a) explore the factor structure using Principal Components Analysis (PCA);

- b) explore the psychometric properties of the SWES;
- c) assess the component scores of the SWES with other validated shame measures to contribute towards the construct validity of the measure; and
- d) assess the test-retest reliability of the SWES.

B) To compare the self-report scores of participants who restrict with those who binge and purge in order to begin a quantitative exploration of the shame-shame and shame-pride cycles and ensure the scale is in line with the theory behind its development. It was predicted that:

- a) restrictors would have higher levels of pride than those who binge and purge;
- and
- b) levels of shame would be high across all eating disorders.

3. Method

The study was completed in four parts. The first consisted of reviewing the findings from the non-clinical study and developing the scale further. The second comprised a focus group, with a sample of participants who had completed outpatient treatment. The third consisted of distributing the SWES to a clinical sample. The fourth required a small subset from the third phase to complete the scale for a second time, to determine the test-retest reliability.

3.1 Phase 1- Scale Development

Initially the SWES was a 22-item scale. An MSc project (Palmqvist, 2010) was conducted using this scale with a non-clinical sample. The 22-item SWES was completed by 324 participants and the results were analysed using Principal Components Analysis (PCA). The PCA revealed the presence of three components, which were labelled as ‘shame’, ‘pride/attractiveness’ and ‘pride/control’.

There were nine items that had moderate to high loadings on more than one component and were therefore removed from the scale. This left seven items in component ‘shame’, three in component ‘pride/attractiveness’ and three in component ‘pride/control’. Following this, eleven more items were created resulting in twelve items for ‘shame’, six items for ‘pride/attractiveness’ and six items for ‘pride/control’. These new items were question numbers 2, 3, 5, 8, 9, 10, 12, 16, 17, 23 and 24. This new 24-item SWES was taken to the focus group to be discussed in Phase 2.

3.2 Phase 2 – Focus Group

A focus group was conducted to highlight any problems with understanding, acceptability or completion of the scale and to elicit any suggestions for improvements.

3.2.2 Participants.

The group consisted of four female participants who had recently completed an outpatient programme for eating disorders. Twelve participants were invited to take part in the focus group.

3.2.3 Procedure.

The participants were contacted via the Coventry Eating Disorder Service (CEDS) and given the Participant Information Sheet (Appendix E) explaining the purpose of the focus group. The focus group was conducted at CEDS, following the participants' final outpatient group. The participants were given the 24-item SWES to read through and were then asked for their opinions and comments. The group was facilitated by the principle investigator, who took notes and audio taped the discussions for the purpose of review. The recording was not transcribed. During the focus group the principle investigator checked back with participants to ensure their comments had been understood.

3.2.4 Focus group results.

The main themes from the focus group were that the items focussing on pride were considered pertinent to what had been maintaining the participants' eating disorders. It was stated that completing the SWES would have helped them to consider their eating disorder differently and focus on what was maintaining it. The participants commented on the questions focussing on the competitive aspects and comparisons to others and stated that they felt these were also important to include. Participants commented that they liked the directness of the questions.

A query was raised over item 8, "I feel ashamed if I eat more than I intended to". One participant felt it should be changed to "I feel ashamed if I eat more than I think I should" as they felt there is not always a clear intention. However, other

participants stated that they liked item 8 as this resonated with them. It was agreed that eating more than intended and eating more than one believes they should were different concepts. In response to this, an additional item (25) was added to the scale.

3.3 Phase 3 – Clinical Sample

The 25-item version of the SWES was completed by an eating disorder sample. The data was used to explore the component structure and psychometric properties of the scale and to explore the relationship between responses on the SWES and different eating disorder presentations.

3.3.1 Participants.

Participants were patients referred to CEDS over a 13month period between February 2010 and March 2011. CEDS is a specialist outpatient eating disorder service and referrals were received from GPs, Community Mental Health Teams, Psychiatrists, and Social Services, amongst others.

Inclusion criteria for this service was a clinician-assessed primary problem of the following eating disorders: Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Eating Disorder Not Otherwise Specified (EDNOS). The following exclusion criteria applied: a body mass index of 15 or less, recent history of self harm, suicidal ideation, planning or intent, illegal drug use, alcohol misuse, diagnosis of psychosis, history of aggressive behaviour, or intellectual disability.

Within the time period, 125 patients were referred to the service and 73 participated in the study. Those who did not participate were either deemed not to have an eating disorder, met the exclusion criteria for the service, or did not attend their assessment appointments. The sample consisted of 67 (92%) females and 6 (8%) males with an age range of 18-53years and a mean age of 27.3 years. The sample consisted of 14 (19%) participants diagnosed with Anorexia Nervosa, 29 (40%) with Bulimia

Nervosa and 30 (41%) with Eating Disorder Not Otherwise Specified. Of the 73 participants, 59 (81%) were White British, 7 (10%) were White European, 2 (3%) were Indian and the remaining 5 (6%) were from 5 other ethnic groups.

3.3.2 Measures.

All new referrals to the service completed a questionnaire pack. The data from a number of the measures was used in the analysis of the current study.

The Stirling Eating Disorders Scale (SEDS) (Williams et al., 1994). This 80 item measure is for use with eating disorder clients. It requires a true/false response to statements such as “When I eat anything I feel guilty”. The measure assesses anorexic dietary cognitions (ADC), anorexic dietary behaviour (ADB), bulimic dietary cognitions (BDC), bulimic dietary behaviour (BDB), high perceived external control, low assertiveness, low self-esteem and self directed hostility. The current study used the data from the first four subscales. The scales have high internal consistency with a Cronbach alpha range of 0.83 – 0.92. Concurrent validity with similar scales and test-retest correlations at three weeks were acceptable (Williams et al., 1994). The Cronbach alpha range of the subscales for the current study was 0.65-0.80. The data from this measure was used to group participants with respect to their eating disorder presentations.

The Other as Shamer Scale (OAS) (Goss, Gilbert & Allan, 1994). This 18 item scale measures the degree to which a person experiences external shame. Participants are required to score on a 5 point Likert scale from 0 (never) to 4 (almost always) to statements such as “I think that other people look down on me”. The scale has good internal consistency with a Cronbach alpha of 0.92 (Goss et al. 1994). The Cronbach alpha for the current study was 0.93. The purpose of using this scale was to test the validity of the items on the SWES.

The Internalised Shame Scale (ISS) (Cook, 1994). This 30 item scale measures negative self-cognitions and internal shame. Participants are required to score on a 5 point Likert scale from 0 (never) to 4 (almost always) to statements such as “I feel like I am never quite good enough.” The scale gives two scores: an internal shame score and a self-esteem score. Cook (1994) reported test-retest correlations of 0.84. The Cronbach alphas for the current study were 0.95 for internal shame and 0.83 for self-esteem. The purpose of using this scale was to test the validity of items on the SWES. These three measures can be viewed in Appendix F.

In addition to these measures, consenting participants were required to complete the Shape Weight and Eating Scale (SWES). This is a 25 item scale investigating levels of shame and pride in shape, weight and eating behaviours. It requires the participant to answer on a 5 point Likert scale from 0 (never) to 4 (almost always) to statements such as “I feel proud of my body shape or weight” and “I feel ashamed of how or what I eat”. This scale can be viewed in Appendix G.

3.3.3 Procedure.

New referrals were sent a questionnaire pack, which was used for clinical diagnostic and treatment outcome purposes. This pack included the SEDS, the OAS and the ISS. Patients then attended an initial assessment conducted by a member of the team. If they fit the criteria for the service, they were invited back for a second appointment, where they were introduced to the research and given the Participant Information Sheet (Appendix H). Those who chose to participate completed the consent form and the SWES, witnessed by a member of the team, at their next appointment.

Following basic data checks, a Principal Components Analysis (PCA) was conducted to determine the component structure of the scale. Internal reliability analyses using Cronbach’s alpha coefficient were conducted to establish the internal

consistency of the resulting subscales. Face and content validity had already been assessed by Clinical Psychologists working the field of eating disorders and Phase 2 participants, in the focus group. The scores of the shame and pride components were correlated with other validated measures of shame to contribute towards the construct validity of the measure.

The data was also used to explore the differences in the responses on the SWES between different diagnostic groups and patients with different symptom presentations (e.g. restrictors, binge-purgers). The relationship between scores for the components of the SWES and scores on four subscales of the SEDS (ADC, ADB, BDC and BDB) were explored using multiple regression analyses.

3.4 Phase 4 – Test-Retest Reliability

A small sample of participants completed the SWES for a second time to analyse the test-retest reliability of the scale.

3.4.1 Participants.

There were 16 participants who completed the SWES for a second time. These were 14 females and 2 males, 1 with AN, 8 with BN and 7 with EDNOS. Participants were excluded from Phase 3 if they had started the treatment programme in the six week time gap as it addressed the concepts being measured by the scale.

3.4.2. Procedure.

Those participants who consented to being contacted again on the initial consent form were sent the test-retest participant information sheet (Appendix I) and the SWES six weeks after initially taking part. Those who consented to participating in Phase 4 returned the scale by post or brought it to their next appointment at the service.

The data was analysed using Pearson's product-moment correlation coefficient to determine the test-retest reliability for the components of the SWES.

4. Results

The data collected in Phases 3 and 4 were subjected to a number of basic checks. Frequency counts were used to ensure the raw data was within the expected parameters and to identify any missing data. There were no missing items in the SWES as the participants were supported in completing the scale. Two participants did not complete the Stirling, OAS and ISS. Their responses for the SWES were included in the Principal Components Analysis (PCA) but not in further analyses.

4.1 Psychometric Properties of the SWES

Several methods were employed to explore the psychometric properties of the scale. PCA was conducted to determine the component structure. Internal reliability analyses for subscales based on each component were established using Cronbach's alpha statistic and the test-retest reliability was calculated using Pearson's product-moment correlation coefficient. Construct validity was contributed to by correlating the subscales with selected established measures.

4.1.1 Component structure.

PCA was chosen to determine the component structure as its use is advised in scale development, due to it taking into account all variance and not just shared variance, as with factor analysis (Field, 2009). First the suitability of the data for PCA was considered.

The first consideration was sample size. There is little agreement concerning the recommended sample size for PCA. Having five cases for each item of the scale has been suggested (Tabachnick & Fidel, 2007), whilst others recommend 10 cases per item (Nunnally, 1978, cited in Pallant, 2007). Whichever recommendation is followed, the current sample size of 73 was too small. However, the scale was evaluated with a non-

clinical sample of 324 participants, and this exploration of the component structure using a clinical population was to highlight any obvious similarities and differences.

The second consideration was the factorability of the data. This was assessed by an inspection of the correlation matrix which revealed the presence of many coefficients of 0.3 and above. The Kaiser-Meyer-Olkin value was 0.81, exceeding the recommended value of 0.6 (Kaiser, 1970) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance ($p < 0.0001$) supporting the factorability of the correlation matrix (Pallant, 2007).

The 25 items of the SWES were subjected to PCA using SPSS version 16. The PCA revealed the presence of six components with eigenvalues exceeding 1 (Kaiser's criterion), explaining 34.1%, 15.7%, 9.4%, 4.9%, 4.8% and 4.2% of the variance respectively (see Appendix J).

An inspection of the screeplot (Appendix K) revealed a break after the third and sixth components, therefore investigation using parallel analysis (Horn, 1965) was conducted to determine whether six or three components would be retained. The results of the parallel analysis using the Monte Carlo PCA for Parallel Analysis program (Watkins, 2000) suggested retaining three components. This analysis indicated that three components had eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size (25 variables x 73 respondents, Appendix L). The component matrix for the six components (Appendix M) shows that there were only five items that loaded onto components 4, 5 or 6 and that 4 of the 5 items loaded onto components 1, 2 or 3 with a loading of 0.4 or above. Considering this information and the evidence from the screeplot and parallel analysis, it was decided to retain three components.

