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SECRECY OF DISORDERED EATING BEHAVIOURS AND BODY DISSATISFACTION AMONG NON-CLINICAL FEMALE UNDERGRADUATE STUDENTS

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By
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Secrecy of Disordered Eating Behaviours and Body Dissatisfaction Among Non-clinical Female Undergraduate Students

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ABSTRACT

The goal of this study was to obtain empirical evidence of secrecy of disordered eating, body dissatisfaction, and body checking among non-clinical women. Female undergraduate students without a history of eating disorders (N = 212) completed questionnaires online and again in the lab a week later under the pretense that their responses were private or would be public. Changes in self-report from the online questionnaires to those completed in the lab indicated secrecy of the relevant construct. The results revealed that women are secretive about their desire to be thin, concerns with food intake, bulimic symptoms, body dissatisfaction, and body checking, but not about dietary restraint. Generally, women for whom appearance is a defining feature of the self, and who are low in fear of negative evaluation tended to be most secretive. Thus, it these women may have been most motivated and willing to engage in impression management.

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INTRODUCTION

Eating disorders are diagnosed most frequently among women and are marked by severe disturbances in eating behaviour and perceptions of weight and body shape (American Psychological Association, 2000). The DSM-IV-TR[1] (2000) identifies two major classes of eating disorders: anorexia nervosa and bulimia nervosa, which affect approximately 0.5% and 1-3% of women respectively (American Psychological Association, 2000). Anorexia nervosa is characterized by a refusal to maintain a normal body weight for one's height and age, intense fear of gaining weight, disturbances in perception of one's body shape and size, and amenorrhea in postmenarcheal women (American Psychological Association, 2000). Bulimia nervosa is characterized by binge eating, engaging in inappropriate compensatory behaviours such as self-induced vomiting to avoid gaining weight, and overvaluation of body shape and weight (American Psychological Association, 2000). Individuals with bulimia also may experience similar levels of body dissatisfaction and fear of gaining weight as do women with anorexia (American Psychological Association, 2000). Additionally, both anorexia and bulimia have been described as involving a great deal of secrecy. Individuals with anorexia often deny their problems and those with bulimia are usually ashamed of their symptoms, and resultantly attempt to conceal them (American Psychological Association, 2000).

However, little is known about secrecy of disordered eating behaviour and body dissatisfaction among women who have not been diagnosed with an eating disorder. Moreover, no studies have investigated associated behaviours such as body checking, which is considered a behavioural manifestation of body image disturbance (Reas,

[1] The author acknowledges that DSM-5 is currently in use. DSM-IV-TR is cited throughout the introduction as it was in use at the time the introduction was written. Much of the information cited here is similar to the DSM-5, although the DSM-5 now includes Binge Eating Disorder.

Whisenhunt, Netemeyer, & Williamson, 2001) and the over-evaluation of shape and weight common to women with eating disorders (Shafran, Fairburn, Robinson, & Lask, 2004). The focus of this study was on women who have not been diagnosed with an eating disorder, as gaining a further understanding of secrecy of disordered eating behaviours, body dissatisfaction, and body checking among non-clinical populations allows for a better understanding of help-seeking for, and the development of, clinical eating disorders. Subclinical levels of disordered eating (Neumark-Sztainer, Wall, Guo, Story, Haines, & Eisenberg, 2006) and body dissatisfaction (Stice, 2002) consistently predict the development of clinical eating disorders, and thus are of interest. Moreover, disordered eating, body dissatisfaction and body checking are highly prevalent among the general population. Approximately 54.4 to 67.7 percent of females from adolescence to young adulthood report having engaged in disordered eating behaviours at some point (Neumark-Sztainer, Wall, Larson, Eisenberg & Loth, 2011), and body dissatisfaction is so common among women that it has been referred to as normative discontent (Rodin, Silberstein, & Striegel-Moore, 1985). Although body checking is more common among clinical samples, non-clinical women, especially those who are currently dieting, also report engaging in body checking (Reas et al., 2001).

Secrecy in Clinical Samples

There is a great deal of literature pertaining to 'denial of illness' among women with anorexia (e.g., Pryor, Johnson, Wiederman, & Boswell, 1995; Vanderdeycken & Vanderlinden, 1983; Vandereycken, 2006a, 2006b; Vitousek, Daly, & Leiser, 1991). Denial refers to "consciously or unconsciously motivated omission, concealment, or misrepresentation of behaviour or internal experience" (Vitousek et al., 1991, p. 648).

Thus, two forms of denial of illness have been identified within the literature, unintentional denial and deliberate denial/refusal to self-disclose. These refer to a lack of recognition of one's problem(s) due to impaired self-awareness and limited insight, or a reluctance to disclose a recognized problem by lying or pretending to be healthy, respectively (Vandereycken, 2006b). The focus of this study was on the latter, that is, purposeful concealment or lack of disclosure of disordered eating behaviours and body dissatisfaction in women who have not been diagnosed with an eating disorder.

Much of the existing literature pertaining to deliberate denial of illness or concealment and lack of disclosure among individuals with an eating disorder state that eating disorders are secretive in nature without providing much evidence that this is the case. However, there are a few studies that have found evidence of secrecy among clinical samples. For example, Vanderdeycken and Vanderlinden (1983) found that when the Eating Attitudes Test (EAT) was administered to 40 individuals (37 women, three men) who were hospitalized for anorexia, only 27 scored in the EAT's clinical range. The 13 women who did not score in the clinical range were referred to as 'deniers' (Vanderdeycken & Vanderlinden, 1983). Pryor et al. (1995) also found 'deniers' using the Eating Disorders Inventory and Eating Disorders Inventory 2. Specifically, 26.7% of the women in Pryor et al.'s (1995) sample, who all met diagnostic criteria for anorexia nervosa restricting subtype, did not score in the clinical range of either the Eating Disorders Inventory or Eating Disorders Inventory 2, indicating that the results of Vanderdeycken & Vanderlinden (1983) were not simply an artifact or a chance finding.

Qualitative studies conducted with women suffering from bulimia also have shown secrecy in this group and suggest that these women live a 'double-life' in order to

hide their disordered eating (Broussard, 2005; Pettersen, Rosenvinge, & Ytterhus, 2008). Interviews with 13 women who self-identified as currently having bulimia revealed that they often lie, make excuses, avoid being seen by others and sneak food to conceal their eating and purging (Broussard, 2005). Moreover, eight of the 13 women indicated that their interview was the first time they had disclosed their bulimic symptoms to someone, despite the fact that the average participant had been struggling with bulimia for 6.5 years (Broussard, 2005). Pettersen et al. (2008) also conducted interviews with women with bulimia and found that concealing their bingeing and purging involved careful planning. For example, one participant stated that she would leave the house dressed as if she was going to the gym with her gym bag and then bike to a number of different stores to accumulate a large amount of food so that no one would realize how much food she intended to consume (Pettersen et al., 2008).

In addition to planning binges and or purging episodes, individuals with eating disorders also find ways to defend themselves against accusations of disordered eating. Using surveys, Vandereycken and Van Humbeeck asked over 400 people, the majority of whom were women, if they wanted to know more about eating disorders to improve their ability to make others think they did not have one. Approximately, 21.2% of participants answered “yes,” and 44.1% of participants also indicated wanting to know more about eating disorders so that they could learn "more tricks" for themselves (Vandereycken &Van Humbeeck, 2008, p. 112).

The aforementioned research indicates that women are secretive about their disordered eating. But why do women feel the need to be secretive about these behaviours? Pettersen et al. (2008) interviewed women who had engaged in bulimic

symptoms for at least three years, and who had received treatment for their eating disorder. These women expressed a great deal of shame about their bingeing and purging and many stated that their fear of being stigmatized is what prevented them from disclosing their behaviours. The findings of Pettersen et al. (2008) are consistent with the propositions of Vitousek et al. (1991), who state that women with bulimia do not disclose their behaviours because of shame. Women with anorexia are thought to conceal their symptoms not because of shame, but because they do not want to enter treatment as it would take away aspects of themselves that are highly valued, specifically their ability to restrict and in turn maintain a low body weight (Vitousek et al., 1991). Vandereycken (2006a) made a similar assertion, stating that women with anorexia do not disclose their symptoms because of egosyntonicity. Egosyntonicity refers to seeing something as a part of oneself and as consistent with one's own image. In the case of anorexia, closely controlling appearance and restricting food intake is syntonic with one's sense of self (American Psychological Association, 2000; Vandereycken, 2006a).

Implications of Secrecy

As described above, some women who suffer from an eating disorder do not fully disclose their eating disorder symptoms on self-report measures (e.g., Pryor et al., 1995), and these women also may elect to not disclose their symptoms in clinical interviews. Given this, it also seems likely that these women would not disclose this information to a heath care professional and therefore, may not be diagnosed with an eating disorder despite actually meeting diagnostic criteria. According to the DSM-IV-TR (2000) it is often necessary to obtain information from other sources (e.g., parents) to assess the

symptoms of anorexia nervosa, as sufferers tend to be unaware of, or unwilling to disclose their symptoms.

Women who do not want to disclose their eating disorder symptoms are also unlikely to present for assessments on their own accord. Indeed, women with anorexia often are taken to see a health care professional by a family member who has noticed substantial weight loss (American Psychological Association, 2000). Furthermore, Hepworth and Paxton (2007) conducted semi-structured interviews with 63 women with bulimia of varying ages and found that fear of stigma, which has been suggested as a primary cause for concealment and secrecy, is a major barrier to help seeking among women with bulimia. Fears of discrimination or of being labeled also were identified as barriers to help-seeking for an eating disorder among 34.5 and 20.7 percent of the 61women interviewed in a study conducted by Cachelin, Rebeck, Veisel, and Striegel-Moore (2001), respectively.

In addition to its implications for diagnosis and help-seeking, concealment and lack of disclosure can result in an obsessive preoccupation with disordered eating thoughts and behaviours. Lane and Wegner (1995) proposed the preoccupation model of secrecy which states that individuals who are trying to keep a secret do so by suppressing relevant thoughts, and that this thought suppression leads to intrusive thoughts about the secret. Further attempts to suppress these intrusive thoughts increase their intrusiveness, thus perpetuating the cycle. The preoccupation model of secrecy can be used to understand the internal experiences of those with a concealable stigma as the latter promote secrecy, especially in social interactions (Smart & Wegner, 1999). Smart and Wegner (1999) considered the cognitive effects of secrecy based on the preoccupation

model of secrecy among eating disorders, which they considered to be a concealable stigma as it is a mental illness that people often try to hide. Female undergraduate students who scored high on screening questions enquiring about fear of weight gain and purging behaviors were classified as high in eating disorder characteristics and for the purposes of the study were said to have an eating disorder. Those who scored low on the screening questions were classified as being low in eating disorder characteristics and thus, as not having an eating disorder. Participants were unaware that they were being classified into groups. Within each group, participants were assigned randomly to either pretend they had an eating disorder or to pretend they were someone without an eating disorder in an interview with a confederate. Participants who scored high on the screening questionnaires and who were randomly assigned to pretend they did not have an eating disorder were considered to be actively concealing their stigma. These participants reported greater levels of thought intrusion than did those in the other three conditions (Smart & Wegner, 1999). Moreover, these participants were more likely to project their concerns on the interviewer, that is, think that the interviewer had an eating disorder (Smart & Wegner, 1999). Thus, being secretive about disordered eating behaviours can result in reduced help seeking (Paxton & Hepworth, 2007) as well as cognitive distractions and intrusive thoughts (Smart & Wegner 1999).

Secrecy of disordered eating behaviours also can impact the romantic partner of the person who is hiding their disordered eating. Huke and Slade (2006) interviewed romantic partners of individuals diagnosed with bulimia. Common themes that arose were feeling that they were powerless in helping their partner, confused about why their partner was engaging in the disordered eating, and feeling that their partner often was

being secretive (Huke & Slade, 2006). Huke and Slade (2006) suggested that these feelings on the part of the partner could add strain to relationships, an additional downfall to secrecy about disordered eating.

Secrecy in Non-clinical Samples

Basile (2004) assessed the relation between self-disclosure of disordered eating and body dissatisfaction among non-clinical women by creating a measure of disclosure of dietary restriction and appearance related feelings. An inverse relationship between self-disclosure and severity of disordered eating behaviour and body dissatisfaction was found, such that participants with greater eating disorder symptom severity and body dissatisfaction indicated being less likely to disclose. A recent master's thesis found similar results through use of a self-created measure of secrecy rather than of disclosure (Hailey, 2012). Hailey (2012) found that secrecy was positively associated with drive for thinness and bulimic symptoms but not with body dissatisfaction in females. Given that Basile's (2004) study has been criticized for its use of a transparent questionnaire to measure disclosure of behaviours that people wish to keep secret (Vandereycken, 2006b), it is likely that Hailey's (2012) thesis would have received the same criticism. Moreover, these two studies do not empirically demonstrate that secrecy exists among non-clinical samples. Rather, they show that novel, transparent measures of secrecy and disclosure are correlated with measures of disordered eating behaviours.

Masuda (2011) used a validated measure of self-concealment to assess the relation between general concealment and disordered eating behaviour among a sample of primarily female undergraduate students. Similar to the aforementioned studies,

general self-concealment was positively associated with disordered eating behaviours. Unfortunately, Masuda (2011) did not include a measure of body dissatisfaction.

It is interesting to note that although Hailey (2012) did not find a significant correlation between body dissatisfaction and secrecy, Basile (2004) found that women with greater levels of body dissatisfaction were less likely to disclose. These findings are of interest in association with the phenomena of fat talk which refers to conversation among female peer groups characterized by negative talk about their own body, weight and shape (Nichter & Vuckovitch, 1994). Fat talk can be considered a form of disclosure pertaining to body dissatisfaction. Thus, relevant information from the fat talk literature was reviewed and is described below.

Fat talk first was identified among girls in middle and high school (Nichter & Vuckovitch, 1994), but also is highly prevalent among young women (Salk & Engeln-Maddox, 2011). When provided with a definition of fat talk, 93% of female undergraduate students indicated that they had engaged in it at some point (Salk & Engeln-Maddox, 2011). Engaging in fat talk and overhearing fat talk both have been associated with body dissatisfaction. For example, self-reported engagement in fat talk has been positively associated with body image concerns (Corning &Gondoli,2012) and body dissatisfaction (Salk & Engeln-Maddox, 2011) among women. Moreover, women who responded to the fat talk of two confederates with negative talk about their own body had greater trait body dissatisfaction than did women who did not respond with fat talk (Salk and Engeln-Maddox, 2012). Thus Hailey's (2012) finding that secrecy and body dissatisfaction are not associated makes sense given that women appear to be open about body dissatisfaction when they engage in fat talk.

