UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL AND HUMAN SCIENCES

School of Psychology

Volume 1 of 1

An Investigation into the Eating Psychopathology of Staff Working with Patients with an Eating Disorder

by

Katharine Anne Brouwer

Thesis for the degree of Doctor of Clinical Psychology

May 2015

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF SOCIAL AND HUMAN SCIENCES

Psychology

Thesis for the degree of Doctor of Clinical Psychology

AN INVESTIGATION INTO THE EATING PSYCHOPATHOLOGY OF STAFF WORKING WITH PATIENTS WITH AN EATING DISORDER

Katharine Anne Brouwer

The first part of this thesis is a systematic review of the literature on the peer comparison and body dissatisfaction relationship. A total of 25 studies met inclusion criteria from which predictor, moderator and mediator variables and consequences of this relationship were identified. The review found an association between peer comparison and body dissatisfaction, however, the lack of consistency between studies limited the ability to draw conclusions regarding the significant variables in this. There was more robust evidence for the consequences of peer comparison and body dissatisfaction in the form of weight and shape management desires. The review identified a need for replication of studies, the use of validated measures and the investigation of samples beyond university students.

The second part of this thesis is an empirical paper investigating eating psychopathology in women working with patients with an eating disorder by considering social comparison and body dissatisfaction. Findings showed that staff had significantly lower levels of eating psychopathology compared to the comparison group and population norms. Psychological theory was applied to offer an explanation of these findings. Clinical implications for the staff and patients were discussed as well as suggestions for further research.

Table of Contents

List of Tables

List of Figures

DECLARATION OF AUTHORSHIP

I, Katharine Anne Brouwer, declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

An Investigation into the Eating Psychopathology of Staff Working with Patients with an Eating Disorder

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signed:

Date:

Acknowledgements

"She was beautiful, but not like those girls in the magazines. She was beautiful, for the way she thought. She was beautiful, for the sparkle in her eyes when she talked about something she loved. She was beautiful, for her ability to make other people smile even if she was sad. No, she wasn't beautiful for something as temporary as her looks. She was beautiful, deep down to her soul"

F. Scott Fitzgerald

Thank you to the staff and girls who I had the privilege of working with and first sparked my interest in this topic. A huge thank you also goes to the managers and staff who took part in this study. I'm so grateful for your time, interest and willingness to participate.

With thanks to my supervisors, Drs. Kate Willoughby and Heidi Hand, for their feedback and perseverance with reading through the many pages. I appreciate your time and expertise.

A huge thank you to my fabulous family, friends and coursemates. To mum and dad, for looking after me over Christmas and promoting a work-life balance. To Opa and Oma, for being my biggest fans and constant encouragers. To my lovely friends for your interest in this project, your kind words, prayers and cheerleading. Finally, a thank you to the 2012 cohort; we make a great team! Thank you for your wisdom, the vast supply of tea and for holding the hope every step of the way.

This thesis would not have been possible without you all. Thank you.

Chapter 1: Systematic Literature Review: The Role of Social Comparison to Peers on Body Dissatisfaction in Women

1.1 Introduction

The body ideal for women, that thin is attractive, has been reflected in the media for decades (Silverstein, Perdue, Peterson & Kelly, 1986; Seifert, 2005). In more recent years, the size of models has significantly decreased (Sypeck, Gray & Ahrens, 2004) which is currently reflected in the "size zero" trend. Models are, on average, 20% underweight (Dittmar, 2007) and now weigh 23% less than the average woman, compared to 8% less twenty-five years ago (Mears, 2011). These figures are significant given that a diagnostic criterion for anorexia nervosa is a body weight markedly below average (American Psychiatric Association, 2013), which was previously stipulated to be 15% underweight (American Psychiatric Association, 2000). Moreover, the average model has a Body Mass Index (BMI) of 14-16 (Dittmar, 2007) while a healthy BMI is considered to be between 18.5-24.9 (Kyle, Schutz, Dupertuis & Pichard, 2003). This thus highlights the dangerously low and unhealthy weight of the models depicted in the media.

Findings have shown that thinness is the most essential factor in attractiveness (Parker et al., 1995) and that portrayal of excessively thin models as normative promotes an environmental pressure for women to conform to these standards (Thompson, van den Berg, Roehrid, Guarda & Heinberg, 2004). It is theorised that repeated exposure to such images leads to this thin-ideal being internalised and strong beliefs develop that being thin is necessary to be attractive (Brown, 2002). This is, however, unrealistic and unobtainable for the

majority of women, especially given that the average weight of women and levels of obesity are rising (Wang, McPherson, Marsh, Gortmaker & Brown, 2011). The effect of the widening discrepancy between the sociocultural portrayal of beauty and the average woman has been the subject of extensive research in recent years, particularly with regards to body dissatisfaction (Grabe, Ward & Hyde, 2008).

1.1.1 Body Dissatisfaction

Body image is a complex, multifaceted concept, which incorporates an individual's perception, thoughts and feelings about their body, particularly its appearance (Cash & Pruzinsky, 1990). Body image dissatisfaction develops as the result of negative evaluation and dysfunctional beliefs about one's weight and shape (Pearson, Heffner & Follette, 2010), which is influenced by cultural, developmental, biological and historical factors (Lerner, Skinner & Sorell, 1980). Given the complex construct of body dissatisfaction, and the variety of influential factors, this would be expected to vary greatly among women. Recently, however, an increased number of women report feeling dissatisfied with their bodies with prevalence rates estimated at 40%-50% (Fergeson, 2013). These high levels of body dissatisfaction have been described as "normative discontent" (Rodin, Silberstein & Striegel- Moore, 1984) and a "normal part of the female experience" (Silberstein, Striegel-Moore & Rodon, 1987, p. 89). Body dissatisfaction is often considered to be a Western problem, however, a recent meta-analysis found that body dissatisfaction is an issue for women across cultures and ethnicities (Grabe & Hyde, 2006). The exception appears to be Black African women who report higher body-esteem (Chithambo & Huey, 2013) and a preference for a bigger body shape ideal (Gordon, Catro, Sitnikov & Holm-Denoma, 2010).

The literature suggests that a plausible factor in the rise of body dissatisfaction is the increase of unrealistic images portrayed in the media (Hesse-Biber, Leavy, Quinn & Zoino, 2006), which highlight the discrepancy between one's current and ideal figure (Furnham, Badmin & Sneade, 2002). Meta-analyses of studies investigating body dissatisfaction following exposure to media images have found statistically significant increases in body dissatisfaction (Groesz, Levine & Murner, 2002; Holmstrom, 2004). This rise in body dissatisfaction is of clinical interest as it has been identified as a factor associated with significant physical and mental health problems, such as increased depressive symptoms and stress (Johnson & Wardle, 2005), low self-esteem (Verplanken & Tangelder, 2011), maladaptive eating and exercise behaviours (Anton, Perri & Riley, 2000) and an increased risk of developing an eating disorder (Stice & Shaw, 2002).

1.1.2 Social Comparison Theory and Body Dissatisfaction

Given the negative consequences of body dissatisfaction and the possible socio-cultural influences on this, several social psychological theories have been developed to account for this. These seek to explain the differing degree to which women experience body dissatisfaction, despite being subjected to the same societal pressures and standards of beauty. One of the most prominent theories in this field is the social comparison theory (Festinger, 1954), which will be discussed below.

Festinger (1954) suggested that humans have a natural drive to obtain stable and accurate appraisals of their status, skills and abilities, which is achieved by comparing themselves to others in their social environment. In the original theory, Festinger (1954) proposed that comparisons would occur to people with whom similar characteristics were shared (in order to obtain the most

accurate appraisal), particularly on the comparison dimension in questions (e.g. athleticism, appearance). Subsequent research led to the development of this theory to suggest that social comparison can occur in two different directions, upwards and downwards. Downward comparison was first proposed by Wills (1981) when individuals compare themselves to a perceived inferior target, which serves a self-enhancing function and increases self-esteem. Upward comparison to a perceived superior target, on the other hand, was suggested to act as a self-improving function and fosters motivation, hope and inspiration (Taylor & Lobel, 1989).

Pelham and Wachsmuth (1995) added a new perspective to the theory by proposing that social comparisons result in either contrast or assimilation with the target, which determines whether the comparison leads to positive or negative self-evaluations. Contrast effect occurs when individuals consider themselves as dissimilar to the comparison target and therefore attribute self-conceptions away from the target (Mussweiler, 201). Upward comparisons will then lead to negative self-evaluations and be deflating, whereas downward comparisons will have positive consequences. Conversely, when an individual assimilates themselves with the comparison target upward comparisons can be inspiring and motivate self-improvement to this obtainable status, whereas downward comparison can communicate a threat that an individual's ability could also decrease to this inferior status and result in negative consequences.

Given these developments, it is now widely accepted that individuals have a variety of motives to compare themselves to others, not solely to develop self-perception, but also to enhance self-esteem or to improve one's skills and abilities (Maddux & Tangey 2011). Moreover, the consequences of social comparison differ depending on whether the subject contrasts or assimilates themselves with the target. A current definition of social comparison, therefore,

is “any process in which individuals relate their own characteristics to those of others” (Buunk & Gibbons, 2000, pp. 491).

Empirical evidence has found that social comparisons have evolutionary value in determining how attractive an individual is to the opposite sex, compared to other competitors, and these comparisons therefore occur routinely in human species (Buunk & Mussweiler, 2001). Women in particular have been found to make body-focused comparisons on a daily basis (Leahey, Crowther & Michkelson, 2007). It therefore follows that social comparison theory (Fesinger, 1954) has frequently been used as the foundation when investigating the effect of comparisons to unrealistic body ideals on women’s body satisfaction. Experimental studies make up the majority of the literature and findings showed that participants who engaged in upward comparison to a target representing the thin-ideal reported higher levels of body dissatisfaction (Tiggemann & McGill, 2004; Birkeland, et al., 2005; Tiggeman & Polivy, 2010; Homan, McHugh, Wells, Watson & King, 2012). In correlational studies, findings generally showed a positive relationship between the amount of media exposure and body dissatisfaction (Schooler, Ward, Merriwether & Caruthers, 2004; Bissel & Zhou, 2004). A comprehensive meta-analysis of the role of the media in body image difficulties in women, using both experimental and correlational studies, found small to moderate effect sizes indicating that media exposure was associated with increased body dissatisfaction (Grabe et al., 2008). Although a modest effect size and therefore not conclusive, there does appear to be an association between social comparison to media images and body dissatisfaction in women.

1.1.3 Aim of the review

Social comparison theory (Festinger, 1954) has been influential in increasing understanding of the effect of the media on women's body satisfaction and wellbeing. At present, however, there have been significantly fewer studies investigating the effect of social comparison to peers on body dissatisfaction, which only started to be empirically investigated in 2002. Peers are important targets to consider as most everyday comparisons are to peers rather than media images (Wheeler & Miyake, 1992). Given that these represent a more natural, and therefore more relevant, comparison target, the influence of peer comparisons on body dissatisfaction could be different than media targets and it is therefore important to consider these separately. A systematic review of the empirical evidence is important to evaluate the current status of the literature between peer comparisons and its relationship to body dissatisfaction.

1.1.4 Review Objectives

1. To review the relationship between social comparison and body dissatisfaction when comparing to peers
2. To review the consequences of peer comparison
3. To critically evaluate the current findings within the literature
4. To provide suggestions of the clinical implications according to the findings of this review

1.2 Method

1.2.1 Search Strategy

Using the online databases Psychinfo (through EBSCO), Web of Science and Scopus, the thesaurus was used to identify relevant search terms. A search was conducted on 7 November 2014 using the subject terms "Social Comparison Theory" OR "Social Comparison" OR "Body Comparison" OR "Comparison" OR "Appearance Related Comparison" OR "Peer Comparison" AND "Body Dissatisfaction" OR "Body Satisfaction" OR "Body Image" OR "Body Esteem" OR "Physical Appearance" OR "Physical Attractiveness" AND "Women" OR "Peer" OR "Naturalistic" OR "Naturalistic Observation". This initial search yielded a total of 745 papers once duplicates were removed.

1.2.2 Inclusion and Exclusion Criteria

The articles had to meet the following criteria in order to be included in the review (a) published in English, (b) published in an academic journal, (c) participants as adult women, (d) social comparison was measured or inferred through an experimental condition, and (e) a measure of body dissatisfaction was used. Papers were excluded if (a) the sample also included men, (b) the population had a diagnosed physical or mental health illness (c) the study was qualitative or (d) the population focused on Black African women. Using these criteria, a total of 282 studies were screened for eligibility using the title and abstract. Once irrelevant papers were excluded, a total of 43 papers were read in full and scrutinised for eligibility. This resulted in a total of 25 studies which were relevant and to be included in the review. A visual representation of the selection process is included below (figure 1).

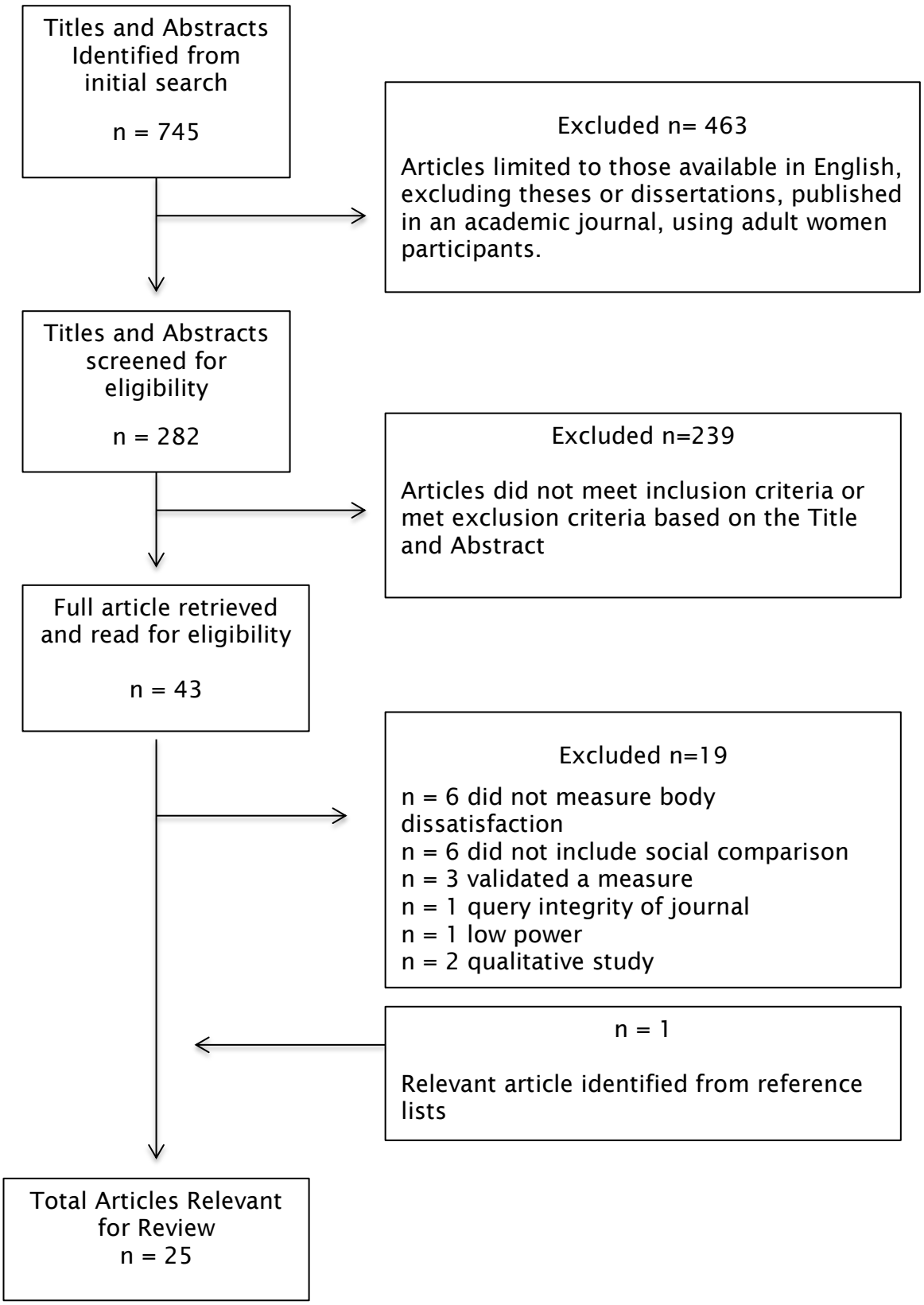

Figure 1: *Flow chart of the study selection process*

1.3 Results

1.3.1 Descriptive Summary of Studies

A descriptive summary of the design, measures and results of the studies were tabulated. Cross sectional studies were rated using relevant items of the strengthening the reporting of observational studies in epidemiology (STROBE; von Elm et al., 2008) and experimental studies were rated using the transparent reporting of evaluations with nonrandomised designs (TREND; Des Jarlais, Lyles & Crepaz, 2004). Each study was rated on six key items: (1) the scientific rationale and objectives (2) validity of outcome measures (3) study design including sample size and participant characteristics (4) statistical analysis (5) key results and interpretation and (6) limitations including generalisability. This information is presented in Appendix A.

Of the identified articles, 22 used a student population. Where age was provided, the mean age ranged from 18 years to 49.20 years. The overall mean age was 21.36 years. Sample sizes ranged from 45 to 1287 participants. In terms of study design, nine were cross-sectional, seven were experimental, six were naturalistic, two were longitudinal and one was experimental in a naturalistic setting. The psychometric measures used in the studies varied greatly. A total of 12 different measures were used for social comparison including validated measures and those developed for the purpose of the study. A total of 10 measures were used for body dissatisfaction including validated measures, sub-tests from other psychometric tools and those developed by the researchers. In addition to social comparison and body dissatisfaction, all studies measured further variables including affect, BMI, self-esteem and eating pathology.

1.3.2 Predictor, Moderator and Mediator Variables

In line with the aims of the review, this section will critically evaluate the empirical literature on the relationship between peer comparison and body dissatisfaction. Unlike in previous literature using media images, where there is a seemingly direct relationship between social comparison and body dissatisfaction (Grabe et al., 2008), the current literature on peer comparison suggests that this process is more complex. From the 25 studies, 17 predictor, moderator or mediator variables were identified; those found to be significant are presented in Table 1. These will be discussed below in order to gain a clearer understanding of the relationship between these variables.

Table 1: *Predictor, Mediator and Moderator Variables Identified in the Literature Review Studies*

Variable Type	**Name**
Predictor	Appearance comments
	Others' perceptions
	Body mass index
	Attachment
	Body surveillance
Moderator	Comparison target
	Thin-ideal internalisation
	Self-esteem
	Cognitive Distortions

Mediator	Social comparison
	Thin-ideal internalisation
	Direct or indirect
	Mindfulness

1.3.3 Predictor Variables

Six predictor variables were identified in a total of four studies. All of these studies examined social comparison as a variable in addition to other predictors. These were appearance related comments (Bailey & Ricciardelli, 2010), others' perceptions and BMI (Lu & Hou, 2009), attachment style (Lev-Ari, Baumgarten-Katz & Zohar, 2014a) and body surveillance (Fitzsimmons-Craft et al., 2014). Contingent self-esteem was also examined but this was not significant (Bailey & Ricciardelli, 2010).

1.3.3.1 Verbal appearance comments. Bailey and Ricciardelli (2010) found that participants who received more negative verbal comments about their appearance engaged in more upward social comparison. In line with previous research, this upward comparison was associated with higher body dissatisfaction (e.g. Leahey & Crowther, 2008; Lin & Kulik, 2002; Krones, Stice, Batres & Orjada, 2005). Conversely, fewer negative appearance comments was associated with increased downward comparison. As a single variable, however, negative comments was not significantly associated with body dissatisfaction and upward social comparisons was instead found to be the strongest predictor of body dissatisfaction. Rather than being a predictor of social comparison and body

dissatisfaction, negative verbal comments could be a predictor of comparison direction instead. The cross-sectional design of this study did not identify the direction of these variables, however, and so this remains uncertain. Nevertheless, this study scored 5/6 on the study quality checklist thus classifying this as a strong study and would be indicative of obtaining reliable findings.

1.3.3.3 Others' perception. Lu and Hou (2009) found that an individual's assumptions about how others viewed their body, specifically family and friends, was a significant predictor of body dissatisfaction. Findings showed that perceived negative beliefs were positively correlated with an increase in body dissatisfaction. It must be noted, however, that this study used Vietnamese participants and this collective culture may value other's perceptions more highly than Western cultures, thereby limiting the generalisability of these findings. Moreover, a non-validated measure of other's perceptions of one's body was translated and used thereby calling the validity of this measure into question. Limitations such as these led to a low score of 2/6 on the quality rating checklist.

1.3.3.4 Body mass index. Lu and Hou (2009) also investigated BMI as a predictor of body dissatisfaction and found this to be a significant variable, with a direct effect of 0.32. The authors proposed that a higher BMI would predict body dissatisfaction as a result of teasing. This was not a variable which was measured in the study, however, and the assumption that teasing is a significant contributing variable was not supported empirically. The notion that a larger BMI leads to more body dissatisfaction, in a culture where the thin-ideal is favoured, however, does have face validity. Overall, given the poor study design, as reflected in the low quality rating, findings of this study may not be reliable and should be considered with caution in the absence of further methodological support.

1.3.3.5 Attachment. Levi-Ari et al. (2014a) proposed that anxiously attached individuals would engage in more social comparison as they are more dependent on others. Avoidant attachment, on the other hand, is associated with independence and it was proposed that individuals would therefore engage in less social comparisons. Results from this study indicated that anxious attachment predicted both a drive for thinness and body dissatisfaction. Avoidant attachment, as hypothesised, did not predict body dissatisfaction. Although findings suggest that body dissatisfaction was predicted by anxious attachment, body dissatisfaction occurred regardless of attachment style when individuals engaged in social comparison. In line with previous research, social comparison thus appeared to be a stronger predictor of body dissatisfaction (Bailey & Ricciardelli, 2010).