The dataset was re-analysed using PCA, forcing a three component solution. The three component solution explained a total of 59.27% of the variance, with component 1 contributing 34.14%, component 2 contributing 15.73% and component 3 contributing 9.4%. To aid in the interpretation of the components, oblique rotation (direct oblimin) was performed⁷. Oblique rotation was used as it assumes a correlation between the components and the component correlation matrix indicated that component 1 and 3 correlated above 0.3. The rotation solution revealed that all items loaded on one of the three components with a loading above 0.4 with only one item loading on more than one component (item 1 - I feel the need to control my body shape or weight). The interpretation was based on the pattern matrix so for clarity, the loadings in this matrix above 0.4 are reported in Table 1. The full results for the pattern and structure matrix and communalities can be viewed in Appendix N.

Component 1 included eight items, none of which loaded onto other components above 0.4. Component 2 included six items, one of which loaded onto component 3. Component 3 included 12 items, one of which loaded onto component 2. Component 1 seemed to represent a lack of pride in body shape or weight and was labelled ‘Lack of Pride in Attractiveness’ (LPA). Component 2 seemed to represent feelings of pride in having control over food, body shape and weight and was labelled ‘Pride in Control’ (PC). Component 3 referred to feelings of shame and disgust around eating behaviours and was labelled ‘Shame around Eating’ (SE). It was decided that item 1 “I feel the need to control my body shape or weight”, which loaded above 0.4 on components 2 and 3, would be included in component 2. This was due to the loading being higher for this component and the item conceptually fitting with component 2.

⁷ Varimax rotation was also performed revealing the same component structure.

Table 1 *Pattern matrix for PCA with direct oblimin rotation of three factor structure solution of SWES items*

<i>Item</i>	<i>Pattern coefficients</i>		
	<i>Component 1</i>	<i>Component 2</i>	<i>Component 3</i>
7. I feel proud of my body shape or weight.	-.973		
3. I feel good about how my body looks	-.872		
22. I feel attractive because of my body shape or weight.	-.825		
9. I feel my body shape or weight is better than average.	-.810		
13. I feel ashamed of my body shape or weight.	.746		
20. I feel disgusted with myself because of my body shape or weight.	.741		
16. I feel better than other people because of my body shape or weight.	-.708		
4. I feel the need to hide my body shape or weight.	.521		
24. I feel more able than other people to control how or what I eat.		.779	
17. I feel proud of my ability to control how or what I eat.		.764	
5. I feel better than others because of the way I can control my body shape or weight.		.637	
21. I feel proud when I can control my body shape or weight.		.633	
1. I feel the need to control my body shape or weight.		.522	.489
6. I feel the need to control how or what I eat.		.519	
11. I feel the need to hide how or what I eat.			.787
12. I feel disgusted with how much I want to eat.			.769
25. I feel ashamed if I eat more than I think I should.			.766
15. I feel ashamed of how or what I eat.			.705
14. I feel disgusted with myself because or how or what I eat.			.684
8. I feel ashamed if I eat more than I intended to.			.683
18. I feel helpless to control how or what I eat.			.629
23. I feel ashamed of the things I do to manage my body shape or weight.			.605
10. I feel disgusted with how much I need to eat.			.590
19. I feel the need to hide how I manage my body shape or weight.			.525
2. I feel ashamed if I gain weight.			.505

4.1.2 Descriptive Statistics

Using the three component structure as the basis for three subscales, totals were calculated and used in the subsequent analyses. The descriptive statistics for the sample are presented in Table 2.

Table 2 *Descriptive statistics*

	Mean	SD	Cronbach's alpha
Lack of Pride in Attractiveness	25.33	6.18	0.91
Pride in Control	13.48	4.45	0.77
Shame around Eating	33.32	7.36	0.89
External Shame (OAS)	37.15	14.8	0.93
Internal Shame (ISS)	64.01	19.21	0.95
Self-esteem (ISSE)	8.11	4.19	0.83
Anorexic Dietary Cognitions	28.76	9.85	0.65
Anorexic Dietary Behaviours	14.88	9.65	0.68
Bulimic Dietary Cognitions	31.37	9.96	0.69
Bulimic Dietary Behaviours.	23.26	11.46	0.68

The mean and standard deviation scores for the OAS are similar to those found in studies with an eating disorder sample (e.g. Troop et al., 2008, mean = 39.3 *SD* = 14.5). The reported mean for the ISS with an eating disorder population was 68.92 (Cook, 1994), which is slightly higher than the mean for this sample. The means and standard deviations for the SEDS subscales are similar to those for other eating disorder participants (e.g. Gamble et al., 2006, ADC mean = 28.8 *SD* = 9.8, ADB, mean = 15.1 *SD* = 8.6, BDC, mean = 35.9 *SD* = 24.5, BDB, mean = 26.4 *SD* = 10.9). However, the mean for ADB (i.e. restricting behaviours) is only just above the clinical cut-off of 14. This could be due to it being an outpatient sample (with an exclusion criteria of a BMI<15) and those with more significant restricting behaviours may be more likely to be treated in inpatient facilities. This is highlighted by a study with inpatients, where the

means were ADC = 31.5, ADB = 22.5, BDC = 22.7 and BDB= 13.5 (Campbell et al., 2002).

It was not possible to compare means for the three components of the SWES with the three components found in the non-clinical study due to the alterations to the scale in Phase 1.

4.1.3 Reliability

To examine the internal consistency of the SWES, Cronbach's alpha was calculated for the three components. The Cronbach's alpha for all components were acceptable (above 0.7, Pallant, 2007) and can be viewed in Table 2.

The test-retest reliability was calculated using Pearson's product moment coefficient. When considering the normality of the data for the different variables it was felt that the data for 'Lack of Pride in Attractiveness', 'Shame around Eating' and the test-retest data for 'Lack of Pride in Attractiveness' violated this assumption. The data for these variables was therefore transformed (reflect and square root) which improved the normality of the distribution. The three components of the SWES were analysed separately as the SWES does not generate a total score. The results are presented in Table 3.

Table 3 *Pearson's correlation coefficient for the test-retest reliability*

Component	Pearson correlation	Strength of Correlation	Significance
Lack of Pride in Attractiveness	$r = 0.314$	Medium	$p = 0.237$
Pride in Control	$r = 0.6^*$	Large	$p = 0.014$
Shame around Eating	$r = 0.119$	Small	$p = 0.660$

* Significant at $p < 0.05$

** Significant at $p < 0.01$

Strength of the correlation based on guidelines by Cohen (1988) (Cited in Pallant, 2007)

The results indicated that the test-retest reliability is not sufficient for ‘Shame around Eating’ (SE) and ‘Lack of Pride in Attractiveness’ (LPA). However, the strength of the correlation needs to be considered as the lack of significant results, particularly for ‘Lack of Pride in Attractiveness’ could be attributed to the small sample size (n=16) (Pallant, 2007). The test-retest reliability for the ‘Pride in Control’ (PC) component were significant.

4.1.3 Validity

To contribute towards the construct validity of the scale, the relationship between the three components of the SWES (LPA, PC and SE) and external shame, internal shame and self-esteem (as measured by the OAS and ISS) was investigated using Pearson’s product-moment correlation coefficient. Preliminary analyses were performed to assess how well the data met the assumptions of normality, linearity and homoscedasticity. Two variables violated the assumption of normality: LPA and SE. This data was transformed (reflect and square root) to enable the use of parametric analyses. The results of the Pearson’s product-moment correlation coefficients are presented in Table 4.

The results of the analysis indicated that LPA is significantly correlated with external shame and self-esteem, whilst LPA and SE are significantly correlated with internal shame. PC was not significantly correlated with any of the variables, indicating that pride is likely to be a different concept to self-esteem and not simply the opposite of shame.

Table 4 *Pearson's correlation coefficient for LPA, PC and SE with the OAS, ISS and ISSE.*

Component	Number of participants	Pearson Correlation	Strength of Correlation	Significance
External Shame (OAS)				
Lack of Pride in Attractiveness	71	$r = 0.4^{**}$	Medium	$p < 0.001$
Pride in Control	71	$r = -0.15$	Small	$p = 0.218$
Shame around Eating	71	$r = 0.19$	Small	$p = 0.108$
Internal Shame (ISS)				
Lack of Pride in Attractiveness	71	$r = 0.48^{**}$	Medium	$p < 0.0001$
Pride in Control	71	$r = -0.01$	None	$p = 0.944$
Shame around Eating	71	$r = 0.271^*$	Small	$p < 0.05$
Self-Esteem (ISSE)				
Lack of Pride in Attractiveness	71	$r = -0.494^{**}$	Medium	$p < 0.0001$
Pride in Control	71	$r = 0.101$	Small	$p = 0.402$
Shame around Eating	71	$r = -0.181$	Small	$p = 0.131$

* Significant at $p < 0.05$

** Significant at $p < 0.01$

Strength of the correlation based on guidelines by Cohen (1988) (Cited in Pallant, 2007)

4.2 Comparisons between Diagnostic Groups and Eating Disorder Presentations

The initial aim was to conduct a between-groups analysis of variance to explore differences in the scores on the SWES for participants with different eating disorder diagnoses and different eating disorder presentations. Participants were given one of three diagnoses following their assessment: AN, BN or EDNOS. The participants were categorised into one of three groups for eating disorder presentations: restrictors, binge-purgers or restrictors and binge-purgers (both). The groups were determined by whether they scored above the clinical cut-off on the SEDS for Anorexic Dietary Behaviours (restrictors), Bulimic Dietary Behaviours (binge-purgers), or both subtests (both). The descriptive statistics for the different groups are reported in Table 5.

Table 5 *Descriptive statistics for diagnostic groups and eating disorder presentations.*

	Anorexia Nervosa (N=14)		Bulimia Nervosa (N=29)		EDNOS (N=30)	
	Mean	SD	Mean	SD	Mean	SD
Lack of Pride in Attractiveness	20.4	7.97	26.9	4.5	26.1	5.68
Pride in Control	16.6	4.77	11.8	3.71	13.7	4.26
Shame around Eating	31.6	5.75	35.3	5.76	32.2	9.02
	Restrictors (N=11)		Binge-Purgers (N=25)		Both (N=26)	
	Mean	SD	Mean	SD	Mean	SD
Lack of Pride in Attractiveness	21.8	8.21	26.3	5.67	27.3	4.55
Pride in Control	17.3	4.13	11.6	3.31	13.9	4.71
Shame around Eating	30.7	6.97	34.5	7.38	36.4	5.33

The patterns of the means show that in this sample, AN participants had lower ‘Lack of Pride in Attractiveness’ than BN and EDNOS participants and the highest scoring for ‘Pride in Control’. BN participants had higher levels of ‘Shame around Eating’ than both EDNOS and AN participants. When participants were categorised by eating disorder presentations, those who both restricted and binge-purged had the highest levels of ‘Shame around Eating’ and ‘Lack of Pride in Attractiveness’. Those who restricted had the highest levels of ‘Pride in Control’. As can be seen in Table 5, the spread of participants across the groups was uneven. When grouping by diagnosis, the AN group had 14 participants, which was too small for adequate power. When categorising by eating disorder presentation there were 11 participants who did not fit into any group as their scores were not above either of the cut-offs and there were only 11 participants in the restrictor group. Due to these difficulties with the sample it was decided to conduct four multiple regressions to consider the relationship between the three components of the SWES and scores on the four subscales of the SEDS. However, the results of the ANOVAs can be seen in Appendix O.