However, despite the fact that fat talk and body dissatisfaction have been associated, it is possible that fat talk does not always reflect true body dissatisfaction. Through open-ended survey questions, women indicated that the phrase "Ugh, I feel so fat." could actually have several different meanings (Salk & Engeln-Maddox, 2011, p. 23). Saying 'I feel so fat' could indicate state body dissatisfaction (e.g., feeling bloated), engagement in unhealthy behaviours (e.g., not going to the gym), a need for reassurance that she is not fat, general body dissatisfaction, or that one has noticed that her body size is unacceptable (e.g., clothes no longer fitting, Salk & Engeln-Maddox, 2011). Moreover, Nichter (2000) interviewed girls and young women and concluded that females may engage in fat talk to gain acceptance from their peers and that positive body image is thought to elicit social rejection.

Consistent with Nichter's (2000) proposition, studies have found that women perceive fat talk as normative. Britton, Martz, Bazzini, Curtin and LeaShomb (2006) presented male and female undergraduate students with a vignette in which a group of women were engaging in fat talk, and asked the female participants whether they, themselves, would talk negatively about their body, not say anything, or talk positively about their body. Both the male and female participants also were asked to indicate how they thought most other women would respond given the same three options. No significant differences were found in the frequency of endorsement of each response option when women indicated how they would respond. However, the majority of women and men thought that most other women would talk negatively about their body, and none of the female participants thought that other women would talk positively about their body. Similarly, Salk and Engeln-Maddox (2011) found that women think that

other women engage in fat talk more frequently than they actually do. That is, when female undergraduate students rated the frequency with which they engaged in fat talk, and the frequency with which other female undergraduate student fat talk, ratings for the frequency of fat talk among other women were significantly greater than self-ratings of frequency of fat talk (Salk & Engeln-Maddox, 2011). Thus, women may perceive fat talk as normative and therefore engage in fat talk as an affiliative tool in some situations rather than using fat talk to express true body dissatisfaction.

In an experimental study, women came into the lab to do interviews with a confederate (Tucker, Martz, Curtin, & Bazzini, 2007). The participant always interviewed the confederate first, and subsequently was interviewed by the confederate. Several questions were asked that required responses from 1to10, but the interview question of interest was "How do you feel about your body and how you look?" (Tucker et al., 2007, p. 160). The confederate would fat talk and rate herself a 1 in the self-derogate condition, would say that she was comfortable with her body and rate herself a 6 in the self-accept condition, and state that she loved her body and rate herself a 10 in the self-aggrandize condition. The ratings participants gave themselves on their own appearance differed significantly depending on the rating the confederate gave herself (Tucker et al., 2007). That is, women exposed to the self-derogate condition gave themselves the lowest ratings, and women exposed to the self-aggrandize condition gave themselves the highest ratings. Consistent with the findings of Tucker et al. (2007), Salk and Engeln-Maddox (2012) found that women who heard a confederate engage in fat talk were more likely to engage in fat talk themselves using an experimental design. More specifically, women discussed advertisements featuring an attractive thin female with two

female confederates. Depending on the experimental condition, the two confederates would both engage in fat talk, one of them would engage in fat talk and the other would not, or neither of them would engage in fat talk in response to the advertisement. The participant would always speak about the advertisement last. More women engaged in fat talk when they heard both confederates engage in fat talk than when only one confederate fat talked. No participants engaged in fat talk when neither of the confederates engaged in fat talk (Salk & Engeln-Maddox, 2012). Thus, women seem to match the type of body talk to which they are exposed, and may indeed use fat talk to gain acceptance from peers as suggested by Nichter (2000).

Nichter (2000) also posited that positive body talk may elicit social rejection. However, women in Tucker et al's (2007) study rated the confederate as equally likeable regardless of whether or not she rated herself a 1, 6, or 10. Moreover, Tompkins, Martz, Rocheleau, and Bazzini (2009) found that female undergraduate students rated a hypothetical female in a vignette as more likeable when she spoke positively about her body than when she engaged in fat talk, regardless of whether or not she was conforming to the type of body talk in which the other females in the vignette were engaged. This finding would better align with Basile's (2004) finding that those who are more dissatisfied with their bodies are less likely to disclose information related to their appearance, as Tompkins et al.'s (2009) findings suggest that negative body talk may be perceived as less likeable than is positive body talk.

It is important to note that Nichter's (2000) work was ethnographic, and thus involved conversations among true peer groups, whereas most experimental (e.g., Britton, et al., 2006; Salk & Engeln-Maddox, 2012; Tompkins et al., 2009) studies ask

participants to respond to vignettes involving fat talk, or confederates' fat talk. Based on the aforementioned research, it seems that women engage in fat talk when exposed to it in experimental studies, but do not spontaneously engage in fat talk. Thus, it is possible that young women spontaneously engage in fat talk and disclose their body dissatisfaction among their peers, but do not feel comfortable doing so among people with whom they are unfamiliar. As suggested by Tompkins et al. (2009) positive body talk may be more likeable, or it may be the case that women believe that they should accept their bodies given the media campaigns that have been promoting self-acceptance, thereby reducing the likelihood of disclosing body dissatisfaction among strangers unless it is in response to fat talk. Women in Rubin, Nemeroff and Russo's (2004) focus groups indicated that they believed that women should accept their body and reject the thin ideal, but at the same time were dissatisfied with their own body. Moreover, women have indicated on surveys about reactions to fat talk that they are commonly annoyed at the commonness of body image concerns among other women, but at the same acknowledge that fat talk can make women feel better (Salk & Engeln-Maddox, 2011).

In summary, the fat talk literature reviewed above indicates that women engage in fat talk when they are prompted by the fat talk of other women. When women are not exposed to other women disclosing body dissatisfaction, they do not seem to spontaneously engage in fat talk (Salk & Engeln-Maddox, 2012). This, in conjunction with the findings that disclosure of body dissatisfaction through fat talk is found to be annoying (Salk & Engeln-Maddox, 2011) and less likeable to other women than is talking positively about one's body (Tompkins et al., 2009), suggest that women may be secretive about their body dissatisfaction. The evidence further suggests that this

secretiveness may be motivated by the fear of negative evaluation by others. As indicated by the women in Rubin et al.'s (2004) focus group, women may acknowledge that they should accept their body despite feeling dissatisfied with it, and thus may not disclose their body dissatisfaction to other women with whom they are unfamiliar until they have evidence that the other women are also dissatisfied with their bodies. However, many of the aforementioned studies involve scenarios where participants over hear the fat talk of another woman or read a vignette in which fat talk occurs and to which they then respond. Given these experimental designs, it is not possible to discern whether women engaged in fat talk as an affiliative tool, or to express true body dissatisfaction, given that the aforementioned research suggests that fat talk is not always an expression of true body dissatisfaction (Salk & Engeln-Maddox, 2011). Thus, in order to determine if women do in fact hide their body dissatisfaction, an experimental design where women are given an opportunity to be secretive about their body dissatisfaction among women, without being prompted by others, is necessary.

One study attempted to assess how participants change their reported body image depending on their audience. Craig, Martz and Bazzini (2007) had female college students complete measures of body dissatisfaction, and then complete the same measures five minutes later under the pretense that their responses on the second set of questionnaires would be shared with a mixed gender group, shared with a group of women, shared with a group of men, or be kept anonymous depending on the condition to which participants were randomly assigned. In all of the conditions in which participants were told their responses would be shared with others, they were shown pictures of the individuals who would see their responses and told that these people would be making

judgements about them accordingly. However, Craig et al. (2007) hypothesized that participants would endorse greater levels of body dissatisfaction when they thought their responses would be shared rather than being secretive. No significant time by condition interactions were found. While this finding could suggest that participants do not manipulate their self-reported body dissatisfaction, regardless of whether they try to seem more dissatisfied or be secretive about their dissatisfaction, Craig et al. (2007) noted that no manipulation check was performed, and thus it is unclear whether participants truly believed that their responses would be shared with others in the relevant conditions. As well, there was a very short delay between administration of the questionnaires, which may have affected participants' likelihood of changing their answers. Thus, further research is required.

Potential Moderators of Secrecy

As mentioned previously, women feel shame about their binging and purging, and the fear of being stigmatized for these behaviours prevents them from disclosing (Pettersen et al., 2008). Furthermore, women also may be secretive about their body dissatisfaction in contexts where the acceptability of such disclosure is ambiguous. Given that stigma pertains to personal characteristics that trigger fear of negative reactions in others (Susman, 1994) fear of negative evaluation may exacerbate the fear of being stigmatised upon disclosure. Fear of negative evaluation refers to experiencing distress over being evaluated negatively, fearing and avoiding the evaluations of others, and expecting others to evaluate the self negatively (Watson & Friend, 1969). Increased fear of negative evaluation has been associated with reduced disclosure of personal information. Specifically, Lombardo and Fantasia (1976) presented female and male

participants with 149 items and asked them to rate how intimate each item was. Based on mean intimacy ratings, participants were classified as low, medium, or high disclosers, with low disclosers being characterized by high mean intimacy ratings. That is, participants who perceived items as being more personal were considered to be less likely to disclose information. Low and moderate disclosers self-reported higher fear of negative evaluation than did high disclosers (Lombardo & Fantasia, 1976). Both women diagnosed with anorexia and bulimia nervosa report heightened fear of negative evaluation relative to non-clinical women (Hinrichsen, Wright, Waller, & Meyer, 2003), and as mentioned previously, women who have been diagnosed with an eating disorder are secretive about their symptoms (Pryor et al., 1995; Vanderdeycken & Vanderlinden, 1983). Thus, women who are high in fear of negative evaluation may be more likely to conceal and less likely to disclose their disordered eating behaviours. Women high in fear of negative evaluation also may be more likely to conceal their body dissatisfaction. The finding that some women find body image concerns to be annoying (Salk & Engeln-Maddox, 2011) indicates that women can be evaluated negatively for being dissatisfied with their body. Thus, women high in fear of negative evaluation may avoid disclosing their body dissatisfaction to avoid being evaluated negatively by others.

Another factor that may impact the disclosure of disordered eating and body dissatisfaction is self-evaluative salience. Self-evaluative salience is the component of body image that refers to the extent to which appearance is used as a defining feature of the self (Cash, Melnyk, & Hrabosky, 2004). The self-evaluative salience subscale of the Appearance Schemas Inventory-revised (see "Measures" section below) has been associated with a number of measures of body image disturbance and disordered eating.

More specifically, self-evaluative salience is positively associated with internalization of the thin ideal (Cash et al., 2004), discrepancies between actual and ideal body image (Cash et al., 2004), disordered eating attitudes (Cash et al., 2004), and dietary restraint (Lamarche & Grammage, 2012). Interestingly, self-evaluative salience also is positively correlated with fear of negative evaluation among female undergraduate students such that women higher in self-evaluative salience are higher in fear of negative evaluation (Chang, Jarry, & Kong, 2014)

As mentioned previously, women who fear being evaluated negatively by others may be more likely to hide their disordered eating behaviours and body dissatisfaction to avoid being evaluated negatively. Logically, fear of negative evaluation may be heightened for domains that are important to the self. For women high in self-evaluative salience, appearance is of great concern. Therefore, behaviours meant to manage appearance are likely to elicit more protectiveness in these women than in women for whom appearance is of lesser importance. Therefore, women who rely heavily on their appearance for their sense of self may be more concerned about being evaluated negatively about their appearance and the behaviours meant to manage it given that both are great importance to them. Thus, these women may be more secretive about their body dissatisfaction and eating behaviours used to control appearance.

Present Study

The aim of the present study was to provide empirical evidence for secrecy of disordered eating behaviours, body dissatisfaction, and body checking among female undergraduate students who have not been diagnosed with an eating disorder (i.e., non-clinical women). The majority of the extant literature pertains to clinical samples, but an

understanding of secrecy of disordered eating behaviour, body dissatisfaction, and body checking among non-clinical women is important given the aforementioned potential implications of secrecy. Thus, the research questions for the study are: Are women who have not been diagnosed with an eating disorder secretive about their disordered eating behaviours, body dissatisfaction, and body checking behaviours? and Do fear of negative evaluation and self-evaluative salience affect secrecy of disordered eating behaviours, body dissatisfaction, and body checking behaviours among non-clinical women?

These questions were addressed by having non-clinical female participants complete measures of disordered eating, body dissatisfaction and body checking online, and then assessing how their responses changed when they were asked to complete the same questionnaires under the pretense that their responses were either public or private in a lab session held one week later. Greater endorsement of disordered eating behaviours, body dissatisfaction, and body checking online than in the lab would be considered reflective of secrecy of the relevant construct. That is, secrecy was operationalized using change scores. Participants scores on measures completed in the lab were subtracted from their scores on measures completed online, such that positive change scores reflected secrecy on measures of disordered eating, body dissatisfaction, and body checking, whereas positive change scores reflected secrecy on satisfaction based measures.

Overall, the literature suggests that women are in fact secretive about engagement in disordered eating behaviours. There is limited evidence for secrecy of body dissatisfaction, but a review of the fat talk literature suggests that women would be secretive about it. As mentioned previously, body checking has not been investigated in

studies of secrecy, but given that it is associated with eating disorders and body dissatisfaction, I expect that women would also be secretive about this behaviour. Thus, the hypotheses of this study are as follows:

1. Participants in the public condition will have greater positive change scores on measures of disordered eating, body dissatisfaction and body checking than will participants in the private condition, reflecting decreases in their self-report on these measures from the online questionnaires to those completed in the lab. Conversely, participants in the public condition will have greater negative change scores of larger magnitude on measures of body and appearance satisfaction than participants in the private condition, reflecting increases in self-reported appearance and weight satisfaction from the online questionnaire to those completed in the lab.
2. There will be a three-way interaction between condition, fear of negative evaluation and self-evaluative salience on changes in self-reported disordered eating, body dissatisfaction, and body checking. Specifically, women high in fear of negative evaluation will have larger positive change scores on measures of disordered eating, body dissatisfaction and body checking, and larger negative change scores on measures of appearance and weight satisfaction in the public condition than in the private condition. Furthermore, these effects will be more pronounced for women with high self-evaluative salience scores than for women with low self-evaluative salience scores.

Self-esteem, Body Mass Index (BMI), and depressive symptoms were considered as covariates in all of the analyses. Self-esteeem (Furnham, Badmin, & Sneade, 2002),

BMI (Foster, Wadden, Swan, Stunkard, Platte, & Vogt, 1998) and depressive symptoms (Spoor, Stice, Bekker, Van Strien, Croon, & Van Heck, 2006) are associated with eating pathology and BMI and depressive symptoms also are associated with body satisfaction (Boersma & Jarry, 2013). Although depressive symptoms were measured to serve as a covariate, secrecy of depressive symptoms also was assessed to determine the specificity of eating pathology and body image secrecy. No a priori hypothesis were formulated for secrecy of depressive symptoms.

METHOD

Participants

Female undergraduate students who had never been diagnosed with an eating disorder were recruited for this study through the Department of Psychology participant pool. The focus of the present study was on women specifically given that disordered eating behaviours and body/weight/shape concerns are most prevalent among women (Croll, Neumark-Szatiner, Story, & Ireland, 2002) and are expressed differently among males (Weltzin, Weinsensel, Franczyk, Burnett, Klitz, & Bean, 2005). After completion of a screening questionnaire, the advertisement for this study became visible only to individuals who indicated that they were female and that they had never been diagnosed with an eating disorder (see Appendix A).