1.3.3.6 Body surveillance. Fitzsimmons-Craft (2014) investigated body surveillance (body checking and monitoring) and social comparison as predictor variables of body dissatisfaction in a naturalistic setting. This study was unique in differentiating social comparison into appearance, exercise and eating comparisons. Findings showed that more frequent comparison and body surveillance resulted in higher levels of body dissatisfaction which remained prevalent at the following assessment slot several hours later, thus indicating a prolonged period of body dissatisfaction. In addition, eating comparison was found to be an independent predictor variable of body dissatisfaction. The authors proposed that eating has biological consequences (e.g. feeling full), which served as a reminder of the comparison and maintained body dissatisfaction. In general, however, it was suggested that social comparison and body surveillance acted as the precursor to body dissatisfaction and exercise or eating comparisons followed as secondary responses.

This study was valuable in providing insight into the prolonged effect of body dissatisfaction by collecting data at set time-points rather than randomised times to measure social comparison (e.g. Leahey et al., 2011). In line with previous research, social comparison was identified as a strong predictor of body dissatisfaction. The current study extended this association by identifying different types of social comparison, which could then impact on the degree of body dissatisfaction. This unique contribution, along with the high quality rating of 5/6, makes this a valuable study in the field.

1.3.4 Moderator Variables

Seven studies investigated moderating variables between peer comparison and body dissatisfaction. Of these, two considered comparison target (Leahey & Crowther, 2008; Young, Gabriel & Schlager, 2014), two measured thin-ideal internalisation (Myers, Ridolfi, Crowther & Ciesla, 2012; Krones, Stice, Batres & Orjada, 2005) and a further three moderators were appearance orientation (Shomaker & Furman, 2007), self-esteem (Jones & Buckingham, 2005) and cognitive distortions (Ridolfi, Myers, Crowther & Ciesla, 2012). In addition to these, several other moderators were investigated in these studies but did not reach significance, these were feminist beliefs (Myers et al., 2012), baseline body image satisfaction (Shomaker & Furman, 2007), perceived social pressure to be thin, attractiveness and baseline affect (Krones et al., 2005).

1.3.4.1 Comparison target. Leahey and Crowther (2008) conducted an ecological momentary assessment. Given this naturalistic design, the authors were unable to control for media images which participants would have been exposed to and data thus included these comparisons. Both body satisfied and

dissatisfied women experienced more appearance esteem following upward comparison to a peer. The authors suggested that upward comparison served a self-improving function (Wood, 1989) and that, given the similarities with the superior target, it would be possible to improve to also meet these standards. This provides evidence for the assimilation effect (Pelham & Wachsmuth, 1995). Downward comparison to a peer, on the other hand, was associated with less appearance esteem for body-dissatisfied women. The similarities with this target, which presents with inferior appearance qualities, could indicate a threat that appearance could equally decrease to these standards. This interaction was not found to be significant for body satisfied women, although they did experience decreased appearance esteem following comparison to a media target. It is possible that their perceived similarity with these media images, by sharing a similar BMI, without meeting their appearance standards, resulted in this negative consequence. Body dissatisfied women, on the other hand, did not experience decreased body esteem following media comparisons. Comparison with this image may have led to a contrast effect, as similarities were not shared and the information was discarded as irrelevant (Pelham & Wachsmuth, 1995). Overall, partial support was found for comparison target as a moderator between social comparison and appearance esteem (Leahey & Crowther, 2008).

Conversely, Young et al., (2014) argued that comfort with intimacy moderated whether assimilation or contrast with the target occurred. The authors proposed that comfort with intimacy was indicative of the individual's attachment style. Findings showed that those who avoided intimacy, and therefore distanced themselves from friends, experienced contrast effects and more body dissatisfaction, despite sharing similar qualities. There was a trend for assimilation when those comfortable with intimacy compared themselves to thin friends and experienced increased body satisfaction, which supported

findings by Leahey & Crowther (2008). The use of attachment style, rather than comparison direction to infer assimilation or contrast is not used elsewhere in the literature. This, combined with the fact that the study was limited in examining comparison to close friends and not a wider peer network, makes it difficult to reliably compare these findings with others. Overall, this study received a relatively low quality score of 3/6 thus indicating a weak study design. Nevertheless, attachment theory is highly respected and could offer insight into the relationship between comparison, assimilation, contrast and body dissatisfaction. Replication of this study with a larger sample size and validated measures may therefore be valuable in increasing the validity and reliability of the findings.

1.3.4.2 Thin-ideal internalisation. Thin ideal internalisation refers to the extent to which an individual believes the sociocultural message for the need to be thin (Thompson & Stice, 2001). Myers et al., (2012) investigated thin-ideal internalisation as a moderator in a naturalistic environment and Krones et al. (2005) in a randomised experiment. Myers et al., (2012) found that the extent to which women had internalised the thin ideal moderated the effect between upward social comparison and body dissatisfaction. Greater thin-ideal internalisation was associated with increased upward comparisons and body dissatisfaction. In a dating game scenario, Krones et al. (2005) found that comparison to a peer who conformed to the thin-ideal standard led to a significant increase in body dissatisfaction, with a medium effect size, however, thin-ideal internalisation was not a significant moderator in this. These findings support those of Jones and Buckingham (2005) and Shomaker and Furman (2007) who also found that thin-ideal internalisation was not a significant moderator in the relationship between peer social comparison and body image. Myers et al.'s

(2012) use of a naturalistic design compared to experimental designs used in the other studies could account for these opposing findings.

1.3.4.3 Appearance orientation. Shomaker and Furman (2007) proposed that both social comparison and appearance orientation (the importance of appearance) were significant moderators of body image. In this study participants were exposed to unacquainted peers who, through conversation, either reinforced the need to meet the thin-ideal or encouraged body satisfaction. Findings showed that individuals who frequently engaged in social comparison and had high levels of appearance orientation experienced body dissatisfaction following indirect pressure to be thin. Both social comparison and appearance orientation moderated this relationship. This study added to the findings of Young et al. (2014) by investigating the influence of unfamiliar peers rather than friends. Both these studies provided support for the relationship between peer comparisons, whether familiar or unfamiliar, and body dissatisfaction. Notably, despite the similar findings, both studies scored a modest 4/6 for study quality. Replication with a larger sample size and a non-student sample would further increase the reliability of these findings.

1.3.4.4 Self-esteem. Jones and Buckingham (2005) found that self-esteem was a significant moderator in the relationship between social comparison and body image. Findings showed that both women with high and low self-esteem engaged in social comparison, however, this relationship was in opposite directions. Downward peer comparison for those with high self-esteem resulted in lower body esteem, whereas downward comparison for those with low self-esteem was associated with higher body esteem. The findings for the high self-esteem group support those of Leahey and Crowther (2008) as assimilation with an inferior target could communicate that appearance status could also reduce to

a lower level. The findings contrast those of Leahey and Crowther (2008) for the low self-esteem group, however, as they experienced higher body esteem following downward comparison whereas the low body dissatisfaction group experienced negative affect and increased guilt. Given these differences in findings, there is currently insufficient evidence to support self-esteem as a moderator in the social comparison and body dissatisfaction relationship.

1.3.4.5 Cognitive distortions. An ecological momentary assessment by Ridolfi et al. (2012) found partial support that cognitive distortions, the inaccurate interpretation of information, moderated the relationship between social comparison and body checking. Interestingly, however, cognitive distortions did not moderate the relationship between peer comparison and body dissatisfaction and no direct relationship between these variables was found. The absence of a relationship between social comparison and body dissatisfaction is in contrast to several studies, such as Myers et al. (2008) and Krones et al. (2005). The authors explained these findings as evidence of assimilation (Pelham & Wachsmuth, 1995), that comparison to a similar target could serve a self-enhancing function and may, therefore, not have negative consequences on the cognitive-affective domain of body dissatisfaction. It could, however, lead to behavioural changes through body checking in order to assess one's current shape as self-enhancement is considered. Although the authors' interpretation of these findings are plausible, it must be noted that this study received a 3/6 quality rating with the low compliance rate being identified as a particular limitation. It may be that the data obtained was subject to bias.

1.3.5 Mediator Variables

Four studies examined mediating variables in the social comparison and body dissatisfaction relationship. One study investigated social comparison as a mediator between thin-ideal internalisation and body dissatisfaction (Fitzsimmons-Craft et al., 2012). One study identified thin-ideal internalisation (Vartanian & Dey, 2013) and one direct or indirect comparison (Lev-Ari et al., 2014b) as mediating variables between social comparison and body dissatisfaction. A further study investigated body comparison in relation to body satisfaction, rather than body dissatisfaction, and examined mindfulness as a mediator variable in this relationship (Dijkstra & Barelds, 2011).

1.3.5.1 Social Comparison. All the studies identified through the systematic review positioned social comparison as an independent variable in relation to body dissatisfaction with the exception of Fitzsimmons-Craft et al. (2012) who examined social comparison and body surveillance (the monitoring of how one's body looks) as mediators between thin-ideal internalisation and body dissatisfaction. Neither general nor appearance comparisons emerged as significant mediators in the relationship between thin ideal internalisation and body dissatisfaction, whereas body surveillance was found to be a significant independent mediator. This is in contrast to the vast majority of empirical evidence which does support social comparison as a significant variable (e.g. Bailey & Ricciardelli, 2010; Levi-Ari et al., 2014b). Although contradictory, these findings are likely to be robust and worthy of further exploration given that the Fitzsimmons-Craft et al. (2012) study received a high quality rating of 5/6.

1.3.5.2 Thin-ideal internalisation. Vartanian and Dey (2013) investigated thin-ideal internalisation as a mediator between social comparison, self-concept

clarity (the extent to which an individual holds a sense of self and has a clear identity) and body dissatisfaction. The researchers hypothesised that women with a low sense of self would be more likely to internalise the thin-ideal for identity formation and engage in social comparison to evaluate their appearance. In contrast to Fitzsimmons-Craft et al. (2012), data analysis found strong support for the relationship between social comparison and body dissatisfaction, which was mediated by thin-ideal internalisation. Additionally, upward comparison was found to mediate the relationship between self-concept clarity and thin-ideal internalisation. Vartanian and Dey (2013) interpret these findings as support for the hypothesis that women with a lower sense of identity compare themselves to peers and internalise the thin-ideal as a way of shaping their sense of self, which can result in increased body dissatisfaction.

1.3.5.3 Direct and indirect comparison. Building on the findings of the majority of literature, that social comparison is associated with body dissatisfaction, Lev-Ari et al. (2014b) examined direct and indirect comparison as contributing factors to this. Indirect comparison was measured through a figure scale with silhouettes ranging from very thin to obese outlines. Participants were asked to rate their current shape and ideal shape. Later, participants chose the silhouette which best represented a significant female (mum, sister or friend). The discrepancy between these ratings were calculated as indirect comparison. Direct comparison was measured by asking participants to think of the significant woman and describe their body compared to theirs (e.g. thinner). Findings showed that indirect comparison to a sister, and both direct and indirect comparison to a best friend, was associated with increased body dissatisfaction. Mediator analysis found that direct comparison to a significant other mediated the relationship between indirect comparison and body dissatisfaction.

These findings add to Young et al. (2014) by including close comparison targets other than best friends and to Shomaker and Furman (2007) by examining close peers rather than acquaintances. In contrast to Young et al. (2014), however, Lev-Ari et al. (2014b) did not find assimilation effect with close friends, which would have increased body satisfaction, and instead proposed that women created a social environment that promoted body dissatisfaction and enhancement of the thin-ideal. As the studies used different measures of social comparison and body dissatisfaction, it is not possible to directly compare the findings to gain further insight into this discrepancy.

1.3.5.4 Mindfulness. Dijkstra and Barleds (2011) investigated mindfulness as a mediating variable between body comparison and body satisfaction, thus proposing this as a protective factor from the more negative effects of social comparison. Findings showed that more mindful individuals engaged in body comparison less frequently and were more satisfied with their bodies. The authors argued that, as mindfulness focused the mind in an accepting way, this lack of judgement eliminated a key component of body dissatisfaction. The hypothesis that mindfulness mediated between body comparison and body satisfaction was partially supported. This study scored 6/6 on the quality checklist rating, marking this as the highest quality study within the literature review. This was particularly due to the large sample size and use of a non-student population, thereby increasing generalisability of the findings. As this study was a cross-sectional design, however, it cannot be determined whether more mindful acceptance or less social comparison increased body satisfaction.

1.3.6 Predictor, Moderator and Mediator Summary

The most recent empirical research on peer comparison and body dissatisfaction has examined a total of 17 variables. Of the investigated variables, six predictor variables were reviewed. Verbal appearance comments and self-esteem were not found to be a significant predictor of body dissatisfaction (Bailey & Ricciardelli, 2010). Others' perception of one's body was found to be a significant predictor (Lu & Hou, 2009), however, the validity of this as a construct and the generalisability of these findings could be debated. Body mass index (Lu & Hou, 2009) was found as a significant predictor of body dissatisfaction; however, the theory that this was a result of teasing had not been empirically supported. Anxious attachment was found to be a significant predictor of body dissatisfaction, whereas avoidant attachment was not (Levi-Ari et al., 2014). Notably, social comparison was a significant predictor of body dissatisfaction regardless of attachment style. Finally, both body surveillance and social comparison were identified as significant predictors of body dissatisfaction (Fitzsimmons-Craft, 2014). Three of these studies found social comparison to be the strongest single predictor of body dissatisfaction (Bailey and Ricciardelli, 2010; Lev-Ari et al., 2014a; Fitzsimmons-Craft, 2014).

Seven studies investigated moderating variables. Both Leahey and Crowther (2008) and Young et al. (2014) found partial support for the comparison target moderating the relationship between social comparison and appearance esteem. Both studies identified that perceived similarities or distance from the target was significant in this relationship and Young et al. (2014) proposed that comfort with intimacy moderated this. Thin-ideal internalisation was found to be a significant moderator of social comparison and body dissatisfaction by Myers et al. (2014), however, this is in contrast to other studies (e.g. Jones & Buckingham, 2005;

Krones et al., 2005; Shomaker & Furman, 2007) and the significance of thin-ideal internalisation remained unclear. Self-esteem was found to be a significant moderator on body esteem for both body satisfied and dissatisfied women. The relationship of this was in opposite directions with downward comparison resulting in lower body esteem for body satisfied women and increased body esteem for body dissatisfied women. Lastly, cognitive distortions was found to partially moderate the relationship between social comparison and body checking. Cognitive distortions moderated the relationship between social comparison and body checking but not with body dissatisfaction, unless individuals engaged in upward comparison (Ridolfi et al., 2012). This is in contrast to the majority of the literature that did support a strong relationship between social comparison and body dissatisfaction but could be explained through assimilation effect (Pelham & Wachsmuth, 1995).

Four studies investigated four different mediator variables. Fitzsimmons-Craft et al. (2012) found that body surveillance mediated the relationship between thin-ideal internalisation and body dissatisfaction, rather than social comparison, which was not found to be a significant mediator. In contrast, Vartanian and Dey (2013) did find a strong relationship between social comparison and body dissatisfaction, which was mediated by thin-ideal internalisation. Indirect comparison was found to be a significant mediator between sister comparison and body dissatisfaction, whereas both direct and indirect comparison mediated the relationship between best friends comparison and body dissatisfaction (Lev-Ari et al., 2014b). Lastly, mindfulness was found to be a significant mediator between social comparison and body satisfaction (Dijkstra et al., 2011).

1.3.7 Consequences

In addition to the predicting, moderating and mediating variables in the relationship between peer comparison and body dissatisfaction, empirical research has also investigated the consequences of this association. In the current systematic review, 14 articles examined the effect on women, which could be categorised as internal (cognitive) and external (behavioural) consequences.

1.3.7.1 Internal

Eight studies investigated affect and weight loss intentions as internal consequences of peer comparison.

1.3.7.1.1 Affect. Using ecological momentary assessment as a naturalistic design, Leahey, Crowther and Mickelson (2007) found that individuals experienced increased negative affect following upward comparisons with medium to large effect sizes. Women with higher levels of body dissatisfaction showed more upward comparisons than body satisfied women, however, no significant differences in affect were found. The authors proposed that body dissatisfied women engaged in social comparison as a means of self-improvement and assimilation resulted in motivation for change rather than negative consequences. Leahey et al. (2007) further found that downward comparison decreased negative affect and guilt for body satisfied and dissatisfied women. These findings contrast those of Lin and Kulik (2002) who found that exposure to an overweight peer did not have positive consequences on affect. In this experimental study, a dating-game was set up in which participants viewed a photo of their opponent who was a thin-peer or an oversized peer. Although exposure to the oversized peer did not increase affect, exposure to a thin-ideal

peer did by decreasing confidence and raising anxiety in those without a boyfriend. It is possible that the experimental, rather than naturalistic, design of this study account for the differences in findings. For instance, in a naturalistic setting, the respondents were not in direct competition with the comparison target and repeated social comparison could result in assimilation and motivation for self-improvement. In the experimental design, however, participants were in direct competition and their current shape could determine their success in the dating scenario, as there was no time for self-improvement. This would make the experimental setting more emotive and could account for the negative effects of comparison.

A limitation of the Leahey et al. (2007) study was that this did not differentiate between comparison targets despite being a naturalistic study and thus would have included peer and media comparison. Given the possible difference between these, the inclusion of both targets makes it difficult to determine the effect of peer comparison in particular. A later study (Leahey & Crowther, 2008) did distinguish between media and peer comparison and showed an increase in positive affect following upward comparison with a peer, compared to a media image which decreased affect. The authors attributed this to assimilation with the peer and the self-enhancing purpose of the comparison. Downward comparisons, on the other hand, were associated with decreased positive affect, which contradict both Leahey et al. (2007) and Lin and Kulik (2002). Leahey and Crowther (2008) attributed this negative affect to assimilation with the inferior target.

A further ecological momentary assessment study found that guilt was experienced following both media and peer comparison whereas negative affect was found only following media comparison (Ridolfi et al., 2012). The author

suggested that negative affect was not experienced with an upward peer comparison as similarities with this target may have led to the belief that this appearance could be achieved (i.e. assimilation effect). This supports Leahey & Crowther's (2008) findings, however it does not account for the increased guilt following peer comparison.

A final study by Leahey et al. (2011) yielded different results when investigating women with varying levels of eating psychopathology. Findings indicated that women with low body dissatisfaction, high body dissatisfaction, low eating pathology and high eating pathology all experienced negative affect following upward comparison. Those with high body dissatisfaction and high eating pathology, however, experienced this to a significantly greater extent and engaged in more compensatory behaviour (see external consequences). This study scored 5/6 on study quality and these findings are therefore likely to be reliable. Within the literature, this is the only study investigating affect as a consequence of social comparison in a population with high levels of eating psychopathology. Given the strong design of this study, this would be a valuable one to replicate and build upon to further develop the field.

As Leahey et al. (2007), Leahey & Crowther (2008), Ridolfi et al. (2011) and Leahey et al. (2011) all used the same naturalistic study design, statistical analysis, measure for affect and scored similarly on the study quality checklist, it was possible to compare some of the findings. The studies found that women experience decreased affect and body dissatisfaction following upward comparisons. This negative affect was enhanced by media comparisons compared to peers (Leahey et al., 2008). The studies, with the exception of Leahey et al. (2011), found evidence for assimilation when engaging in peer comparisons.

1.3.7.1.2 Weight-loss intentions. As well as the impact on affect, four studies investigated cognitive changes with regard to weight and dieting. As aforementioned, Leahey et al. (2007) found that body dissatisfied women did not experience negative affect following upward comparison to a peer, however, they did report greater thoughts of dieting. It is possible that, through assimilation, affect was not impacted, however, this desire to meet the comparison's targets standards did result in cognitive changes. The authors proposed that these could precede behavioural changes such as restricted eating. These findings were replicated by Leahey and Crowther (2008) as body dissatisfied women were found to have high appearance esteem following upward peer comparison, however, they also experienced more thoughts of dieting compared to upward comparison to a dissimilar media image. Investigating this hypothesis further, Leahey et al. (2011) found that all women in their study experienced increased thoughts of dieting and exercise following upward comparison. Notably, however, women with high levels of eating pathology also showed a behavioural change by engaging in compensatory behaviour such as vomiting. Although this indicated a process from comparison to cognitive and behavioural change, it is possible that this was only true for a population already vulnerable to compensatory eating behaviour. Furthermore, the finding that all women in the study experienced negative affect and increased dieting cognitions contradicted those of previous studies (Leahey et al., 2007; Leahey & Crowther, 2008).

Using a cross-sectional, rather than naturalistic, design, Lu and Hou (2009) found that body dissatisfaction, following social comparison, was the most significant predictor of the intent to lose weight, explaining 26% of the variance. This supported naturalistic studies in placing cognitions about weight loss as a consequence of peer comparison.

1.3.7.2 External

Ten empirical studies investigated the external consequences of peer comparison. Half the studies considered eating pathology as a consequence, two investigated exercise behaviour, two measured fat talk and one considered body checking.

1.3.7.2.1 Eating psychopathology. The majority of studies identified changes in eating psychopathology (weight and shape management behaviours) as an external consequence of peer comparison. Bailey and Ricciardelli (2010) found that women who engaged in frequent upward social comparison had higher levels of body dissatisfaction, a desire for thinness and bulimic symptoms, such as binging. Two studies investigated women who scored highly on eating psychopathology and found that they were more likely to engage in compensatory behaviour, such as vomiting (Leahey et al., 2011) and had higher baseline levels of body dissatisfaction, thus suggesting that this could be both a risk and maintenance factor to eating pathology (Arigo, Schumacher & Martin 2014). Interestingly, in one of the only longitudinal studies, using a college sample, Arigo et al. (2014) found that 38.8% of participants, who started the semester in the clinical range of eating pathology, scored in the sub-clinical range after nine weeks, without the input from mental health services. On the other hand, 31% of the sample scored above the clinical threshold at the end of the semester despite scoring below this at the start. These individuals were found to have stronger tendencies towards upwards social comparison. Notwithstanding the other influential variables involved at the start of university, the authors proposed that comparison to peers had a significant influence in these changes in eating pathology. Although this was one of the only longitudinal studies identified in the systematic review, this received a quality rating of 5/6. The

scientific rationale for the study, large sample size and validated measures would suggest that this is a reliable study and findings could be accepted with some certainty.