4.2.1 Multiple Regression

Before conducting the multiple regressions, the suitability of the data was assessed. Recommendations regarding sample size again varied with $n=45$, for a multiple regression with three independent variables, recommended by Stevens, (1996, cited in Pallant, 2007) and $n=74$ recommended by Tabachnick and Fidell (2007, cited in Pallant, 2007). Therefore the sample size of $n=71$ was considered adequate. Multicollinearity, singularity, linearity and homoscedasticity were not violated and the residuals were all normally distributed about the dependent variable scores.

The correlation matrix for all the variables included in the four multiple regressions are presented in Table 6. As can be seen, 'Pride in Control' significantly correlated with Anorexic Dietary Cognitions and Behaviours, and 'Shame around Eating' significantly correlated with Bulimic Dietary Cognitions and Behaviours and Anorexic Dietary Cognitions. 'Lack of Pride in Attractiveness' significantly correlated with Bulimic Dietary Behaviours.

Table 6 *Correlation matrix for components of the SWES and subscales of the SEDS*

	Anorexic Dietary Cognitions	Anorexic Dietary Behaviours	Bulimic Dietary Cognitions	Bulimic Dietary Behaviours
LPA	.03	.09	.19	.32**
PC	.46**	.38**	-.01	-.20
SE	.30*	.21	.53**	.56**

* Significant at $p<0.05$

** Significant at $p<0.01$

The multiple regression analysis reported that LPA, PC and SE explained 34% of the variance in ADC, which was significant at $p<0.0001$. Of these variables, PC made the largest unique contribution, followed by SE and LPA. The contributions made by PC and SE were significant at $p<0.001$ and $p<0.005$ respectively.

LPA, PC and SE explained 22% of the variance in ADB, which was significant at $p<0.001$. Of these variables, PC made the largest unique contribution, followed by SE and LPA. The contribution made by PC was significant at $p<0.0001$.

LPA, PC and SE explained 28% of the variance in BDC, which was significant at $p<0.0001$. Of these variables, SE made the largest unique contribution followed by LPA and PC. The contribution made by SE was significant at $p<0.0001$.

LPA, PC and SE explained 33% of the variance in BDB, which was significant at $p<0.0001$. Of these variables, SE made the largest unique contribution followed by PC and LPA. The contribution made by SE was significant at $p<0.0001$.

The beta values, indicating the unique contribution of the independent variables (LPA, PC and SE) to explaining the dependent variable (ADC, ADB, BDC or BDB) are reported in Table 7.

Table 7 *Beta values from the four multiple regression analyses*

	Anorexic Dietary Cognitions	Anorexic Dietary Behaviours	Bulimic Dietary Cognitions	Bulimic Dietary Behaviours
LPA	0.02	0.14	-0.08	0.02
PC	0.51**	0.45*	0.03	-0.14
SE	0.34*	0.19	0.57**	0.53**

* Significant at $p<0.05$

** Significant at $p<0.01$

In summary, ‘Pride in Control’(PC) made the largest unique contribution for ADC and ADB, which focus on restricting thoughts and behaviours and ‘Shame around Eating’(SE) made the largest unique contribution for BDC and BDB, which focus on binge-purging thoughts and behaviours. ‘Lack or Pride in Attractiveness’ (LPA) did not significantly contribute to any of the four subscales, suggesting that the concept is not significantly different across the eating disorder presentations.

5. Discussion

The aims of the current study were to develop and distribute the Shape, Weight and Eating Scale (SWES) to an eating disorder population. The data collected from this sample was used to explore the factor structure and psychometric properties of the SWES, and to investigate variation in the responses of those with different eating disorder presentations.

5.1 Summary of Findings

Initial PCA analysis revealed a six component structure for the SWES using Kaiser's criterion, however, following inspection of the scree plot, the component matrix and parallel analysis, it was decided that three components would be retained. To aid in the interpretation of the components oblique rotation was performed. Following the rotation, the three components were labelled 'Lack of Pride in Attractiveness' (LPA), 'Pride in Control' (PC) and 'Shame around Eating' (SE). The Cronbach's alphas for all three components were acceptable (>0.7) and particularly high for LPA and SE (0.91 and 0.89 respectively).

The test-retest reliability was not as good as anticipated. 'Pride in Control' was the only component that significantly correlated with its test-retest data, with a large strength of correlation. 'Lack of Pride in Attractiveness' had a medium correlation but was not significant. There was a small non-significant correlation for 'Shame around Eating'.

The results for the correlations with other validated shame measures were that 'Lack of Pride in Attractiveness' was significantly correlated with external shame (OAS), 'Lack of Pride in Attractiveness' and 'Shame about Eating' were significantly correlated with internal shame (ISS) and 'Lack of Pride in Attractiveness' was

significantly negatively correlated with self-esteem (ISSE). 'Pride in Control' did not significantly correlate with any of the comparator measures.

When considering the mean scores, those with AN had lower 'Lack of Pride in Attractiveness' and 'Shame around Eating' and higher 'Pride in Control' than those with BN or EDNOS. Those categorised as restrictors had lower 'Lack of Pride in Attractiveness' and 'Shame around Eating' and higher 'Pride in Control' than binge-purgers and those who restrict and binge-purge.

The results of the multiple regressions indicated that 'Lack of Pride in Attractiveness', 'Pride in Control' and 'Shame around Eating' significantly explained the variance for the four SEDS subscales. The highest percentages of explained variance were for Anorexic Dietary Cognitions (ADC) and Bulimic Dietary Behaviours (BDB) (34% and 33% respectively). As expected from the zero order correlation, 'Pride in Control' made the largest contribution to ADC and Anorexic Dietary Behaviours (ADB) whilst 'Shame around Eating' made the largest contribution to Bulimic Dietary Cognitions (BDC) and BDB.

5.2 The Component Structure and Psychometric Properties of the SWES

5.2.1 Component structure.

One aim of the study was to assess the component structure of the SWES with a clinical sample. When the original scale was given to a non-clinical sample, a PCA revealed three components, which were labelled 'Pride/Attractiveness', 'Pride/Control' and 'Shame' (Palmqvist, 2010). However, a number of items loaded onto more than one component, therefore the scale was amended and extra items were created with the aim of fitting the existing components. The three components for the 25-items SWES were similar to those found with the non-clinical sample. 'Pride/Attractiveness' was replaced with 'Lack of Pride in Attractiveness' as the loadings for items about pride in

attractiveness were negative. ‘Pride in Control’ remained the same and ‘Shame’ was replaced with ‘Shame about Eating’ as the items were specifically about shame in eating behaviours and beliefs.

Given that amendments had been made to the scale, it was not possible to compare the clinical and non-clinical samples. Comparisons might have explored the notion that shame and pride in eating behaviours are significant in the onset and maintenance of eating disorders (Goss & Gilbert, 2002) and therefore different to levels in the non-clinical population.

The results of the qualitative studies by Elsworthy (2006) and Skarderud (2007) appear to fit with the three components of the SWES. These studies highlighted themes of body weight shame, pride in body weight, pride in others’ compliments and pride in appearance, which would be assessed by the ‘Lack of Pride in Attractiveness’ component. Themes of pride in restriction and self-control would be assessed by the ‘Pride in Control’ component, and shame of having an eating disorder and shame in feelings and cognitions about eating would be assessed by the ‘Shame about Eating’ component.

5.2.2 Test-retest reliability.

The test-retest reliability was not as high as expected. There are a number of potential explanations for this finding. The sample size for the test-retest data was small (n=16). This was due to many people starting treatment in the six week time gap and therefore being excluded from this phase of data collection. This phase required the participants to return the completed scale and not complete it in their appointment, which may also have contributed to the small sample size. ‘Pride in Control’ was the only scale that was significantly correlated with a large strength correlation. ‘Lack of Pride in Attractiveness’ had a medium effect size but was not significant, which could

be due to small sample size (Pallant, 2007). The small and non-significant correlation for 'Shame around Eating' could indicate that this is not a stable trait but is variable over time. It could be that 'Pride in Control' is more stable in eating disorder patients without treatment, but 'Shame around Eating' and 'Lack of Pride in Attractiveness' are more mood dependant and influenced by external factors. Another possible explanation is that although no participants had started treatment within the six week gap, some had attended psycho-education sessions. It is possible that the information in these sessions, or just being aware that they were due to start treatment, may have influenced their levels of 'Shame around Eating'.

5.2.3 Correlations with external and internal shame and self-esteem.

It is interesting that Vitousek (1996) stated that restriction and control led to increased self-esteem, as in this sample there was no correlation between 'Pride in Control' and self-esteem, as measured by the ISSE (Cook, 1994). The findings were that 'Lack of Pride in Attractiveness' was significantly positively correlated with external shame and internal shame and significantly negatively correlated with self-esteem. 'Shame around Eating' was significantly positively correlated with internal shame. 'Pride in Control' was not significantly correlated with internal shame, external shame or self-esteem. These results indicated that pride in one's attractiveness and appearance are correlated with self-esteem, whereas pride in control of eating or restriction is not.

Frank (1991) and Burney and Irwin (2000) highlighted the difference between global shame and shame about eating in eating disorder populations. This difference was supported by the non-significant correlation between 'Shame around Eating' and external shame. There was a significant correlation between 'Shame around Eating' and

internal shame, however, the correlation strength was small. These findings support the need to measure shame specific to eating with this client group.

5.3 Exploring the Relationship between the Components of the SWES and Different Eating Disorder Diagnoses and Presentations.

Due to the small number of participants diagnosed with AN or categorised as restrictors in this sample, ANOVAs to compare differences between the groups were not reported. However, by considering the mean scores, the diagnostic groups and eating disorder presentations were in line with the model of shame-shame and shame-pride cycles (Goss & Gilbert, 2002). The model would suggest that those who restrict or are diagnosed with AN would have the highest levels of ‘Pride in Control’, which was the case with the current sample. It would also suggest that ‘Shame around Eating’ would be there for all participants with an eating disorder but higher for those who binge and purge. In the current sample the highest mean score for ‘Shame around Eating’ was for those who both restricted and binge-purge, followed by those who binge-purge, with restrictors having the lowest mean score. ‘Lack of Pride in Attractiveness’, which was significantly correlated with both internal and external shame, was highest for those who both restrict and binge-purge, followed by those who binge-purge, with restrictors having the lowest levels. This is in line with the model proposed by Goss and Gilbert (2002).

The results of the multiple regression analyses, conducted to explore the relationship between the components of the SWES and Anorexic Dietary Cognitions (ADC), Anorexic Dietary Behaviours (ADB), Bulimic Dietary Cognitions (BDC) and Bulimic Dietary Behaviours (BDB), (as measured by the SEDS) were as expected when considering the model proposed by Goss and Gilbert (2002). The overall finding was that LPA, PC and SE significantly explained the variance for ADC, ADB, BDC and

BDB, further supporting the relationship between shame about eating, pride in control of eating and pride (or lack of) around attractiveness with eating disorder cognitions and behaviours.

‘Pride in Control’ significantly explained the variance for ADC and ADB, which are focussed on restricting cognitions and behaviours. ‘Shame around Eating’ also significantly contributed to ADC. This is as expected by the model of shame-pride cycles for those who restrict (Goss & Gilbert, 2002). ‘Shame around Eating’ explained significant amounts of variance for BDC and BDB, which are focussed on binge-purging cognitions and behaviours. This is what was expected with respect to shame-shame cycles (Goss & Gilbert, 2002) as the model proposes that shame is a significant factor to those who binge and purge, but pride is not. The results from the multiple regressions indicate that shame related to eating behaviours may make more of a contribution to binge-purging thoughts and behaviours than a lack of pride in attractiveness.