Three-hundred and eight-three participants completed the online portion of this study of which 233 also completed the lab portion of the study. Although 233 participants completed the entire study, data from 212 were analyzed ($n_{control}$ = 103, $n_{experimental}$ = 109) as 21 participants were not considered to be valid responders (see Results section). The mean age of these 212 participants was 21.06 (*SD* = 3.92) and their

average BMI was 24.22 (*SD* = 4.49), which was within the normal range. In term of self-reported ethnicity and race, 72.6% self-identified as White, 7.1% as East Asian, 5.2% as Black, 4.7% as Arab, 4.2% as South Asian, .5% as Latin American, and 5.7% reported being of "other" and/or mixed race and ethnicity. Participants varied in terms of years of university education, 20.4% were in their first year, 20.4% were in their second year, 30.3% were in their third year, 19.9% were in their fourth year, and 9% reported having attended university for more than four years.

Measures

Demographics Questionnaire.

The demographics questionnaire consisted of several items asking participants about their age, gender, marital status, ethnicity, education, and employment (see Appendix B).

Dependent Variables.

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). The EDE-Q is a 36-item measure of the main behavioural features associated with eating disorders over the past 28 days. The EDE-Q consists of four subscales: Restraint, Eating Concern, Weight Concern, and Shape Concern, and also assesses binge eating and compensatory behaviours. The Restraint subscale measures restrained eating and includes five items such as “Over the past 28 days, have you been deliberately trying to limit the amount of food you eat to influence your shape and weight?” The Eating Concern subscale measures preoccupation with food, eating or calories and includes five items such as "Over the past 28 days, how concerned have you been about other people seeing you eat?" The Weight Concern subscale measures dissatisfaction with weight and

includes five items such as “Over the past 28 days, have you had a strong desire to lose weight?" The Shape Concern subscale measures dissatisfaction with shape and includes eight items such as “Over the past 28 days, have you had a definite desire to have a totally flat stomach?" All items are answered on a seven point scale from 0 (No days) to 6 (everyday). Subscale scores are obtained by computing the mean for all relevant items and higher scores indicate greater engagement in dietary restraint or greater concern with eating, weight, or shape depending on the subscale. Peterson et al. (2007) have found Chronbach alphas of .70, .73, .72, and .83 for the Restraint, Eating Concern, Weight Concern, and Shape Concern subscales respectively, indicating acceptable to good internal consistency. In the present study, all four subscales had good internal consistency on both the online (αrestraint = .82, αeating = .81, αshape = .87, αweight = .82) and lab (αrestraint = .82, αeating = .83, αshape = .87, αweight = .84) components.

Eating Disorder Inventory - 2 (EDI-2; Garner, 1991). The EDI-2 is a 91-item measure of the symptoms and psychological traits associated with eating disorders. The EDI-2 consists of 11 subscales, but only the Body Dissatisfaction (EDI-2 BD), Bulimia (EDI-2 B), and Drive for Thinness (EDI-2 DT) subscales were included in this study. The EDI-2 BD measures discontent with shape and size and consists of nine items such as "I think that my hips are too big". The EDI-2 B measures symptoms associate with bulimia and consists of seven items such as "I have the thought of trying to vomit in order to lose weight." The EDI-2 DT measures excessive concern with dieting and fear of weight gain and consists of seven items such as "I am preoccupied with the desire to be thinner." All items are answered from 1 (never) to 6 (always). Item responses are summed and higher scores indicate more body dissatisfaction, greater endorsement of symptoms associated

with bulimia, and greater preoccupation with dieting and weight on the BD, B, and DT subscales, respectively. Spillane, Boerner, Anderson, & Smith (2004) reported Chronbach's alphas of .93 and .91 for the BD and DT subscales, respectively, indicating excellent internal consistency. The B subscale was only reported to have adequate internal consistency (α = .74; Spillane et a., 2004). In the present study the EDI-2 BD, B and DT had good to excellent internal consistency based on data from the online (αbd= .89, αb = .84, αdt = .90) and lab (αbd= .90, αb = .85, αdt = .91) components.

Body Esteem Scale for Adolescents and Adults (BESAA; Mendelson, Mendelson, & White, 2001). The BESAA is a 23-item measure assessing self-evaluations of one's body and appearance, and consists of three subscales: appearance, weight and attribution. All 23 items were administered to preserve the integrity of the measure, however, only the appearance and weight subscales were analyzed. While these two subscales measure perceptual aspects of body image, the attribution subscale measures the extent to which people attribute life outcomes to their appearance, which was not of interest. More specifically, the appearance subscale measures satisfaction with appearance and consists of 10 items such as "I like what I see when I look in the mirror." The weight subscale measures weight satisfaction and consists of eight items such as "Weighing myself depresses me." Subscale scores are obtained by computing the mean of the relevant items and higher scores reflect more positive evaluations of one's appearance and greater satisfaction with one's weight on the appearance and weight subscales, respectively. Mendelson and colleagues (2001) reported Cronbach's alphas of .92 and .94 for the appearance and weight subscales, respectively, indicating good to excellent internal consistency. In the present study, the appearance (α_{online} = .90, α_{lab} =

.91) and weight (α_{online} = .93, α_{lab} = .94) subscales had excellent internal consistency on both the online and lab components.

Body Checking Questionnaire (BCQ; Reas, Whisenhunt, Netemeyer, & Williamson, 2002). The BCQ is a 23-item measure assessing the frequency of body checking behaviours. Items such as "I check to see if my thighs rub together" are answered on a 5-point scale from 1 (*never*) to 5 (*very often*). The BCQ has three, highly correlated, underlying factors (*r*s = .69-.81): overall appearance, specific body parts, and idiosyncratic checking. Given the high correlations among the factors, the total score, which is obtained by summing all the items, was used in the present study. Higher scores on the BCQ total score reflect greater frequency of body checking. De Berardis et al. (2007) reported a Cronbach's alpha of .93 for the BCQ total score, indicating excellent internal consistency. In the present study, the BCQ also had excellent internal consistency on both the online (α = .94) and the lab (α = .94) components.

Covariates.

Beck Depression Inventory – Second edition (BDI-II; Beck, Steer Brown; 1996). The BDI-II is a 21-item measure of the severity of depressive symptoms. Items such as "Sadness" are answered by selecting one of four responses indicating the degree to which the respondent experienced the symptom over the past two weeks (e.g., 0-*I do not feel sad*, 1-*I feel sad much of the time*, 2-*I am sad all the time*, 3-*I am so sad or unhappy that I can't stand it.*). Items are summed to obtain a total score with higher scores indicating more depressive symptoms. Beck and colleagues reported a Cronbach's alpha of .93 for the BDI-II, indicating excellent internal consistency. In the present study, the BDI-II also

had excellent internal consistency on both the online (α= .92) and the lab (α = .92) components.

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The RSES is a 10-item measure of global trait self-esteem. Items such as "On the whole I am satisfied with myself" are answered on a 4-point scale from 0 (*strongly agree*) to 3 (*strongly disagree*). Items are summed and higher scores reflect higher trait self-esteem. Greenberger, Chen, Dmitrieva, and Farruggia (2003) reported a Cronbach's alpha of .88, indicating good internal consistency. In the present study, the RSES had excellent internal consistency (α = .90).

Subjective Units of Distress Scale (SUDS; Wolpe & Lazarus, 1966). The SUDS is a single-item scale, on which participants rate their current level of anxiety from 0 to 100. A higher SUDS rating reflects greater anxiety.

Body Mass Index (BMI). BMI was calculated by dividing body weight (kilograms) by height (metres) squared. Weight and height data were gathered in the lab rather than through self-report to obtain a more accurate measure of BMI given that participants typically under report their weight and over report their height (Gorber, Tremblay, Moher, & Gorber, 2007).

Proposed Moderators.

Brief Fear of Negative Evaluation II (BFNE II; Carleton, McCreary, Norton, & Asmundson, 2006). The BFNE II is a 12-item measure assessing the fear of being evaluated negatively by others. Items such as "I am afraid that other people will not approve of me" are answered on a 5-point scale from 0 (*not at all characteristic of me*) to 4 (*extremely characteristic of me*). Items are summed to obtain a total score, and higher

scores reflect greater fear of negative evaluation. Carleton and colleagues (2006) reported a Cronbach's alpha of .94, indicating high internal consistency. In the present study, the BFNE II had excellent internal consistency (α = .97).

Appearance Schemas Inventory – Revised (ASI-R; Cash, Melnyk, & Hrabosky, 2004). The ASI-R is a 20-item measure of body image investment and consists of two subscales: Self-evaluative Salience (SES) and Motivational Salience (MS). All 20 items were administered to preserve the integrity of the measure, however, only the SES subscale was analyzed. The SES subscale measures the degree to which one bases his or her self-evaluation on appearance and consists of 12 items such as "What I look like is an important part of who I am." Items were answered on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The SES subscale score is computed by summing the relevant items, and higher scores indicated greater use of appearance for determining one's sense of self. Cash and colleagues (2004) reported a Cronbach's alphas of .82 among women, indicating good internal consistency. In the present study, the ASI-R SES had good internal consistency (α = .84).

Validity Check.

The BCQ and EDI-2 BD each had an item added to them asking participants to indicate a specific response in order to ensure that they read the items. For example, on the EDI-2 BD, this item was: "Please select O, 'often". Items were added to the BCQ and EDI-2 BD specifically because these measures were administered during both the online and the lab component of the study, which allowed the same validity check to be used in both parts of the study.

Manipulation Check.

The manipulation check was a short questionnaire designed specifically for this study. It consisted of two open ended questions, followed by five items answered from 1 (*strongly disagree*) to 5 (*strongly agree*; see Appendix C). The open ended questions asked participants whether they knew any of the other participants in their group and what they thought was the purpose of the study. The five items that followed, such as "My answers to the questionnaires I just completed will be kept confidential." were used to assess the extent to which participants felt their responses were private. The mean score of these five items was computed, and higher scores were expected among participants assigned to the private condition. The five items had adequate internal consistency (α = .75).

Procedure

The present study comprised two components. The first was an online survey and the second was a laboratory experiment conducted approximately one week after the online survey. On the participant pool, these two components were advertised as two separate studies that were being conducted by the same investigator, and therefore being offered together to facilitate recruitment (see Appendix A). Participants were offered 0.5 credits for completing the online component, and one credit for completing that lab component. Body image and eating behaviour were not mentioned in the advertisement to reduce the potential for self-selection bias.

The online component was advertised as a study of the association between birth order and self-esteem among female undergraduate students. This cover story was thought to be appropriate as the RSES was only included in the online component, which added support for the claim that the online and laboratory components were separate

studies. Additionally, a consistent association between eating disorders and birth order has not been found (Vandereycken & Van Vreckem, 1992). Thus, participants were unlikely to have preconceived notions of the relation between birth order and eating behaviour that could influence their responses to the measure of eating behaviour included in the online component. The lab component of this study was advertised as a study of employment, depression, and opinions of self. The demographic questionnaire administered in this component has items referring to employment (see Appendix B). The administration of the BDI II in the lab increased the plausibility of the cover story. The procedures for the online and lab components are described below.

On-line Component. Participants accessed the online study through a link provided to them when they signed up for the study. Once participants accessed the online study, they were presented with an informed consent form (See Appendix D). Selecting "Yes" at the bottom of the screen indicated consent. Participants then were presented with the following measures in randomized order: the covariate measures (RSES, BDI-II), moderator measures (BFNE II and ASI-R SES), all of the dependent measures except for the SUDS (i.e., EDE-Q, EDI-2, BCQ, and BESSA) and the following two questions about birth order: "How many biological siblings do you have?" and "Are you the a) oldest child , b) middle child, c) youngest child, d) I am an only child." The latter questions were included to increase the credibility of the cover story.

Upon completion of the online survey, participants were e-mailed a list of dates and times for the laboratory component. They were asked to reply with their name, year and program of study, and at least two suitable appointment dates/times. Based on this information, the primary investigator attempted to schedule four participants for each

time slot who varied in year of study and academic program. This was done to reduce the chance that participants assigned to the same group would know each other as this would compromise the manipulation.

Lab component. Approximately one week after completing the online survey, participants came into the lab in groups of four. Two female experimenters who were blind to the hypotheses of the study conducted each lab session. One experimenter actually conducted the experiment, and the other helped to debrief participants and acted as the fourth participant in the event that a participant missed her appointment. This was to ensure group size consistency. A code was entered in the database identifying the main experimenter to test for any experimenter effects. Participants completed their consent form (see Appendix E) and the demographics questionnaire in the lab room. Having the participants meet and spend this time together was critical in enhancing the credibility of the manipulation. That is, seeing other participants as opposed to being told about additional participants in another room was thought to help increase the chances that participants would believe that a group discussion actually was going to take place in the public condition (see below for experimental manipulation). Each group of four was randomly assigned to either the public or the private condition.

Upon completion of their consent forms and demographic questionnaires, participants were told one of the following statements depending on the condition to which they were assigned. Participants assigned to the private condition were told:

> "Now we are going to separate you into individual rooms where you will find a computer with a program that is opened for you. The program will take you through several questionnaires and I ask that you please fill these out as honestly

as possible. Please be aware that your responses are completely confidential and anonymous as you will be logging in with a random code that is on a slip of paper in your rooms. I will not see your answers as they will uploaded directly to a spread sheet without any identifying information and analyzed in aggregate by a graduate student. It is a condition of the study that I remain unaware of your answers and we took precautions to ensure this anonymity. Once everyone has completed their questionnaires, we will reconvene in this room and have a group discussion about eating behaviour and body image."

Participants assigned to the public condition were told

"Now we are going to separate you into individual rooms where you will find a computer with a program that is opened for you. The program will take you through several questionnaires and I ask that you please fill these out as honestly as possible. Please be aware that your responses will be shared with the rest of the group and you will be logging into the survey with the first two letters of your first name and first two letters of your last name as indicated on a slip of paper in your rooms. Once everyone has completed their questionnaires we will reconvene in this room and have a group discussion where we will talk about your individual responses to the questionnaires which will automatically get uploaded to my laptop here (experimenter points to the lab computer), once you've finished all the questionnaires."

Despite the fact that the group discussion was only vital to the public condition, both groups were told that there would be a group discussion to equalize groups on anticipation of group involvement and make the experimental conditions differ only on

the assumption that questionnaire responses would be either entirely private or made public to the other participants. Participants then were escorted to their individual rooms, and given the opportunity to withdraw since consent was obtained in a group setting.