Trottier, Polivy and Herman (2007) examined eating pathology by measuring food intake following exposure to a thin, average, or overweight peer. Findings showed no significant interaction between social comparison and the amount eaten for either restrained or non-restrained eaters. This is in contrast to studies using self-report questionnaires as a measure of eating behaviour (Leahey et al., 2011; Arigo, et al., 2014) and could indicate a discrepancy between self-report measures and observed behaviour.

Using a contemporary means of peer comparison, Smith, Hames and Joiner (2013) investigated the use of social networking on body satisfaction and eating behaviour using a prospective design. Findings showed that negative social comparisons resulted in a significant increase in body dissatisfaction, bulimic symptoms and over-eating. With the use of social media forming a part of everyday life, it is important to consider the consequences of this form of social comparison. This study may not give a reliable account of this, however, given that it received a quality rating of 3/6. The small sample size and homogenous sample mean that these findings may not be generalisable to a non-student population. Moreover, the use of an invalidated measure may have limited the validity of this data.

1.3.7.2.2 Exercising. Two studies investigated exercise in a naturalistic setting. Wasilenko, Kulik and Wanic (2007) exposed participants to a fit, unfit or no peer condition and found that comparison to a fit peer was associated with increased body dissatisfaction and significantly less time exercising. In the absence of longitudinal data, however, it was unclear whether individuals

engaged in weight-reduction behaviour out of sight of the fit target instead. Exercising with an unfit peer did not have a significant effect on body dissatisfaction but did increase exercise time. The authors proposed that this could be due to the assimilation and wanting to avoid a reduction in status. However, as social comparison was inferred through the experimental condition rather than measured the direction of the comparison cannot be determined and the occurrence of assimilation is an assumption.

These findings were confirmed by Datta and Kulik (2012) who observed that women approached exercise equipment significantly faster in the presence of an unfit peer and hypothesised that this would lead to increased body satisfaction, however, this was not confirmed through psychometric measures. In line with Wasilenko et al. (2007)'s interpretation, assimilation effect could have occurred so the unfit peer acted as a motivator to exercise in order to avoid a reduction in fitness to their inferior status. Although both these studies appeared to have found similar findings, it must be noted that both received a relatively poor quality rating of 3/6. A major limitation was the absence of psychometric measures to support the interpretation of their findings and this should thus be considered with caution.

1.3.7.2.3 Fat talk. Two studies investigated fat-talk, which was termed by Nichter (2000) to refer to the tendency of women to engage in negative conversations about their weight. Corning and Gondoli (2012) found that social comparison and body dissatisfaction accounted for 48% of the variance in fat talk. Social comparison was proposed to motivate fat talk as a means of communicating an individual's position in relation to other targets. Arroyo (2014) supported these findings by identifying body dissatisfaction as a mediator between social comparison and fat talk. Arroyo (2014) proposed that fat talk

outwardly expresses the internal cognitive experience of women regarding their weight and shape, which in turn maintained these evaluations.

1.3.7.2.4 Body checking. Ridolfi et al. (2011) found body checking, to assess weight and shape, to be a consequence of comparison to peers and media images. Findings showed that both upward and downward comparison to peers was associated with more body checking, which the authors propose was due to similarities with the targets and the assimilation effect (Pelham & Wachsmuth, 1995). As the data was collected at five randomly selected times throughout the day, however, the amount of time women engaged in body checking following a comparison could not be measured.

1.3.8 Consequences Summary

A total of six consequences of social comparison and body dissatisfaction were identified in this review. Of these, two were internal consequences (affect and guilt) and four were behavioural consequences (eating psychopathology, exercise, fat talk and body checking). Negative affect and guilt was found to increase following upward comparison by Leahey et al. (2007), Ridolfi et al. (2011) and Leahey et al. (2011). In contrast to these findings, Leahey and Crowther (2008) found decreased negative affect and guilt following upward comparison to a peer compared to a media image. The majority of studies supported assimilation when engaging in peer comparison (e.g. Leahey et al., 2007; Leahey & Crowther, 2008). The impact of downward comparison on affect was unclear as Leahey et al. (2007) found affect to decrease, Leahey and Crowther (2008) to increase and no significant difference was found according to Lin and Kulik (2002). One study found thoughts of dieting and exercise to be

experienced following social comparison by all women (Leahey et al., 2011) whereas others only found significant differences for body-dissatisfied women (Leahey et al., 2007; Leahey & Crowther 2008). The intention to lose weight was significantly predicted by social comparison and body dissatisfaction (Lu & Hou, 2009).

Higher levels of harmful eating pathology were found for individuals who engaged in frequent upward comparison and had higher body dissatisfaction (Bailey & Ricciardelli, 2010; Smith, Hames & Joiner, 2013). Women who scored high on baseline measures of eating pathology had higher levels of body dissatisfaction (Arigo et al., 2014) and were more likely to engage in compensatory behaviours following social comparison (Leahey et al., 2011). Weighing food intake of restrictive eaters following social comparison did not yield significant results (Trottier et al., 2007). Exercise behaviour changed as a result of social comparison with comparison to a fit peer resulting in increased body dissatisfaction and decreased exercise time (Wasilenko et al., 2007). Comparison to an unfit peer resulted in increased exercise time and a faster approach to exercise (Datta & Kulik, 2012). Fat talk was identified as a consequence of social comparison and body dissatisfaction (Corning et al., 2012; Arroyo, 2014) and body checking was found to be a consequence of social comparison but, surprisingly, not of body dissatisfaction (Ridolfi et al., 2011).

1.3.9 Clinical Implications

Given the natural occurrence of peer comparison, its association with body dissatisfaction and consequences related to eating psychopathology, some

studies suggested clinical implications of this. These included identification of vulnerable individuals, education and clinical interventions.

1.3.9.1 Identification and education. Findings suggested that individuals who engage in frequent upward comparison are more likely to experience increased body dissatisfaction and are at risk of developing eating disorder pathology (Krones et al., 2005) or decreased affect (Shomaker & Furman, 2007) as a result of this. It is therefore plausible that a measure establishing the frequency of social comparison could act as a screening tool to identify those at greater risk of subsequent difficulties. Arigo et al. (2014) suggested that women in a university environment may be particularly vulnerable to this as there are many opportunities for comparison in this environment. Colleges and university may therefore benefit from introducing social comparison measures to identify those at risk, for instance in student GP surgeries.

Once identified, studies suggested that education to increase awareness about the comparison process, the inaccuracy of appraisals and negative consequences of this could be beneficial in reducing its effect (Ridolfi et al., 2011; Myers et al., 2012). If a desire for weight management strategies remain, Lu and Hou (2009) proposed that further education could be provided on healthy weight loss strategies rather than engaging in extreme compensatory behaviours.

1.3.9.2. Cognitive behavioural therapy. Clinical strategies through cognitive behavioural therapy (CBT) interventions were recommended. Myers et al. (2012) and Fitzsimmons-Craft et al. (2014) proposed that CBT could aid in helping individuals formulate the thoughts, emotions and behaviours associated with peer comparisons. As appraisal of the information obtained through comparisons is often inaccurate and biased, these dysfunctional thoughts could then be challenged to more realistic interpretations and thereby reduce the

negative impact on affect (Leahey et al., 2011). In addition to cognitive strategies, behavioural interventions may be powerful in engaging in less biased comparisons. For instance, Fitzsimmons-Craft et al. (2014) suggested that individuals could compare themselves to every third person they see, thereby challenging the selection bias of comparing to thin targets alone. This, in turn, would give more realistic evidence of their status compared to others and can be used to challenge the negative appraisals obtained from comparison to unrealistic targets. Lastly, although mindfulness has only been investigated as a mediator variable (Dijkstra & Barleds, 2011), this was associated with increased body satisfaction and decreased social comparison. It therefore follows that mindfulness could be an effective clinical intervention although it is currently unclear whether this would be effective through the reduction in social comparisons or the increase of body satisfaction.

1.4 Discussion

The empirical evidence regarding the influence of peer comparison on body dissatisfaction is sparse, relative to the literature on media image comparison. There was a need to critically review the current literature to better understand the relationship between peer comparison and body dissatisfaction as well as identifying the consequences and clinical implications of this. The current review identified 25 empirical studies, which investigated this relationship using adult women, and allows some tentative conclusions to be considered.

1.4.1 Summary of Findings

The review of the empirical evidence found a strong association between peer comparison and body dissatisfaction, with the vast majority of studies supporting this relationship (e.g. Corning et al., 2012; Lev-Ari et al., 2014a; Fitzsimmons-Craft et al., 2011). This association was significant regardless of whether comparison was with a significant peer (Young et al., 2014; Lev-Ari et al., 2014b) or an unacquainted peer (Shomaker & Furman, 2007) thus suggesting that social comparisons occur generally between peers.

In order to gain a better understanding of the relationship between peer comparison and body dissatisfaction, the majority of studies identified in the review investigated predictor, moderator or mediator variables. These studies highlighted the complexity of this relationship and, thus far, only allowed tentative conclusions to be considered due to a lack of replication and methodological limitations. Regarding predictor variables, the review found emerging evidence for attachment style (Lev-Ari et al., 2014a), others' perception of one's body and BMI (Lu & Hou, 2009). It must be noted, however, that these were distinct studies conducted with an ethnic minority sample and findings may therefore not be generalisable to other cultures. Research that used a Western sample did not find any significant predictors (Bailey & Ricciardelli, 2010). Given the social foundation of comparison theory, it is conceivable that predictors of this vary across cultures. Although body dissatisfaction and the preference for a figure representing the thin-ideal have been found to be relatively similar across White, Asian and Hispanic populations (Grabe & Hyde, 2006), this may be distinct from the process which predicts social comparison, which could vary across cultures. Alternatively, as social comparison has an evolutionary basis and occurs naturally (Buunk & Mussweiler, 2001), predictor variables may be limited in what

they add to the literature and, as found, social comparison alone may be the strongest single predictor of body dissatisfaction (Bailey & Ricciardelli, 2010; Lev-Ari et al., 2014b; Fitzsimmons-Craft, 2014).

One of the most significant findings regarding moderator and mediator variables were the high numbers of variables which had been investigated in this relatively new field. The results of this review showed a distinct lack of cohesion and consistency between the studies as different variables were often investigated without the findings being replicated or extended by subsequent research. When variables had been repeatedly examined, results were often contradictory. This could, in part, be the result of the different methodologies and psychometric measures used, making between study comparisons and generalisability difficult. In addition, as many studies investigated multiple variables in the search for significance, the depth and quality of the findings could have been affected (Moher, Liberati, Tetzlaff & Altman, 2009). In light of these limitations, the studies investigating moderating and mediating variables, although numerous, had limited value in developing overall understanding of the complex relationship between peer comparison and body dissatisfaction.

It is worth noting thin-ideal internalisation as a variable of particular interest in the social comparison literature. Studies investigating media comparisons have found this to be a highly significant variable (e.g. Tiggeman, 2003; Dittmar & Howard, 2004), however, this systematic review found a more complicated picture in the peer-comparison literature. Although Myers et al. (2012) did find support for thin-ideal internalisation as a moderator variable, this was not consistent throughout the literature (e.g. Shomaker & Furman, 2007; Jones & Buckingham, 2005; Krones et al., 2005). Thin-ideal internalisation was also not supported as a mediator variable (Myers et al., 2014; Vartanian & Dey,

2013). Given the current lack of evidence for thin-ideal internalisation as a significant variable in the peer comparison and body dissatisfaction relationship, this could imply a different process between these comparisons. It may be that only media images are internalised as ideal as they incorporate a level of attractiveness in addition to other lifestyle factors, such as money, luxury and glamour, which cannot be replicated in laboratory settings (Krones et al., 2005) and is not found naturally in peer comparisons.

A further valuable finding of the peer comparison review was that upward peer comparison did not consistently lead to increased body dissatisfaction, neither did downward comparison lead to decreased body dissatisfaction. This appeared to be salient in the peer comparison process in particular and was attributed to the shared qualities leading to assimilation with the target (Pelham & Wachsmuth, 1995). For upward peer comparisons, this assimilation meant that a superior status was achievable thus resulting in positive effects (e.g. Young et al., 2014), whereas for downward comparisons, a threat could be identified as status could also decrease, thus resulting in negative effects (e.g. Ridolfi et al., 2011). There is emerging evidence for these findings and assimilation could thus indicate a key difference between the peer and media comparison process. As upward comparison to media images resulted in more negative consequences compared to peer comparisons (Leahey & Crowther 2008), it could be hypothesised that, although media images are dissimilar targets, they are considered achievable in light of the sociocultural pressure to conform to these ideals. Peer-comparisons, on the other hand, are not tainted by overt sociocultural messages to conform, which may allow individuals to make more realistic evaluations of the comparison. Moreover, identification with peers gives a more accurate representation of the target compared to glamourised media images. To date, however, no firm conclusions can be drawn as the majority of

studies did not show positive effects following upward peer comparisons (e.g. Smith et al., 2013; Data & Kulik 2012). In addition, assimilation was inferred rather than being a measurable concept thus limiting the validity and reliability of these findings in the absence of further empirical evidence.

The review found more robust evidence for the consequences of peer comparison and body dissatisfaction in the form of weight and shape management strategies. These comprised of cognitive strategies, such as thoughts of dieting and fat-talk, as well as behavioural strategies such as restricting eating and exercise. The finding of this as a consequence is unsurprising given that body dissatisfaction is "the most consistent and robust risk and maintenance factor for eating pathology" (Stice, 2002, pp. 832-833) where weight and shape management is a dominant theme. These findings have clinical implications in terms of treatment for both body dissatisfaction and eating pathology. Upward social comparison could be assessed as a risk and maintenance factor for eating psychopathology (Krones et al., 2005) and targeted through clinical interventions. To date, interventions for social comparison have not been implemented and evaluated, however, the review found suggestions of educating individuals on this psychological process as serving a psycho-educational purpose (Ridolfi et al., 2011; Myers et al., 2012). The accuracy of appraisals made through peer comparisons could be evaluated and challenged if these are biased, in line with a CBT framework (Leahey et al., 2011; Fitzsimmons-Craft et al., 2014). There was also emerging evidence that mindfulness could be a valuable clinical intervention for body satisfaction by encouraging non-judgemental acceptance of the body (Dijkstra & Barelds, 2011) and thereby reducing maladaptive cognitions, body dissatisfaction and weight or shape management strategies. Currently, these interventions have not been

investigated as a treatment for the consequences of social comparison and body dissatisfaction, which is an important area for future research.

1.4.2 Limitations and Recommendations for Future Research

Several limitations were noted in the systematic review of the literature. Firstly, the homogeneity of the participants used as the vast majority were university students thus representing a narrow age-range, a particular living environment and a certain intellectual status. This higher level of education could be an important variable to consider as weight dissatisfaction has been found to increase with higher education (Allaz, Bernstein, Rouget, Archinard & Morabia, 1998). Additionally, up to 80% of college women desire to lose weight (Vohs, Heatherton & Herrin, 2001), thereby suggesting that this is a body dissatisfied population who may be vulnerable to pressure to be thin (Sheldon, 2010). Notwithstanding these findings, this is comparable to older women with a study of 54-year old participants finding that 80% also experienced body dissatisfaction (McLaren & Kuh, 2004). Age may therefore not be a significant factor with regards to body dissatisfaction. Nevertheless, the homogeneity of the sample currently limits the generalisability of the findings. Further research using women with more diverse demographic profiles is necessary to develop the literature.

The majority of the literature consisted of cross-sectional studies, which allowed associations between variables to be investigated, however, inferences about causality, the direction of the relationship and long-term implications could not be made. The use of naturalistic studies in recent years has added to the literature, however, data is often entered into recording devices retrospectively

thereby limiting its reliability. There was a distinct lack of longitudinal studies within the literature. These would allow for data beyond university years to be collected and aid in developing a clearer understanding of the development and maintenance of peer comparison, body dissatisfaction and the consequences of this. In addition, many of the identified studies are highly reliant on self-report measures which are subject to bias. One study which calculated food intake, rather than assessing this through a self-report measure, found no significant differences (Trottier, Polivy & Herman, 2007). Further observational studies such as this would add to the reliability of the literature.

Additionally, the vast number of variables which have been investigated, combined with the different measures used to identify social comparison and body dissatisfaction made it difficult to compare the research and obtain a clear picture of the current status of the literature. There are sufficient validated measures for identifying social comparison (e.g. Thompson, Heinberg & Tantleff, 1991; Thompson, Heinberg, Altable & Tantledd-Dunn, 2002) and body dissatisfaction (e.g. Cooper, Taylor, Cooper & Fairburn, 1987) thus limiting the need for self-developed measures. More consistency, increased collaboration and replication of studies would greatly benefit this area of research and allow for more robust findings and clearer conclusions to be made.

Finally, although some studies have considered the clinical implications of these findings, these have not been investigated as psychological interventions. Considering that predictor, moderator and mediator variables within the literature were unclear, more preventative measures may be difficult to implement at this stage. The consequences of peer comparison, body dissatisfaction and eating psychopathology were more evident and would benefit from being investigated in

clinical samples to allow evidence based treatments to be formed. This would be a highly interesting and relevant area for future research.

1.4.3 Limitations of the Systematic Review

The systematic review was subject to several limitations. The first was the narrative presentation of the findings as a meta-analytic study may prove more beneficial in gaining a holistic overview of the literature with a statistical perspective. To date, however, this may not be possible given the homogeneity of the participants and designs of the studies. Moreover, this is a relatively new field with the first empirical evidence of peer comparison and body dissatisfaction emerging in 2002, which limits the number of studies in this area.

Additionally, the review focused on women only, which excludes the developing evidence for peer comparison and body dissatisfaction among males (Blond, 2008). Studies with a male sample focus on a muscular physique, rather than thinness, which would have made comparisons of these studies difficult. Nevertheless, this is important to consider and future reviews would benefit from investigating the process between male peer comparisons, body dissatisfaction and the consequences.

1.4.4 Conclusion

The aim of this systematic review was to consider the relationship between social comparison and body dissatisfaction when comparing to peers, to review the consequences of peer comparison, to critically evaluate the current findings within the literature and to provide suggestions of the clinical implications.

Findings suggest that there is an association between social peer comparison and body dissatisfaction, although the numerous predictor, moderator and mediator variables make it difficult to discern the significant factors in this. The impact of this relationship, however, is supported by more robust empirical evidence with a desire for weight and shape modification, particularly weight loss, emerging as significant consequences. This has resulted in clinical implications and interventions being considered, particularly in a student population. A further significant population to investigate could be staff working in eating disorder services as these care providers are exposed to thin women and experiencing body dissatisfaction or increased eating psychopathology could have significant consequences in this population, both for staff and the patients in their care. The following empirical paper will explore social comparison, body dissatisfaction and eating psychopathology in this unique population.

Chapter 2: Empirical Paper

An Investigation into the Eating Psychopathology of Staff Working with Patients with an Eating Disorder

2.1 Introduction

2.1.1 Social Comparison Theory and Body Dissatisfaction

Social comparison theory (Festinger, 1954) suggests that humans have a natural tendency to compare themselves to others in order to make appraisals about their status, skills and abilities. This natural desire for evaluation has been widely accepted and has evolutionary value in many species through enabling the appraisal of competitors (Gilbert, Price & Allan, 1995). Within human interactions, social comparisons occur naturally (Buunk & Mussweiler, 2001) and are an effortless reaction (Gilbert, Giesler & Morris, 1995), rather than a deliberate or conscious choice (Wood, Taylor & Lichtman, 1985; Lev-Ari et al., 2014b). The extent and manner in which individuals engage in these social comparisons, however, differs considerably (Gibbons & Buunk, 1999).

Festinger's (1954) original theory focused on social comparison for self-evaluation purposes. He hypothesised that, in order to obtain accurate appraisals, more comparisons would be made to targets with whom similar characteristics were shared, especially on the critical dimension (e.g. intelligence), and less comparisons made to targets with whom there were more notable differences. Subsequent research has developed this theory to include self-enhancing and self-improving purposes of comparisons (Gibbons & Buunk, 1995).

In order to serve a self-enhancing function, Wills (1981) proposed downward comparison where comparisons were made to a perceived inferior target, which led to an increased favourable opinion of oneself. Self-improving functions of social comparison, on the other hand, was associated with upward comparison, where perceived superior targets were identified who modelled a greater ability and could stimulate hope and motivation for self-improvement (Taylor & Lobel, 1989; Maddux & Tangney 2011). In their original theoretical forms, comparison directions could thus be summarised to serve the following functions: lateral comparison as self-evaluative, downward comparison as self-enhancing and upward comparison as self-improving (Corcoran, Crusius & Mussweiler, 2011).

In reality, however, social comparisons have been found to be more complex. Upward comparisons could also highlight an individual's inferiority to the target, and thus result in hopelessness rather than serving a self-improving function (Buunk, Collins, Taylor, Van Yperen & Dakof, 1990), especially if the target dimension is unattainable. Similarly, downward comparison could decrease self-esteem if comparison with the target communicated the threat that an individual's status could also reduce to this inferior standard (Leahey & Crowther, 2008), rather than servicing a self-enhancing function. These different self-evaluations are consistent with the contrast and assimilation effect as proposed by Pelham and Wachsmuth (1995). This suggests that assimilation with a target results in the feedback obtained from the comparison, both positive and negative, being directly attributed to the self. Contrast with a target, conversely, results in the evaluations being attributed away from the self. The integration of these theories and findings, that is, the natural tendency and evolutionary advantage of comparison to others, the upward and downward directions of these comparisons, and the effect of assimilation or contrast to the target encompass the current status of the social comparison theory.

Social comparison theory (Festinger, 1954) has been particularly influential in research investigating the impact of comparison to media images. Media models are on average 20% underweight and have a BMI of 14-16 (Dittmar, 2007), whereas a BMI in the normal range is between 18.5 – 24.9. The use of these images communicates that thin is beautiful, a value which has been internalised by many women (Levine & Murnen, 2009). Empirical evidence has found that women compare themselves to these unrealistic beauty ideals and subsequently receive negative feedback about their own appearance, resulting in body dissatisfaction (Engeln-Maddox, 2005; Strahan, Wilson, Cressman & Buoet, 2006). More recently, social comparison theory (Festinger, 1954) has also been used to investigate the impact of naturally occurring peer comparison, which was found to follow a similar trend in increasing body dissatisfaction (Corning & Gondoli, 2012; Fitzsimmons-Craft et al., 2011; Leahey et al., 2011; Lev-Ari et al., 2014b). Of particular interest was that women compared themselves to friends and acquaintances (e.g. Young et al., 2014; Lev-Ari et al., 2014b; Smith et al., 2013) as well as strangers (Krones et al., 2005; Trottier et al., 2007), thus suggesting that comparisons occur to diverse targets in different environments, which supports the evolutionary basis of this process. A meta-analysis of experimental, correlational and naturalistic social comparison studies found that appearance comparisons predicted body dissatisfaction with a moderate and significant effect size of 0.77 (Myers & Crowther, 2009).