‘Lack of Pride in Attractiveness’ did not individually significantly explain the variance of any of the four subscales. This could indicate overlap between LPA and the other components and highlights that ‘Shame about Eating’ and ‘Pride in Control’ may be the areas that need to be addressed in treatment to reduce the restricting or binge-purge cognitions and behaviours.

5.4 Clinical Implications

When developing the current study it was felt that the data collected using the SWES with a clinical sample would increase the understanding of shame and pride specific to eating disorders, which could inform clinical practice and improve treatment outcome. It had been suggested by Skarderud (2007) that the evidence supporting the notion of shame-shame and shame-pride cycles, in the onset and maintenance of eating

disorders, indicates that they should be a prime focus for treatment. The findings of the current study support the notion of these cycles and having a measure of shame and pride in body shape, weight, and eating behaviours would allow for the monitoring of progress in dealing with these maintaining cycles.

Goss and Allan (2009) recommended the assessment of shame prior to and during eating disorder treatment. A measure such as the SWES could be used for such assessment. Considering the finding that shame around eating may have more clinical relevance in eating disorder populations than global shame (Frank, 1991, Burney & Irwin 2000) using a measure such as the SWES, may be more suitable for clinical practice and research than global measures of shame.

The SWES could be used as a monitoring tool for group treatment programmes but also as a guide to target areas for individual therapy. It could give the clinician greater understanding into the potential maintaining cycles that need to be addressed. Goss and Allan (2009) recommended that therapists explore potential sources of pride, which could be assisted by the use of the SWES.

The clinical implications from the results of the multiple regression analysis are that as ‘Lack of Pride in Attractiveness’ did not make a unique contribution to explaining the variance in ADC, ADB, BDC or BDB, that treatments should focus on ‘Pride in Control’ and ‘Shame around Eating’ if they aim to impact on restricting or binge-purging cognitions and behaviours. The SWES could then be used to assess the progress of such treatments and their outcomes.

Goss and Allan (2009) have recommended the development of treatment programmes for eating disorder patients that treat shame and develop alternate foci for pride without directly addressing eating disorder behaviours, particularly for those patients who struggle to give up eating disorder behaviours early in treatment. These

would need to be evaluated against existing evidence-based treatment programmes. The SWES would provide a measure of the factors that these alternative programmes would be aiming to address and could be used alongside measures of eating disorder behaviours in the evaluation of these treatment programmes.

5.5 Study Limitations

The main limitation of the current study was the sample size used in the Principal Components Analysis (PCA). The size of the sample raises questions about the reliability of the component structure. However, following PCA, three components were retained similar to the three components retained using a much larger non-clinical sample (n=324) (Palmqvist, 2010). The data met all other assumptions for PCA. The total scores for two of the three components (LPA and SE) were not normally distributed, as is often the case for data in clinical populations. This data was transformed to enable the use of parametric tests in subsequent analyses.

The sample consisted of a higher proportion of participants who binged and purged compared with those who restricted. This was largely due to the sample being collected from an outpatient clinic as opposed to an inpatient unit. This resulted in a limitation of the statistical analyses available to assess the differences between eating disorder diagnoses or presentations. A strength of the sample was that it included males and females, a wide age range and a range of ethnicities. Although the majority of the sample were white British females, the current sample was representative of those presenting to the target service.

The sample size for the test-retest data was also small. If research were to be carried out again, a smaller time gap between completions of the SWES may result in less people being excluded due to having started treatment. No guidelines were found as to the optimum time gap between data collections for test-retest analysis, therefore the

time gap used in other published studies was reviewed and six weeks was commonly used. However, there were studies that used smaller lengths of time (Cook, 1994).

A further limitation was the potential sample bias towards those seeking treatment. This could indicate that the results may not be representative to the eating disorder population as a whole. Potentially, those who did not participate may have higher levels of shame or pride, preventing them from seeking treatment.

A further limitation of the current study was that the criterion validity of the SWES was not assessed. Correlating the component scores with the OAS and ISS contributed towards the construct validity but criterion validity would need to be assessed using other measures of shame and pride specific to eating, shape and weight. This was considered, however, no measures of pride were found and the specific measures of shame, for example, the SGES (Frank, 1991) or ESS (Andrews, Qian & Valentine, 2002) were difficult to obtain, not commonly used in research or only had small sections specific to shame about eating.

There are general limitations when relying on self-report measures as they are susceptible to denial or social desirability factors. This may be particularly relevant when assessing shame and pride as they involve social comparison (Goss & Allan, 2009). Participants were all in the process of being assessed for treatment and, although informed otherwise, may have considered that their responses may contribute towards the assessment and affect their suitability for treatment.

If this research were to be conducted again, it would be recommended that data be collected over a longer time period to enable a sample size more suitable for PCA, though this was beyond the time constraints of the current study. Another way to increase the sample size and the range of eating disorder presentations and severity would be to include more data collection sites, possibly including inpatient settings.

5.6 Future research

Following on from the current study, it would be recommended that the SWES be administered to a number of different populations. Administering it to a larger eating disorder sample with a higher proportion of restrictors or those diagnosed with AN would allow for comparisons to be made between diagnostic groups or symptom presentations. Using this version of the SWES with a non-clinical sample could be used to establish non-clinical norms and aid in the exploration of differences between the clinical and non-clinical populations. Administering the SWES to those with Binge Eating Disorder could be done to explore the differences in ‘Lack of Pride in Attractiveness’, ‘Shame about Eating’ and ‘Pride in Control’ specific to bingeing behaviours without purging behaviours. To clarify whether these components are significant specifically to eating disorder populations, the SWES could be administered to other clinical populations with psychiatric or physical health presentations. The SWES could also be administered to adolescents in a longitudinal study to assess the predictive value of the components of the scale.

The majority of research exploring shame in eating disorders has viewed shame as a global construct and assessed shame as a trait. However, Gilbert (1997) stated that when working clinically with shame, it is preferable to work on the things that are the focus of shame, which for eating disorder women may be shame about their body, lack of control over food and their eating behaviours (Goss & Gilbert, 2002). It may therefore be more clinically relevant for future research into the role of shame in eating disorders to focus on specific aspects of shame that are changeable rather than traits. The use of the SWES in such research would enable a way to measure potentially changeable aspects of shame.

A finding of the current study was that ‘Lack of Pride in Attractiveness’ did not significantly contribute to the variance of anorexic or bulimic cognitions or behaviours. As this suggests that ‘Lack of Pride in Attractiveness’ and ‘Shame around Eating’ contribute differently to eating disorder cognitions and behaviours, this could be explored further in future research. The finding that ‘Shame about Eating’ and ‘Pride in Control’ have a significant contribution to the variance of eating disorder cognitions and behaviours gives support to the idea of treatment programmes aiming to tackle shame-shame and shame-pride cycles (Goss & Allan, 2009). Future research would be needed to evaluate the efficacy of these treatment programmes in comparison to existing evidence-based treatments.

5.7 Conclusion

In conclusion, the SWES was developed in response to the need for a measure of pride relevant to eating disorders and the clinical importance of assessing shame specific to eating behaviours (Frank, 1991; Burney & Irwin, 2000). The current study assessed the scale’s component structure and psychometric properties. A three component structure was retained assessing ‘Lack of Pride in Attractiveness’, ‘Pride in Control’ and ‘Shame around Eating’, all with acceptable internal reliability. The data from a clinical sample was used to explore the relationship between the components and eating disorder cognitions and behaviours. It was found that ‘Pride in Control’ significantly contributed to the variance of restricting cognitions and behaviours, whilst ‘Shame about Eating’ significantly contributed to the variance of binge-purging cognitions and behaviours and restricting cognitions.

The findings of the current study supported the notion of shame-shame and shame-pride cycles (Goss & Gilbert 2002) in the maintenance of eating disorders and the notion of developing treatments that specifically tackle shame and pride with eating

disorder patients (Goss & Allan, 2009). The study also puts forward a new measure of shame and pride specific to body shape, weight and eating behaviours, which can be used clinically, for monitoring purposes, as an outcome measure or in future research.

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Critical Appraisal

This critical appraisal has been informed by the research diary kept throughout the study and reflections made at the end. It discusses the decision making processes and highlights learning points.

1 Origins of the study

At the initial stage of deciding on research topics, I was open to ideas and had not started the course with fixed thoughts of what research I wanted to conduct. At the research fair, studies in the area of eating disorders interested me, as this was something I had previously been intrigued by. I had experience of working in areas where the links between physical and mental health were prominent and I believed that this would be the case for eating disorders. I was also drawn to studies with a quantitative methodology. Confidence in my research abilities was relatively low as I had not been involved with research since my undergraduate dissertation, however, I was most familiar with quantitative methodology and therefore I felt more confident in undertaking this type of project.

The study that I enquired into further was that of scale development in the area of shame and pride in eating disorders. This appealed to me as I was able to combine the research with a clinical placement in a specialist eating disorders service and it was an opportunity for me to conduct quantitative research in an area of interest. The project was continuing on from research undertaken as a MSc project. There were advantages in choosing a research project that had already been conceptualised as the interest was already there in the service and with the supervisors, and practicalities regarding recruiting participants had been considered. However, this meant that I was less familiar with the topic area and the rationale for the research than if I had identified the need for the study myself.

2 Peer review, ethics and procedural considerations

As I was unfamiliar with the background literature and rationale for the study the process of writing a research proposal and submitting this for peer review was incredibly helpful. It required justifying the need for the research and considering practicalities involved and ethical issues. As part of applying for ethical approval I attended the ethics committee meeting and answered the questions posed. This increased my ownership of the study and gave me the opportunity to deepen my understanding of the processes involved. Ultimately the process of completing the peer review and ethics application increased the quality of the study, as it enabled the consideration of procedural issues to improve the quality and ethics.

A number of key decisions were made regarding the procedure of data collection. Firstly it had to be decided at what point in the assessment process patients would be introduced to the study and required to complete the scale if they consented to participate. The assessment procedure at the service consisted of three appointments; an initial assessment with a clinician, a second assessment with the medic and a clinician (where a diagnosis was considered) and finally a feedback appointment where the assessment report and diagnosis were discussed with the patient. It was decided to introduce the patients to the study and give them the participant information sheets at the end of the second assessment appointment. This was to prevent giving the information to patients who did not meet the service criteria and allowed them time to take the information home and consider it in the two weeks before their feedback appointment. Those willing to participate would be witnessed signing the consent form and completing the scale in their feedback appointment. It was felt that this would allow them to ask the clinician questions and discuss emotions or thoughts that may be raised. Although this was the most ethically appropriate way to structure the data collection I

feel in contributed to the smaller sample size. There were a number of patients who did not attend the feedback appointments, potentially due to deciding they were not ready for treatment following what was discussed in the assessment appointments. This could also have led to a sample bias for those motivated to start treatment and willing to engage with the service. The format also required clinicians to remember to give the information sheet out at the second appointment. If they forgot to do so there was no logical next step to collect the data until the patient was due to start treatment, which could be a number of weeks, if not months, later.

A second decision regarded the time gap before collecting the test-retest data. It was necessary for the data to be collected before treatment started to reduce the impact treatment may have on the responses. However, it needed to be long enough to adequately assess the test-retest reliability. No guidelines were found as to the appropriate amount of time therefore previous studies were considered and the length of six weeks was decided upon. On reflection, a shorter time period may have increased the sample size as less participants may have started treatment or disengaged with the service by that point.