Once in their individual room, participants first rated their level of anxiety using the SUDS. Anxiety was measured to ensure that any differences between the two groups were better accounted for by the intended manipulation (i.e., private vs. public) than by any potential anxiety associated with the anticipation of a group discussion. Participants then completed the EDE-Q, EDI-2, BCQ, BESSA, and BDI-II in randomized order. Although the BDI-II was initially included in the online study so that depression could serve as a covariate, it also was administered post-manipulation. As explained previously, the goal of repeating the BDI-II administration was to see if participants are secretive not only about disordered eating behaviours, body/weight concern and dissatisfaction, but also about other psychological symptoms such as depression. The BDI-II was selected given that it has sound psychometric properties, and depressive symptoms, similar to eating disorder behaviours, ranges in severity.

Once participants completed these measures, they answered the manipulation check items. Following this, participants were asked what they thought the purpose of the present study was, and when they started to think this. Then, they were debriefed, which consisted of revealing that there was no group discussion and that all responses to the questionnaires were, in fact, confidential. The experimenter then sought consent to weigh and measure the participants' height. All participants consented and resultantly were measured/weighed in private so that BMI could be calculated.

RESULTS

Approach to Data Analysis

All statistical analyses were performed using IBM SPSS Statistics (Version 22) for Windows. First, change scores were computed. The data then were checked for evidence of valid responding. Participants who were not considered to have provided valid data were removed from the dataset. This was followed by a missing values analysis on all variables included in this study and missing values were imputed. The assumptions of multiple regression then were assessed. Additional checks to ensure the validity of this study then were conducted. For example, testing to ensure random assignment was effective. Lastly, separate regressions were performed for each outcome variable.

Calculation of Change Scores

As mentioned previously, secrecy was operationalized using change scores. Change scores were computed for each dependent variable by subtracting participants' lab scores from their online scores. Positive change scores mean that participants endorsed higher levels of each construct on the online survey than they did in the lab. Negative change scores mean the opposite. Thus, positive change scores on measures of disordered eating, body dissatisfaction, body checking and depressive symptoms were indicative of secrecy, whereas negative change scores on measures of appearance and weight satisfaction were reflective of secrecy. The change scores served as the outcome variables in all of the regression analyses.

Valid Responding

The validity check items included on the BCQ and EDI-2 BD were examined. A failed validity check consisted of incorrectly answering the validity items included in the online survey or in the lab component of the study. Five participants failed the validity check on the online portion, and one person failed the validity check on both portions of the study. The data from six participants were removed.

In addition to the validity check items, participants' responses about the purpose of the study were checked for hypothesis guessing. Participants who correctly guess the purpose of the study were not considered to be valid responders. They may have responded consistently or inconsistently with their understanding of the purpose of the study. Seventeen participants correctly guessed the purpose of the study. However, two of these indicated that they did not realize the purpose until they were asked about it. Thus, only the data from the 15 participants who correctly guessed the true purpose of the study as soon as the manipulation occurred were removed. This left 212 participants with analysable data. It is of note that everyone who correctly guessed the purpose of the study were in the public condition.

Missing Data

A missing values analysis was conducted. The percentage of missing values for each measure item ranged from 0 to 9.9 %, and the overall percentage of missing values was 0.26%. Little's MCAR test was not significant, $\chi 2\ (21295) = 13661.75$, $p = 1.00$, indicating that the data were missing completely at random.

Multiple imputation first was attempted to impute missing data as it is "currently considered the most respectable method of dealing with missing data" (Tabachnick &

Fidell, 2007, p. 72). However, multiple imputation method produced implausible values. Moreover, SPSS did not produce values when constraints were placed to produce values within the plausible range. Thus, missing values were replaced using variations of mean substitution.

Specifically, at the item-level, missing values were imputed using case-mean substitution. That is, the value imputed for each missing item on a scale or subscale was computed by calculating the mean of that particular participant's responses on the other items belonging to that scale or subscale. Case-mean substitution was deemed to be an appropriate method for handling item-level missing data given that it is suitable for self-report measures on which the items are assumed to be closely related, as was the case for all of the measures included in this study (see Measures section). As well, it has the added benefit of recognizing that there are differences between participants and does not use data obtained from other participants to impute a value (Fox-Wasylyshyn & El-Masri, 2005).

State anxiety, as measured by the SUDS (a single item scale) was the only variable for which there was variable-level missingness. Given that the SUDS is comprised of only one item, and that there were no other measures of state anxiety from which missing values could be imputed, group mean substitution was used to impute missing SUDS ratings. More specifically, the mean SUDS rating for participants in each condition was used to replace any missing SUDS rating for participants assigned to the same condition. Group mean substitution is appropriate when there is little missing data (Tabachnick & Fidell, 2007) and they are missing completely at random (Fox-Wasylyshyn & El-Masri, 2005). Moreover, expectation maximization, the alternative

method of imputation could not be used, as it assumes that the data is normally distributed, which was not the case for the SUDS ratings, *SW* (191) = .84, *p* <.001.

Assumptions of Multiple Regression

MRA assumes that the independent variables are measured reliably (Cohen et al., 2003; Osborne & Waters, 2002). All measures of the potential covariates and moderators have good reliability and weight and height were measured, rather than self-reported, to ensure a reliable measure of BMI. The remaining assumptions of MRA were tested separately for each regression. Histograms of the standardized residuals and normal probability plots revealed that the residuals were normally distributed for each of the regressions. Thus, the assumption of normally distributed residuals was satisfied. Next, plots of the standardized residuals against the standardized predicted values were inspected visually to test the assumption of homoscedasticity. A funnel pattern was observed on the scatterplots for the regressions utilizing the change scores on the EDEQ-restraint, EDEQ-eating, EDEQ-shape, and BDI-II as the criterion variable. This fanning out of data points indicated that the variance was not constant across the residuals and thus the assumption of homoscedasticity was violated for those regressions (Field, 2009). The plots for the remaining criterion variables appeared to have an even concentration of scores around the centre, suggesting that they met the assumption of homoscedasticity.

MRA further assumes that there is a linear relationship between the independent variables and dependent variables (Cohen et al., 2003; Osborne & Waters, 2002). The scatterplots of standardized residuals versus standardized predicted values were inspected again along with partial plots to assess the assumption of linearity. All regressions with the exception of those utilizing the change scores on the BESAA-appearance and BDI-II

as the criterion variables appeared to model a linear relation, and thus satisfied the assumption of linearity. The plots for the regressions with the change scores on the BESAA-appearance and BDI-II as the criterion variables appeared to have a wave pattern, indicating that the assumption of linearity was violated for those regressions. Lastly, MRA assumes independence of residuals. The Durbin-Watson statistic for each of the regressions was around the acceptable value of two (Cohen et al., 2003) as they ranged from 1.67 to 2.17, suggesting that this assumption was met for all regressions.

Although the absence of multicollinearity is not a formal assumption of MRA, it was checked as multicollinearity can result in unreliable regression coefficients (Cohen et al., 2003). The Variance Inflation Factor (VIF) for each regression was less than 10, suggesting that multicollinearity was not an issue (Cohen et al., 2003). As well, data were checked for univariate normality. Tabachnick and Fidell (2007) consider this to be an important step in analyses involving inference, even if it is not a formal assumption, as the results can be degraded if the variables are not normally distributed. The Shapiro-Wilk's test of normality revealed that only variable on which scores were normally distributed was the ASI-R SES, $SW(212) = .99$, $p = .138$. However, skewness was in the acceptable range of ±2 for all variables, and kurtosis was only outside of the acceptable range of ±3 for BMI and the change scores on the BCQ, EDEQ-restraint, and BDI-II. One strategy for dealing with nonnormal data is boostrapping, which is also helpful when assumptions such as linearity and homoschedasticity also are violated (Tavakol & Wilcox, 2013). Another strategy is to transform the data (Osborne, 2002; Tabachnick & Fidell, 2007). However, transformations tend to improve skewness specifically, which was not of concern. Moreover, given that negative values and zero are valid scores on

some of the measures, the square root and inverse transformations could not be employed, respectively. Thus, it was decided that all analyses would be bootstrapped.

Lastly, the data from participants in the public and private conditions were checked separately for outliers (Tabachnik & Fidell, 2007). Although absence of outliers is not an assumption of MRA, extreme cases can be problematic as they may influence the regression equation (Tabachnick & Fidell, 2007). Z-scores beyond |3.29| were used to identify univariate outliers (Field, 2009) which then were replaced with the corresponding highest non-outlying value (i.e., Windsorized; Gwet & Rivest, 1992). One multivariate outlier was identified using leverage values (Field, 2009). However, this outliers did not affect the pattern of the results and thus was retained. No influential cases were identified based on Cook's distance.

Additional Validity Checks

Effectiveness of Random Assignment. To determine whether random assignment had been effective, independent *t*-tests were conducted to ensure that the data collected online did not differ between participants who were assigned to the private and the public conditions. The scores of participants in the private and public conditions did not differ on any of the measures completed online (*p*s > .153), with the exception of the BDI-II, $t(210) = -1.97$, $p = .05$. However, Beck et al. (1996) reported a mean BDI-II total score for female college students of 14.55 ($SD = 10.74$), indicating that the mean BDI-II score for participants within each condition was within a standard deviation of what would be expected for this sample (see Table 1). Thus, although BDI-II scores were statistically different between the experimental conditions, the scores were at, or below the mean for female undergraduates.

Experimenter Effects. Six experimenters conducted the lab portion of this study. To ensure that there were no experimenter effects on data collected during the lab portion of this study, a Multivariate Analysis of Variance (MANOVA) was conducted. The experimenter who conducted the session was the independent variable, and the EDEQ, EDI-2, BESAA, BCQ, and BDI-II were the dependent variables. There was no significant effect of experimenter on any of the dependent variables (*p*s >.109).

Effectiveness of the Manipulation. Part way through the study some weaknesses were noted with the previously described manipulation check. Firstly, asking participants what they thought the purpose of the study was prior to completing the manipulation check items could have suggested that this study involved deception, and thereby affected their responses to the manipulation check items. Moreover, upon further thought, the five manipulation check items were considered ambiguous. Specifically, participants in the public condition could respond with *strongly agree* to the question "My answers to the questionnaires I just completed will be kept confidential" despite believing the public manipulation, given that they were informed that their responses would remain confidential "within the lab space" during consent.

Thus, a new manipulation check was employed after 58 participants were tested (see Appendix F). The new manipulation check included seven items answered on a scale from 1(*not at all true*) to 5 (*true*). One item read "I signed a consent form" and was included as a validity check, as all participants signed a consent form prior to completing this questionnaire. Five of the remaining items were analyzed (e.g., My responses to the questionnaires will be shared with the other participants) to assess the extent to which participants believed their intended manipulation. The item, "There will be a group

discussion once everyone has completed their questionnaires" was not analyzed as it was not intended to elicit differential response depending on the condition to which participants were assigned. A mean was derived from participants' scores on the five manipulation check items, and higher means were expected among participants assigned to the public condition. The five items had adequate internal consistency (α = .72). Lastly, there was one open ended question which asked participants if they knew any of the other participants in the study prior to coming to the lab.

Thus, two manipulation checks were employed in this study; 27.5% of participants completed the initial manipulation check, and 72.5% completed the new one. A t-test was conducted on the scores from the initial manipulation check to determine whether participants' responses differed based on the condition to which they were assigned. Participants in the private condition (M = 4.70, SD = 0.50) scored significantly higher on the initial manipulation check than did participants in the public condition (M = 3.60, SD = 1.01) as expected, $t(49) = 5.42$, $p < .001$. A t-test conducted on the scores from the revised manipulation check revealed significantly higher scores in the public condition (M = 3.23, SD = 0.76) than in the private condition (M = 1.82, SD = 0.74) as expected, $t(148) = -11.39$, $p < .001$. Thus, the results from both manipulation checks demonstrate that the manipulation was effective.

Descriptive Statistics

Descriptive statistics are presented in Table 1, and intercorrelations between the variables are presented in Table 2. The correlations on the top half of the correlation matrix were derived using the data collected online for all variables except BMI and the

SUDS, whereas the correlations on the bottom half were derived using the data collected in the lab with the exception of the BFNE and RSES.

Table 1.

Descriptive Statistics, N = 212

	Online		Lab		Change Scores	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Private Condition (*n* = 103)						
EDEQ-restraint	1.43	1.50	1.43	1.41	0.01	0.69
EDEQ- eating	0.96	1.20	0.83	1.11	0.12	0.58
EDEQ - shape	2.43	1.62	2.27	1.57	0.16	0.76
EDEQ - weight	1.99	1.52	1.84	1.46	0.15	0.77
EDI-2 BD	32.38	9.56	31.85	9.43	0.52	4.72
EDI-2 DT	14. 65	6.27	13.38	5.58	1.01	4.34
EDI-2 B	23.04	8.84	21.99	8.72	1.27	3.31
BESAA - app	2.26	0.64	2.22	0.70	0.04	0.39
BESAA - weight	2.03	0.93	2.02	0.95	0.00	0.40
BCQ	52.17	17.83	51.02	17.03	0.95	10.27
BDI - II	11.46	9.94	11.46	10.72	0.07	5.27
RSES	20.83	5.15				
SUDS			21.02	18.93		
BMI			24.04	4.58		
BFNE	37.91	11.53				
ASI-R SES	38.81	7.74				
Public Condition (*n* =109)						
EDEQ-restraint	1.44	1.39	1.23	1.26	0.22	0.93
EDEQ- eating	1.06	1.13	0.65	0.93	0.40	0.68
EDEQ - shape	2.58	1.60	2.01	1.50	0.59	0.81
EDEQ - weight	2.18	1.52	1.77	1.50	0.41	0.77
EDI-2 BD	32.65	10.27	30.75	10.11	2.01	4.76
EDI-2 DT	22.31	8.79	19.71	8.72	2.63	4.54
EDI-2 B	15.33	6.26	13.15	5.27	2.11	3.64
BESAA - app	2.11	0.86	2.32	0.79	-0.22	0.44
BESAA - weight	1.95	1.04	2.19	1.00	-0.24	0.47
BCQ	52.92	17.57	46.77	15.56	6.15	9.03
BDI - II	14.52	11.97	11.02	9.56	3.47	6.47
RSES	20.68	6.73				
SUDS			22.00	21.77		
BMI			24.00	4.78		
BFNE	37.89	13.86				
ASI-R SES	40.33	8.94				

Note: EDEQ- Restraint = Restraint subscale of the Eating Disorder Examination Questionnaire; EDEQ-Eating = Eating Concern subscale of the Eating Disorder Examination Questionnaire; EDEQ-Shape = Shape Concerns subscale of the Eating Disorder Examination Questionnaire; EDEQ-Weight = Weight Concern subscale of the Eating Disorder Examination Questionnaire; EDI-2 BD = Body Dissatisfaction subscale of the Eating Disorder Inventory-2; EDI-2 DT = Drive for Thinness subscale of the Eating Disorder Inventory-2; EDI-2 B = Bulimia subscale of the Eating Disorder Inventory-2; BESAA - app = Appearance subscale of the Body Esteem Scale for Adolescents and Adults; BESAA - weight = Weight subscale of the Body Esteem Scale for Adolescents and Adults; BCQ = Body Checking Questionnaire; BDI-II = Beck Depression Inventory II; RSES = Rosenberg Self-Esteem Scale; SUDS = Subjective Units of Distress Scale; BMI = Body Mass Index; BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Table 2.