2.1.2 Body Dissatisfaction and Eating Psychopathology

This association between social comparison and body dissatisfaction is of clinical interest as this has been identified as a factor associated with physical and mental health problems such as low self-esteem (Verplanken & Tangelder,

2011), psychological distress (Johnson & Wardle, 2005) and increased risk of developing an eating disorder (Stice & Shaw, 2002). The latter has received particular interest as body dissatisfaction is considered "the most consistent and robust risk and maintenance factor for eating pathology" (Stice, 2002, pp. 832-833). This ranges from unhealthy forms of weight management, such as restrictive eating and laxative abuse, to psychiatric disorders of anorexia nervosa and bulimia nervosa (Levine & Piran, 2004). More recently, body dissatisfaction was found to be the strongest predictor of risk for eating disorders by promoting unhealthy dieting behaviours, which act as a precursor to the development of an eating disorder (Stice, Marti & Durant, 2011). Although a valuable study, it must be noted that this was conducted using an adolescent female sample and may therefore not be generalisable to adult women.

2.1.3 Staff in Eating Disorder Services

Research investigating the wellbeing of staff in eating disorder services found that they are vulnerable to burnout (Warren, Schafer, Crowley & Olivardia, 2013), where burnout is characterised by emotional exhaustion, negative attitudes towards patients and reduction in personal accomplishments (Maslach & Jackson 1981). This is often attributed to the complex physical complications (Jones, Morgan & Arcelus, 2013), comorbid psychological disorders (Herpertz-Dahlmann, 2009) and high rates of suicide (Franko & Keel, 2006) experienced by patients in their care. In addition to these occupational demands, in these services weight management, size ideals and body comparison are prominent topics of conversation, as individuals with an eating disorder have an attentional bias towards this (Shafran, Lee, Cooper, Palmer & Fairburn, 2007). These issues are often raised and discussed as part of the therapeutic process (Lowell &

Meader, 2005) and staff are therefore required to confront their personal difficulties with these topics (DeLucia-Waack, 1999). Even in the absence of these direct conversations, research into social comparison found that indirect exposure to pressure to be thin, by hearing acquaintances promote this ideal, was sufficient in significantly increasing body dissatisfaction (Shomaker et al., 2007), which are conversations staff will be frequently exposed to.

Considering these experiences, alongside the association between social comparison, body dissatisfaction and eating psychopathology, this raises an interesting question for staff working in eating disorder services. Female staff will be subjected to sociocultural pressure to conform to the thin ideal as presented in the media (Thompson et al., 2004), as well as working in an environment with thin women where food, weight and body difficulties are prominent features. Findings have shown that the shared characteristics often found between eating disorder patients and staff, such as being predominantly female, with similar levels of education and of a white ethnicity, can make staff vulnerable to over-identification with their patients (DeLucia-Waack, 1999). In addition, social comparisons are also more likely to occur as those shared characteristics make a target more relevant (Festinger, 1954). It is possible that these factors could make staff vulnerable to the development of body dissatisfaction and consequently eating psychopathology, that is weight and shape management strategies, following social comparison with their patients.

The psychological consequences of working with an eating disorder population have received some empirical support in recent years. A recent qualitative study of health professionals found that participants became more aware of their body image issues, with some reporting feeling “huge and big” compared to “such small tiny delicate things” (Walker & Lloyd, 2011, p. 387).

Using a sample of 71 eating disorder staff, Shisslak, Gray and Crago (1989) found that 20% of participants reported being moderately or greatly affected by working with these patients. This included changes in body image, eating habits and a heightened awareness of food. There was no significant difference in length of service in participants who reported being affected by it. A similar study, using qualitative data and a self-designed questionnaire was conducted by Warren, Crowley, Olivardia and Schoen (2008). From the 43 participants, 50% reported being more vigilant of their own appearance following a session with a patient and 72% reported feeling self-conscious about their own appearance. Regarding eating behaviour, 70% reported a change in the way they viewed food with 54% indicating that their eating behaviours had changed. Interestingly, these changes encompassed both positive and negative changes from eating more regularly and mindfully to restricting. These studies thus provide preliminary support for the notion that working with this client group can increase awareness of one's own body and influence attitudes towards food and eating.

To date, however, the literature investigating the eating psychopathology of staff working with patients with an eating disorder is limited. Empirical evidence is often dated, reliant on anecdotal data or case studies and are usually qualitative in design or use non-validated measures. Moreover, the evidence for social comparison and body dissatisfaction as significant underlying processes in eating psychopathology has not been empirically investigated in this population. Given this, there is a need for a contemporary study using evidence based measures and psychological theory to develop the literature of eating psychopathology in eating disorder staff.

2.1.4 Contributing Factors

As well as the general literature on social comparison and body dissatisfaction, empirical evidence has identified several factors as influential in the development and maintenance of eating psychopathology and the wellbeing of staff, which will be considered below.

2.1.4.1 Eating pathology. In addition to body dissatisfaction as a key risk factor in the development and maintenance of an eating disorder (Stice, 2002; Polivy & Herman, 2002; Stice et al., 2011), the diagnosis of an eating disorder itself could be a significant variable in eating psychopathology. Empirical evidence suggests that eating disorders are a difficult psychiatric disorder to treat with longitudinal studies suggesting that approximately 33% recover (Herzog et al., 1999), although between 30-50% relapse within a year (Pike, 1998). These findings therefore indicate that a diagnosis of an eating disorder is a significant risk factor in the persistence or re-emergence of eating psychopathology. This is an interesting factor to consider within the eating disorder staff population in particular as evidence suggests that a third have suffered from this disorder (Barbarich, 2002; Johnston et al., 2005).

Another influential variable in eating psychopathology is an individual's BMI with a recent study findings that eating psychopathology increases with BMI, accounting for 19% of the variance (Rø, Reas & Rosenvinge, 2012). An individual's BMI could therefore be considered as a highly significant and associated factor of eating psychopathology.

2.1.4.2 Staff wellbeing. The empirical evidence of staff's eating psychopathology is limited. Given this, it is possible to draw upon possible risk and preventative factors from the more general literature for this population. Research has highlighted the necessity of supervision to identify assumptions and

behaviours, which may emerge from working with this client group (DeLucia-Waack, 1999). This process could act as a preventative measure in the development of eating psychopathology.

2.1.5 Research Aims

The current study aims to investigate the rates of eating psychopathology of staff working with patients with an eating disorder compared to women who do not work with this client group. The study will address the gap in the literature by considering the psychological theory of social comparison (Festinger, 1954) and its relationship with body dissatisfaction and eating psychopathology using validated measures. Building on previous research, the current study will also examine previous eating disorder diagnosis, BMI and supervision as possible factors influencing eating psychopathology.

2.1.6 Hypotheses

H_1 It is predicted that there will be significant correlations between social comparison, body dissatisfaction and eating psychopathology in the staff and comparison group

H_2 It is predicated that there will be higher rates of eating psychopathology in eating disorder services staff compared to the comparison group

H_3 It is predicted that higher social comparison, higher body dissatisfaction, higher BMI, diagnosis of a previous eating disorder and infrequent supervision will predict higher eating psychopathology in the staff group

2.2 Method

2.2.1 Design

A cross-sectional questionnaire design was used with clinical staff working in eating disorder services and a comparison group of adult women who did not work in eating disorder services. Independent variables were social comparison, body dissatisfaction and demographic variables on the dependent variable of eating psychopathology.

2.2.2 Recruitment

The minimum sample size required for multiple regression was calculated using G power analysis (Faul, Erdfelder, Buchner & Lang, 2007). The minimum sample size was 117 with 0.8 power, 5% significance and a medium effect size (0.15). Research and Development departments of 36 different NHS England trusts were contacted. Two were unable to participate due to the university not falling within their geographical region, three did not have eating disorder services within the trust and six did not respond to correspondence. Twenty-five trusts granted favourable approval which gave access to 31 eating disorder services including day services and inpatient services. The number of clinical staff in services ranged considerably from two to twenty.

Once Research and Development Department approval was obtained from the trust (appendix B for a list of those who granted approval), the eating disorder manager was contacted with information about the study. A link with the questionnaire was then sent to the manager who forwarded this to all clinical staff in their team. Participants for the comparison group were recruited through convenience sampling via a snowball effect on social media. All participants were recruited between June 2014 and October 2014.

2.2.3 Participants

Demographic information from the staff and comparison group included in the analyses are presented in table 2.

Table 2: *Demographic Characteristics of the Staff and Comparison Group*

Demographic	Staff		Comparison	
	N	%	*N*	%
Age				
18-24	5	3.8	9	6.9
25-30	33	25.2	51	38.9
31-40	30	22.9	30	22.9
41-50	40	30.5	16	12.2
51-60	17	13	16	12.2
61+	6	4.6	9	6.9
Total	131		131	
Ethnicity				
British	100	76.3	113	86.3
Other White	13	9.9	15	11.5
Other Ethnicity	17	13	3	2.3
Total	130		131	
BMI				
Underweight	1	0.8	2	1.5
Normal	72	55	88	67.2
Overweight	33	25.2	25	19.1
Obese	21	16	16	12.2
Total	127		131	

Demographic	Staff		Comparison	
	N	%	*N*	%
Previous Eating Disorder				
Yes	10	7.6	22	16.8
No	116	88.5	108	82.4
Not Disclosed	5	3.8	1	0.8
Total	131		131	
Job				
Support Worker	19	14.5		
Clinical Psychologist	21	16.0		
Psychiatric Nurse	35	26.7		
Dietician	8	6.1		
Assistant Psychologist	8	6.1		
Psychotherapist	8	6.1		
Psychiatrist	5	6.1		
Other	19	3.8		
Total	131			
Change in Eating				
Less	14	10.7		
More	34	26.0		
No change	83	63.4		
Total	131			
Daily Hours with Patients				
0-2	18	13.7		
3-5	94	71.8		
6-8	17	13		
Total	129			
BMI of Patients				
10-12	4	3.1		
13-15	63	48.1		
16-18	44	33.6		
19-20	10	7.6		
21+	10	7.6		
Total	131			
Frequency of Supervision				
Once a week	18	13.7		
Once a fortnight	22	16.8		
Once a month	74	56.5		
Every 3 months	7	5.3		
Every 6 months	2	1.5		
Once a year	3	2.3		
Never	5	3.8		
Total	131			

2.3.2.1 Staff. Participants for the staff group were 138 female adults working in eating disorder services across England. One hundred and thirty one participants completed the majority of the questionnaire. Two men completed the study and five participants did not complete the survey beyond the initial demographics, these data sets were therefore excluded from analysis. The majority of participants identified themselves as British (76.3%) and represented a range of ages with the majority being aged between 25-30 (25.2%) or 41-50 (30.5%). Body mass index was calculated for each participant and a range of BMIs were obtained with the majority falling within the normal (55%) or overweight (25.2%) range. One participant (1.5%), had a BMI falling within the underweight category indicating a BMI of less than 18.5, and 21 (16%) in the obese category, indicating a BMI of greater than 30. Staff included psychiatric nurses (26.7%), clinical psychologists (16%) and support workers (14.5%) most of whom reported working directly with patients between 3-5 hours a day (71.8%). Only ten respondents (7.6%) disclosed having had a previous eating disorder and over half reported that their eating behaviour had not changed since working with this population (63.4%). Staff reported frequent supervision with 86% receiving this on a weekly, fortnightly or monthly basis.

2.3.2.2 Comparison. Participants for the comparison group were 135 female adults who completed the majority of the survey. Of those, four indicated that they currently worked with patients with an eating disorder and these were excluded from analysis. Most of the participants were British (86.3%) and aged between 25-30 (38.9%) or 31-40 (22.9%). The majority of participants indicated that they had not had a previous eating disorder (82.4%). The BMI for most participants fell within the normal (67.2%) or overweight (19.1%) range. Two

participants (1.5%) had a BMI falling within the underweight category and 16 participants (12.2%) in the obese category.

2.2.4 Procedure

Managers of 31 eating disorder services were contacted via email with confirmation of their trust's research and development approval and information regarding the study (appendix C). All those contacted agreed to participate and forwarded an information email to female staff in their team (appendix D). Clinicians willing to participate were directed to an online questionnaire through "iSurvey". The initial page included information and consent (appendix E) followed by four questionnaires, which were completed anonymously. The completion of the questionnaires took between 8 – 20 minutes. Participants had the option of providing an email address, which was stored separately to their data, in order to be entered into a prize draw for one of four £20 gift vouchers. The survey finished with a debrief statement which explained the purpose of the study and provided information of support organisations should the questionnaires have raised concerns or distress (Appendix F).

The procedure for the comparison group was the same, with the exception that these were recruited through a snowball effect using social media. Participants were given a brief outline of the study and a link to the isurvey questionnaire.

2.2.5 Materials

All variables were measured using questionnaires. Social comparison, body dissatisfaction and eating psychopathology were all measured using validated questionnaires. An additional questionnaire was designed to measure demographic information and exploratory variables.

2.2.5.1 Demographics questionnaire. Demographic information (see appendix G) collected for the staff sample included gender, age, ethnicity, job role, average BMI of patients, average hours per working day spent with patients, the experience of a previous eating disorder and whether working with an eating disorder population had changed eating habits. Participants were asked to rate the frequency of provision of clinical supervision. This was defined using the Department of Health (1993) definition of "a formal process of professional support and learning which enables individual practitioners to develop knowledge and competence, assume responsibility for their own practice and enhance consumer protection and safety of care in complex clinical situations".

The demographics information for the comparison group (Appendix H) asked for gender, age, ethnicity, whether participants currently worked with an eating disorder population and whether they had a previous eating disorder.

2.2.5.2 Social comparison questionnaire. The Physical Appearance Comparison Scale (PACS; Thompson, Heinberg & Tantleff, 1991) was used to measure the frequency of social comparisons. This five-item scale assesses the extent to which an individual compares their appearance to that of others. Higher scores indicate higher levels of social comparison. There are no norms available for this measure; however, a previous study investigating body dissatisfaction and social comparison in 17-27 year olds (N=265) found that the

mean was 15.4, with a standard deviation of 3.85 (Fitzsimmons-Craft et al., 2012). A further study split the PACS scores into tertiles to represent low, medium and high tendencies of making physical appearance-related comparisons (O'Brien, Hunter, Halberstadt & Anderson, 2007). Thompson, Heinberg & Tantleff (1991) reported internal consistency using Cronbach's alpha to be α = .97 and test-retest reliability to be .72 of this measure.

2.2.5.3 Body dissatisfaction. The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1986) was used as a 34-item self-report measure for body satisfaction. This measure is also useful for the identification of individuals at high risk of eating disorders in both clinical and non-clinical samples (Rush, First & Blackers, 2008). Items are rated using a 6-point Likert scale measuring the frequency of negative body-related thoughts, where higher scores indicate higher body dissatisfaction. Pook, Tuschen-Caffier and Brähler (2008) found this measure to have high internal consistency (Cronbach's α = .97) and Rosen, Jones, Ramirez and Waxman (1996) found the measure to have high test re-test reliability in both a clinical and non-clinical population (Cronbach's α = .88).

2.2.5.4 Eating psychopathology. The Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994) is a widely used measure of eating psychopathology in clinical populations, such as those presenting with anorexia or bulimia nervosa, as well as non-clinical populations. This self-report measure is based on the gold standard "Eating Disorder Examination" interview (Cooper, Cooper & Fairburn, 1989) for diagnosis of eating disorders and contains 36-items. These are rated on a 7-point scale of severity or frequency, where higher scores indicate higher levels of eating psychopathology. The measure enquires about the past 28 days and responses can be divided into subscales of restraint,

eating concern, weight concern and shape concern. Mean scores for normative data for the general adult population are available for each subgroup; restraint (1.30), Eating concern (0.76), Weight concern (1.79), Shape Concern (2.23) and the mean global score (1.52) (Mond, Hay, Rodgers & Owen, 2004). All subscales demonstrate high levels of internal consistency and test re-test reliability (Luce & Crowther, 1999). The measure asks respondents for their weight and height, which allows BMI to be calculated.

2.2.6 Ethical Considerations

Ethical approval was received from the University of Southampton School of Psychologist Ethics Committee and Research Governance (Appendix I). The Integrated Research Application System and supporting documentation was used to obtain Research and Development permission for 25 NHS England trusts. In addition to this, one trust required Good Clinical Practice training prior to approval being granted and one required evidence of peer review by an independent researcher.

Participants were provided with information regarding the study and informed consent was obtained. Participants were informed of their right to withdraw from the study at any time. Data was stored on a password protected computer which only the researcher had access to. All data was anonymous and email addresses for the prize draw (optional) were stored separate to the data.

The debrief statement explained the purpose of the study and provided the email address of the researcher for further information. Information of the support organisation BEAT was provided and participants were encouraged to

contact their GP should, whilst unlikely, the study have raised concerns or caused distress.

2.3 Results

2.3.1 Data Preparation

The PACS and EDE-Q were completed in their entirety by all participants. A small amount of missing data was found in the BSQ with four participants in the staff group (3.1%) and two participants in the comparison group (1.5%) having missed one question. Missing data was replaced with the respondent's mean on the corresponding subscale in order to maintain sample size (Tabachnick & Fidell, 2001). A minor amount of demographic data was missing from the staff group (2.3%, $n = 3$), which could not be replaced and these cases were excluded pairwise. Similarly, four participants in the staff group (3.1%) and one in the comparison group (0.8%) did not provide weight or height which did not allow their BMI to be calculated and these were excluded pairwise.

Total scores and subscales were calculated for the PACS (Thompson et al., 1991), BSQ (Cooper et al., 1986) and EDE-Q (Fairburn & Beglin, 1994). Interpretation of the mean scores were based on previous literature, where available. For the BSQ (Cooper et al., 1986), the standard deviations of the original study were used and scores <110 were classified as no concern, between 110-137 classified mild concern, between 138-166 classified as moderate concern and those of 167 and above classified as severe concern (Di Pietro & da Silveira, 2008). The global score of the EDE-Q (Fairburn & Beglin, 1994) based on Mond et al. (2006) was used *(*$M = 1.52$, $SD = 1.25$). Scores one standard

deviation below the norm (< 0.27) were classified as "low" and those one standard deviation above the norm (> 2.77) were classified as "high". The PACS (Thompson et al., 1991) did not have established norms or categorical interpretations. In the absence of this, the data from the comparison group in the current study was used (M = 16, SD = 3). Data in the range of 13-19 was classified as normal, data one standard deviation below the norm (< 13) was classified as low levels of social comparison and data one standard deviation above the norm (> 19) were classified as high levels of social comparison.

Participant's BMIs were calculated using the height and weight measurements provided in the EDE-Q (Fairburn & Beglin, 1994). Classifications were based on the World Health Organisation (2000) global database where weight below 18.4 were classified as "underweight", 18.5 – 24.9 as "normal", 25 – 29.9 as "overweight" and above 30 as "obese".

Categorical variables (age group, ethnicity, job role, patient's BMI, hours with patients, previous eating disorder and change in eating behaviour) were recoded into dummy variables to enable these to be used in correlation and regression analyses. As 86% of staff reported receiving at least monthly supervision, these were combined and categorised as "frequent" and those receiving less than this as "rarely".

2.3.2 Preliminary Analysis

Data analysis was conducted using SPSS version 22. Variable distribution of the continuous variables were assessed for normality using histograms and the

Shapiro-Wilk test of skewness and Kurtosis (Thode, 2002; Steinskog, Tjøstheim & Kvamstø, 2007).

The PACS was the only measure which was normally distributed in both the staff and comparison group. The BSQ was positively skewed for the staff group, $W(131) = 0.938$, $p < 0.001$, skewness ($z = 4.86$) and Kurtosis ($z = 5.57$) and the comparison group, $W(131) = 0.954$, $p < 0.001$, skewness ($z = 2.99$) and Kurtosis ($z = -0.68$). Similarly, the EDE-Q was positively skewed for the staff group $W(131) = 0.814$, $p < 0.001$, skewness ($z = 7.70$) and Kurtosis ($z = 5.57$) and the comparison group $W(131) = 0.932$, $p < 0.001$, skewness ($z = 3.68$) and Kurtosis ($z = -1.83$). Finally, BMI was positively skewed for the staff group $W(127) = 0.917$, $p < 0.001$, skewness ($z = 4.97$) and Kurtois ($z = 2.24$) and the comparison group $W(130) = 0.833$, $p < 0.001$, skewness (z = 17.93) and Kurtois ($z = 6.69$).

A small number of outliers were identified using boxplots, however, these were not consistent across all measures and were identified to be participants who scored in the extreme range on a measure. As this data is a true representation of the sample, outliers were not removed.

Transformations were completed but were not successful in transforming the data. Given this, bootstrapping (Efron & Tibshirani, 1994) was employed. Bootstrapping is a standard tool in statistics which can be used if assumptions of normality are not met, yet the distribution of the data is representative of the sample. Bootstrapping generates a large number of samples by re-sampling the original data. A standard bootstrap of 1000 was used on parametric tests to give more robust data (Erceg-Hurn & Mirosevich, 2008; Wright, London & Field, 2011).

Internal consistency was calculated for the primary and exploratory variables using Cronbach's alpha (Table 3). All variables achieved high levels of internal

consistency ($\alpha \geq 0.8$) with the exception of the PACS which achieved a good level ($\alpha \geq 0.7$).