3 Scale development

Before showing the final version of the scale to the focus group, the results of the scale used with the non-clinical sample were reviewed. This gave me the opportunity to work alongside my supervisors in making decisions regarding which items of the scale to retain and creating new items. This process was initially overwhelming as I had not previously been involved in scale development. However, this was a collaborative process, which reduced my anxieties and overall was really informative into the procedure of how scales are developed. It has led to me paying

closer attention to the measures I use in my clinical practice and increased my ability to critically appraise them.

4 Focus group

Overall, conducting the focus group was a positive experience. This was a new challenge for me and I had concerns about how interactive the participants would be and whether they would have opinions on the scale. It was reassuring that responses from the participants were positive and that they felt it would have been helpful to have completed the scale at the beginning of their treatment. This helped to justify the ethical consideration of asking participants to complete numerous questionnaires and reinforced the notion that the scale would be clinically useful.

5 Data collection

The recruitment of participants was straightforward as it coincided with the referrals and assessment procedure of the service. However, it took time for clinical staff to become familiar with adding the research to the well established structure of assessments.

It was predicted early on that obtaining an adequate number of participants for Principal Components Analysis (PCA) would be unlikely, with knowledge of previous referral and DNA rates. However, there were a number of factors in the recruitment process that further impacted on the sample size and potential sample biases. There were no patients who attended their feedback session who did not consent to participate however, I was surprised by the number of patients who did not attend their appointments and disengaged from the service. As highlighted earlier, collecting the data at the third assessment appointment led to fewer participants than if it had been collected earlier in the assessment process. There were also a significant number of

inappropriate referrals of patients who did not fit the criteria for the service, for example, those with binge-eating disorder.

Involving other clinicians in the data collection had its pros and cons. It would not have been possible to collect the data without the help of the staff at the service and their support was invaluable. However, it required changes to the assessment procedure that they were all familiar with, which took time to adjust to. I personally found it difficult to remind the staff to include my research in the assessments as I was concerned about irritating those who had done it or making those who had not, feel guilty.

As time went on I became more and more anxious about the number of patients not turning up for appointments as the likelihood of getting adequate numbers was reducing. I was reassured by my supervisors that as the scale had been analysed with adequate numbers in the non-clinical study, this research was focussed on further development of the scale with a clinical sample and using it to explore these factors with an eating disorder population. Therefore an adequate sample would be ideal but not essential. I continued to collect data for as long as feasibly possible, allowing time for analysis and writing up the research by the given deadline. On reflection, this did increase the time pressures in the final stages of writing up the research.

If I was designing the study again I would consider the possibility of using another site to increase the sample size. The possibility of using an inpatient unit in addition to the outpatient service would increase the range of eating disorder severity within the sample and potentially make comparisons between eating disorder diagnoses possible. Whilst this would be beneficial, it would significantly increase the work involved as it would require engaging another service and overseeing the data collection on two sites and ensuring continuity in the procedure.

6 Team working

Throughout the whole research process I have learned the value of having a research and field supervisor within the area and having a clinical team who understood the benefits of the study. This was particularly important as it required their time and effort to help with the data collection. Having the clinical team witness the signing of consent forms and assisting people to complete the forms in their appointments reduced the amount of missing data and enabled participants to ask any questions. It was therefore vital that the staff understood the research procedures and its clinical implications and rationale. Being on placement with the staff team enabled me to develop a relationship with the team outside of the research, which I feel increased their willingness to engage with the project.

7 Analysis

Personally, data analysis was the stage of research I was most excited about as it was the time when I would find out if the findings were as expected. Although I have previously analysed quantitative data, this was the first time that I had used PCA. I had initially assumed that scale development would involve statistical procedures with clear findings and I was surprised by how much subjective decision making there was, relying on the theory behind the development of the scale. The key decisions in the analysis stage were around the type of rotation to use, the number of components to retain and whether to use parametric analyses. The decisions were made with the support of my research supervisor and it was helpful to be able to discuss the different options.

When considering whether to do oblamin or varimax rotation there were no clear cut answers. Varimax rotation would have been simpler to report but assumes that the components are not correlated. It is suggested that if components correlate above

0.3 then oblimin rotation should be used (Pallant, 2007). However, the correlations between the three components were 0.04, -0.17 and 0.36 and it would have been possible to justify using either rotation method. However, it was decided that as two components correlated above 0.3, that oblimin rotation would be conducted.

The decision of how many components to retain was informed by a number of criteria, the results of the non-clinical study and the theory behind the scales development. Following the PCA there were two plausible options: six or three components. The decision of how many components to retain would influence any further analyses, as the totals for the components would be used. It felt like this was a crucial decision as it would impact on the overall findings of the research and the future use of the scale. The different options were deliberated with my research supervisor and it was felt there was more justification for retaining three components.

The scores for two of the three components were not normally distributed, as is often the case with clinical data. The decision as whether to use non-parametric statistics or to transform the data and use parametric statistics was changed a number of times. Initially non-parametric analyses were going to be used but it was discovered that the number of participants in the different diagnostic groups meant the Kruskal-Wallis analyses were underpowered. The alternative of using Multiple Regression to explore the relationship between the three components and different eating disorder presentations was considered. However, this analysis is sensitive to violations in the assumption of normality and has no non-parametric equivalent. It was therefore decided to transform the data to improve the normality and use parametric analyses. These changes in decision required analysing the data using a number of different methods which greatly improved my understanding of different statistical techniques, the assumptions they make and their strengths and weaknesses.

8 Research supervision

Research supervision was generally a positive experience. Particularly in times of stress, it could be immensely helpful and reassuring. I learned a great deal about my writing style and my ability to accept constructive criticism. It was helpful to create deadlines, which I generally managed to stick to, with the exception of the literature review. This experience has made me more realistic about how long different tasks can take. The aspect of research supervision that I found most helpful was the opportunity to discuss decision making and feeling supported throughout the research process.

9 Combining research and clinical practice

Completing the research in the service where I was on a placement was a major benefit. It meant that the team had a personal connection to me and I also felt completely involved in the area around the time that I was applying for ethical approval and beginning the data collection. It enabled me to keep records of the patients being referred and dates of their appointments so I could be there as a reminder to hand the information sheets out. It also meant that I could include the data collection process as part of my clinical work.

A further advantage was being able to work clinically with the models and theory behind the research and increase my understanding of the factors pertinent to eating disorder services and patients. It was reassuring to experience the benefit the research could have on clinical practice as I became more aware and involved with working with shame and pride in eating disorders. This enhanced my learning as a whole and showed me how to combine research and clinical practice, which is something that I would aim to do in my future career.

10 Main learning points

Having not previously completed a full scale research project in the NHS, a main learning point was about the procedures involved in the whole research process and the organisation and planning needed to ensure things run as smoothly as possible. I also feel that I have learned what is realistic and achievable within a limited time period and with limited resources. Throughout the research I underestimated how long tasks would take to complete. I feel this was due to my inexperience and this is something I am now more able to accurately approximate.

The scale development and analysis has increased my understanding of the processes involved and has made me aware of the strengths and limitations of measures that I use in my clinical practice.

I learned the importance of the research team and the need to sustain the interest of those involved in the research. I have learned how to balance reminding people about collecting the data without imposing it upon them.

Conducting the literature review gave me the opportunity to increase my understanding of an area related to my research topic. I decided to conduct a literature review focussing on family functioning in eating disorders as the research focussed on more individual factors and I wanted to increase my awareness and learning of systemic factors. This gave me the opportunity to read and reflect on the literature in the area, to a greater degree than is often possible as part of clinical practice.

Since my undergraduate degree I have not conducted any research and my confidence in my abilities to complete work to a doctoral standard was low. However, the research process and the support and reassurance of my supervisors increased my confidence and enthusiasm for research. It also confirmed my belief that research is a valuable role of the clinical psychologist.

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Appendix A

Definitions of Elements of Family Functioning

Achievement orientation – The emphasis the family places on achievements.

Adaptability – The extent to which a family system is flexible and able to change and adapt to different circumstances or stressors. Measures of adaptability range from rigid to chaotic. A middle range is considered to be most well functioning.

Adherence to values and norms – The emphasis the family places on behaving in a way that is acceptable to their values and norms.

Affective involvement – The degree to which the family shows an interest in and values its individual members. The level of concern for each other.

Affective responsiveness/expression – The family's ability to respond to a range of stimuli with the appropriate quality and quantity of feeling and emotion. Appropriate expression of emotion.

Behaviour control – The way in which a family establishes and maintains standards for the behaviour of its members. The clarity of the rules within the family.

Cohesion – The emotional bonding that family members have towards each other and the extent that boundaries are maintained. Measure of cohesion range from enmeshed to disengaged. A middle range is considered to be most well functioning.

Communication – How well information is verbally exchanged within the family. The clarity and directness of verbal interactions.

Conflict – In relation to this paper conflict is viewed in consideration to conflict avoidance or the family's ability to resolve conflict.

Cross-generational blurring - Lack of clear roles of the different family members, coalitions between parents and children.

Dependency - Lack of individual autonomy and independence.

Enmeshment – An extreme form of proximity and intensity in family interactions. An extreme level of cohesion, over-involvement, blurring of boundaries and roles.

Family Hierarchy – The extent that there is a hierarchy or power structure for taking responsibility for leadership and setting limits. The extent to which there are internal boundaries or parent-child coalitions within the family.

Flexibility – A high amount of adaptability to new or stressful situations.

Implicit family rules – Unwritten family norms that govern the family members' behaviours.

Organisation and structure – The strength of the roles, hierarchy and structure within the family.

Over-protectiveness – A high degree of concern for each other's welfare. Can result in a lack of autonomy for individual family members.

Problem solving/task accomplishment – The family's ability to resolve problems or complete tasks and maintain an effective level of family functioning.

Rigidity – Inflexibility within the family and a commitment to keeping things the same. A lack of adaptability.