Intercorrelations Between Study Variables, N = 212

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. EDEQ-restraint		.71**	.70**	.69**	.52**	.68**	.49**	-.41**	-.48**	.52**	.43**	-.29**	.20**	.33**	.35**	.45**
2. EDEQ- eating	.70**		.80**	.80**	.62**	.72**	.69**	-.53**	-.63**	.56**	.54**	-.46**	.33**	.43**	.45**	.45**
3. EDEQ - shape	.72**	.74**		.90**	.72**	.81**	.52**	-.65**	-.74**	.63**	.53**	-.46**	.27**	.46**	.50**	.57**
4. EDEQ - weight	.75**	.75**	.90**		.73**	.77**	.53**	-.63**	-.81**	.58**	.48**	-.43**	.25**	.57**	.41**	.48**
5. EDI-2 BD	.58**	.65**	.76**	.76**		.70**	.50**	-.64**	-.79**	.53**	.43**	-.47**	.25**	.55**	.38**	.38**
6. EDI-2 DT	.74**	.72**	.81**	.80**	.71**		.58**	-.46**	-.53**	.44**	.43**	-.40**	.25**	.40**	.45**	.55**
7. EDI-2 B	.51**	.76**	.55**	.58**	.50**	.60**		-.56**	-.65**	.66**	.46**	-.38**	.23**	.38**	.38**	.37**
8. BESAA - app	-.49**	-.56**	-.73**	-.71**	-.64**	-.64**	-.49**		.74**	-.51**	-.57**	.70**	-.28**	-.35**	-.56**	-.60**
9. BESAA - weight	-.60**	-.65**	-.79**	-.85**	-.80**	-.74**	-.51**	.76**		-.51**	-.44**	.48**	-.20**	-.61**	-.38**	-.44
10. BCQ	.62**	.63**	.71**	.70**	.61**	.76**	.55**	-.61**	-.58**		.40**	-.40**	.12	.20**	-.49**	.51**
11. BDI - II.	.46**	.59**	.60**	.58**	.47**	.49**	.51**	-.60**	-.54**	.50**		-.67**	.39**	.18**	.51**	.40**
12. RSES	-.30**	-.39**	-.52**	-.50**	-.46**	-.37**	-.35**	.67**	.47**	-.41**	-.61**		-.33**	-.16*	-.56**	-.48**
13. SUDS	.21**	.34**	-.33**	.28**	.27**	.26**	.28**	-.32**	-.22*	.18**	.48**	-.33**		.15*	.28**	.13
14. BMI	.38**	.44**	.44**	.53**	.55**	.38**	.36**	-.35**	-.62**	.19**	.25**	-.16*	.15*		.13	.19**
15. BFNE	.35**	.42**	.54**	.49**	.43**	.49**	.40**	-.62**	-.44**	.56**	.49**	-.56**	.28**	.13		.63**
16. ASI-R SES	.44**	.38**	.57**	.52**	.43**	.56**	.34**	-.59**	-.46**	.54**	.37**	-.48**	.13**	.19**	.63**	

Note: EDEQ- Restraint = Restraint subscale of the Eating Disorder Examination Questionnaire; EDEQ-Eating = Eating Concern subscale of the Eating Disorder Examination Questionnaire; EDEQ-Shape = Shape Concerns subscale of the Eating Disorder Examination Questionnaire; EDEQ-Weight = Weight Concern subscale of the Eating Disorder Examination Questionnaire; EDI-2 BD = Body Dissatisfaction subscale of the Eating Disorder Inventory-2; EDI-2 DT = Drive for Thinness subscale of the Eating Disorder Inventory-2; EDI-2 B = Bulimia subscale of the Eating Disorder Inventory-2; BESAA - app = Appearance subscale of the Body Esteem Scale for Adolescents and Adults; BESAA - weight = Weight subscale of the Body Esteem Scale for Adolescents and Adults; BCQ = Body Checking Questionnaire; BDI-II = Beck Depression Inventory II; RSES = Rosenberg Self-Esteem Scale; BMI = Body Mass Index; SUDS = Subjective Units of Distress Scale; BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

*p <.05, **p <.01

Main Analyses

Data were analyzed using separate bootstrapped hierarchical regressions (with condition dummy coded) for each dependent variable. That is, all regressions were bootstrapped. Recall that change scores were the dependent variables and that they could be positive or negative, with positive scores reflecting higher scores online than in the lab, and negative scores indicating the opposite. Thus, for all dependent variables excluding measures of appearance and weight satisfaction, positive change scores of a larger magnitude in the public than in the private condition indicate secrecy of the relevant construct. For the regressions using the BESAA-appearance and BESAA-weight as the outcome variables, negative change scores in the public than in the private condition, indicate secrecy of appearance or weight dissatisfaction, and/or enhancement of appearance or weight satisfaction.

Regression was used as opposed to ANOVA because the moderating variables were continuous rather than categorical. Covariates (i.e., BMI, BDI-II, RSES, and SUDS) were placed in the first block and were retained only if they significantly contributed to the model. The regression that assessed the effect of the experimental manipulation on depression did not use the BDI-II as a covariate. The second block contained the dummy codes for condition, where zero and one represented the private and public conditions, respectively, as well as the first order for the potential moderators (i.e., BFNE and ASI-R SES). The third block contained the second order effects (i.e., two-way interactions), and the three-way interaction between condition, fear of negative evaluation, and self-evaluative salience was placed in the fourth block. Although fear of negative evaluation, self-evaluative salience, and any two-way interactions involving these variables were not

expected to be significant predictors of any of the outcome variables, they were included in the regressions given that first and second order terms should be included when testing for three-way interactions (Aiken & West, 1991). All predictors (i.e., covariates and potential moderators) were centered prior to being included in the regression analyses to avoid multicollinearity (Field, 2009).

The statistics for the main analyses presented in text below are not bootstrapped. Bootstrapped confidence intervals are presented in the corresponding tables, although any discrepancies between the bootstrapped and non-bootstrapped results are identified in the text. When there were discrepancies, interpretations were based on the bootstrapped results as they are more reliable given that not all of the assumptions of multiple regression were met. For analyses in which the bootstrapped results are not mentioned, it should be assumed that they are consistent with the non-bootstrapped statistics. The simple slopes analyses are an exception to the above. All statistics, including the bootstrapped confidence intervals, for the simple slopes analyses are presented in-text as there are no corresponding tables for these analyses.

Secrecy of Disordered Eating

Dietary Restraint. The covariates BMI, self-esteem, and state anxiety did not significantly contribute to the model and thus were removed from the analysis (*p*s > .367). Depression was the only significant covariate. Table 3 provides a summary of the final model. Step 1 of the model, which included only depression, was marginally significant, $F(1,210) = 3.91$, $p = .049$, and accounted for only 1.8% of the variance in changes of self-reported engagement in dietary restraint. Furthermore, the bootstrapped confident interval, 95% CI [-.002, .022] contained zero suggesting that the effect of

depressive symptoms on changes in self-reported dietary restraint was not significant. Moreover, the squared semi-partial correlation was only .02, suggesting that depressive symptoms had a negligible effect. Steps 2, 3 and 4 did not significantly improve the prediction of changes in self-reported dietary restraint, Fchange(3,207) = 1.76, p = .373, Fchange(3,204) = 1.65, p = .221, Fchange(1,203) = 1.45, p = .762, respectively, and none of the predictors were significant (all ps > .098). Thus, contrary to prediction, the condition to which participants were assigned did not predict changes in self-reported engagement in dietary restraint, nor did the interaction between condition, fear of negative evaluation and self-evaluative salience.

Table 2.

Hierarchical Regression Predicting Changes in Self-reported Dietary Restraint, N =212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.02	(Constant)	0.117	0.056		2.08	.039	0.006	0.221	
		BDI-II	0.010	0.005	0.14	1.98	.049	-0.002	0.022	.018
2	.03	(Constant)	0.024	0.081		0.30	.768	-0.111	0.168	
		BDI-II	0.009	0.006	0.12	1.50	.136	-0.004	0.022	.010
		Condition	0.181	0.115	0.11	1.58	.116	-0.028	0.389	.012
		BFNE	-0.003	0.006	-0.04	-0.45	.653	-0.014	0.008	.001
		ASI-R SES	0.005	0.009	0.05	0.59	.557	-0.013	0.022	.002
3	.05	(Constant)	0.053	0.086		0.62	.535	-0.098	0.205	
		BDI-II	0.010	0.006	0.14	1.70	.091	-0.002	0.022	.013
		Condition	0.211	0.116	0.13	1.81	.071	0.002	0.421	.015
		BFNE	0.001	0.009	0.02	0.14	.891	-0.013	0.015	.000
		ASI-R SES	-0.006	0.012	-0.06	-0.49	.623	-0.026	0.014	.001
		Condition*BFNE	-0.012	0.012	-0.14	-1.03	.303	-0.032	0.009	.005
		Condition*ASI-R SES	0.024	0.018	0.19	1.39	.167	-0.010	0.057	.009
		BFNE*ASIR	-0.001	0.001	-0.10	-1.47	.144	-0.002	0.000	.010
4	.05	(Constant)	0.063	0.092		0.69	.493	-0.098	0.224	
		BDI-II	0.010	0.006	0.14	1.66	.098	-0.002	0.022	.013
		Condition	0.190	0.135	0.12	1.41	.161	-0.092	0.468	.009
		BFNE	0.001	0.009	0.01	0.10	.919	-0.013	0.015	.000
		ASI-R SES	-0.006	0.012	-0.06	-0.46	.644	-0.025	0.014	.001
		Condition*BFNE	-0.012	0.012	-0.14	-0.99	.321	-0.034	0.010	.005
		Condition*ASI-R SES	0.024	0.018	0.19	1.37	.172	-0.011	0.057	.009
		BFNE*ASIR	-0.001	0.001	-0.13	-1.13	.258	-0.002	0.000	.006
		Condition*BFNE* ASI-R SES	0.000	0.001	0.04	0.30	.762	-0.002	0.002	.000

Note: BDI-II = Beck Depression Inventory II; BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Eating Concerns. None of the covariates significantly contributed to the model (*p*s > .165) thus, all were removed from the analysis. Table 4 provides a summary of the final model. Step 1, which included the dummy code for condition, self-evaluative salience and fear of negative evaluation was significant, $F(3,208) = 5.97$, $p = .001$, and accounted for 7.9% of the variance in the change in self-reported worries related to eating. Condition and self-evaluative salience, were significant predictors, although the latter was only marginally significant $\beta = 0.17$, $t(208) = 1.98$, $p = .049$. As hypothesized, participants in the public condition had greater changes in their self-reported worries related to eating than did participants in the private condition, $\beta = 0.20$, $t(208) = 2.97$, $p = .003$. Although, adding in the second order effects in Step 2 did not significantly improve the prediction of change scores on eating concerns, $F\text{change}(3,205) = 0.25$, $p = .863$, adding the three-way interaction in Step 3 did, $F\text{change}(1,204) = 3.94$, $p = .049$. In Step 3, condition $\beta = 0.29$, $t(204) = 3.58$, $p < .001$and the three way between condition, fear of negative evaluation, and self-evaluative salience, $\beta = -0.25$, $t(204) = -1.98$, $p = .049$, emerged as significant predictors of changes in self-reported eating concerns. Self-evaluative salience no longer predicted changes in self-reported eating concerns ($p = .425$).

Simple slopes analyses were conducted to understand the nature of this three-way interaction based on the guidelines set out by Aiken and West (1991). More specifically, I investigated how high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of self-evaluative salience and fear of negative evaluation interacted with the condition to which participants were assigned. Thus, four simple slope equations were computed for each of the possible combinations of high and

low levels of self-evaluative salience and fear of negative evaluation. I expected that condition would have the greatest effect on change scores when participants were high in self-evaluative salience and fear of negative evaluation. Graphs of the simple slopes are presented in Figures 1 and 2.

Figure 1 depicts the simple slopes for high and low levels of self-evaluative salience when fear of negative evaluation was low. At low levels of fear of negative evaluation, participants low in self-evaluative salience had greater changes in self-reported eating concerns in the public condition than in the private condition. However, this simple slope was not significantly different from zero (p = .208). Contrary to hypothesis, at high levels of self-evaluative salience, participants low in fear of negative evaluation had the greatest changes in their self-reported eating concerns if they had been assigned to the public condition. This simple slope was significantly different from zero, $t(204) = 2.71$, $p < .007$, 95%CI [0.270, 1.235], indicating that the condition to which participants were assigned significantly predicted changes in self-reported eating concerns when participants were high in self-evaluative salience and low in fear of negative evaluation.

As seen in Figure 2, at high levels of fear of negative evaluation, participants who were high and low in self-evaluative salience had greater changes in their self-reported eating concerns if they were assigned to public rather than private condition. However, neither of these simple slopes were significantly different from zero (ps > .152). Thus, the condition to which participants were assigned did not significantly predict changes in self-reported eating concerns when fear of negative evaluation was high, regardless of whether self-evaluative salience was high or low.

Table 3.