Table 3: *Cronbach Alpha for the Physical Appearance Comparison Scale, Body Satisfaction Questionnaire and Eating Disorder Examination Questionnaire*

Variable	Condition	α	*M*	*SD*
Sum Physical Appearance Comparison Scale (PACS)	Staff	0.7	12.8	3.31
	Comparison	0.7	16.8	3.40
Sum Body Shape Questionnaire (BSQ)	Staff	0.9	67.4	21.76
	Comparison	0.9	94	38.13
Eating Disorder Examination Questionnaire (EDE-Q)				
Restraint Subscale	Staff	0.8	3.52	5.06
	Comparison	0.8	7.64	6.42
Eating Concern Subscale	Staff	0.8	1.86	3.76
	Comparison	0.8	3.56	5.10
Shape Concern Subscale	Staff	0.8	11.12	9.07
	Comparison	0.9	18.57	12.98
Weight Concern Subscale	Staff	0.8	5.97	5.72
	Comparison	0.9	10.29	8.10
Sum	Staff	0.9	22.50	20.99
	Comparison	0.9	40.06	29.36

2.3.3 Descriptive Statistics

Means and standard deviations were calculated for the major study variables. The tendency to engage in appearance based social comparisons were lower for the staff group (*M* = 12.79, *SD* = 3.31*)* compared to the comparison group (*M* = 16.82, *SD* = 3.40). This indicates levels within the normal range for both groups. The staff group had lower levels of body dissatisfaction (*M* = 67.35, *SD* = 21.76), compared to the comparison group (*M* = 94.04, *SD* = 38.13*).* Despite the positive skew of this variable, the mean of both the staff and comparison group would be categorised as no concern with body image. Surprisingly, the mean for eating psychopathology was lower in the staff group (*M* = 0.92, *SD* = 0.89*)* compared to the comparison group (*M* = 1.65, *SD* = 1.24*).* Body mass index for the staff (*M* = 24.98, *SD* = 4.90*)* and comparison group (*M* = 24.45, *SD* = 5.04*)* were comparable. Notably, however, the mean of the staff group fell within the "overweight' category, whereas the comparison group fell within the "normal" range. When comparing the groups, 41.2% of staff and 31.3% of the comparison group had BMIs in the overweight or obese range. The categorical interpretation of these measures and the frequency for both groups are visually presented in table 4.

Table 4: *Categorical Interpretations of the Physical Appearance Comparison Scale, Body Satisfaction Questionnaire, Eating Disorder Examination Questionnaire Body Mass Index.*

Variables	Staff (N = 131)		Comparison (N = 131)	
	N	%	N	%
PACS				
Low	81	61.8	21	16
Normal	48	36.6	78	59.5
high	2	1.5	32	24.4
BSQ				
No concern	125	95.4	87	66.4
Mild concern	5	3.8	26	19.8
Moderate concern	1	0.8	11	8.4
Severe concern	0	0	7	5.3
EDE-Q				
Low	28	21.4	11	8.4
Normal	92	70.2	94	71.8
High	10	7.6	25	19.1
BMI				
Underweight	1	0.8	2	1.5
Normal	72	55	88	67.2
Overweight	33	25.2	25	19.1
Obese	21	16	16	12.2

2.3.4 Data Analysis

2.3.4.1 Hypothesis 1: Relationship between variables

The assumptions for Pearson bivariate correlations were met and these were computed, with bootstrap, to investigate the relationships between social comparison, body dissatisfaction and eating psychopathology dimensions in the

staff (Table 5) and comparison group (Table 6). The effect sizes are based on those suggested by Evans (1996).

Social comparison was significantly and positively correlated with body dissatisfaction with a large effect size in the staff group, $r = 0.550$, 95% BCa CI [.391 - .673], $p < 0.001$, and in the comparison group, $r = 0.720$, 95% BCa CI [.635 - .786], $p < 0.001$. Social comparison was also significantly and positively correlated with global eating psychopathology with a medium effect size for staff, $r = 0.476$, 95% BCa CI [.317 - .620], $p < 0.001$, and a large effect size for the comparison group $r = 0.631$, 95% BCa CI [.516 - .727], $p < 0.001$. Finally, social comparison was also positively and significantly correlated in the staff group with the EDE-Q subscales of restraint ($r = 0.391$, 95% BCa CI [.225 - .548], $p < 0.001$), eating concern ($r = 0.329$, 95% BCa CI [.144 - .507], $p < 0.001$), shape concern ($r = 0.502$, 95% BCa CI [.346 - .629], $p < 0.001$) and weight concern ($r = 0.438$, 95% BCa CI [.269 - .580], $p < 0.001$) although these were small or medium effect sizes. Similarly, positive and significant relationships with medium to large effect sizes were found for in the comparison group for restraint ($r = 0.393$, 95% BCa CI [.218 - .531], $p < 0.001$), eating concern ($r = 0.429$, 95% BCa CI [.274 - .540], $p < 0.001$), shape concern ($r = 0.693$, 95% BCa CI [.604 - .775], $p < 0.001$) and weight concern ($r = 0.652$, 95% BCa CI [.538 - .742], $p < 0.001$).

Body dissatisfaction was significantly and positively correlated with global eating psychopathology with a large effect size for both the staff ($r = 0.821$, 95% BCa CI [.750 - .880], $p < 0.001$) and comparison ($r = 0.867$, 95% BCa CI [.812-.910], $p < 0.001$) groups. The relationship between body dissatisfaction and eating psychopathology subscales were also positively and significantly correlated with a large effect size for restraint for staff ($r = 0.617$, 95% BCa CI [.465 - .745], p

< 0.001) and comparison, (r= 0.553, 95% BCa CI [.407 - .671], p < 0.001). Large effect sizes were found for staff and comparison respectively for eating concern (r= 0.616, 95% BCa CI [.465 - .760], p < 0.001) and (r= 0.708, 95% BCa CI [.601 - .797], p < 0.001), shape concern (r= 0.845, 95% BCa CI [.787 - .892], p < 0.001) and (r= 0.888, 95% BCa CI [.846 - .922], p < 0.001) and weight concern (r= 0.796, 95% BCa CI [.725 - .864], p < 0.001), (r= 0.875, 95% BCa CI [.832 - .909], p < 0.001).

Based on these analyses, the hypothesis that there will be significant correlations between social comparison, body dissatisfaction and eating psychopathology in the staff and comparison group should be accepted.

Table 5: *Pearson's Correlation Matrix for Staff Group*

	1	2	3	4	5	6	7
1. PACS	_						
2. BSQ	.550***	_					
3. Restraint	.391***	.617***	_				
4. Eating Concern	.329***	.616***	.655***	_			
5. Shape Concern	.502***	.845***	.619***	.719***	-		
6. Weight Concern	.438***	.796***	.700***	.674***	.920***	-	
7. Total EDEQ	.476***	.821***	.835***	.827***	.931***	.947***	_

*** significance at p < 0.001 (2 tailed)

Table 6: *Pearson's Correlation Matrix for Comparison Group*

	1	2	3	4	5	6	7
PACS	-						
BSQ	.720***	-					
Restraint	.393***	.553***	-				
Eating Concern	.429***	.708***	.574***	-			
Shape Concern	.693***	.888***	.625***	.754***	-		
Weight Concern	.652***	.875***	.604***	.763***	.932***	-	
Total EDE-Q	.631***	.867***	.781***	.852***	.950***	.947***	-

*** significant at p< 0.001 (2 tailed)

2.3.4.2 Hypothesis 2: Between group eating psychopathology

The difference between eating psychopathology in the staff (M = 0.92, SD = 0.89) and comparison group (M = 1.65, SD = 1.24) were calculated using a bootstrapped independent sample t-test (Ahad, Abdullah, Heng & Mohd, 2012). Staff scored significantly lower on global eating psychopathology compared to the comparison group ($t(236) = -5.563$, $p < 0.001$) with a medium effect size (d= .68). Staff also scored significantly lower on the subscales of restraint, $t(246) = -5.759$, $p < 0.001$, eating concern $t(229) = -3.157$, $p < 0.01$, shape concern $t(232) = -5.386$, $p < 0.001$ and weight concern $t(234) = -5.006$, $p < 0.001$. On the basis of these analyses, the hypothesis that staff in eating disorder services would present with significantly higher rates of eating psychopathology compared to the comparison group should be rejected.

Given these highly significant and surprising differences, further analyses was completed to explore these findings. The staff and comparison group were compared to the mean eating psychopathology score identified by Mond et al. (2006) who used a much larger sample of 5255 women. Using an ANOVA calculator for summary data (Soper, 2015), significant between group differences were found ($F(2, 24) = 15.77$, $p < 0.001$) with a medium effect size ($d = .57$). A post hoc comparison, using Bonferroni correction to adjust for multiple comparisons, revealed that the staff group scored significantly lower on the mean difference of eating psychopathology ($M = 0.92$, $SD = 0.89$) compared to the Mond et al. (2006) group for measure norms ($M = 1.52$, $SD = 1.25$, $p < 0.001$) with a medium effect size ($d = .55$). There were no statistically significant differences between the comparison group and Mond et al. (2006) measure mean. This indicated that eating disorder staff were significantly different with regards to eating psychopathology compared to the general population and represented a unique sample.

2.3.4.3 Hypothesis 3: Predictor variables of eating psychopathology

A hierarchical multiple regression was used to test the hypothesis that social comparison, body dissatisfaction, BMI, diagnosis of a previous eating disorder and infrequent supervision will significantly predict eating psychopathology. The assumptions of multicollinearity, linearity and independence of observations for regression were met. Bootstrapping was used to account for the violations of normality assumptions and prevent a type 1 error occurring (Keselman, Wilcox, Othman & Fradette, 2002).

Blockwise entry was used to enter the variables based on previous research as suggested by Field (2013). Body dissatisfaction was entered first as a known predictor of eating psychopathology followed by social comparison, BMI, a previous eating disorder and finally the exploratory factor of frequency of supervision. Analyses showed that body shape dissatisfaction was the only significant predictor in levels of eating psychopathology in staff working with patients with an eating disorder, explaining 70.4% of the variance. The correlation between body dissatisfaction and eating psychopathology had a strong effect size ($r^2 = .70$). The overall model was significant ($F(1,125) = 296.70$, $p < 0.001$) with an increase in body dissatisfaction predicting an increase in eating psychopathology ($t(1,125) = 17.23$, $p < 0.001$). Models including social comparison, BMI, a previous eating disorder and receiving supervision rarely were not significant (Table 7). Based on this analysis, the hypothesis should be rejected.

Table 7: *Hierarchical Regression for Predictor Variables on Eating Pathology in the Staff Group*

Variable	B	Bias	SE	Bootstrap 95% CI		β
				Lower	Upper	
Step 1						
Constant	-1.32	-.01	.17	-1.66	-1.02	
BSQ	.03	.00	.00	.03	.04	.84***
Step 2						
Constant	- 1.43	-.01	.21	-1.81	-1.05	
BSQ	.03	.00	.00	.03	.04	.81***
PACS	.02	.00	.02	-.02	.05	.06
Step 3						
Constant	-1.57	-.00	.27	-2.07	-1.05	
BSQ	.03	.00	.00	.03	.04	.79***
PACS	0.2	.00	.02	-.02	.05	.07
BMI	.00	.00	.00	-.01	.02	.03
Step 4						
Constant	-1.56	.00	.27	-2.10	-.1.02	
BSQ	.03	.00	.00	.03	.04	.79***
PACS	.02	.00	.02	-.02	.05	.07
BMI	.00	.00	.00	-.01	-.02	.03
Previous ED	-0.4	-.00	.12	-.32	.19	-.12

Step 5						
Constant	-1.52	.01	0.26	-2.01	-.98	.79***
BSQ	.03	.00	.00	0.03	.04	.06
PACS	.01	.00	.01	-.02	.05	
BMI	.01	.00	.01	-.01	.02	.3
Previous ED	-.01	-.00	.12	-.03	.22	-.00
Rare S/V	.25	-.00	.27	-.22	.79	.08

Note: CI = confidence interval, *** p<0.001

2.4 Discussion

2.4.1 Summary of study

The aim of this study was to investigate eating psychopathology in staff working with patients with an eating disorder. This study used the psychological theory of social comparison and body dissatisfaction as underlying processes in this as well as exploratory variables, specifically the diagnosis of a previous eating disorder, BMI and supervision.

2.4.2 Summary of findings

2.4.2.1 Hypothesis one. Using correlation analysis, social comparison, body dissatisfaction and eating psychopathology were significantly and positively

correlated in both the staff and comparison group. This was expected and in line with previous studies within the literature, which supported the association between appearance based comparison and body dissatisfaction (Myers & Crowther, 2009), body dissatisfaction and eating psychopathology (Stice et al., 2002) and social comparison and eating psychopathology (Corning, Krumm & Smitham, 2006).

2.4.2.2 Hypothesis two. It was hypothesised that staff would experience more eating psychopathology compared to the comparison group given that eating disorder staff have more opportunity to compare their appearance to thin women, alongside the sociocultural pressure to conform to the thin ideal (Thompson et al., 2004). This, combined with dominant conversation about shape, size and weight in this environment, means that staff are frequently confronted with issues of body image (DeLucia-Waack, 1999), which could have a significant impact on body dissatisfaction (Shomaker et al., 2007). Findings were surprising and showed that staff experienced significantly less eating psychopathology than the comparison group. The levels of eating psychopathology experienced by staff were also significantly lower than the norms derived from data with a large sample (Mond et al., 2006). This would suggest that eating disorder staff are a unique population, which is worthy of further exploration.

2.4.2.3 Hypothesis three. The final hypothesis, based on empirical evidence in the literature, was that higher social comparison, body dissatisfaction, BMI, a previous eating disorder and infrequent supervision would predict eating psychopathology in staff. Hierarchical regression analysis did not support this and body dissatisfaction was found to be the only significant

predictor of eating psychopathology in staff, with an increase in body dissatisfaction predicting an increase in eating psychopathology. Social comparison may be a more significant predictor in body dissatisfaction rather than being a direct predictor of eating psychopathology.

2.4.3 Interpretation of findings

Despite having more opportunity to compare to thin-ideal targets, staff engaged in social comparison less frequently than the comparison group. It is in line with the literature that lower levels of social comparison would be associated with lower levels of body dissatisfaction (e.g. Leahey et al., 2011; Lev-Ari et al., 2014b), which was also observed in this study. It is interesting to note, however, that lower body dissatisfaction occurred despite working in a setting where previous research indicated that staff felt more self-critical following a session with a patient (Warren et al., 2008) and discrepancies between the therapist and client's bodies were prominent (DeLucia-Waack, 1999; Lowell & Meader, 2005).

Notwithstanding these findings, the aim of this research was to investigate levels of eating psychopathology for staff working with patients with an eating disorder and eating psychopathology will therefore be the focus of this discussion. Findings showed that staff had significantly lower levels of eating psychopathology compared to the comparison group. It is possible that these findings were due to sample characteristics, which should be acknowledged. Firstly, 63.4% of staff indicated that their eating behaviour had not changed since working with this clinical population. This is in contrast to previous research, which found that 70% of staff had changed their view on food (Warren et al.,

2008). Similarly, only 7.6% of staff reported having had a previous eating disorder, which is considerably less than the third of staff, which previous research suggests (Barbarich, 2002; Johnston et al., 2005). The number of staff in this sample who have had an eating disorder may therefore not be representative of the population and this low power may have influenced findings. Lastly, frequency of supervision was not a significant predictor in eating psychopathology. In this sample, 87% of staff received supervision at least on a fortnightly basis. This suggests a well-supported staff group and may not be representative of services in which supervision is provided less often. Despite the possible influence of these sample characteristics, the overall finding that staff experienced significantly low levels of eating psychopathology is worthy of further reflection.

A low level of eating psychopathology indicates an absence of weight and shape management strategies. Although, when taken to the extreme, these strategies are indicative of eating disorders, it could be argued that a degree of engagement in weight and shape management behaviours is important for a healthy lifestyle, such as opting for a low-fat meal or diet drink. Given that the vast majority of staff (80%) had normal levels of body dissatisfaction, as found in the general population, one would expect their weight and shape management behaviours to also reflect these norms, however, this was not found. Findings suggest that, rather than engaging in normal levels of weight and shape management behaviour, eating disorder staff significantly deviate from this. Possible explanations for this will be considered using the application of psychological theory, in particular, social learning, cognitive behavioural and psychodynamic theory.

2.4.4 Psychological Interpretation of Findings

2.4.4.1 Social learning theory. A key part of eating disorder treatment across all services is the provision of meal support. During meal support, staff provide empathy and encouragement to patients while expecting adherence to clear boundaries around food intake (Couturier & Mahmood, 2009). Although there are differences in the implementation of meal support, in many services staff are expected to eat with patients to act as a positive role model, normalise eating and portray this as a social activity (Long, Wallis, Leung, Arcelus & Meyer, 2012; Treasure, Cardi & Kan, 2011). In order to be a positive role model from whom patients can learn, staff must not eat diet food, avoid any foods or have a negative view about their weight (Leichner, Hall & Calderon, 2005). Although these expectations around meal support may be an occupational requirement, staff may adopt these rules as part of their lifestyle in order to be a genuine role model. In a qualitative study, a participant supported this and stated "I'll go to an extreme and think it's not okay to eat healthy and eat more junk food in an effort to practice what I preach to clients about all food being okay. I lose sight of moderation and go to an extreme of my clients distorted views" (Warren et al., 2008, p. 37).

The significantly lower levels of eating psychopathology observed in this study could be an attempt to portray "normal" eating to patients. Although a lack of weight and shape management strategies is important for this population to encourage recovery, this may not be effective when applied to the non-clinical population. This could be reflected in the findings that 41.2% of staff were overweight or obese and the mean BMI fell within the overweight category.

2.4.4.2 Cognitive behavioural theory. A key feature of the cognitive behavioural formulation of eating disorders is the over-evaluation of eating, shape and weight (Fairburn, Cooper & Shafran, 2003). Treatment, therefore, aims to challenge this bias by modifying cognitions and behaviours. An influential cognitive behavioural therapy (CBT) protocol for eating disorders by Murphy, Straebler, Cooper and Fairburn (2003) suggests several core features of this process. This includes helping patients evaluate their self-worth in domains other than weight and shape by reducing body checking and biased comparisons, identifying underlying emotions to "feeling fat" and addressing dietary rules. Staff delivering CBT treatment may have self-practiced these interventions as experiential learning (Bennett-Levy, Lee, Travers, Pohlman & Hamernik, 2003). Even if this was not a formal requirement of training, given that body and weight dissatisfaction is a common experience for most women (Rodin et al., 1984), therapists may have found utility in applying these interventions to their own lives (Sanders & Bennett-Levy, 2010).

2.4.4.3 Exposure and desensitisation. An additional feature of CBT, not specific to eating disorders, is that frequent exposure to a stimuli results in desensitisation to the strong emotion initially associated with it (Tryon, 2005). For example, patients communicating distress about the size of their thighs may initially lead staff to feel anxious about the size of theirs, check, compare, and experience increased body dissatisfaction. Similarly, patients communicating the belief that fat and carbohydrates are bad may initially lead staff to fear and question the amount they consume. The frequency of these experiences, however, may result in staff becoming desensitised to the initial anxiety they felt. Without the emotive component, the message would be rejected and not acted upon. This phenomenon has been observed in studies investigating the

effectiveness of using emotive advertising to encourage behavioural change. Findings showed that repeated exposure to an emotive message led to this being resisted (Brown, 2001) or disregarded (van 't Riet & Ruiter, 2013). Women who do not work in eating disorder services, and are therefore exposed to these messages less frequently, may not have desensitised to the emotional component of these messages, thus resulting in a reaction.

2.4.4.4 Psychodynamic theory. An important issue to consider from a psychodynamic perspective is that of countertransference. In recent empirical research this has been defined as the reactions a clinician has towards a patient (Satir, Thompson-Brenner, Boisseau & Crisafulli, 2009). Research has found that patients with an eating disorder evoke feelings of anger, frustration, incompetence and worry in their therapist (Satir et al., 2009). Some treatment providers expressed feeling frustrated at not being able to cure the problem and others reported a lack of empathy as patients resisted treatment (Walker & Lloyd, 2011). Although the psychodynamic literature has not reported a direct link between countertransference and changes in eating behaviour in staff, there may be an indirect effect, which could account for the current findings. It is possible that these emotive responses, such as frustration, could lead staff to want to show patients how "easy" treatment is by not engaging in any weight or shape management strategies, yet maintaining body satisfaction. Another explanation could be that such emotions lead to comfort eating as a mean of emotional regulation and managing the stress often associated with working with this challenging population (Warren et al., 2008). Alternatively, the therapist may experience deep empathy or identification with the patient (DeLucia-Waack, 1999) and subconsciously "eat for" the patient. In the absence of empirical evidence to support this explanation, however, this is currently only speculative.

2.4.5 Clinical Implications

Regardless of the underlying reasons for the finding that staff in eating disorder services have low levels of eating psychopathology, this could have clinical implications for both staff and the patients in their care.

2.4.5.1 Implications for staff. The overall findings that the average BMI for staff is in the overweight category has health implications as this increases the risk of type 2 diabetes, hypertension, coronary artery disease, cancers, osteoarthritis and liver and gall bladder disease (Kopelman, 2007). The absence of normal levels of weight and shape management behaviours is likely to maintain this problem. Staff may therefore benefit from discussions around normal eating as their working environment does not reflect the norm. Eating disorder services could give staff permission to engage in strategies which promote a healthy lifestyle, such as eating low-fat foods. This may also require a revision of meal support and consideration of how staff can be a positive role model while not neglecting normal forms of controlled eating.

Staff may be reluctant to engage in weight and shape management strategies through fear that this would be unhelpful for their patients to witness (e.g. eating smaller portions, opting for a salad) or raise anxiety about the impact weight loss would have on the therapeutic relationship. Not engaging in these behaviours could therefore be seen as a protective strategy. It could be argued, however, that this does not reflect normal eating found outside the therapeutic environment and that removing this trigger does not enable patients to develop coping mechanisms. In terms of the therapeutic relationship, no empirical evidence exists on the influence weight loss could have on the therapeutic relationship. In the absence of this, research on the influence of weight gain

through pregnancy found that patients experienced increased body image issues and body dissatisfaction, as well as envy and child related concerns (Warren et al., 2008). Weight loss in staff may have similar consequences and envy around being "allowed" to lose weight. Despite these possible therapeutic ruptures, the psychoanalytic literature promotes the discussion of the therapist's body, regarding this as crucial in addressing the patient's assumptions and enhancing the therapeutic relationship (Lowell & Meader, 2005).