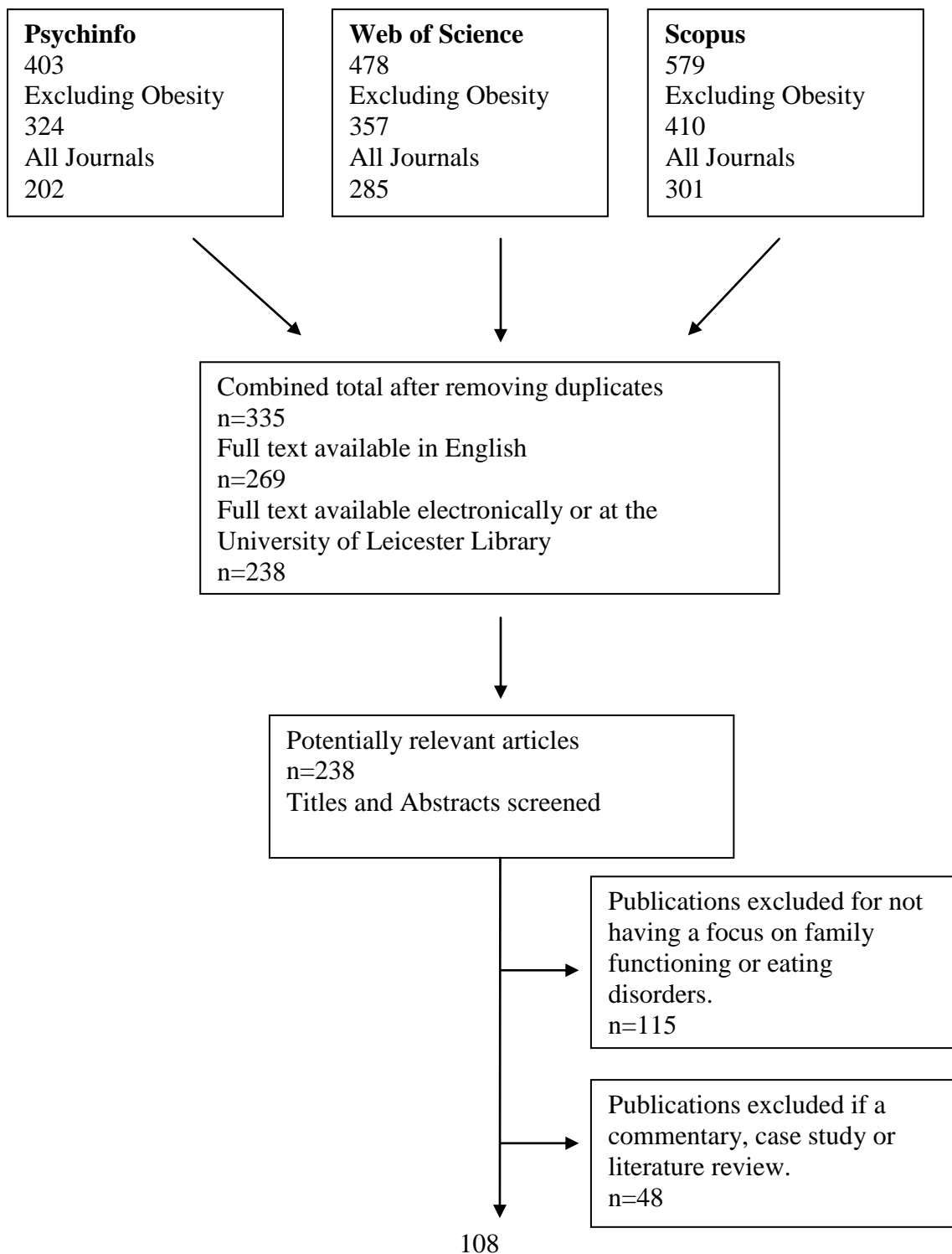
Role performance – The differentiation of tasks to different family members. The clarity and appropriateness of roles within the family and the distribution of responsibility and accountability.

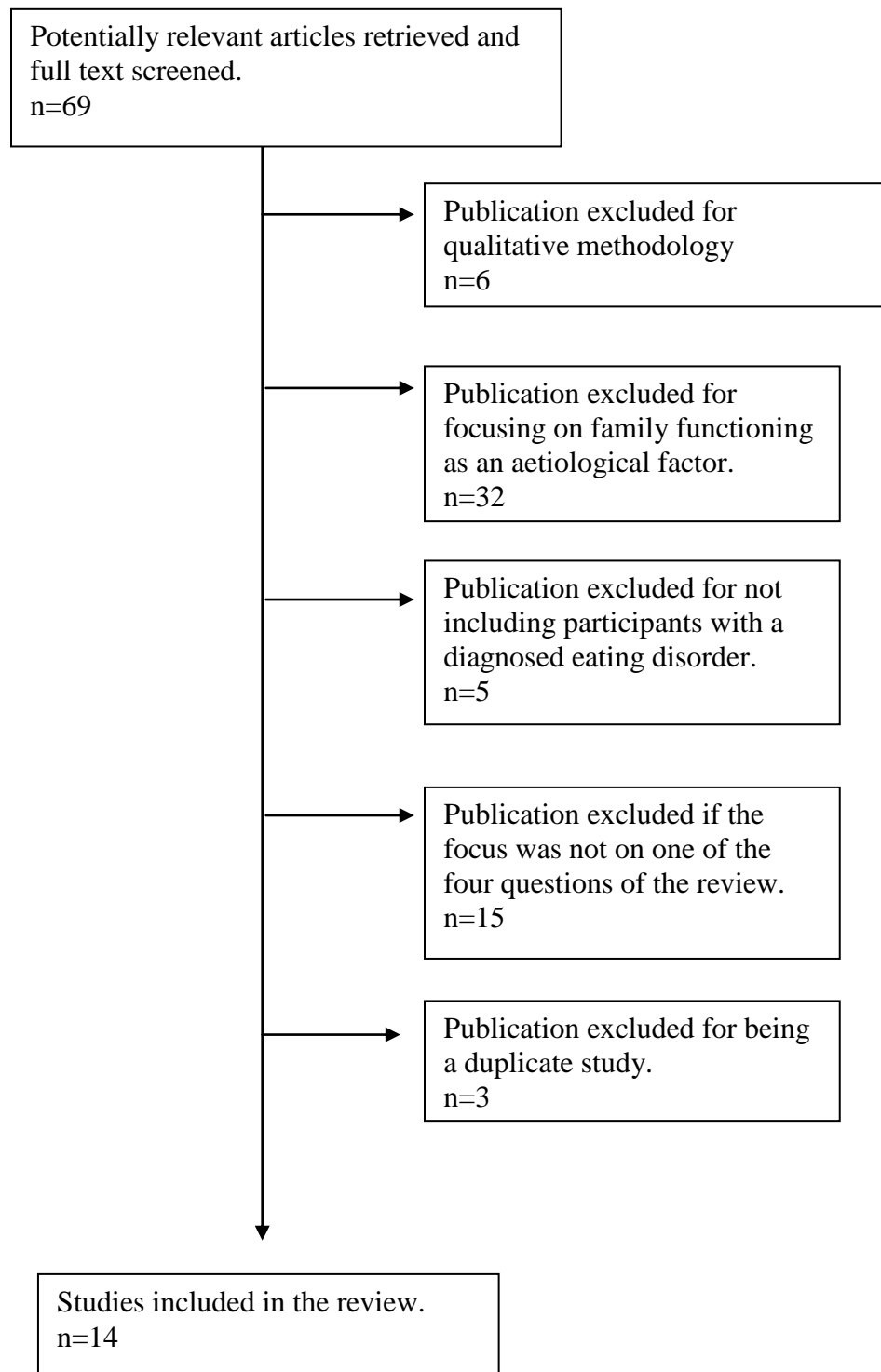
Appendix B

Selection process

Search terms entered into the database on 26.11.10:

(Eating Disorder AND Family Funct*) OR (Eating Disorder AND Family Maint*)





Appendix C

Data Extraction Form

General information

Date of data extraction

Record number

Author

Article title

Journal

Country of origin

Source of funding

Study characteristics

Aim/objectives of the study

Study design

Study inclusion and exclusion criteria

Recruitment procedures

Participant characteristics

Age

Gender

Ethnicity

Family Included

Diagnoses

Diagnostic process

Number of participants in each category

Outcome data/results

Measures used

Statistical techniques used

Follow-ups

Response rates

Summary outcome data

Additional outcomes

Study Quality

Study design

Risk of bias

Choice of measures used

Statistical issues

Quality of reporting

Generalisability

Appendix D

Abbreviations

FF	Family Functioning
AN	Participant with Anorexia Nervosa
AN-R	Participant with Anorexia Nervosa Restricting Type
AN-B	Participant with Anorexia Nervosa Bulimic Type
BN	Participant with Bulimia Nervosa
BN-S	Participant with Bulimia Nervosa Simplex
EDNOS	Participant with Eating Disorder Not Otherwise Specified
ED	Participant with an Eating disorder
C	Control
M-	Mother of (AN/BN/C etc)
F-	Father of....
P-	Parents of....
S-	Sibling of....
Sis-	Sister of....
Fam-C	Control Family
Fam-ED	Eating Disorder Family

Appendix E

Participant Information Sheet and Consent Form – Focus Group

Dear

Research Study: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

I am writing to invite you to take part in a research study which I am carrying out as part of my clinical training. My name is Anita Holtom-Viesel and I am a Trainee Clinical Psychologist at the University of Leicester. I am interested in the role of shame and pride in eating disorders and I have been involved in the development of a scale looking at this. The purpose of the study is to ask patients with a diagnosed eating disorder to complete the scale to assess if it is valid and reliable. Before the study begins I want to conduct a focus group to get the opinions of people with an eating disorder regarding how they feel about the scale.

The following people are involved in this research:

Anita Holtom-Viesel

Trainee Clinical Psychologist at the University of Leicester

Telephone number: 02476 521130

Dr Ken Goss

Consultant Clinical Psychologist and Head of Coventry Eating Disorders Service

Telephone number: 02476 521130

Dr Steve Allan

Academic Tutor at the University of Leicester

Telephone number: 0116 223 1648

Please find enclosed a participant information sheet explaining the study in more detail and a consent form which needs to be signed if you agree to take part in the focus group. Please ensure that you read both the participant information sheet and the consent form before deciding whether or not you would like to participate.

If you decide to take part in the study please contact me on 02476521130 to inform me that you would like to take part in the focus group and I will organise a convenient time and date. You would then need to bring the consent form with you and before the group commences put your initials in the boxes on the consent form and sign it.

I would like to take this opportunity to thank you for reading this letter.

Yours Sincerely

Anita Holtom-Viesel

Trainee Clinical Psychologist

Participant Information Sheet (Focus Group)

Study Title

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

We would like to invite you to take part in our research study. Before you decide we would like invite you to understand why the research is being done and what it would involve for you. If after reading this information sheet you have further questions you can contact the lead researcher on the contact number provided.

What is the purpose of the study?

The purpose of the study is to gain a better understanding of shame and pride in people with eating disorders. If the role of shame and pride in the development and maintenance of eating disorders were better understood this would have a number of potential benefits for both patients and clinicians. It could indicate possible areas for therapy to be focused on and give an understanding as to why there may be less improvement than expected if possible maintaining factors are not considered. It may give clinicians more insight into how patients view different aspects of their illness.

Why have I been invited?

You have been invited to take part in the research as you are a current patient at the Coventry Eating Disorders Service (CEDS) and the results from the research could be used to 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 the research and if you decide to take part and then want to withdraw at any point you are free to do so and your data will be destroyed. Whether you agree to participate or not, it will not affect the treatment you receive.

What will happen to me if I take part?

You will attend a focus group at CEDS with approximately 5 other participants. You will be asked to look at the Shape, Weight and Eating Scale and then give your opinions on how acceptable you feel the scale is, if you feel any changes should be made and how understandable the questions are. This focus group will be audio taped to enable the researcher to analyse what has been said. It is expected to take between 30 - 60 minutes.

What will I have to do?

If you are interested in taking part in the research then you need to read the information sheet, if you have any further questions then contact the researcher on the number provided. If you decide to take part then contact Anita Holtom-Viesel to inform her that you have decided to participate and a convenient date and time will be arranged. You will need to bring the consent form with you to the focus group and Anita will witness you initial the boxes on the consent form that you agree to and sign the bottom.

What are the potential disadvantages and risks to taking part?

You may feel inconvenienced by taking part as it will take up your time. It may also lead you to think about your feelings about your shape, weight and eating behaviours, which may lead to emotional distress. The researcher will aim to minimise emotional distress during the focus group and if they feel you need extra support following the group they will be available to spend time with you individually to discuss any distress caused.

What are potential benefits of taking part?

A benefit to you taking part in the focus group is that you will be having your opinions heard regarding the future research study, which aims to improve the focus of treatment for people with eating disorders.

Will my taking part in the study be kept confidential?

The focus group will be audio-taped to enable the researcher to listen to what has been said and consider the opinions of the participants. The audio tape will be kept in a locked cabinet at CEDS. There will be no identifiable information in any of the publications of this research. If you wish for your G.P to be informed of your participation then we can do this. There will be no identifiable information in any publications of this research.

What if there is a problem

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally you can do this following the NHS complaints procedure.

What will happen to the results of the research study?