Hierarchical Regression Predicting Changes in Self-reported Eating Concerns, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.05	(Constant)	0.135	0.062		2.17	.031	0.015	0.241	
		Condition	0.259	0.087	0.20	2.97	.003	0.102	0.437	.039
		BFNE	0.001	0.004	0.02	0.20	.840	-0.007	0.009	.000
		ASI-R SES	0.013	0.007	0.17	1.98	.049	0.000[a]	0.026	.017
2	.08	(Constant)	0.138	0.066		2.10	.037	0.009	0.265	
		Condition	0.265	0.089	0.20	2.96	.003	0.103	0.438	.039
		BFNE	0.003	0.006	0.07	0.55	.582	-0.008	0.016	.001
		ASI-R SES	0.009	0.009	0.12	0.96	.339	-0.011	0.026	.004
		Condition*BFNE	-0.006	0.009	-0.09	-0.67	.506	-0.022	0.009	.002
		Condition*ASI-R SES	0.010	0.014	0.09	0.70	.483	-0.018	0.038	.002
		BFNE*ASI-R SES	0.000	0.000	-0.02	-0.34	.732	-0.001	0.001	.001
3	.10	(Constant)	0.088	0.070		1.26	.209	-0.044	0.220	
		Condition	0.370	0.130	0.29	3.58	.000	0.187	0.584	.057
		BFNE	0.005	0.006	0.10	0.83	.409	-0.006	0.017	.003
		ASI-R SES	0.007	0.009	0.10	0.80	.425	-0.011	0.022	.003
		Condition*BFNE	-0.008	0.009	-0.12	-0.86	.390	-0.023	0.008	.003
		Condition*ASI-R SES	0.011	0.014	0.11	0.79	.430	-0.016	0.038	.003
		BFNE*ASI-R SES	0.001	0.001	0.16	1.37	.171	-0.001	0.002	.008
		Condition*BFNE*ASI-R SES	-0.002	0.001	-0.25	-1.98	.049	-0.003	-0.000[b]	.017

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

[a] 2.12×10^{-4}

[b] -6.29×10^{-5}

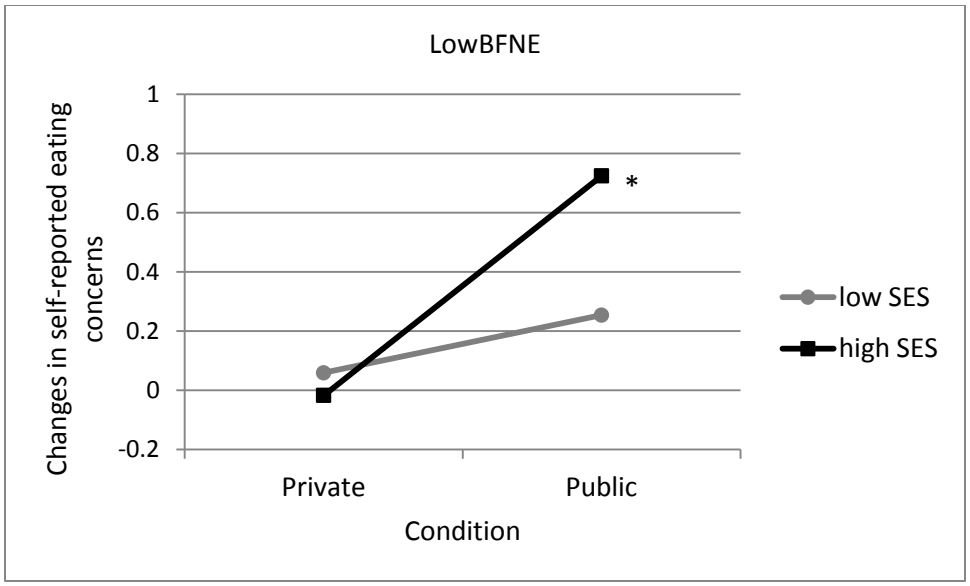

Figure 1. The effect of condition on changes in self-reported eating concerns when fear of negative evaluation is low.

* $p < .05$

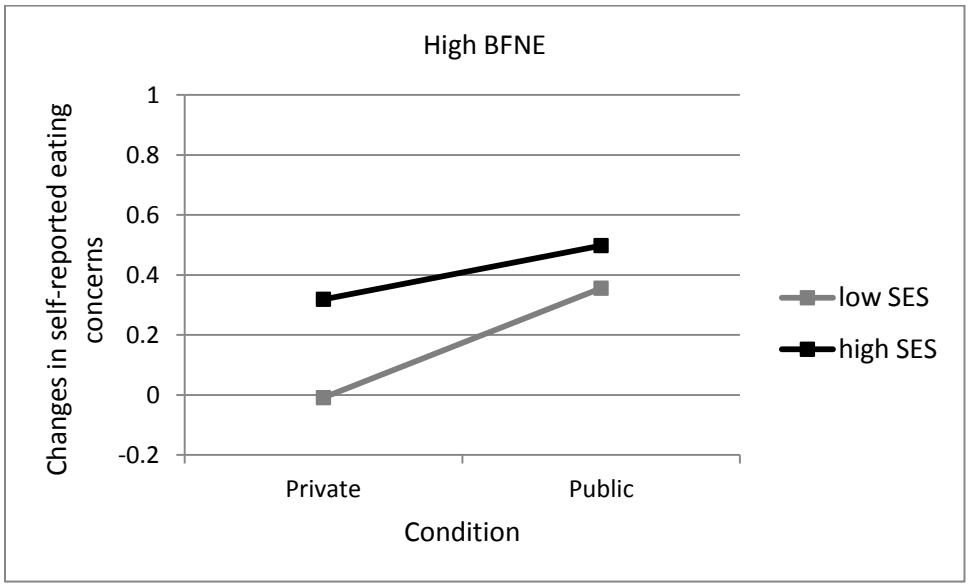

Figure 2. The effect of condition on changes in self-reported eating concerns when fear of negative evaluation is high.

Drive For Thinness. As none of the covariates significantly contributed to the model (*p*s > .218), all were removed from the analysis. Table 5 provides a summary of the final model. Step 1 of the model, which included the dummy code for condition, fear of negative evaluation, and self-evaluative salience was significant, $F(3,208) = 2.65$, $p = .051$, and accounted for 3.7% of the variance in the change in self-reported preoccupation with dieting and fear of weight gain. As hypothesized, the condition to which participants were assigned significantly predicted changes in their self-reported drive for thinness, $\beta = .18$, $t(208) = 2.62$, $p = .009$ such that participants in the public condition had greater changes in their self-report than did participants in the private condition. Adding the second order effects in Step 2, did not significantly improve the prediction of changes in self-reported preoccupation with dieting and fear of weight gain, $Fchange(3,205) = 0.89$, $p = .447$, nor did adding in the three-way interaction terms in Step 3, $Fchange(1,204) = 3.53$, $p = .062$.

Table 4.

Hierarchical Regression Predicting Changes in Self-reported Drive for Thinness, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.04	(Constant)	1.010	0.440		2.29	.023	0.145	1.808	
		Condition	1.615	0.616	0.18	2.62	.009	0.581	2.816	.032
		BFNE	-0.024	0.031	-0.07	-0.78	.436	-0.084	0.041	.003
		ASI-R SES	0.004	0.047	0.01	0.09	.932	-0.093	0.102	.000
2	.05	(Constant)	1.126	0.462		2.44	.016	0.196	1.960	
		Condition	1.696	0.629	0.19	2.68	.008	0.546	2.981	.033
		BFNE	0.000	0.045	0.00	0.00	.998	-0.075	0.086	.000
		ASI-R SES	0.044	0.066	0.08	0.66	.509	-0.119	0.211	.002
		Condition*BFNE	-0.039	0.063	-0.09	-0.62	.536	-0.158	0.094	.002
		Condition*ASI-R SES	-0.065	0.096	-0.09	-0.68	.497	-0.258	0.133	.002
		BFNE*ASI-R SES	-0.002	0.003	-0.05	-0.64	.520	-0.008	0.003	.002
3	.07	(Constant)	0.792	0.493		1.61	.110	-0.116	1.696	
		Condition	2.390	0.729	0.27	3.28	.001	0.991	3.822	.049
		BFNE	0.012	0.045	0.03	0.27	.791	-0.066	0.092	.000
		ASI-R SES	0.034	0.066	0.06	0.51	.611	-0.107	0.192	.001
		Condition*BFNE	-0.051	0.063	-0.11	-0.80	.423	-0.167	0.082	.003
		Condition*ASI-R SES	-0.058	0.096	-0.08	-0.61	.546	-0.269	0.120	.002
		BFNE*ASI-R SES	0.00	0.005	0.13	1.12	.269	-0.006	0.015	.006
		Condition*BFNE* ASI-R SES	-0.011	0.006	-0.24	-1.88	.062	-0.023	0.001	.016

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Bulimic Symptoms. None of the covariates significantly contributed to the model (*p*s > .172). Thus, they were removed from the analysis. Table 6 provides a summary of the final model. Step 1, which contained the dummy codes for condition, fear of negative evaluation and self-evaluative salience was not significant, $F(3, 208) = 1.81$, $p = .147$, and accounted for 2.5% of the variance in changes in self-reported bulimic symptoms. Adding the second order effects in Step 2 did not significantly improve the prediction of self-reported bulimic symptoms, $Fchange(3, 205) = 1.98$, $p = .304$, but adding in the three-way interaction in Step 3 did, $Fchange(1, 204) = 1.82$, $p = .018$. Condition, $\beta = 0.22$, $t(204) = 2.72$, $p = .007$, and the interaction between condition, fear of negative evaluation and self-evaluative salience, $\beta = -0.30$, $t(204) = -2.38$, $p = .018$ emerged as significant predictors in Step 3.

Simple slopes analyses were conducted to understand the nature of this three-way interaction based on the guidelines set out by Aiken and West (1991). Graphs of the simple slopes are presented in Figures 3 and 4. Contrary to predictions, as seen in Figure 4, participants high in self-evaluative salience and fear of negative evaluation did not have greater changes in their self-reported shape concerns in the public condition than in the private condition, $t(204) = 0.07$, $p = .942$, 95% CI [-1.523, 1.605]. Rather, among participants high in self-evaluative salience, greater changes in self-reported bulimic symptoms were observed when they were in the public rather than private condition if fear of negative evaluation was high (see Figure 3). This simple slope was significantly different from zero, $t(204) = 2.38$, $p = .018$, 95% CI [0.008, 6.505], suggesting that effect of condition on changes in self-reported eating concerns was significant among women

high in self-evaluative salience and low in fear of negative evaluation. None of the other simple slopes were significantly different from zero (*p*s > .177).

Table 5.

Hierarchical Regression Predicting Changes in Self-reported Bulimic Symptoms, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.03	(Constant)	1.311	0.344		3.81	.000	0.674	1.941	
		Condition	0.761	0.482	0.11	1.58	.116	-0.143	1.669	.011
		BFNE	-0.003	0.024	-0.01	-0.13	.893	-0.052	0.043	.000
		ASI-R SES	0.047	0.037	0.11	1.28	.203	-0.027	0.127	.008
2	.03	(Constant)	1.407	0.363		3.88	.000	0.725	2.087	
		Condition	0.855	0.494	0.12	1.73	.085	-0.122	1.842	.014
		BFNE	0.011	0.035	0.04	0.32	.750	-0.063	0.080	.000
		ASI-R SES	0.040	0.052	0.10	0.76	.448	-0.072	0.159	.003
		Condition*BFNE	-0.032	0.050	-0.09	-0.65	.518	-0.135	0.084	.002
		Condition*ASI-R SES	0.025	0.075	0.05	0.33	.745	-0.148	0.182	.000
		BFNE*ASI-R SES	-0.002	0.002	-0.07	-0.99	.323	-0.007	0.002	.005
3	.06	(Constant)	1.077	0.385		2.80	.006	0.330	1.854	
		Condition	1.551	0.569	0.22	2.72	.007	0.268	2.671	.034
		BFNE	0.023	0.035	0.08	0.65	.514	-0.054	0.089	.002
		ASI-R SES	0.029	0.052	0.07	0.57	.569	-0.063	0.134	.002
		Condition*BFNE	-0.044	0.049	-0.12	-0.88	.378	-0.143	0.069	.004
		Condition*ASI-R SES	0.032	0.075	0.06	0.43	.668	-0.132	0.178	.001
		BFNE*ASI-R SES	0.005	0.004	0.15	1.29	.198	-0.004	0.011	.008
		Condition*BFNE* ASI-R SES	-0.011	0.005	-0.30	-2.38	.018	-0.019	-0.001	.026

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

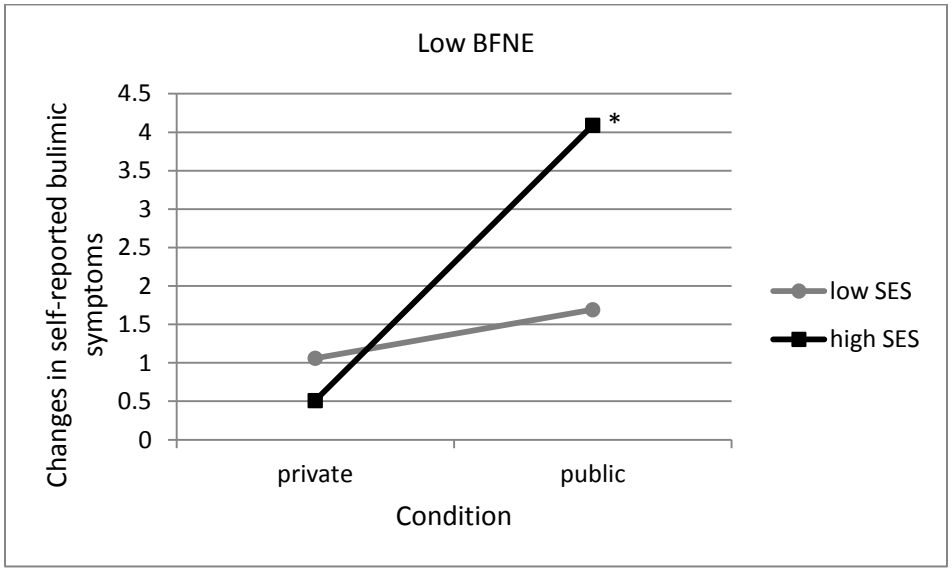

Figure 3. The effect of condition on changes in self-reported bulimic symptoms when fear of negative evaluation is low.

* $p < .05$

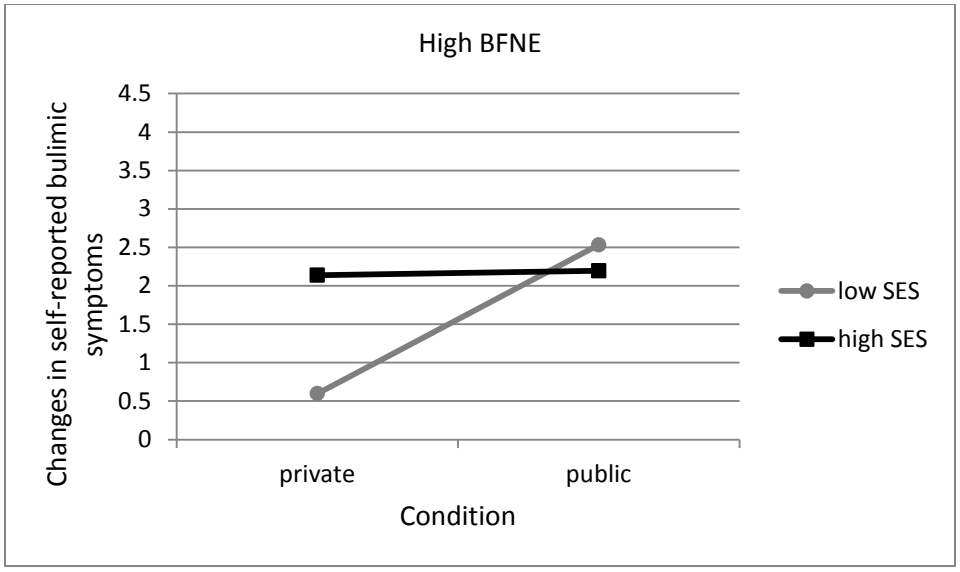

Figure 4. The effect of condition on changes in self-reported bulimic symptoms when fear of negative evaluation is high.