2.4.5.2 Implications for patients. The importance of weight and shape to patients with an eating disorder has been confirmed by the social comparison literature, which has found that patients with an eating disorder have a greater tendency to engage in daily comparisons (Corning et al., 2006). This is important to consider in eating disorder services as "when a body meets a body, no formal introductions are made…as therapists, we focus on words but our bodies also speak" (Petrucelli, 2008, p. 237).

Eating disorder staff are already aware that their bodies are being observed (Warren et al., 2008; Walker & Lloyd, 2011) and the patient's experience of this has also been investigated. In an empirical study, findings showed that patients with an eating disorder placed greater emphasis on the therapist's figure compared to patients with anxiety disorders and preferred a female therapist with an average figure (Vocks, Legenbauer & Peters, 2007). Vocks et al. (2007) suggest that, given the nature of the therapist's work, their bodies could enhance or inhibit the credibility of their message around normalising eating. The patient could attribute more health and wellbeing to a therapist with an average shape compared to larger therapists who may evoke fear of weight gain if their suggestions of eating habits were followed (Vocks et al., 2007). This preference

could influence the patient's willingness to engage and the outcome of treatment (Arnkoff, Glass & Shapiro, 2002). This idea was supported by a qualitative study of patients undergoing treatment who held very firm views that a therapist whom they perceived as fat (above size 16) had lost control, would be seen as inferior and would prevent full engagement, or even lead to disengagement, in therapy (Rance, Clarke & Moller, 2014). A thin therapist, on the other hand, was reported by patients to make them feel more self-conscious, view themselves negatively and would find being told to gain weight unfair and shaming, as their thin therapist did not have to (Rance et al., 2014).

Although the empirical evidence in this field is limited, studies do suggest that therapists with a healthy relationship with food and an average shape might make patients more likely to engage in treatment. Data from patients suggests that this would encompass being in control of weight and food and happy with one's shape, while not engaging in a rigid or strict relationship with food (Rance, et al., 2014). From the current findings it could be argued that, although staff have normal levels of body dissatisfaction, their lack of engagement in weight and shape management strategies is overcompensating and could be perceived as unhelpful to the therapeutic process.

2.4.6 Strengths and Limitations

A strength of the study is the number of eating disorder services which were approached and the wide range of disciplines represented in the sample which make this reflective of the NHS England eating disorder staff population. Although the sample size was large compared to other studies investigating this

population, the number of services involved indicates a relatively small response rate. This may have biased the sample as it possible that only practitioners with a particular interest or experience in this topic responded. A further bias with the current study could be that only 7.6% considered themselves to have had a previous eating disorder, which is significantly less compared to previous research (Barbarich, 2002; Johnston et al., 2005). The experience of these individuals may therefore not be accurately represented in the current study. A strength of the sample, however, was that both the staff group and control group were not obtained from a student population. As the majority of research into social comparison, body dissatisfaction and eating psychopathology do use students as a convenience sample, the current data may reflect the experience of slightly older women and adds to the literature.

The application of evidence based psychological theory and validated psychometric measures using a quantitative design is unique and contributes to the literature. In terms of outcome level limitations, however, it is possible that the responses on the EDE-Q (Fairburn & Beglin, 1994) were significantly lower in the staff group as they may have viewed this as a clinical measure and interpreted the questions with an eating disorder population in mind. Staff may therefore have answered questions significantly lower compared to the extreme beliefs and behaviours often present in their patients, the comparison group, on the other hand, would not have had this clinical population as a reference point. In addition to this, more general limitation of questionnaires should be considered such as demand characteristics, which may have influenced participants' responses.

A key limitation is the cross-sectional design of this study, which does not allow causal inferences to be made. It may be that staff already had lower levels of social comparison, body dissatisfaction and eating psychopathology before working with an eating disorder population. If the response to the demographics question on eating change is taken at face value, this could certainly be denoted as 60.4% of the sample indicated that their eating behaviour had not changed. Regardless of causality, however, the average BMI in the overweight range and the lower levels of eating psychopathology could have a significant effect on the therapeutic relationship, as well as staff wellbeing, which should be considered in services.

It would have been helpful to include a psychometric measure on mood and support or coping mechanisms (other than supervision) as these could have helped in further exploring predictor variables of eating psychopathology.

2.4.7 Direction for future research

A longitudinal study would benefit the literature on the impact of working in eating disorder services on staff by investigating whether levels of social comparison, body dissatisfaction and eating psychopathology change over time. Moreover, further qualitative feedback from staff may be helpful as the qualitative data currently in the literature suggests that body dissatisfaction and eating behaviours would increase, which was not supported by this quantitative study. Given that the current study suggests that eating disorder staff are a unique population, further insight into this through interviews may be beneficial. In particular, it would be interesting to explore whether different professions, personal experience with an eating disorder, supervision and characteristics of

patients are significant when explored through a qualitative design, which did not emerge as numerically significant in the current study.

In addition to exploring the underlying factors to eating psychopathology in eating disorder staff and the causal roles in this, interventions which could support staff would be beneficial to implement and evaluate, such as healthy eating or reflective practice.

2.5. Conclusion

The current study adds to the literature by exploring the impact of the relationship between social comparison, body dissatisfaction and eating psychopathology. Findings suggest that these are all significantly lower in the eating disorder staff group compared to the general population. In particular, findings revealed that levels of eating psychopathology, that is weight and shape management behaviours, are significantly lower in this group compared to the normal population. The underlying reasons and predisposing factors for this finding remain largely unknown and requires further investigation. Nevertheless, the impact of this on both staff and patients could be significant and is worth considering in current eating disorder services to further enhance the wellbeing of staff and recovery of patients.

Appendices

Appendix A : Descriptive Summary of Review Studies

Reference	Design	Population	Measure SC	Measures BD	Additional Measures	Results	Limitations
Arigo, Schumacher & Martin (2013) Study quality rating: 5/6	Longitudinal	Students n = 454 Age (*M* = 19)	Upward Appearance Comparison Scale (UPACS; O'Brien et al., 2009)	Body Image Disturbance Questionnaire (BIDQ; Cash, Philips, Santos & Hrabosky, 2004)	Eating Pathology Affect	7% of sample developed significant eating pathology at follow up *t*[30]59.00, *p*<.0001 Non parametric regression: Upward appearance comparison significantly differentiated EDE-Q subgroups	Short-term follow up (9 weeks) Self-report measures Homogenous sample Limited factors for disordered eating were measured
Arroyo (2014) Study quality rating: 5/6	Cross Sectional	Students n= 201 Age (M = 20.15)	Upward Physical Appearance Comparison Scale (UPACS; O'Brien et al., 2009)	Eating Disorders Inventory – 3 (Garner, 2004) Body Dissatisfaction sub-scale	Weight discrepancy Body Surveillance Fat Talk	Mediator Model: Body dissatisfaction significantly mediated the relationship between weight discrepancy, upward comparison and body surveillance and fat talk with medium effect sizes Body dissatisfaction was predictive of fat talk	Cross sectional Homogenous sample Did not measure comparison direction

Bailey & Ricciardelli (2010) Study quality rating: 4/6	Cross Sectional	Students n= 196 Age (*M* = 22.11)	Social Comparisons on Physical Appearance Scale (VCOPAS; Herbozo & Thompson, 2006a)	Eating Disorders Inventory – 3 (Garner, 2004) Body Dissatisfaction sub-scale	Drive for thinness Bulimia Verbal comments Self-esteem	Hierarchical multiple regression: Higher frequency of negative comments, higher upward comparisons, lower downward comparisons, and higher contingent self esteem, significantly predicted higher bulimic behaviour	Self report measures Measure requires validation Cross-sectional
Corning & Gondoli (2012) Study quality rating: 4/6	Cross Sectional	Students n= 143 Age (*M* = 19.06)	Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999)	Eating Disorder Inventory (Garner, Olmsted & Polivy, 1983)– body dissatisfaction and drive for thinness subscale	Fat talk	Social comparison moderated engagement in fat talk (r = .35, $p <$ .0001) A stronger tendency to socially compare raises the likelihood of fat talk as body image decreases	Homogenous sample Self-report measures Cross sectional

Datta & Kulik (2012) Study quality rating: 3/6	Experimental	Students n= 376	Inferred through experimental condition	Self-developed	Exercise time	Females worked out more quickly in the vicinity of a unfit peer, $F(2, 72) = 3.79$, $p = .027$ ANOVA: Approach times were shortest in the unfit condition (M=58.84, SD = 110.537) than fit peer (M = 163.88, SD = 154.55). Peer comparison did not significantly affect body satisfaction	Use of unvalidated questionnaires Homogenous sample
Dijkstra & Barekds (2011) Study quality rating: 6/6	Cross Sectional	Women n = 1287 Age (M = 49.20)	Body Comparison Scale (BSC; Thompson, Heinberg, Altable & Tantledd-Dunn, 2002)	Body Areas Satisfaction Scale (BASS; Cash, 2000)	Mindfulness	Correlations: More mindful individuals engaged in less body comparison (r = −.18, p <.01) and were more satisfied with their body (r= .30, p <.01) Mediator model: Evidence of a small mediator effect in the body comparison and body dissatisfaction relationship $z(1286)$ = −5.20, p < .001	Homogenous sample Cross-sectional

Fitzsimmons-Craft et al. (2014) Study quality rating: 5/6	Naturalistic	Students n = 235 Age (*M* = 18.71)	Self report Social Comparison Diary Self Developed Visual analogue scale	Self Developed Visual analogue scale	Body surveillance Affect Eating Attitudes (EAT-26)	Non-parametric linear regression: Body dissatisfaction increased over 2-week diary period. Both social comparison and body surveillance function as trigger for body dissatisfaction Eating comparison was an independent predictor of body dissatisfaction	Reminders for diary completion were not sent at random Social comparison and body surveillance could be a result of body dissatisfaction, not a trigger
Fitzsimmons-Craft, Harney, Koehler, Danzi, Riddell & Bardone-Cone (2012) Study quality rating: 5/6	Cross Sectional	Students n = 265 Age (*M* = 19.12)	Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999) Physical Appearance Comparison Scale (PACS; Thompson, Heinberg & Tantleff, 1991)	Eating Disorder Inventory (Garner, Olmsted & Polivy, 1983)– body dissatisfaction subscale	Body Surveillance Thin ideal	Mediation Analysis: General social comparison and body surveillance partially mediated the relation between thin ideal internalization and body dissatisfaction 0.18 ($p <$ .001) Body surveillance was a unique and significant mediator of the thin ideal internalization– body dissatisfaction relationship 0.17 ($p <$ .001)	Cross-sectional Homogenous sample

Jones & Buckingham (2005) Study quality rating: 4/6	Experimental	Students n = 120	Inferred through experimental condition	Body Esteem Scale for Adolescents and Adults (BESSA; Mendelson, Mendelson & White, 2001)	Self esteem Mood Thin Ideal Self-worth Similarity	Upward comparison reported more positive affect (M = 36.65) than control (M = 33.75), $p < .05$. Mediation Model: Self–esteem significantly predicted body esteem ($p < .001$), but social comparison condition did not ($p > .05$)	Only one stimulus photograph used for comparison Homogenous sample
Krones, Stice, Batres & Orjada (2005) Study quality rating: 4/6	Experimental	Students n = 119 Age (M = 18)	Inferred through experimental condition	Satisfaction and Dissatisfaction with Body Parts Scale (Berscheid, Walster & Bohmstedt, 1973)	Negative Affect Thin-Ideal Perceived Sociocultural Pressure Self Esteem	Significant difference on body dissatisfaction were found in the experimental group to thin-ideal peer competition $F(1, 117) = 4.08$, $p < .05$ with a medium effect size No significant differences on other measures and self-esteem was not a moderato between the thin-ideal and body dissatisfaction relationship	Brief condition to induce social comparison Both confederates were considered attractive Homogenous sample

Leahey & Crowther (2008) Study quality rating: 4/6	Naturalistic	Students n = 105 Age (*M* = 19.34)	Self Developed Social Comparison Diary	Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1987)	Affect Appearance Esteem Thoughts of dieting	Moderator Model: BD women, upward comparisons were associated with more negative affect, guilt and appearance esteem than downward comparisons Body Satisfied: Upward comparison with peers was associated with positive affect and appearance esteem Upward comparison with peers associated with more appearance esteem and dieting thoughts for body dissatisfied women.	Homogenous sample Diary completion prompts could have been randomised Diary sometimes completed retrospectively limiting reliability

Leahey, Crowther & Ciesla (2011) Study quality rating: 4/6	Naturalistic	Students n = 160 Age (*M* = 19.34)	Self Developed Social Comparison Diary	Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1987)	Eating Disorder Symptoms Affect Body Esteem Compensa-tory Behaviour	Hierarchical Linear Model: Eating pathology high body (EPHB) dissatisfaction women were more likely to make appearance comparisons than Low body dissatisfied women EPHB and HB women did not differ in their probability of making upward comparisons. Both groups were significantly more likely to engage in upward appearance comparisons than LB women	Heavy reliance on self report measures Random reminders to fill in diary but relies on recent, rather than momentary, comparison experience. Possibility of recall bias. Participant fatigue could have led to decrease in diary completion

Leahey, Crowther & Mickelson (2007) Study quality rating: 5/6	Naturalistic	Students n = 153 Age (*M* =19.81*)*	The Multi-dimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash & Mikulka, 1990) Appearance Evaluation Subscale	Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1987)	Depression Self-esteem Affect Eating	High BD women reported more body-focused comparisons than LBD individuals, $t(76) = 4.30$, $p < .01$, $d = 0.98$ ANOVA: High BD engaged in more upward comparisons than LBD individuals, $F(1,74) = 16.85$, $p < .001$ Hierarchical Linear Model: Significant main effects for Comparison direction and NA, PA, BD, guilt, thoughts of dieting, and thoughts of exercising	Relies heavily on self-report measures Not all participants completed all the diaries Homogenous sample

Lev-Ari, Baumgareten -Katz & Zohar (2014a) Study quality rating: 5/6	Cross-Sectional	Women n = 283 Age (*M* =25)	Stunkard Figure Rating Scale (Stunkard, Sorenson & Schlusinger, 1983) (indirect comparisons) Self Developed Likert Comparison Scale (Levri et al., 2014) (direct comparisons)	EDI-2 (Garner & Garfinkel, 1979) body dissatisfaction sub-scale	Attachment Style	Indirect comparisons had strong, significant, positive loadings on comparison to mother (r = .69), sister (r = .72) and friend (r = .79). All comparisons were statistically significant *p* <.001. Avoidant and anxious attachment styles were positively correlated with indirect comparisons (r = .16, r = .13, respectively, *p* <.05). Indirect comparisons were highly positively correlated to body dissatisfaction (r = .68, *p* <.001, self-ideal disparity; and r = .56, *p* <.001 for drive for thinness)	Reliance on self-report data Convenience sample may not be representative of general population

Lev-Ari, Baumgarten-Katz & Zohar (2014b) Study quality rating: 4/6	Cross Sectional	Women n = 283 Age (*M* =25)	Stunkard Figure Rating Scale (Stunkard, Sorenson & Schlusinger, 1983) (indirect comparisons) Self Developed Likert Comparison Scale (Levri et al., 2014) (direct comparisons)	EDI-2 (Garner & Garfinkel, 1979) body dissatisfaction sub-scale	Drive for thinness	62.6% of the women reported their sister being thinner than them (Z= 3.4, p < .001) and 66.3% reported being heavier compared to their best friend (Z= 4.41, p <.001) Structural Equation Model: Indirect comparisons, mediated by direct comparisons, predicted Body Dissatisfaction, Drive for Thinness, and Self-Ideal Disparity	Cross sectional Reliance on self-report measures

Lin &Kulik (2002) Study quality rating: 2/6	Experimental	Students n = 69 Age (*M* =20)	Inferred through experimental condition	Body Part Satisfaction Scale (Berscheid, Walster & Bohrnstedt, 1973)	Anxiety Confidence Self-esteem Male Attraction	ANOVA: Thin-peer comparison expressed more negative self-perceptions than over-size peer comparison Thin peer exposure resulted in less body satisfaction $F(2, 61) = 3.30$, $p < 0.05$ and less confidence in their attractiveness $F(2, 61) = 5.04$, $p < 0.01$	Homogenous sample
Lu & Hou (2009) Study quality rating: 3/6	Cross-Sectional	Students n = 232 Age (*M* =19.63)	Physical Appearance Comparison Scale (PACS; Thompson, Heinberg & Tantleff, 1991) Specific Attributes Comparison Scale (SACS; Tiggeman & McGill, 2004)	Self-developed Likert scale adapted from McCabe, Ricciardelli, Mellor & Ball, 2005)	Perception of others Intention to lose weight BMI	Structural Equation Modeling: Body dissatisfaction increased with BMI ($p < .001$). Perceptions of how others viewed their bodies ($p < .001$), and upward social comparisons ($p < .01$) Body dissatisfaction markedly influenced respondent weight-loss intentions ($p < .001$)	Homogenous sample Reliance on self-report measures

Myers, Ridolfi, Crowther & Ciesla (2012) Study quality rating: 3/6	Naturalistic	Students n = 99 Age (*M* =19.53)	Self-developed Social Comparison Diary	State-Self Esteem scale (SSES; Heatherton & Polivy, 1997) – Appearance and body image disturbance subscale	Thin ideal Feminist Beliefs Body Checking	Thin-ideal internalization was significantly correlated with total number of comparisons (r = .27, $p < .01$) Moderator Mode: Upward appearance-focused comparison is related to increased body image disturbance The upward appearance comparisons and thin-ideal internalization interaction were significant predictors of body image disturbance Feminist beliefs did not moderate the relationship between upwards, appearance-focused social comparisons and body image disturbance	Homogenous sample Relatively small sample size Causal connections cannot be definitely determined from EMA research

Ridolfi, Myers, Crowther & Ciesla (2012) Study quality rating: 3/6	Naturalistic	Students n = 99 Age (*M* =19.51)	Social Comparison Diary	Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1987)	Assessment of Body Image Cognitive Distortions Body checking Self Esteem Affect	Hierarchical Linear Model: Social comparison to a media image was associated with significant increase in body checking. Appearance focused cognitive distortions moderated the relationship between social comparisons to peers and body checking, $t(91)=2.37$, $p < .05$. Appearance focused cognitive distortions moderated the association between peer comparisons and body checking but not media comparisons and body dissatisfaction	Reliance on self-report measures Relatively low compliance rate (74.7%)

Shomaker & Furman (2007) Study quality rating: 4/6	Experimental	Students n = 89 Age (*M* =20.70)	Physical Appearance Comparison Scale (PACS; Thompson, Heinberg & Tantleff, 1991)	Satisfaction and Dissatisfaction with Body Parts Scale (Berscheid, Walster & Bohmstedt, 1973) Physical Appearance Scale of Adolescent Self-Perception Profile (Harter, 1988)	BMI Attractive-ness Affect Thin ideal Appearance orientation	Hierarchical Regressions: Social comparison tendency exacerbated pressure to be thin, body dissatisfaction and positive emotions Social comparison and appearance orientation were significant in developing body dissatisfaction and mood disturbance following pressure to be thin	Homogenous sample
Smith, Hames & Joiner (2013) Study quality rating: 4/6	Longitudinal	Students n = 232 Age (*M* =18.72)	Self Developed Maladaptive Facebook Usage Scale	Eating Disorder Inventory (Garner, Olmsted & Polivy, 1983)–body dissatisfaction subscale	Eating Pathology Reassurance Seeking	Hierarchical Regression: Maladaptive Facebook use significantly predicted increases in bulimic symptoms and body dissatisfaction The relationship between maladaptive Facebook usage and increased bulimic symptoms was mediated by increases in body dissatisfaction	Unvalidated measure Did not measure social comparison outside of social media usage

Trottier, Polivy & Herman (2007) Study quality rating: 3/6	Experimental	Students n = 70	Inferred through experimental condition	Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper & Fairburn, 1987)	Mood Self-Esteem Restraint BMI	Restrained eaters perceived themselves as significantly heavier compared to a thin peer rather than average-weight peer $t(19) = 2.49$, $p < .01$ Restrained eaters reported significantly more body dissatisfaction when comparing to thin peer $t(19) = 2.67$, $p < 01$, than restrained eaters to average-weight or overweight peer condition, $t(18) = 2.76$, $p < .01$. Restrained eaters exposed to the thin peer had significantly lower appearance self-esteem $t(19) = 1.74$, $p < .05$	Use of written rather than visual stimuli Participant weight was used to allocated comparison target so may not have been objectively over or under weight

Vartanian & Dey (2013) Study quality rating: 5/6	Cross Sectional	Students n = 277 Age (*M* =19.7)	Upward Physical Appearance Comparison Scale (UPACS; O'Brien et al., 2009)	Eating Disorder Inventory (Garner, Olmsted & Polivy, 1983)–body dissatisfaction subscale	Self-concept Thin Ideal	Thin-ideal internalization, upward appearance comparisons, and downward appearance comparisons were positively correlated with body dissatisfaction. Structural Equation Model: Thin-ideal internalization mediated the association between upward social comparisons and body dissatisfaction Upward comparison tendencies were a significant mediator of the relationship between self-concept clarity and thin-ideal internalization	Cross sectional

Wasilenko, Kulil & Wanic (2007) Study quality rating: 3/6	Experimental (naturalistic setting)	Students n = 45	Inferred through experimental condition	Body Parts Satisfaction Scale (BPSS; Bersheid, Walster & Bohrnstedt (1973) Visual Analogue Scale	Exercise Time	Body satisfaction was significantly lower for women in the fit-peer condition (*M*= 5 3.32, *SD* = 0.53) compared to the unfit peer (*M*= 3.79, *SD* = 0.55) and control (*M* = 3.77, *SD* = 0.38) condition Women had lower body satisfaction when exercising with a fit peer (*M*= 2 0.58, *SD* = 1.00)	No blind condition Homogenous sample BMI of participants were in the normal range
Young, Gabriel & Schlager (2014) Study quality rating: 3/5	Experimental	Students *Study 1* n = 65 Age (*M* =18.85) *Study 2* n = 61 Age (*M* =19.48)	Inferred through experimental condition Multidimen-sional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash & Mikulka, 1990)	Body Image IAT (self developed) Multidimen-sional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash & Mikulka, 1990) - Body Area Satisfaction Subscale	Intimacy mood Ideal-body overlap Diet Intentions Exercise Intent	*Study 1* Avoidants experienced lower body satisfaction after writing about a thin friend and higher body satisfaction after writing about a heavy friend, *F*(1, 21) = 7.20, *p* = .014 Writing about a heavy friend led avoidants to experience higher implicit body satisfaction than non-avoidants, *F*(1, 25) = 7.02, *p* = .014	Only used friends as comparison target no unfamiliar peers or acquaintances

		Study 2 Writing about a thin friend led avoidants to experience lower body satisfaction, but nonavoidants to experience higher body satisfaction, $F(1, 24) = 9.50$, $p = .005$

Appendix B : List of Approved Trusts

NHS Trusts
2gether NHS Foundation Trusts
Avon and Wiltshire Mental Health Partnership NHS Trust
Barnet Enfield & Haringey NHS Mental Health Trust
Berkshire Healthcare NHS Foundation Trust
Black Country Partnership NHS Foundation Trust
Cambridgeshire and Peterborough NHS Foundation Trust
Central North West London NHS Foundation Trust
Cheshire and Wirral Partnership NHS Foundation Trust
Coventry and Warwickshire Partnership Trust
Cumbria Partnership NHS Foundation Trust
Gloucestershire Hospitals NHS Foundation Trust
Greater Manchester West Mental Health NHS Foundation Trust
Hertfordshire Partnership University NHS Foundation Trust
Kent and Medway NHS and Social Care Partnership Trust
Leicestershire Partnership NHS Trust
Lincolnshire Partnership NHS Foundation Trust
Mersey Care NHS Trust
Norfolk and Suffolk NHS Foundation Trust
North East London NHS Foundation Trust
North Essex Partnership University NHS Foundation Trust
Oxford Health NHS Foundation Trust
Somerset Partnership NHS Foundation Trust
South Staffordshire and Shropshire Healthcare NHS Foundation Trust
South West London and St George's Mental Health NHS Trust
Southern Health NHS Foundation Trust

Appendix C: Email to Service Managers

UNIVERSITY OF Southampton

The Impact of working with Eating Disorder Patients on Staff:

Email to Service Managers (Version 1, 20 July 2014)

My name is Katharine Brouwer, Trainee Clinical Psychologist at the University of Southampton. I am requesting the participation of your staff working in the eating disorder service in a study regarding eating psychopathology.