The results of the focus group will be used to make any amendments to the Shape, Weight and Eating Scale which will then be used in the second stage of this research study. The results from the research project will be written up and submitted as a doctoral thesis and will also be submitted for selected journal publication.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by Warwick Research Ethics Committee. The study also underwent peer review at the University of Leicester.

Contact for further information

If you require any further information before deciding whether to participate in this study please contact Anita Holtom-Viesel on 02476 521130.

Consent Form

Title of Research: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

Lead Researcher: Anita Holtom-Viesel

Please initial box

1. I confirm that I have read and understood the information
sheet dated(version) for the above study. I have had
the opportunity to consider the information, ask questions and have
had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free
to withdraw at any time without giving any reason, without my
treatment being affected. ☐
3. I understand that the information I provide will be anonymous in
any report or publication. ☐
4. I give permission to the research team in the above study to have
access to my records. ☐
5. I understand that the focus group will be tape-recorded and the
tape-recordings will be destroyed after completion of the doctoral
course. ☐
6. I would like my G.P to be informed of my participation in this study. ☐
7. I agree to take part in the above study. ☐

Name of Participant

Date

Signature

Witnessed by _____ Date _____

Appendix F

The Stirling Eating Disorder Scale, The Other As Shamer Scale and The Internal Shame Scale.

Appendix G

The Shape Weight and Eating Scale

Appendix H

Participant Information Sheet and Consent Form – Clinical Sample

Dear

Research Study: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

I am writing to invite you to take part in a research study which I am carrying out as part of my clinical training. My name is Anita Holtom-Viesel and I am a Trainee Clinical Psychologist at the University of Leicester. I am interested in the role of shame and pride in eating disorders and I have been involved in the development of a scale looking at this. The purpose of the study is to ask patients with eating difficulties to complete the scale to assess if it is valid and reliable.

The following people are involved in this research:

Anita Holtom-Viesel

Trainee Clinical Psychologist at the University of Leicester

Telephone number: 02476 521130

Dr Ken Goss

Consultant Clinical Psychologist and Head of Coventry Eating Disorders Service

Telephone number: 02476 521130

Dr Steve Allan

Academic Tutor at the University of Leicester

Telephone number: 0116 223 1648

Please find enclosed a participant information sheet explaining the study in more detail and a consent form which needs to be signed if you agree to take part. Please ensure that you read both the participant information sheet and the consent form before deciding whether or not you would like to participate.

If you decide to take part in the study please bring the consent form with you to your feedback appointment where a member of the team will be there to answer any questions and to witness you putting your initials in the boxes on the consent form and signing it. You will then complete the Shape, Weight and Eating Scale at the beginning of your feedback appointment.

I would like to take this opportunity to thank you for reading this letter.

Yours Sincerely

Anita Holtom-Viesel

Trainee Clinical Psychologist

Participant Information Sheet

Study Title

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

We would like to invite you to take part in our research study. Before you decide we would like invite you to understand why the research is being done and what it would involve for you. If after reading this information sheet you have further questions you can contact the lead researcher on the contact number provided.

What is the purpose of the study?

The purpose of the study is to gain a better understanding of shame and pride in people with eating disorders. If the role of shame and pride in the development and maintenance of eating disorders were better understood this would have a number of potential benefits for both patients and clinicians. It could indicate possible areas for therapy to be focused on and give an understanding as to why there may be less improvement than expected if possible maintaining factors are not considered. It may give clinicians more insight into how patients view different aspects of their illness.

Why have I been invited?

You have been invited to take part in the research as you are a patient at the Coventry Eating Disorders Service (CEDS) and the results from the research could be used to 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 the research and if you decide to take part and then want to withdraw at any point you are free to do so and your data will be destroyed. Whether you agree to participate or not, it will not affect the treatment you receive.

What will happen to me if I take part?

You will complete the Shape, Weight and Eating Scale, which will ask questions regarding how you feel about different aspects of your body shape, your weight and your eating behaviours. It should take no longer than 10 minutes to complete. You will complete this at CEDS at the beginning of your feedback appointment. Some participants will be contacted at a later date to complete the Shape, Weight and Eating Scale for a second time, if you are happy to be contacted again then initial that box on the consent form.

What will I have to do?

If you are interested in taking part in the research then you need to read the information sheet, if you have any further questions then contact the researcher on the number provided. If you decide to take part then bring the consent form with you to your feedback appointment. At this appointment a member of the team will be there to answer any questions and to witness you putting your initial in the boxes on the consent form that you agree to and signing the bottom. You can then take the time to complete the Shape, Weight and Eating Scale during this appointment.

What are the potential disadvantages and risks to taking part?

You may feel inconvenienced by taking part as it will take up your time to read the information and complete the scale. We would hope that it does not take you more than 5-10 minutes to complete the scale. Thinking about your shape, weight and eating may cause emotional distress. If this is the case then you can contact CEDS on 02476 521130 or discuss this at your appointment.

What are potential benefits of taking part?

A benefit to you taking part is that the service will have a greater understanding of your difficulties and may be able to look at your difficulties focussing on what is maintaining them.

Will my taking part in the study be kept confidential?

Your responses on the scale will be kept in your file, which is kept in a locked filing cabinet at CEDS, so the only people to have access to the information will be your care team. The collected data will be kept on a password protected computer at CEDS and a memory stick which will be kept in a locked cabinet at CEDS. If you wish for your G.P to be informed of your participation then we can do this. There will be no identifiable information in any publications of this research. The data in your file will be kept for 7 years, in keeping with NHS procedure.

What if there is a problem

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally you can do this following the NHS complaints procedure.

What will happen to the results of the research study?

The research study will be written up and submitted as a doctoral thesis and will also be submitted for selected journal publication.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by Warwick Research Ethics Committee. The study also underwent peer review at the University of Leicester.

Contact for further information

If you require any further information before deciding whether to participate in this study please contact Anita Holtom-Viesel on 02476 521130.

Consent Form

Title of Research: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

Lead Researcher: Anita Holtom-Viesel

Please initial
box

1. I confirm that I have read and understood the information
sheet dated(version) for the above study. I have had
the opportunity to consider the information, ask questions and have
had these answered satisfactorily.
2. I understand that my participation is voluntary and that I am free
to withdraw at any time without giving any reason, without my
treatment being affected.
3. I understand that the information I provide will be anonymous in
any report or publication.
4. I give permission to the research team in the above study to have
access to my records.
5. I would like my G.P to be informed of my participation in this study.
6. I agree to take part in the above study.
7. I agree to be contacted regarding taking part in the next stage of
this study.

☐☐☐☐☐☐☐

Name of Participant

Date

Signature

Witnessed by _____ Date _____

Appendix I

Participant Information Sheet and Consent Form – Test-retest

Dear

Research Study: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

Thank you for your contribution to this study so far. I am writing to invite you to take part in the second part of this research study, which I am carrying out as part of my clinical training. I am contacting you, as you initialled the box giving consent to contact you about the second stage of the research. The purpose of this part of the study is to see if the results from the scale are stable over time i.e. if your answers on the scale at a later date are the same as your answers when you first completed the scale.

The following people are involved in this research:

Anita Holtom-Viesel

Trainee Clinical Psychologist at the University of Leicester

Telephone number: 02476 521130

Dr Ken Goss

Consultant Clinical Psychologist and Head of Coventry Eating Disorders Service

Telephone number: 02476 521130

Dr Steve Allan

Academic Tutor at the University of Leicester

Telephone number: 0116 223 1648

Please find enclosed a participant information sheet explaining this part of the study in more detail and a consent form which needs to be signed if you agree to take part. Please ensure that you read both the participant information sheet and the consent form before deciding whether or not you would like to participate.

If you decide to take part in the study please put your initials in the boxes on the consent form and sign it. Please bring the signed consent form and the completed Shape, Weight and Eating Scale to your next appointment at Coventry Eating Disorders Service.

I would like to take this opportunity to thank you for reading this letter.

Yours Sincerely

Anita Holtom-Viesel

Trainee Clinical Psychologist

Participant Information Sheet

Study Title

Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

We would like to invite you to take part in the second stage of our research study. Before you decide we would like invite you to understand why the research is being done and what it would involve for you. If after reading this information sheet you have further questions you can contact the lead researcher on the contact number provided.

What is the purpose of the study?

The purpose of the study is to gain a better understanding of shame and pride in people with eating disorders. If the role of shame and pride in the development and maintenance of eating disorders were better understood this would have a number of potential benefits for both patients and clinicians. It could indicate possible areas for therapy to be focused on and give an understanding as to why there may be less improvement than expected if possible maintaining factors are not considered. It may give clinicians more insight into how patients view different aspects of their illness.

Why have I been invited?

You have been invited to take part in this section of the research as you consented to being contacted regarding this next stage of the research on your consent form.

Do I have to take part?

You do not have to take part in the research and if you decide to take part and then want to withdraw at any point you are free to do so and your data will be destroyed. Whether you agree to participate or not it will not affect the treatment you receive.

What will happen to me if I take part?

You will complete the Shape, Weight and Eating Scale, for a second time. It should take no longer than 10 minutes to complete. You will then bring the completed scale and the signed consent form to your next appointment at CEDS.

What will I have to do?

If you are interested in taking part in the research then you need to read the information sheet, if you have any further questions then contact the researcher on the number provided. If you decide to take part then initial the boxes on the consent form that you agree to and sign the bottom. You can then take the time to complete the Shape, Weight and Eating Scale and bring it, along with the consent form, to your next appointment.

What are the potential disadvantages and risks to taking part?

You may feel inconvenienced by taking part as it will take up your time to read the information and complete the scale. We would hope that it does not take you more than 5-10 minutes to complete the scale. Thinking about your shape, weight and eating may cause emotional distress. If this is the case then you can contact CEDS on 02476 521130 or discuss this at your next appointment.

What are potential benefits of taking part?

A benefit to you taking part is that the service will have a greater understanding of your difficulties and may be able to look at your difficulties focussing on what is maintaining them.

Will my taking part in the study be kept confidential?

Your responses on the scale will be kept in your file, which is kept in a locked filing cabinet at CEDS, so the only people to have access to the information will be your care team. The collected data will be kept on a password protected computer at CEDS and a memory stick which will be kept in a locked cabinet at CEDS. If you wish for your G.P to be informed of your participation then we can do this. There will be no identifiable information in any publications of this research. The data in your file will be kept for 7 years, in keeping with NHS procedure.

What if there is a problem

If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally you can do this following the NHS complaints procedure.

What will happen to the results of the research study?

The research study will be written up and submitted as a doctoral thesis and will also be submitted for selected journal publication.

Who has reviewed the study?

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by Warwick Research Ethics Committee. The study also underwent peer review at the University of Leicester.

Contact for further information

If you require any further information before deciding whether to participate in this study please contact Anita Holtom-Viesel on 02476 521130.

Consent Form

Title of Research: Development and Exploration of the Shape, Weight and Eating Scale with an Eating Disorder Population.