Secrecy of Body Dissatisfaction

Shape Concerns. None of the covariates significantly contributed to the model (*p*s > .167). Thus, they were removed from the analysis. Table 7 provides a summary of the final model. Step 1 of the model, which included the dummy codes for condition, fear of negative evaluation, and self-evaluative salience was significant, $F(3,208) = 5.34$, $p = .001$, and accounted for 7.1% of the variance in the change of self-reported of shape concerns. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in their self-reported shape concerns, $\beta = 0.25$, $t(208) = 3.76$, $p < .001$ such that participants in the public condition had greater changes in their self-report than did participants in the private condition. Adding in the second-order terms in Step 2, did not significantly improve the prediction of changes in self-reported shape concerns, $Fchange(3,205) = 1.68$, $p = .173$, although adding in the three-way interaction did, $Fchange(1,204) = 3.97$, $p = .048$. In Step 3, the three-way interaction between self-evaluative salience, condition, and fear of negative evaluation emerged as a significant predictor, $\beta = -0.25$, $t(204) = -1.99$, $p = .048$.

Simple slopes analyses were conducted to understand the nature of this three-way interaction based on the guidelines set out by Aiken and West (1991). Graphs of the simple slopes are presented in Figures 5 and 6. At low levels of fear of negative evaluation, participants who were high and low in self-evaluative salience had greater changes in their self-reported shape concerns if they were assigned to public rather than private condition, although participants high in self-evaluative salience appeared to be more secretive in the public condition than participants low in self-evaluative salience

(See Figure 5). However, both of these slopes were significantly different from zero ($t(204) = 2.70$, p -.007, 95%CI [0.182, 0.730]] and $t(204) = 3.30$, $p = .001$, 95%CI [0.395, 1.829], respectively). Figure 6 depicts the simple slopes for high and low levels of self-evaluative salience at high levels of fear of negative evaluation. These slopes were not significantly different from zero ($p = .208$). Contrary to predictions women high in fear of negative evaluation and high in self-evaluative salience were not most secretive.

Table 6.

Hierarchical Regression Predicting Changes in Self-reported Shape Concerns, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.07	(Constant)	0.170	0.078		2.17	.031	0.010	0.315	
		Condition	0.410	0.109	0.25	3.76	.000	0.209	0.632	.063
		BFNE	-0.004	0.006	-0.06	-0.69	.493	-0.014	0.008	.002
		ASI-R SES	0.008	0.008	0.08	0.92	.360	-0.010	0.025	.004
2	.09	(Constant)	0.207	0.081		2.54	.012	0.028	0.375	
		Condition	0.447	0.111	0.28	4.02	.000	0.240	0.682	.072
		BFNE	0.003	0.008	0.04	0.35	.725	-0.010	0.018	.001
		ASI-R SES	0.004	0.012	0.04	0.35	.725	-0.024	0.031	.001
		Condition*BFNE	-0.014	0.011	-0.18	-1.29	.199	-0.037	0.007	.007
		Condition*ASI-R SES	0.011	0.017	0.08	0.65	.517	-0.028	0.050	.002
		BFNE*ASI-R SES	-0.001	0.001	-0.12	-1.72	.086	-0.002	0.000[a]	.013
3	.11	(Constant)	0.144	0.087		1.67	.097	-0.045	0.329	
		Condition	0.578	0.128	0.36	4.50	.000	0.302	0.867	.088
		BFNE	0.005	0.008	0.08	0.63	.528	-0.009	0.019	.002
		ASI-R SES	0.002	0.012	0.02	0.19	.850	-0.027	0.029	.000
		Condition*BFNE	-0.017	0.011	-0.20	-1.49	.139	-0.039	0.005	.010
		Condition*ASI-R SES	0.012	0.017	0.10	0.74	.462	-0.025	0.049	.002
		BFNE*ASI-R SES	0.000	0.001	0.06	0.54	.588	-0.001	0.002	.001
		Condition*BFNE* ASI-R SES	-0.002	0.001	-0.25	-1.99	.048	-0.004	-0.000[b]	.017

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

[a] 4.26×10^{-5}
[b] -4.54×10^{-5}

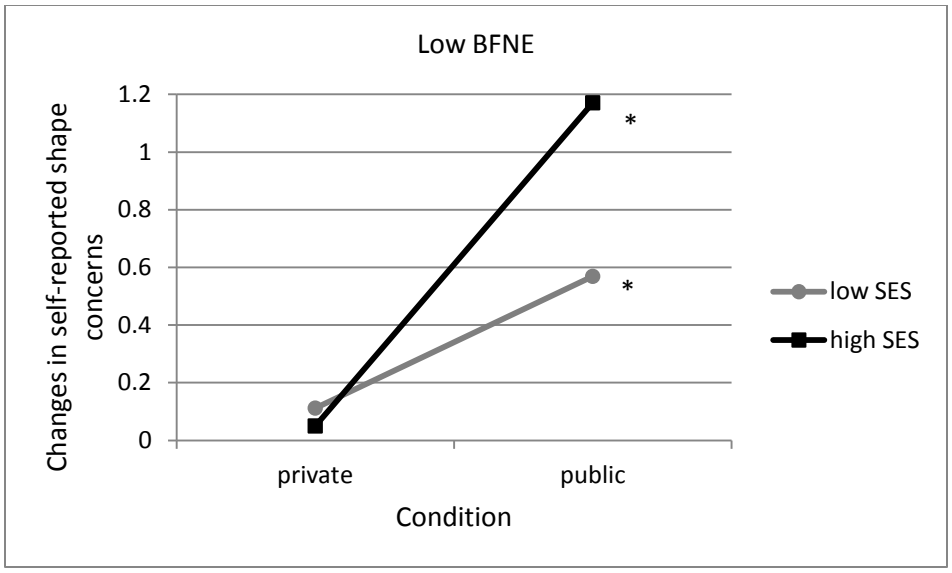

Figure 5. The effect of condition on changes in self-reported shape concerns when fear of negative evaluation is low

$^{*}p < .05$

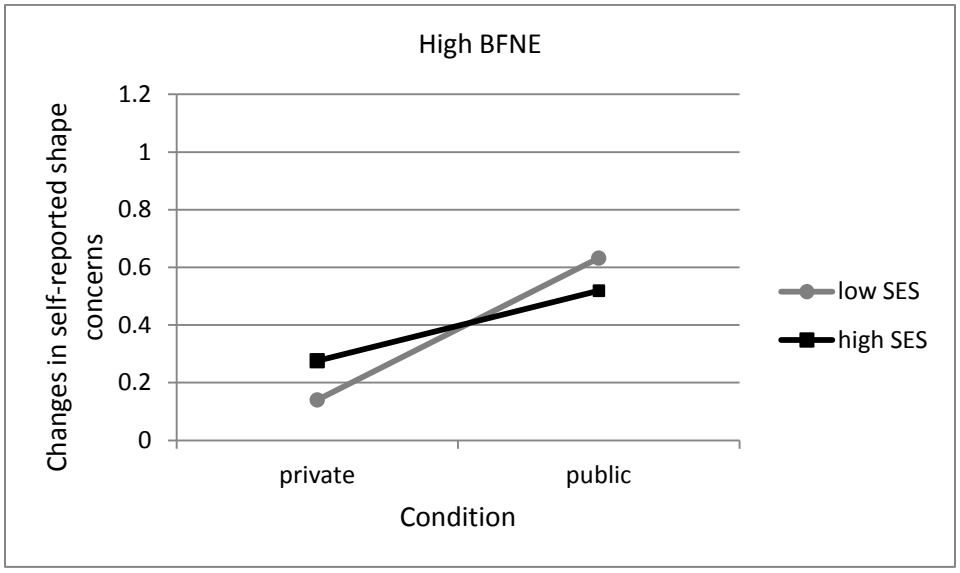

Figure 6. The effect of condition on changes in self-reported shape concerns when fear of negative evaluation is high.

Weight Concerns. The covariates BMI, depressive symptoms, and state anxiety did not significantly contribute to the model and thus were removed from the analysis (*p*s > .322). Self-esteem was the only significant covariate and therefore, was maintained. Table 8 provides a summary of the final model. Step 1, which included only self-esteem, was not significant, F (1,210) =2.90, p = .090, and accounted for only 1.4% of the variance in changes of self-reported weight concerns. Self-esteem no longer predicted changes in self-reported weight concerns once the other covariates were removed from the model, $t(210) = 1.70$, p = .090. Step 2, which included the dummy codes for condition, fear of negative evaluation, and self-evaluative salience did not significantly improve the prediction of changes in self-reported weight concerns, *Fchange*(3,207) = 2.32, p = .077, although it accounted for an additional 2.7% of the variance. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in their self-reported weight concerns, β = .24, $t(207) = 2.36$, p = .019 such that participants in the public condition had greater changes in their self-report than did participants in the private condition. Adding the second order effects in Step 3 did not significantly improve the prediction of changes in self-reported weight concern, *Fchange*(3,204) = 1.00, p = .396, nor did adding in the three-way interaction in Step 4, *Fchange*(1,203) = 0.07, p = .790.

Table 7.

Hierarchical Regression Predicting Changes in Self-reported Weight Concerns, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.01	(Constant)	0.283	0.053		5.30	.000	0.178	0.384	
		RSES	0.015	0.009	0.12	1.70	.090	-0.003	0.033	.014
2	.05	(Constant)	0.153	0.076		2.01	.045	-0.002	0.301	
		RSES	0.010	0.011	0.08	0.95	.346	-0.012	0.032	.004
		Condition	0.252	0.107	0.16	2.36	.019	0.039	0.465	.026
		BFNE	-0.006	0.006	-0.10	-1.01	.315	-0.018	0.005	.005
		ASI-R SES	0.003	0.008	0.03	0.33	.739	-0.014	0.021	.001
3	.06	(Constant)	0.189	0.080		2.37	.019	0.020	0.346	
		RSES	0.009	0.011	0.07	-0.89	.432	-0.014	0.031	.003
		Condition	0.288	0.109	0.19	2.65	.009	0.063	0.512	.032
		BFNE	-0.007	0.008	-0.12	-0.90	.368	-0.024	0.008	.004
		ASI-R SES	-0.000	0.011	-0.00	-0.01	.996	-0.024	0.026	.000
		Condition*BFNE	-0.000	0.011	-0.00	-0.01	.994	-0.023	0.025	.000
		Condition*ASI-R SES	0.006	0.017	0.05	0.35	.724	-0.031	0.049	.001
		BFNE*ASI-R SES	-0.001	0.001	-0.12	-1.65	.101	-0.002	0.000	.013
4	.06	(Constant)	0.181	0.086		2.11	.036	0.004	0.349	
		RSES	0.009	0.011	0.07	0.80	.427	-0.014	0.031	.003
		Condition	0.306	0.127	0.20	2.1	.017	0.061	0.559	.027
		BFNE	-0.007	0.008	-0.11	-0.85	.396	-0.025	0.008	.003
		ASI-R SES	0.000	0.012	-0.00	-0.03	.979	-0.023	0.027	.000
		Condition*BFNE	0.000	0.011	-0.01	-0.03	.974	-0.023	0.025	.000
		Condition*ASI-R SES	0.006	0.017	0.01	0.36	.716	-0.032	0.040	.001
		BFNE*ASI-R SES	-0.001	0.001	-0.09	-0.78	.435	-0.003	0.001	.003
		Condition*BFNE* ASI-R SES	0.000	0.001	-0.03	-0.27	.790	-0.002	0.002	.000

Note: RSES = Rosenberg Self-esteem Scale; BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Body Dissatisfaction. None of the covariates significantly contributed to the model (*p*s > .459) and therefore, all were removed from the analysis. Table 9 provides a summary of the final model. Step 1 of the model, which included the dummy codes for condition, fear of negative evaluation, and self-evaluative salience was not significant, $F(3,208) = 2.65$, $p = .05$, although it accounted for 3.7% of the variance in the change in self-reported body dissatisfaction. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in their self-reported body dissatisfaction, $\beta = .16$, $t(208) = 2.37$, $p = .019$ such that participants in the public condition had greater changes in their self-report than did participants in the private condition. However, adding in the second order effects in Step 2, did not significantly improve the prediction of changes in self-reported body dissatisfaction, $Fchange(3,205) = 0.41$, $p = .749$, nor did adding in the three-way interaction in Step 3, $Fchange(1,204) = 0.29$ $p = .589$. None of the predictors in Step 3 were significant (*p*s > .077).

Table 8.

Hierarchical Regression Predicting Changes in Self-reported Body Dissatisfaction, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.04	(Constant)	0.488	0.468		1.04	.299	-0.473	1.457	
		Condition	1.554	0.655	0.16	2.37	.019	0.208	2.877	.026
		BFNE	-0.018	0.033	-0.05	-0.55	.583	-0.076	0.043	.001
		ASI-R SES	-0.043	0.050	-0.08	-0.84	.400	-0.128	0.049	.003
2	.04	(Constant)	0.571	0.493		1.16	.249	-0.452	1.602	
		Condition	1.611	0.671	0.17	2.40	.017	0.266	2.959	.027
		BFNE	-0.052	0.048	-0.14	-1.09	.275	-0.133	0.036	.006
		ASI-R SES	-0.004	0.071	-0.01	-0.06	.955	-0.121	0.121	.000
		Condition*BFNE	0.069	0.067	0.14	1.03	.306	-0.051	0.204	.005
		Condition*ASI-R SES	-0.088	0.102	-0.12	-0.86	.393	-0.302	0.101	.003
		BFNE*ASI-R	-0.001	0.003	-0.03	-0.37	.710	-0.006	0.004	.003
3	.04	(Constant)	0.674	0.530		1.27	.205	-0.420	1.802	
		Condition	1.393	0.784	0.15	1.78	.077	-0.232	3.072	.015
		BFNE	-0.056	0.048	-0.15	-1.16	.249	-0.143	0.033	.006
		ASI-R SES	-0.001	0.071	-0.00	-0.01	.991	-0.124	0.133	.000
		Condition*BFNE	0.073	0.068	0.15	1.07	.285	-0.042	0.208	.005
		Condition*ASI-R SES	-0.090	0.103	-0.12	-0.88	.382	-0.312	0.093	.004
		BFNE*ASI-R	-0.003	0.005	-0.08	-0.66	.512	-0.014	0.003	.002
		Condition*BFNE* ASI-R SES	0.004	0.007	0.07	0.54	.589	-0.006	0.016	.001

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Appearance Satisfaction. None of the covariates significantly contributed to the model (*p*s > .200). Thus, they were removed from the analysis. Table 10 provides a summary of the final model. Step 1, which included the dummy codes for condition, fear of negative evaluation, and self-evaluative salience was significant, $F(3,208) = 7.71$, $p < .001$ and accounted for 10.0% of the variance in the change in self-reported appearance satisfaction. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in their self-reported appearance satisfaction, $\beta =$

-0.29, $t(208) = -4.33$, $p < .001$ such that participants in the public condition had negative change scores of a larger magnitude on the BESSA- appearance than did participants in the private condition. More negative change scores indicated that participants in the public condition reported higher levels of appearance satisfaction in the lab than they did online. Adding the second order effects in Step 2, did not significantly improve the prediction of changes in self-reported appearance satisfaction, $Fchange(3,205) = 1.39$, $p = .246$. Although, the interaction between fear of negative evaluation and self-evaluative salience initially was significant in this step, $\beta = 0.14$, $t(205) = 2.02$, $p = .045$, the bootstrapped confidence interval contained zero, 95% CI [-1.53×10^{-6}, 0.001], indicating that it was not actually significant. Adding in the three-way interaction between condition, fear of negative evaluation, and self-evaluative salience in Step 3, significantly improved the prediction of changes in self-reported appearance satisfaction, $Fchange(1,204) = 7.20$, $p = .008$. Condition, $\beta = -0.29$, $t(204) = -4.33$, $p < .001$continued to be a significant predictor, and the three-way interaction also emerged as a significant predictor in Step 3, $\beta = 0.33$, $t(204) = 2.68$, $p = .008$.