With an increased number of individuals being diagnosed with eating disorders, combined with significant cuts in the National Health Service, it has become increasingly important to tend to the welfare of staff to promote wellbeing, staff retention and the provision of high quality care to patients.

Building on previous research, the current study is interested in investigating the effect social comparison and body satisfaction have on eating psychopathology for staff working with eating disordered patients. The study is also interested in exploring whether age, formal training, amount of supervision, a previous eating disorder diagnosis and time spent face to face with patients have an influence on eating pathology. This will involve members of staff giving some basic demographic information and answering a series of standardised questionnaires measuring social comparison, body dissatisfaction and eating behaviour. Participants will be asked to complete these questionnaires, which should take approximately 10-15 minutes.

Personal information will not be released to or viewed by anyone other than the researchers involved in this project. Results of this study will not include names or any other identifying characteristics. Participation is voluntary and participants can withdraw at any time.

This research has received ethical approval from the Research and Ethics Committee at the University of Southampton. An integrated Research Application System (IRAS) form has been completed and approval obtained from your trust Research and Development approval.

A summary of this research project will be supplied upon request by contacting Katharine Brouwer: kab1g12@soton.ac.uk.

I wonder whether your team would be interested in participating in this? If you require further information, please do not hesitate to contact me.

Yours Sincerely

Katharine Brouwer

Trainee Clinical Psychologist
University of Southampton
2012 Cohort

Appendix D : Request for Participation Email

UNIVERSITY OF Southampton

The Impact of working with Eating Disorder Patients on Staff:

Email for Participation (Version 1, 20 July 2014)

Dear Colleagus

My name is Katharine Brouwer, Trainee Clinical Psychologist at the University of Southampton. I am requesting your participation in this study investigating the impact working with patients with an eating disorder has on staff wellbeing.

With an increased number of individuals being diagnosed with eating disorders, combined with significant cuts in the National Health Service, it has become increasingly important to tend to the welfare of staff to promote wellbeing, staff retention and the provision of high quality care to patients.

Building on previous research, the current study is interested in investigating different factors which may impact wellbeing. The study involves completing four online questionnaires and will take between 10-15 minutes to complete.

Personal information will not be released to or viewed by anyone other than the researchers involved in this project. Results of this study will not include names or any other identifying characteristics. Participation is voluntary and you can withdraw from the study at any time.

You have the option of being entered into a prize draw for one of three £20 Amazon gift vouchers for your participation.

This research has received ethical approval from the Research and Ethics Committee at the University of Southampton and from your trust's Research and Development Department.

For further information about this study please contact Katharine Brouwer:

kab1g12@soton.ac.uk.

If you would like to participate in this study, please copy this link into your web browser to access the survey.

https://www.isurvey.soton.ac.uk/12095

Thank you very much.

Katharine

Katharine Brouwer
Trainee Clinical Psychologist
University of Southampton
2012 Cohort

Appendix E: Information and Consent Page

The Impact of Working with Eating Disordered Patients on Staff

Information and Consent (Version 1, 20 July 2014)

Thank you for considering to take part in this survey. We are interested in exploring how working with patients with an eating disorder may affect staff wellbeing. You will be asked to complete four questionnaires exploring different factors, which may impact on wellbeing. This survey will take approximately 10-15 minutes to complete.

You will be asked to indicate your consent for the information you share to be used for the purposes of this study before starting this survey. You are able to withdraw from this study at any time by closing the web-browser.

All information provided will be stored securely and anonymously, in line with the Data Protection Act, University of Southampton and NHS Policies. If you would like to be entered into a prize draw for one of three £20 Amazon gift vouchers you will be asked to provide your email address so you can be contacted if you win. Your email address will not be stored with your data and your responses will therefore remain anonymous. Entering the prize draw and providing an email address is optional.

It is possible that you may find some of the questions asked sensitive in nature and may increase distress. Please contact BEAT on 0845 634 1414 or email help@b-eat.co.uk for advise and support. If you experience significant distress, please contact your GP.

If you have any questions in relation to this study, please do not hesitate to contact Katharine Brouwer: kab1g12@soton.ac.uk

Please tick (check) this box to indicate that you consent to taking part in this

survey and for your data to be used for the purpose of this thesis research project

□

Appendix F: Debrief Statement

The Impact of Working in Eating Disorder Services on Staff

Debrief following Participation (Version 1, 20 July 2014)

Thank you for completing this survey.

The aim of this research was to investigate the effect social comparison and body dissatisfaction have on eating behaviour for staff working in eating disorder services. The research is also interested in investigating whether age, ethnicity, formal training, clinical supervision, a previous diagnosis of an eating disorder or the amount of time spent directly with patients have an effect on eating behaviour.

It is expected that higher levels of social comparison and higher body dissatisfaction will have an effect on levels of eating pathology. It is also expected that frequent supervision, formal training and being slightly older will reduce harmful eating behaviours. It is expected that having a previous diagnosis of an eating disorder, belonging to a white ethnic group and spending more face-to-face time with patients will be associated with higher levels of eating pathology.

Your data will help our understanding of how social comparison and body dissatisfaction effect eating behaviour in an environment where staff are subjected to extremely thin women.

Once again, results of this study will not include your name or any other identifying characteristics and the research did not use deception. You may have a copy of the research findings once this is available in August 2015 by contacting Katharine Brouwer: kab1g12@soton.ac.uk.

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

If you experienced significant distress in completing this survey, please contact your GP. For further support or information about body dissatisfaction and eating disorders, please contact BEAT on 0845 634 1414 or email help@b-eat.co.uk

Thank you very much for participating in this study.

Appendix G: Staff Demographics Questionnaire

Demographic Information (Version 1. 2 June 2014)

Gender:

Male ☐
Female ☐

Which age group do you belong to:

18-24	25-30	31-40	41-50	51-60	61+
☐	☐	☐	☐	☐	☐

What is your ethnicity:

White British ☐
Any other White background ☐
Asian or Asian British ☐
Black or Black British ☐
Chinese ☐
Other ☐

What is your job title:

Support Worker ☐
Psychiatric Nurse ☐
Occupational Therapist ☐
Clinical Psychologist ☐
Psychiatrist ☐
Dietician ☐
Other (please state) _____

Do you think working with eating disorder patients has changed your eating habits:

Yes - I am eating more now ☐
Yes – I am eating less now ☐
No – it has not changed my eating habits ☐

Would you consider yourself to have had an eating disorder?

Yes ☐
No ☐
Prefer not to say ☐

On a typical working day, how much time would you spend face to face with patients?

0-2 hours ☐
3-5 hours ☐
6-8 hours ☐
8+ hours ☐

How often do you receive formal clinical supervision:
Where clinical supervision is *"A formal process of professional support and learning which enables individual practitioners to develop knowledge and competence, assume responsibility for their own practice and enhance consumer protection and safety of care in complex clinical situations"(Department of Health, 1993*)

Once a week ☐
Once a fortnight ☐
Once a month ☐
Every 3 months ☐
Every 6 months ☐
Once a year ☐
Never ☐

How long, on average, are your supervision sessions:
_____minutes

Appendix H: Comparison Demographics Questionnaire

Demographic Information (Version 1. 2 June 2014)

Gender:

Male ☐
Female ☐

Which age group do you belong to:

18-24	25-30	31-40	41-50	51-60	61+
☐	☐	☐	☐	☐	☐

What is your ethnicity:

White British ☐
Any other White background ☐
Asian or Asian British ☐
Black or Black British ☐
Chinese ☐
Other ☐

Do you currently work with individuals who have an eating disorder?

Yes ☐

No ☐

Appendix I: ERGO Ethical Approval

UNIVERSITY OF Southampton

Oxford University Hospitals NHS Trust
Headley Way
Oxford OX39 DU

17 June 2014

To Whom It May Concern

Project Reference: 10388

Project Title: The impact of working with eating disordered patients on staff: Does this affect eating psychopathology?

Investigator: Katharine Brouwer

This project was reviewed by the Faculty of Social and Human Sciences Ethics Committee who requested one revision, and subsequently gave a favourable opinion on 04/06/2014.

Sponsorship and insurance for this project was confirmed on 05/06/2014.

Please contact rgoinfo@soton.ac.uk if you require further information regarding the project.

Yours sincerely

Barbara Halliday
Director of Corporate Services

Corporate Services, University of Southampton, Highfield Campus, Southampton SO17 1BJ United Kingdom
Tel: +44 (0)23 8059 4684 Fax: +44 (0)23 8059 5781 www.southampton.ac.uk

List of References

Ahad, N. A., Abdullah, S., Heng, L. C., & Ali, N. M. (2012). Relative power performance of t-test and bootstrap procedure for two-sample. *Pertanika Journal of Social Sciences & Humanities*, *20*(1), 43-52

Allaz, A. F., Bernstein, M., Rouget, P., Archinard, M., & Morabia, A. (1998). Body weight preoccupation in middle-age and ageing women: A general population survey. *International Journal of Eating Disorders, 23*(3), 287-294. doi: 10.1002/(SICI)1098-108

American Psychiatric Association (2000): *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed, text rev. Washington, DC: American Psychiatric Publishing.

American Psychiatric Association (2013): Diagnostic and statistical manual of mental disorders. 5th edition. Washington, DC: American Psychiatric Publishing.

Anton, S. D., Perri, M. G., & Riley III, J. R. (2000). Discrepancy between actual and ideal body images: Impact on eating and exercise behaviors. *Eating Behaviors, 1*(2), 153-160. doi: 10.1016/S1471-0153(00)00015-5

Arigo, D., Schumacher, L., & Martin, L. M. (2013). Upward appearance comparison and the development of eating pathology in college women. *International Journal of Eating Disorders*. doi: 10.1002/eat.22240

Arnkoff, D. B., Glass, C. R., & Shapiro, S. J. (2002). *Expectations and preferences*. New York: Oxford University Press.

Arroyo, A. (2014). Connecting theory to fat talk: Body dissatisfaction mediates the relationships between weight discrepancy, upward comparison, body surveillance, and fat talk. *Body Image*, *11*(3), 303-306. doi: 10.1016/j.bodyim.2014.04.006

Bailey, S. D., & Ricciardelli, L. A. (2010). Social comparisons, appearance related comments, contingent self-esteem and their relationships with body dissatisfaction and eating disturbance among women. *Eating behaviors*, *11*(2), 107-112. doi: 10.1016/j.eatbeh.2009.12.001

Barbarich, N. C. (2002). Lifetime prevalence of eating disorders among professionals in the field. *Eating Disorders*, *10*, 305–312.

Bennett-Levy, J., Lee, N., Travers, K., Pohlman, S., & Hamernik, E. (2003). Cognitive therapy from the inside: enhancing therapist skills through practising what we preach. *Behavioural and Cognitive Psychotherapy*, *31*(02), 143-158. doi: 10.1017/S1352465803002029

Blond, A. (2008). Impacts of exposure to images of ideal bodies on male body dissatisfaction: A review. *Body Image, 5*(3), 244-250. doi: 10.1016/j.bodyim.2008.02.003

Birkeland, R., Thompson, J. K., Herbozo, S., Roehrig, M., Cafri, G., & Van den Berg, P. (2005). Media exposure, mood, and body image dissatisfaction: An experimental test of person versus product priming. *Body Image, 2*(1), 53-61. doi: 10.1016/j.bodyim.2004.11.002

Bissell, K. L., & Zhou, P. (2004). Must See TV or ESPN: Entertainment and Sports Media Exposure and Body Image Distortion in College Women. *Journal of Communication, 54*(1), 5-21. doi: 10.1111/j.1460-2466.2004.tb02610

Brown, J. D. (2002). Mass media influences on sexuality. *Journal of Sex Research, 39*, 42–45. doi: 10.1080/00224490209552118

Brown, S. L. (2001). Emotive health advertising and message resistance. *Australian Psychologist*, *36*(3), 193-199. doi: 10.1080/00050060108259655

Buunk, B. P., Collins, R. L., Taylor, S. E., Van Yperen, N. W., & Dakof, G. A. (1990). The affective consequences of social comparison: either direction has its ups

and downs. *Journal of personality and social psychology*, *59*(6), 1238. doi: 10.1037/0022-3514.59.6.1238

Buunk, B.P., Gibbons, F.X. (2000). Towards an enlightenment in social comparison theory: moving beyond classic and renaissance approaches. In Suls, J., Wheeler, L. *Handbook of social comparison: Theory and research* (487-499). Dordrecht, Netherlands: Kluwer Academic Publisher.

Buunk, B. P., & Mussweiler, T. (2001). New directions in social comparison research. *European Journal of Social Psychology*, *31*(5), 467-475. doi: 10.1002/ejsp.77

Cash, T E, & Pruzinsky, I: (Eds.) (1990). Body images: Development, deviance and change. New York, NY: Guilford Press.

Chithambo, T.P., Huey, S.J. (2013). Black/white differences in perceived weight and attractiveness among overweight women. *Journal of Obesity*. doi: 10.1155/2013/320326

Cooper, Z., Cooper, P. J., & Fairburn, C. G. (1989). The validity of the eating disorder examination and its subscales. *The British Journal of Psychiatry*, *154*(6), 807-812. doi: 10.1192/bjp.154.6.807

Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairbum, C. G. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of eating disorders, 6*(4), 485-494. doi: 10.1002/1098-108

Corcoran, K., Crusius, J., & Mussweiler, T. (2011). Social comparison: Motives, standards, and mechanisms. *Theories in social psychology*, 119-139.

Corning, A. F., & Gondoli, D. M. (2012). Who is most likely to fat talk? A social comparison perspective. *Body image*, *9*(4), 528-531. doi: 10.1016/j.bodyim.2012.05.004

Corning, A. F., Krumm, A. J., & Smitham, L. A. (2006). Differential social comparison processes in women with and without eating disorder

symptoms. *Journal of Counseling Psychology*, *53*(3), 338. doi: 10.1037/0022-0167.53.3.338

Couturier, J., & Mahmood, A. (2009). Meal support therapy reduces the use of nasogastric feeding for adolescents hospitalized with anorexia nervosa. *Eating disorders*, *17*(4), 327-332. doi: 10.1080/10640260902991236

Datta, N., & Kulik, J. A. (2012). Women's Approach and Avoidance of Social Comparison Opportunities When Exercising. *Basic and Applied Social Psychology*, *34*(5), 467-473. doi: 10.1080/01973533.2012.711685

DeLucia-Waack, J. L. (1999). Supervision for counselors working with eating disorders groups: Countertransference issues related to body image, food, and weight. *Journal of Counseling & Development*, *77*(4), 379-388. doi: 10.1002/j.1556-6676.1999.tb02463

Department of Health (1993) *A vision for the future.* Report of the Chief Nursing Officer.

Des Jarlais, D. C., Lyles, C., & Crepaz, N. (2004). Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: the TREND statement. *American journal of public health, 94*(3), 361-366. doi: 10.2105/AJPH.94.3.361

Dijkstra, P., & Barelds, D. P. (2011). Examining a model of dispositional mindfulness, body comparison, and body satisfaction. *Body image*, *8*(4), 419-422. doi: 10.1016/j.bodyim.2011.05.007

Di Pietro, M., & Silveira, D. X. D. (2009). Internal validity, dimensionality and performance of the Body Shape Questionnaire in a group of Brazilian college students. *Revista Brasileira de Psiquiatria, 31*(1), 21-24. doi: 10.1590/S1516-44462008005000017

Dittmar, H. (2007). Consumer culture, identity and well-being: The search for the 'good life' and the 'body perfect'. New York, NY: Psychology Press.

Dittmar, H., & Howard, S. (2004). Thin-ideal internalization and social comparison tendency as moderators of media models' impact on women's body-focused anxiety. *Journal of Social and Clinical Psychology*, *23*(6), 768-791. doi: 10.1521/jscp.23.6.768.54799

Efron, B., & Tibshirani, R. J. (1994). An introduction to the bootstrap. New York, USA: CRC press.

Engel-Maddox (2005). Cognitive responses to idealised media images of women: the relationship of social comparison and critical processing to body image disturbance in college women. *Journal of Social and Clinical Psychology*, *24*(8), 1114-1138. doi: 10.1521/jscp.2005.24.8.1114

Erceg-Hurn, D. M., & Mirosevich, V. M. (2008). Modern robust statistical methods: an easy way to maximize the accuracy and power of your research. *American Psychologist*, *63*(7), 591. doi: 10.1037/0003-066X.63.7.591

Evans, J. D. (1996). Straightforward statistics for the behavioral sciences. Pacific Grove, CA: Brooks/Cole Publishing.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A "transdiagnostic" theory and treatment. *Behaviour research and therapy*, *41*(5), 509-528. doi: 10.1016/S0005-7967(02)00088-8

Fairburn, C.G., & Beglin, S.J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders, 16*(4), 363–370. doi: 10.1002/1098-10

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior research methods*, *39*(2), 175-191. doi: 10.3758/BF03193146

Ferguson, C. J. (2013). In the eye of the beholder: Thin-ideal media affects some, but not most, viewers in a meta-analytic review of body dissatisfaction in women and men. *Psychology of Popular Media Culture, 2*(1), 20. doi: 10.1037/a0030766

Festinger, L. (1954). A theory of social comparison processes. *Human relations, 7*(2), 117-140. doi: 10.1177/001872675400700202

Field, A. (2013). Discovering statistics using IBM SPSS statistics. London, UK: Sage.

Fitzsimmons-Craft et al., (2014). The relationships among social comparisons, body surveillance, and body dissatisfaction in the natural environment. *Behaviour Therapy.* In press. doi: 10.1016/j.beth.2014.09.006

Fitzsimmons-Craft, E. E., Harney, M. B., Koehler, L. G., Danzi, L. E., Riddell, M. K., & Bardone-Cone, A. M. (2012). Explaining the relation between thin ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body Image*, *9*(1), 43-49. doi: 10.1016/j.bodyim.2011.09.002

Franko, D. L., & Keel, P. K. (2006). Suicidality in eating disorders: occurrence, correlates, and clinical implications. *Clinical Psychology Review*, *26*(6), 769-782. doi: 10.1016/j.cpr.2006.04.001

Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *The Journal of Psychology, 136*(6), 581-596. doi: 10.1080/00223980209604820

Garner, D. M. (2004). *The Eating Disorder Inventory-3: Professional manual.* Odessa, FL: Psychological Assessment Resources, Inc.

Garner, D. M., & Garfinkel, P. E. (1979). The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. Psychological medicine, 9(02), 273-279. doi: 10.1017/S0033291700030762

Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. International journal of eating disorders, 2(2), 15-34. doi: 10.1002/1098-108X(198321)2:23.0.CO;2-6

Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: development of a scale of social comparison orientation. *Journal of personality and social psychology*, *76*(1), 129. doi: 10.1037/0022-3514.76.1.129

Gilbert, D. T., Giesler, R. B., & Morris, K. A. (1995). When comparisons arise. *Journal of personality and social psychology*, *69*(2), 227.