Lead Researcher: Anita Holtom-Viesel

Please initial box

- | | |
|--|---|
| 1. I confirm that I have read and understood the information sheet dated(version) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my treatment being affected. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |
| 3. I understand that the information I provide will be anonymous in any report or publication. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |
| 4. I give permission to the research team in the above study to have access to my records. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |
| 5. I would like my G.P to be informed of my participation in this study. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |
| 6. I agree to take part in the above study. | <div style="border: 1px solid black; width: 50px; height: 50px; margin: 0 auto;"></div> |

Name of Participant

Date

Signature

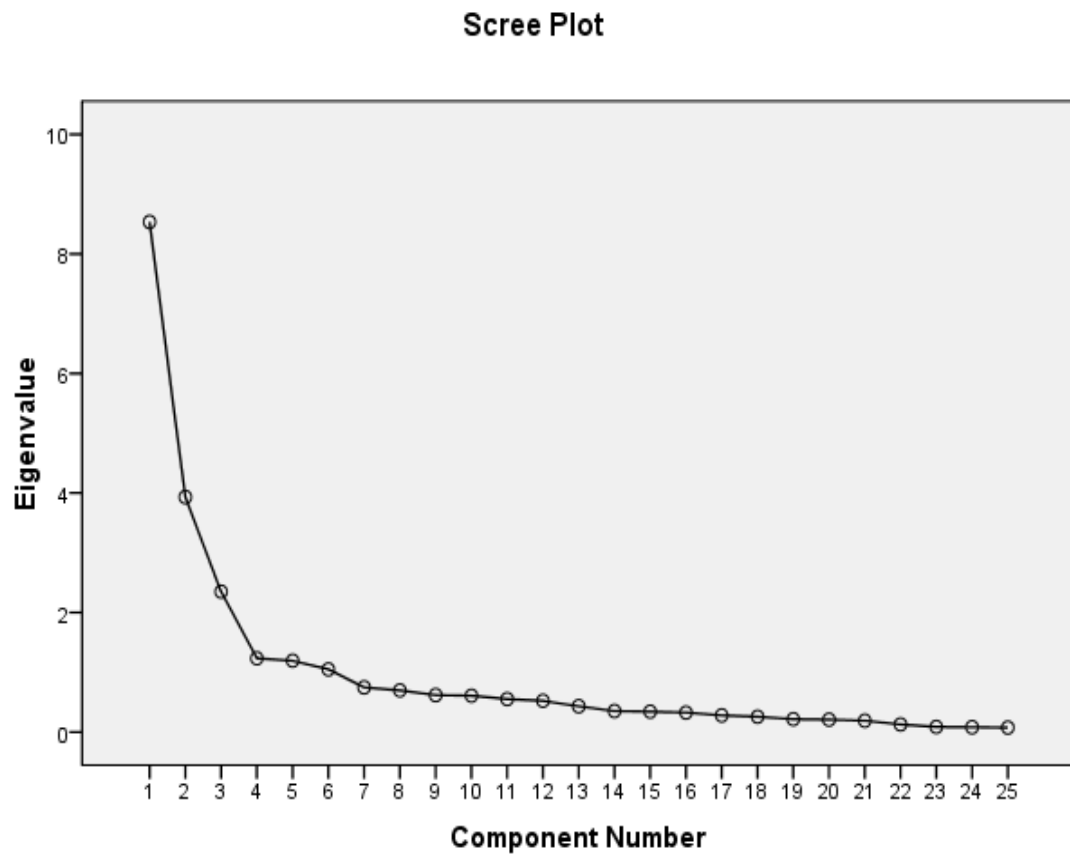
Appendix J

PCA initial Eigenvalues

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	8.535	34.141	34.141
2	3.932	15.727	49.868
3	2.349	9.396	59.264
4	1.234	4.936	64.200
5	1.192	4.769	68.969
6	1.049	4.197	73.166

Appendix K

Scree Plot



Appendix L

Parallel Analysis

Component	%variance	Cumulative %variance	Eigenvalue	Randon Eigenvalue	Retain
1	34.141	34.141	8.535	2.0284	Yes
2	15.727	49.868	3.923	1.8559	Yes
3	9.396	59.264	2.349	1.7257	Yes
4	4.936	64.200	1.234	1.6169	No

Appendix M

PCA Component Matrix

	Component					
	1	2	3	4	5	6
Q14 I feel disgusted with myself because of how or what I eat.	.831					
Q15 I feel ashamed of how or what I eat.	.813					
Q13 I feel ashamed of my body shape or weight.	.781					
Q20 I feel disgusted with myself because of my body shape or weight.	.766					
Q3 I feel good about how my body looks.	-.725		.439			
Q10 I feel disgusted with how much I need to eat.	.682					
Q11 I feel the need to hide how or what I eat.	.647					
Q7 I feel proud of my body shape or weight.	-.638	.423	.508			
Q16 I feel better than other people because of my body shape or weight.	-.637	.453				
Q22 I feel attractive because of my body shape or weight.	-.622					
Q12 I feel disgusted with how much I want to eat.	.617	.423				
Q9 I feel my body shape or weight is better than average.	-.613					
Q4 I feel the need to hide my body shape or weight.	.596					.401
Q25 I feel ashamed if I eat more than I think I should.	.576	.575				
Q18 I feel helpless to control how or what I eat.	.536		.462			
Q5 I feel better than others because of the way I can control my body shape or weight.	-.532	.520				
Q23 I feel ashamed of the things I do to manage my body shape or weight.	.501		.436		.449	
Q2 I feel ashamed if I gain weight.	.496	.474				
Q1 I feel the need to control my body shape or weight.		.654			.407	
Q8 I feel ashamed if I eat more than I intended to.	.495	.576				
Q17 I feel proud of my ability to control how or what I eat.	-.439	.564	-.427			
Q24 I feel more able than other people to control how or what I eat.		.559	-.468			
Q6 I feel I need to control how or what I eat.		.553		-.481		
Q21 I feel proud when I can control my body shape or weight.		.546				
Q19 I feel the need to hide how I manage my body shape or weight.				.506		
Extraction Method: Principal Component Analysis.						
a. 6 components extracted.						

Appendix N

Complete Structure and Pattern Coefficients and Communalities

Component 1

Item	Pattern coefficients			Structure coefficients			Communalities
	Component 1	Component 2	Component 3	Component 1	Component 2	Component 3	
7. I feel proud of my body shape or weight.	-.973	.010	.219	-.895	.179	-.135	.843
3. I feel good about how my body looks	-.872	-.089	-.020	-.865	.055	-.340	.756
22. I feel attractive because of my body shape or weight.	-.825	.039	.093	-.798	.180	-.206	.647
9. I feel my body shape or weight is better than average.	-.810	.063	.094	-.786	.201	-.198	.630
13. I feel ashamed of my body shape or weight.	.746	.020	.203	.816	-.097	.475	.703
20. I feel disgusted with myself because of my body shape or weight.	.741	.131	.218	.798	.015	.492	.700
16. I feel better than other people because of my body shape or weight.	-.708	.279	.014	-.749	.397	-.233	.638
4. I feel the need to hide my body shape or weight.	.521	-.008	.199	.594	-.088	.388	.387

Component 2

Item	Pattern coefficients			Structure coefficients			Communalities
	Component 1	Component 2	Component 3	Component 1	Component 2	Component 3	
24. I feel more able than other people to control how or what I eat.	-.070	.779	-.170	-.262	.785	-.167	.658
17. I feel proud of my ability to control how or what I eat.	-.156	.764	-.189	-.351	.783	-.218	.694
5. I feel better than others because of the way I can control my body shape or weight.	-.312	.637	-.175	-.482	.682	-.265	.631
21. I feel proud when I can control my body shape or weight.	-.041	.633	.060	-.125	.642	.068	.415
1. I feel the need to control my body shape or weight.	.008	.522	.489	.098	.538	.511	.531
6. I feel the need to control how or what I eat.	.070	.519	.331	.104	.519	.375	.400

Component 3

Item	Pattern coefficients			Structure coefficients			Communalities
	Component 1	Component 2	Component 3	Component 1	Component 2	Component 3	
11. I feel the need to hide how or what I eat.	-.019	-.149	.787	.292	-.118	.775	.622
12. I feel disgusted with how much I want to eat.	.014	.062	.769	.283	.087	.776	.606
25. I feel ashamed if I eat more than I think I should.	.015	.255	.766	.251	.280	.780	.673
15. I feel ashamed of how or what I eat.	.252	-.179	.705	.538	-.195	.790	.726
14. I feel disgusted with myself because or how or what I eat.	.286	-.205	.684	.569	-.228	.781	.744
8. I feel ashamed if I eat more than I intended to.	.010	.305	.683	.208	.328	.698	.579
18. I feel helpless to control how or what I eat.	-.060	-.394	.629	.234	-.361	.593	.501
23. I feel ashamed of the things I do to manage my body shape or weight.	-.070	-.356	.605	.209	-.322	.567	.443
10. I feel disgusted with how much I need to eat.	.244	-.017	.590	.461	-.036	.678	.514
19. I feel the need to hide how I manage my body shape or weight.	-.003	.096	.525	.172	.115	.528	.288
2. I feel ashamed if I gain weight.	.198	.361	.505	.321	.347	.590	.487

Appendix O

Results of the two ANOVA

The results of an ANOVA exploring the differences in scores on the SWES between different diagnostic categories found significant differences between diagnostic groups at $p < 0.05$ for LPA and PC. LPA - $F(2,70) = 4.12$ $p = 0.020$, PC - $F(2,70) = 6.41$ $p = 0.003$. Post hoc comparisons using Tukey HSD showed that for LPA, participants with AN were significantly different from BN and EDNOS. For PC, participants with AN were significantly different from BN.

The results of an ANOVA exploring differences in scores on the SWES between different eating disorder behaviour categories found significant differences between eating disorder behaviour groups were found for PC, $F(2,59) = 7.407$ $p = 0.001$. Post hoc comparisons using Tukey HSD showed significant differences for PC between Restrictors and Binge-Purgers.

Appendix P

Full correlation matrix

	ADC	ADB	BDC	BDB	OAS	ISS	ISSE	LPA	PC	SE
ADC	1.00	0.62**	0.31**	0.07	0.23	0.32**	-0.06	0.03	0.46**	0.3*
ADB	0.62**	1.00	0.03	-0.12	0.23	0.28*	-0.11	0.09	0.38**	0.21
BDC	0.31**	0.03	1.00	0.67**	0.14	0.22	-0.01	0.19	-0.01	0.53**
BDB	0.07	-0.12	0.67**	1.00	0.00	0.07	-0.06	0.32**	-0.20	0.56**
OAS	0.23	0.23	0.14	0.00	1.00	0.78**	-0.49**	0.39**	-0.15	0.19
ISS	0.32**	0.28*	0.22	0.07	0.78**	1.00	-0.56**	0.47**	-0.01	0.28*
ISSE	-0.06	-0.11	-0.01	-0.06	-0.49**	-0.56**	1.00	-0.48**	0.10	-0.18
LPA	0.03	0.09	0.19	0.32**	0.39**	0.47**	-0.48**	1.00	-0.31**	0.49**
PC	0.46**	0.38**	-0.01	-0.20	-0.15	0.01	0.10	-0.31**	1.00	-0.11
SE	0.3*	0.21	0.53**	0.56**	0.19	0.28*	-0.18	0.49**	-0.11	1.00

* Significant at $p < 0.05$

** Significant at $p < 0.01$

Appendix Q

Epistemological Position

The research was conducted from a positivist epistemology, assuming that shame and pride are measureable concepts, which contribute to the development and maintenance of eating disorders. It assumes that these concepts are quantifiable through the use of reliable and valid scientific measures. The methodology driven by this epistemology was quantitative.

Appendix R

Chronology of research process

Research Proposal Submitted for Peer Review	December 2009
Research Proposal Submitted to Ethics Committee	January 2010
Ethical Approval Received	February 2010
Research and Development Approval Received	March 2010
Focus Group Conducted	April 2010
Data Collection	April 2010 - March 2011
Literature Review Conducted	November 2010
Data Analysis	March 2011
Thesis Submission	April 2011
Aim to Disseminate	October 2011

Appendix S

Letter of Ethical Approval

Appendix T

Target Journal – British Journal of Clinical Psychology

Guidelines to Author

Taken on 13th April 2001 from

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- Brief reports and comments

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