Gilbert, P., Price, J., & Allan, S. (1995). Social comparison, social attractiveness and evolution: How might they be related?. *New Ideas in Psychology*, *13*(2), 149-165. doi: 10.1016/0732-118X(95)00002

Gordon, K. H., Castro, Y., Sitnikov, L., & Holm-Denoma, J. M. (2010). Cultural body shape ideals and eating disorder symptoms among White, Latina, and Black college women. *Cultural Diversity and Ethnic Minority Psychology, 16*(2), 135. doi: 10.1037/a0018671

Grabe, S., & Hyde, J. S. (2006). Ethnicity and body dissatisfaction among women in the United States: a meta-analysis. *Psychological bulletin, 132*(4), 622. doi: 10.1037/0033-2909.132.4.622

Grabe, S., Ward, L.M., Hyde, J.S. (2008). The role of the media in body image concerns among women: a meta-analysis of experimental and correlational studies. *Psychological Bulletin, 134*(3), 460-476. doi: 10.1037/0033-2909.134.3.460

Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic

review. *International Journal of Eating Disorders, 31*(1), 1-16. doi: 10.1002/eat.10005

Herpertz-Dahlmann, B. (2009). Adolescent eating disorders: definitions, symptomatology, epidemiology and comorbidity. *Child and adolescent psychiatric clinics of North America*, *18*(1), 31-47. doi: 10.1016/j.chc.2008.07.005

Herzog, D. B., Dorer, D. J., Keel, P. K., Selwyn, S. E., Ekeblad, E. R., Flores, A. T., ... & Keller, M. B. (1999). Recovery and relapse in anorexia and bulimia nervosa: a 7.5-year follow-up study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*(7), 829-837. doi: 10.1097/00004583-199907000-00012

Hesse-Biber, S., Leavy, P., Quinn, C. E., & Zoino, J. (2006, April). The mass marketing of disordered eating and eating disorders: The social psychology of women, thinness and culture. *Women's studies international forum, 29*(2), 208-224. doi: 10.1016/j.wsif.2006.03.007

Holmstrom, A. J. (2004). The effects of the media on body image: A meta-analysis. *Journal of Broadcasting & Electronic Media, 48*(2), 196-217. doi: 10.1207/s15506878jobem4802

Homan, K., McHugh, E., Wells, D., Watson, C., & King, C. (2012). The effect of viewing ultra-fit images on college women's body dissatisfaction. *Body image, 9*(1), 50-56. doi: 10.1016/j.bodyim.2011.07.006

Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: a prospective analysis. *Journal of abnormal psychology, 114*(1), 119. doi: 10.1037/0021-843X.114.1.119

Jones, A. M., & Buckingham, J. T. (2005). Self–esteem as a moderator of the effect of social comparison on women's body image. *Journal of social and clinical psychology*, *24*(8), 1164-1187. doi: 10.1521/jscp.2005.24.8.1164

Jones, W. R., Morgan, J. F., & Arcelus, J. (2013). Managing physical risk in anorexia nervosa. *Advances in Psychiatric Treatment*, *19*(3), 201-202. doi: 10.1192/apt.bp.111.009779

Keselman, H. J., Wilcox, R. R., Othman, P., Rahman, M. A., & Fradette, K. (2002). Trimming, Transforming Statistics, And Bootstrapping: Circumventing the Biasing Effects Of Heterescedasticity And Nonnormality. *Journal of Modern Applied Statistical Methods, 1*(2), 288-309

Kopelman, P. (2007). Health risks associated with overweight and obesity. *Obesity reviews*, *8*(s1), 13-17. doi: 10.1111/j.1467-789X.2007.00311

Krones, P. G., Stice, E., Batres, C., & Orjada, K. (2005). In vivo social comparison to a thin-ideal peer promotes body dissatisfaction: A randomized experiment. *International Journal of Eating Disorders*, *38*(2), 134-142. doi: 10.1002/eat.20171

Kyle, U. G., Schutz, Y., Dupertuis, Y. M., & Pichard, C. (2003). Body composition interpretation: contributions of the fat-free mass index and the body fat mass index. *Nutrition, 19*(7), 597-604. doi: 10.1016/S0899-9007(03)00061-3

Leahey, T. M., Crowther, J. H., & Mickelson, K. D. (2007). The frequency, nature, and effects of naturally occurring appearance-focused social comparisons. *Behavior Therapy*, *38*(2), 132-143. doi: 10.1016/j.beth.2006.06.004

Leahey, T. M., & Crowther, J. H. (2008). An ecological momentary assessment of comparison target as a moderator of the effects of appearance-focused social comparisons. *Body image*, *5*(3), 307-311. doi: 10.1016/j.bodyim.2008.03.002

Leahey, T. M., Crowther, J. H., & Ciesla, J. A. (2011). An ecological momentary assessment of the effects of weight and shape social comparisons on women with eating pathology, high body dissatisfaction, and low body

dissatisfaction. *Behavior therapy*, *42*(2), 197-210. doi: 10.1016/j.beth.2010.07.003

Leichner, P., Hall, D., & Calderon, R. (2005). Meal support training for friends and families of patients with eating disorders. *Eating disorders*, *13*(4), 407-411. doi: 10.1080/10640260591005281

Lerner, R. M., Skinner, E. A., & Sorell, G. T. (1980). Methodological implications of contextual/dialectic theories of development. *Human Development, 23*, 225-235

Lev-Ari, L., Baumgarten, Katz, I., & Zohar, A. H. (2014a). Show me your friends, and I shall show you who you are: the way attachment and social comparisons influence body dissatisfaction. *European Eating Disorders Review*, *22*(6), 463-469. doi: 10.1002/erv.2325

Lev-Ari, L., Baumgarten-Katz, I., & Zohar, A. H. (2014b). Mirror, mirror on the wall: How women learn body dissatisfaction. *Eating Behaviors*. doi: 10.1016/j.eatbeh.2014.04.015

Levine, M. P., & Murnen, S. K. (2009). "Everybody knows that mass media are/are not [pick one] a cause of eating disorders": A critical review of evidence for a causal link between media, negative body image, and disordered eating in females. *Journal of Social and Clinical Psychology*, *28*(1), 9-42. doi: 0.1521/jscp.2009.28.1.9

Levine, M. P., & Piran, N. (2004). The role of body image in the prevention of eating disorders. *Body image*, *1*(1), 57-70. doi: http://dx.doi.org/10.1016/S1740-1445(03)00006-8

Lin, L. F., & Kulik, J. A. (2002). Social comparison and women's body satisfaction. *Basic and Applied Social Psychology*, *24*(2), 115-123. doi: 10.1207/S15324834BASP2402_4

Long, S., Wallis, D. J., Leung, N., Arcelus, J., & Meyer, C. (2012). Mealtimes on

eating disorder wards: A two-study investigation. *International Journal of Eating Disorders*, *45*(2), 241-246. doi: 10.1002/eat.20916

Lowell, M. A., & Meader, L. L. (2005). My body, your body: Speaking the unspoken between the thin therapist and the eating-disordered patient. *Clinical Social Work Journal*, *33*(3), 241-257. doi: 10.1007/s10615-005-4941

Lu, H. Y., & Hou, H. Y. (2009). Testing a model of the predictors and consequences of body dissatisfaction. *Body Image*, *6*(1), 19-23. doi: 10.1016/j.bodyim.2008.08.003

Luce, K. H., & Crowther, J. H. (1999). The reliability of the eating disorder examination-Self report questionnaire version (EDE-Q). *International Journal of Eating Disorders, 25*(3), 349-351. doi: 0.1002/(SICI)1098-108

Maddux, J. E., & Tangney, J. P. (Eds.). (2011). Social psychological foundations of clinical psychology. Guilford Press.

Maslach C. & Jackson S.E. (1981) The measurement of experienced burnout. *Journal of Occupational Behaviour* **2**, 99 – 113. doi: 10.1002/job.4030020205

McLaren, L., & Kuh, D. (2004). Body dissatisfaction in midlife women. *Journal of Women & Aging, 16*(1-2), 35-54. doi: 10.1300/J074v16n01_04

Mears, A. (2011). Pricing beauty: The making of a fashion model. California, LA: University of California Press.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, *151*(4), 264-269. doi: 10.7326/0003-4819-151-4-200908180-00135

Mond, J. M., Hay, P. J., Rodgers, B., & Owen, C. (2006). Eating Disorder Examination Questionnaire (EDE-Q): norms for young adult women.

Behaviour research and therapy, *44*(1), 53-62. doi: 10.1016/j.brat.2004.12.003

Murphy, R., Straebler, S., Cooper, Z., & Fairburn, C. G. (2010). Cognitive behavioral therapy for eating disorders. *The Psychiatric Clinics of North America, 33*(3), 611. doi: 10.1016/j.psc.2010.04.004

Mussweiler, T. (2001). Focus of comparison as a determinant of assimilation versus contrast in social comparison. *Personality and Social Psychology Bulletin, 27*(1), 38-47. doi: 10.1177/0146167201271004

Myers, T.A. & Crowther, J.H. (2009). Social comparison as a predictor of body dissatisfaction: a meta-analytic review. *Journal of Abnormal Psychology, 118*(4), 683-698. doi: 10.1037/a0016763

Myers, T. A., Ridolfi, D. R., Crowther, J. H., & Ciesla, J. A. (2012). The impact of appearance-focused social comparisons on body image disturbance in the naturalistic environment: The roles of thin-ideal internalization and feminist beliefs. *Body image*, *9*(3), 342-351. doi: 10.1016/j.bodyim.2012.03.005

Nichter, M. (2000). Fat talk: What girls and their parents say about dieting. Cambridge, MA: Harvard University Press.

O'Brien, K. S., Hunter, J. A., Halberstadt, J., & Anderson, J. (2007). Body image and explicit and implicit anti-fat attitudes: The mediating role of physical appearance comparisons. *Body Image*, *4*(3), 249-256. doi: 10.1016/j.bodyim.2007.06.001

Parker, S., Nichter, M., Nichter, M., Vuckovic, N., Sims, C., & Ritenbaugh, C. (1995). Body image and weight concerns among African American and White adolescent females: Differences that make a difference. *Human organization*, *54*(2), 103-114.

Pearson, A. N., Heffner, M., & Follette, V. M. (2010). Acceptance & Commitment Therapy for Body Image Dissatisfaction: A Practitioner's Guide to Using

Mindfulness, Acceptance & Values-based Behavior Change Strategies. New Harbinger Publications.

Pelham, B. W., & Wachsmuth, J. O. (1995). The waxing and waning of the social self: Assimilation and contrast in social comparison. *Journal of Personality and Social Psychology*, *69*(5), 825. doi: 10.1037/0022-3514.69.5.825

Petrucelli, J. (2008). When a body meets a body: The impact of the therapist's body on eating-disordered patients. In F. S. Anderson (Ed.), Bodies in treatment (pp. 237–253). New York, NY: The Analytic Press.

Pike, K. M. (1998). Long-term course of anorexia nervosa:: Response, relapse, remission, and recovery. *Clinical Psychology Review*, *18*(4), 447-475. doi: 10.1016/S0272-7358(98)00014-2

Pook, M., Tuschen-Caffier, B., & Brähler, E. (2008). Evaluation and comparison of different versions of the Body Shape Questionnaire. *Psychiatry research*, *158*(1), 67-73. doi: 10.1016/j.psychres.2006.08.002

Polivy, J., & Herman, C. P. (2002). Causes of eating disorders. *Annual review of psychology*, *53*(1), 187-213. doi: 10.1146/annurev.psych.53.100901.135103

Rance, N. M., Clarke, V., & Moller, N. P. (2014). "If I See Somebody… I'll Immediately Scope Them Out": Anorexia Nervosa Clients' Perceptions of Their Therapists' Body. *Eating disorders, 22*(2), 111-120. doi: 10.1080/10640266.2013.860847

Ridolfi, D. R., Myers, T. A., Crowther, J. H., & Ciesla, J. A. (2011). Do appearance focused cognitive distortions moderate the relationship between social comparisons to peers and media images and body image disturbance? *Sex roles*, *65*(7-8), 491-505. doi: 10.1007/s11199-011-9961-0

Rø, Ø., Reas, D. L., & Rosenvinge, J. (2012). The impact of age and BMI on Eating Disorder Examination Questionnaire (EDE-Q) scores in a community sample. *Eating behaviors*, *13*(2), 158-161. doi: 10.1016/j.eatbeh.2011.12.001

Rodin, J., Silberstein, L., & Striegel-Moore, R. (1984). Women and weight: a normative discontent. *Nebraska symposium on motivation*. University of Nebraska Press.

Rosen, J.C., Jones, A., Ramirez, E. Waxman, S. (1996). Body shape questionnaire: studies of validity and reliability. *International Journal of Eating Disorders, 20*(3), 315-319

Rush, A. J., First, M. B., & Blacker, D. (Eds.). (2008). *Handbook of psychiatric measures*. American Psychiatric Publisher.

Sanders, D., & Bennett-Levy, J. (2010). When therapists have problems: what can CBT do for us. *The Oxford Guide to Surviving as a CBT Therapist*. Oxford: Oxford University Press.

Satir, D. A., Thompson-Brenner, H., Boisseau, C. L., & Crisafulli, M. A. (2009). Countertransference reactions to adolescents with eating disorders: relationships to clinician and patient factors. *International Journal of Eating Disorders*, *42*(6), 511-521. doi: 10.1002/eat.20650

Schooler, D., Ward, L., Merriwether, A., & Caruthers, A. (2004). Who's that girl: Television's role in the body image development of young white and black women. *Psychology of women quarterly, 28*(1), 38-47. doi: 10.1111/j.1471-6402.2004.00121

Seifert, T. (2005). Anthropomorphic characteristics of centerfold models: Trends towards slender figures over time. *International Journal of Eating Disorders, 37*(3), 271-274. doi: 10.1002/eat.20086

Shafran, R., Lee, M., Cooper, Z., Palmer, R. L., & Fairburn, C. G. (2007). Attentional bias in eating disorders. *International Journal of Eating Disorders*, *40*(4), 369-380. doi: 10.1002/eat.20375

Sheldon, P. (2010). Pressure to be perfect: Influences on college students' body esteem. *Southern Communication Journal*, *75*(3), 277-298. doi: 10.1080/10417940903026543

Shisslak, C. M., Gray, N., & Crago, M. (1989). Health care professionals' reactions to working with eating disorder patients. *International Journal of Eating Disorders*, *8*(6), 689-694. doi: 0.1002/1098-108

Shomaker, L. B., & Furman, W. (2007). Same-sex peers' influence on young women's body image: An experimental manipulation. *Journal of Social and Clinical Psychology*, *26*(8), 871-895. doi: 10.1521/jscp.2007.26.8.871

Silverstein, B., Perdue, L., Peterson, B., & Kelly, E. (1986). The role of the mass media in promoting a thin standard of bodily attractiveness for women. *Sex roles, 14*(9-10), 519-532. doi: 10.1007/BF00287452

Silberstein, L.R., Strigel-Moore, R.H., Rodin, J. (1987). Feeling fat: a woman's shame. In H.B. Lewis (Eds.). The role of shame in symptom formation (89-108). Hillsdale, NJ: Lawrence Erlbaum Associates.

Smith, A. R., Hames, J. L., & Joiner Jr, T. E. (2013). Status Update: Maladaptive Facebook usage predicts increases in body dissatisfaction and bulimic symptoms. *Journal of affective disorders*, *149*(1), 235-240. doi: 10.1016/j.jad.2013.01.032

Soper, D.S. (2015). Analysis of Variance (ANOVA) Calculator - One-Way ANOVA from Summary Data [Software]. Available from www.danielsoper.com/statcalc

Steinskog, D. J., Tjøstheim, D. B., & Kvamstø, N. G. (2007). A cautionary note on the use of the Kolmogorov-Smirnov test for normality. *Monthly Weather Review, 135*(3), 1151-1157. doi: 10.1175/MWR3326.1

Stice, E. (2002). Risk and maintenance factors for eating pathology: a meta-analytic review. *Psychological bulletin*, *128*(5), 825. doi: 10.1037/0033-2909.128.5.825

Stice, E., & Shaw, H. E. (2002). Role of body dissatisfaction in the onset and maintenance of eating pathology: A synthesis of research findings. *Journal of Psychosomatic research, 53*(5), 985-993.

Stice, E., Marti, C. N., & Durant, S. (2011). Risk factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behaviour research and therapy*, *49*(10), 622-627. doi: 10.1016/j.brat.2011.06.009

Strahan, Wilson, Cressman & Buote (2006). Comparing to perfection: how cultural norms for appearance affect social comparison and self-image. *Body Image, 3*(3), 211-227. doi: 10.1016/j.bodyim.2006.07.004

Sypeck, M. F., Gray, J. J., & Ahrens, A. H. (2004). No longer just a pretty face: Fashion magazines' depictions of ideal female beauty from 1959 to 1999. *International Journal of Eating Disorders, 36*(3), 342-347. doi: 10.1002/eat.20039

Tabachnick, B. G., & Fidell, L. S. (2001). Using multivariate statistics. New York: Pearson

Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: downward evaluation and upward contacts. *Psychological review*, *96*(4), 569. Doi: 10.1037/0022-3514.49.5.1169

Thode, H. C. (2002). Testing for normality (Vol. 164). New York: CRC Press.

Thompson, J.K., Heinberg, L., & Tantleff, S. (1991). The Physical Appearance Comparison Scale (PACS). *The Behavior Therapist, 14*, 174

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (2002). Exacting beauty: Theory, assessment and treatment of body image disturbance. Washington, DC: American Psychological Association.

Thompson, J. K., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. Current directions in psychological science, 10(5), 181-183. doi: 10.1111/1467-8721.00144

Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, *35*(3), 293-304. doi: 10.1002/eat.10257

Tiggemann, M. (2003). Media exposure, body dissatisfaction and disordered eating: Television and magazines are not the same! *European Eating Disorders Review*, *11*(5), 418-430. doi: 10.1002/erv.502

Tiggemann, M., & McGill, B. (2004). The role of social comparison in the effect of magazine advertisements on women's mood and body dissatisfaction. *Journal of Social and Clinical Psychology, 23*(1), 23-44. doi: 10.1521/jscp.23.1.23.26991

Tiggemann, M., & Polivy, J. (2010). Upward and downward: Social comparison processing of thin idealized media images. *Psychology of Women Quarterly, 34*(3), 356-364. doi: 10.1111/j.1471-6402.2010.01581

Treasure, J., Cardi, V., & Kan, C. (2012). Eating in eating disorders. *European Eating Disorders Review*, *20*(1), 42-49. doi: 10.1002/erv.1090

Trottier, K., Polivy, J., & Herman, C. P. (2007). Effects of exposure to thin and overweight peers: Evidence of social comparison in restrained and

unrestrained eaters. *Journal of Social and Clinical Psychology*, *26*(2), 155-172. doi: 10.1521/jscp.2007.26.2.155

Tryon, W. W. (2005). Possible mechanisms for why desensitization and exposure therapy work. *Clinical Psychology Review*, *25*(1), 67-95. doi: http://dx.doi.org/10.1016/j.cpr.2004.08.005

van 't Riet, J., & Ruiter, R. A. (2013). Defensive reactions to health-promoting information: An overview and implications for future research. *Health Psychology Review, 7,* 104-136. doi: 10.1080/17437199.2011.606782

Vartanian, L. R., & Dey, S. (2013). Self-concept clarity, thin-ideal internalization, and appearance-related social comparison as predictors of body dissatisfaction. *Body image*, *10*(4), 495-500. doi: 10.1016/j.bodyim.2013.05.004

Verplanken, B., & Tangelder, Y. (2011). No body is perfect: The significance of habitual negative thinking about appearance for body dissatisfaction, eating disorder propensity, self-esteem and snacking. *Psychology & Health, 26*(6), 685-701. doi: 10.1080/08870441003763246

Vocks, S., Legenbauer, T., & Peters, I. (2007). Does shape matter? Preferences for a female therapist's figure among patients with eating disorders. *Psychotherapy Research, 17*(4), 416-422. doi: 10.1080/10503300600740703

Vohs, K. D., Heatherton, T. F., & Herrin, M. (2001). Disordered eating and the transition to college: A prospective study. *International Journal of Eating Disorders*, *29*(3), 280-288. doi: 10.1002/eat.1019

Von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & Strobe Initiative. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement:

guidelines for reporting observational studies. *Preventive medicine*, *45*(4), 247-251. doi: 10.1016/j.ypmed.2007.08.012

Walker, S., Lloyd, C. (2011). Barriers and attitudes health professionals working in eating disorder experience. *International Journal of Therapy and Rehabilitation, 18,* 383-391

Wang, Y. C., McPherson, K., Marsh, T., Gortmaker, S. L., & Brown, M. (2011). Health and economic burden of the projected obesity trends in the USA and the UK. *The Lancet, 378*(9793), 815-825. doi: 10.1016/S0140-6736(11)60814-3

Warren, C. S., Crowley, M. E., Olivardia, R., & Schoen, A. (2008). Treating patients with eating disorders: An examination of treatment providers' experiences. *Eating Disorders*, *17*(1), 27-45. doi: 10.1080/10640260802570098

Warren, C. S., Schafer, K. J., Crowley, M. E., & Olivardia, R. (2012). A qualitative analysis of job burnout in eating disorder treatment providers. *Eating disorders*, *20*(3), 175-195. doi: 10.1080/10640266.2012.668476

Warren, C. S., Schafer, K. J., Crowley, M. E. J., & Olivardia, R. (2013). Demographic and work-related correlates of job burnout in professional eating disorder treatment providers. *Psychotherapy*, *50*(4), 553. doi: 10.1037/a0028783

Wasilenko, K. A., Kulik, J. A., & Wanic, R. A. (2007). Effects of social comparisons with peers on women's body satisfaction and exercise behavior. *International Journal of Eating Disorders*, *40*(8), 740-745.

Wheeler, L., & Miyake, K. (1992). Social comparison in everyday life. Journal of Personality and Social Psychology, 62(5), 760. doi: 10.1037/0022-3514.62.5.760

WHO. Obesity: preventing and managing the global epidemic. Report of a WHO Consultation. WHO Technical Report Series 894. Geneva: World Health Organization, 2000

Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin,* 90, 245-271

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attributes. *Psychological bulletin*, *106*(2), 231. doi: 10.1037/0033-2909.106.2.231

Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of personality and social psychology*, *49*(5), 1169. doi: 10.1037/0022-3514.49.5.1169

Wright, D.B., London, K., Field, A.P. (2011). Using boostrap estimation and the plug-in principle for clinical psychology data. *Journal of Experimental Psychology, 2*(2), 252-270. doi: 10.5127/jep.01361

Young, A. F., Gabriel, S., & Schlager, O. M. (2014). Does This Friend Make Me Look Fat? Appearance-Related Comparisons Within Women's Close Friendships. *Basic and Applied Social Psychology*, *36*(2), 145-154. doi: 10.1080/01973533.2014.8812