Simple slopes analyses were conducted to understand the nature of this three-way interaction based on the guidelines set out by Aiken and West (1991). Graphs of the simple slopes are presented in Figures 7 and 8. Figure 7 depicts the simple slopes for high and low levels of self-evaluative salience when fear of negative evaluation is low. At low levels of fear of negative evaluation, participants high and low in self-evaluative salience had larger negative change scores on the BESAA-app in the public condition than in the private condition, indicating that they reported higher appearance satisfaction in the lab than online. Although the simple slope for high self-evaluative salience at low

fear of negative evaluation appears to show greater discrepancies in change scores from the private to public condition, both simple slopes were statistically different from zero ($t(204) = -2.98$, $p = .003$, 95%CI [-0.831, -0.190], ($t(204) = -2.18$, $p = .031$, 95%CI [-0.340, --0.062], respectively).

As seen in Figure 8, at high levels of fear of negative evaluation, both participants who were high and low in self-evaluative salience had larger negative change scores on the BESAA-app if they were assigned to the public than to the private condition. Although the simple slope for low self-evaluative salience at high fear of negative evaluation appears to show greater discrepancies in change scores from the private to public condition, both the simple slopes for high and low levels of self-evaluative salience were statistically different from zero ($t(204) = -3.11$, $p = .002$, 95%CI [-0.956, -0.160], ($t(204) = -3.11$, $p = .002$, 95%CI [-0.956, -0.160], respectively).

Table 9.

Hierarchical Regression Predicting Changes in Self-reported Appearance Satisfaction, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.10	(Constant)	0.034	0.041		0.84	.400	-0.044	0.106	
		Condition	-0.247	0.057	-0.29	-4.33	.000	-0.359	-0.130	.081
		BFNE	0.005	0.003	0.15	1.71	.090	-0.001	0.010	.013
		ASI-R SES	-0.005	0.004	-0.10	-1.15	.250	-0.013	0.004	.006
2	.12	(Constant)	0.010	0.043		0.23	.821	-0.073	0.087	
		Condition	-0.271	0.058	-0.31	-4.66	.000	-0.393	-0.151	.094
		BFNE	0.006	0.004	0.19	1.55	.122	-0.002	0.015	.010
		ASI-R SES	-0.005	0.006	-0.10	-0.85	.397	-0.018	0.007	.003
		Condition*BFNE	-0.002	0.006	-0.04	-0.32	.748	-0.015	0.009	.000
		Condition*ASI-R SES	0.000	0.009	0.00	0.01	.992	-0.017	0.021	.000
		BFNE*ASI-R SES	0.001	0.000	0.14	2.02	.045	-0.000	0.001	.017
3	.14	(Constant)	0.053	0.045		1.18	.238	-0.039	0.140	
		Condition	-0.363	0.067	-0.42	-5.44	.000	-0.507	-0.217	.123
		BFNE	0.005	0.004	0.14	1.18	.238	-0.003	0.014	.006
		ASI-R SES	-0.004	0.006	-0.08	-0.64	.524	-0.015	0.007	.002
		Condition*BFNE	0.000	0.006	-0.01	-0.06	.950	-0.013	0.011	.000
		Condition*ASI-R SES	-0.001	0.009	-0.01	-0.10	.918	-0.017	0.018	.000
		BFNE*ASI-R SES	0.000	0.000	-0.10	-0.90	.368	-0.001	0.000	.003
		Condition*BFNE* ASI-R SES	0.001	0.001	-0.33	2.68	.008	0.000	0.003	.030

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

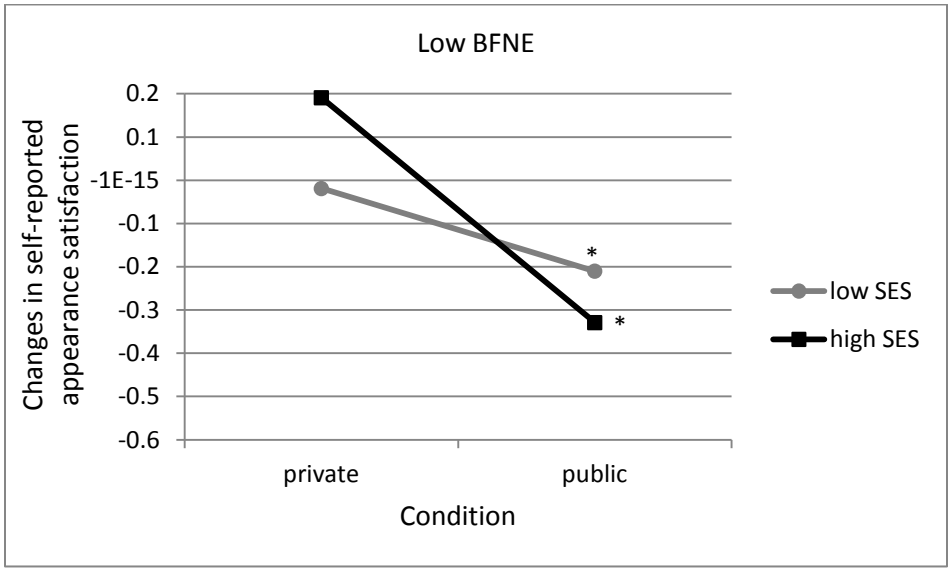

Figure 7. The effect of condition on changes in self-reported appearance satisfaction when fear of negative evaluation is low.

*p <.05

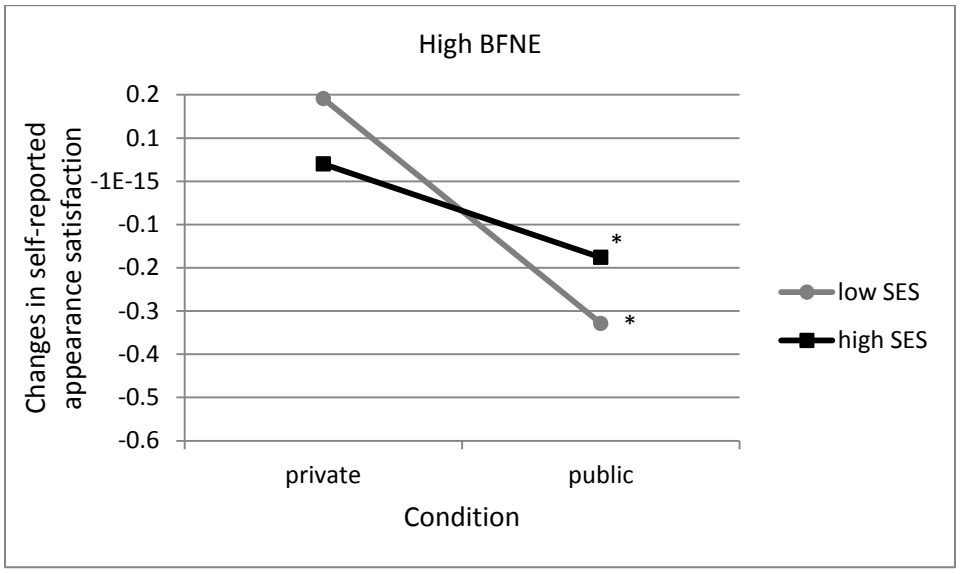

Figure 8. The effect of condition on changes in self-reported appearance satisfaction when fear of negative evaluation is high.

*p < .05

Weight Satisfaction. None of the covariates significantly contributed to the model (*p*s > .135). Thus, they were removed from the analysis. Table 11 provides a summary of the final model. Step 1 of the model, which included the dummy codes for condition, fear of negative evaluation, self-evaluative salience was significant, $F(3,208) = 6.24$, $p < .001$ and accounted for 8.3% of the variance in the change in self-reported weight satisfaction. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in their self-reported weight satisfaction, $\beta = -0.27$, $t(208) = -3.96$, $p < .001$ such that participants in the public condition had negative change scores of a larger magnitude on the BESSA-weight than did participants in the private condition. Larger negative change scores indicated that participants in the public condition reported higher levels of weight satisfaction in the lab than they did online. Adding the second-order effects in Step 2, did not significantly improve the prediction of changes in self-reported appearance satisfaction, $Fchange(3,205) = 0.76$, $p = .520$, nor did adding in the three-way interaction between condition, fear of negative evaluation, and self-evaluative salience in Step 3, $Fchange(1,204) = 3.85$, $p = .051$. In Step 3, condition remained a significant predictor $\beta = -0.36$, $t(204) = -4.61$, $p < .001$. As well, although the interaction between condition, fear of negative evaluation and self-evaluative salience was only slightly above the significance cut-off, $\beta = 0.24$, $t(204) = 1.96$, $p = .051$, the bootstrapped 95% confidence interval did not contain zero, suggesting that this interaction also was in fact significant, 95% CI [2.61×10^{-4}, 0.002].

Simple slopes analyses were conducted to understand the nature of this three-way interaction based on the guidelines set out by Aiken and West (1991). Graphs of the simple slopes are presented in Figures 9 and 10. Figure 9 depicts the simple slopes for

high and low levels of self-evaluative salience when fear of negative evaluation was low. At low levels of fear of negative evaluation, participants high and low in self-evaluative salience had larger negative change scores on the BESAA-weight in the public than in the private condition, indicating that they reported higher weight satisfaction in the lab than online. Although, the simple slope for high self-evaluative salience at low fear of negative evaluation appears to show greater discrepancies in change scores from the private to public condition, both the simple slopes for high and low levels of self-evaluative salience were statistically different from zero ($t(204) = -1.93$, $p = .055$, 95%CI [-0.338, -0.030] and $t(204) = -2.24$, $p = .026$, 95%CI [-0.785, -0.048], respectively).

As seen in Figure 10, at high levels of fear of negative evaluation, both participants who were high and low in self-evaluative salience had more negative change scores on the BESAA-weight if they were assigned to public rather than private condition. Although, the simple slope for low self-evaluative salience at high fear of negative evaluation appears to show greater discrepancies in change scores from the private to public condition, both the simple slopes for low and high levels of self-evaluative salience were statistically different from zero ($t(204) = -3.11$, $p = .002$, 95%CI [-0.956, -0.160], and $t(204) = -2.36$, $p = .019$, 95% CI [-0.403, -0.021] respectively).

Table 10.

Hierarchical Regression Predicting Changes in Self-reported Weight Satisfaction, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.08	(Constant)	0.002	0.043		0.04	.972	-0.080	0.081	
		Condition	-0.240	0.061	-0.27	-3.96	.000	-0.364	-0.123	.069
		BFNE	0.004	0.003	0.12	1.37	.171	-0.002	0.009	.008
		ASI-R SES	-0.001	0.005	-0.02	-0.23	.819	-0.010	0.009	.000
2	.09	(Constant)	-0.017	0.046		-0.38	.703	-0.106	0.076	
		Condition	-0.258	0.062	-0.29	-4.17	.000	-0.384	-0.140	.077
		BFNE	0.006	0.004	0.18	1.43	.153	-0.002	0.013	.009
		ASI-R SES	-0.002	0.007	-0.03	-0.25	.807	-0.013	0.010	.000
		Condition*BFNE	-0.003	0.006	-0.07	-0.53	.595	-0.016	0.009	.001
		Condition*ASI-R SES	0.001	0.009	0.02	0.14	.889	-0.017	0.021	.000
		BFNE*ASI-R SES	0.000	0.000	0.10	1.42	.157	-0.000[a]	0.001	.009
3	.11	(Constant)	0.017	0.048		0.35	.727	-0.084	0.119	
		Condition	-0.330	0.072	-0.37	-4.61	.000	-0.495	-0.180	.092
		BFNE	0.005	0.004	0.14	1.15	.250	-0.004	0.012	.006
		ASI-R SES	-0.001	0.007	-0.01	-0.09	.933	-0.011	0.011	.000
		Condition*BFNE	-0.002	0.006	-0.05	-0.34	.732	-0.016	0.010	.001
		Condition*ASI-R SES	0.001	0.009	0.01	0.06	.954	-0.018	0.022	.000
		BFNE*ASI-R SES	0.000	0.000	-0.08	-0.70	.484	-0.001	0.000[c]	.002
		Condition*BFNE* ASI-R SES	0.001	0.001	0.24	1.96	.051	0.000[b]	0.002	.017

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

[a] -2.99×10^{-5}

[b] 2.61×10^{-4}

[c] 3.96×10^{-4}

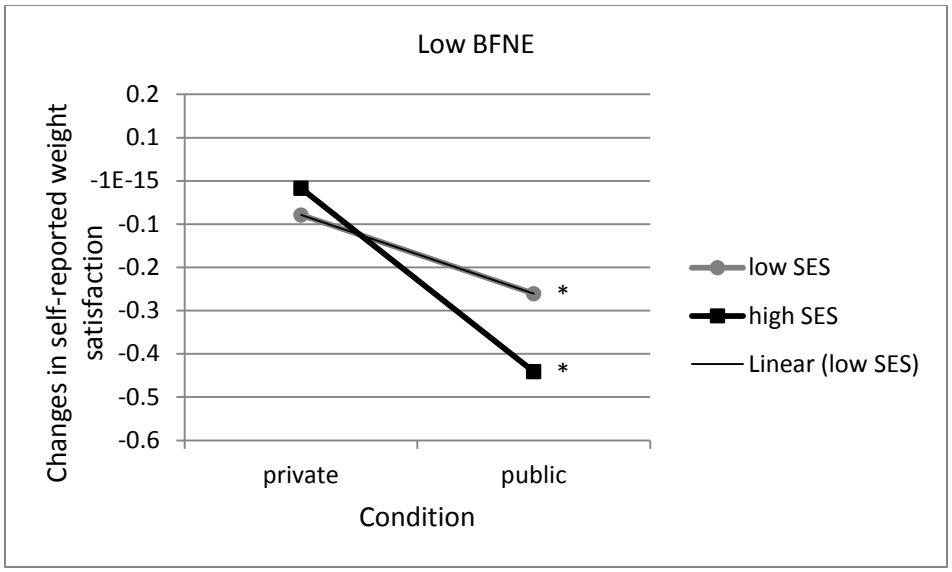

Figure 9. The effect of condition on changes in self-reported weight satisfaction when fear of negative evaluation is low.

* $p < .05$

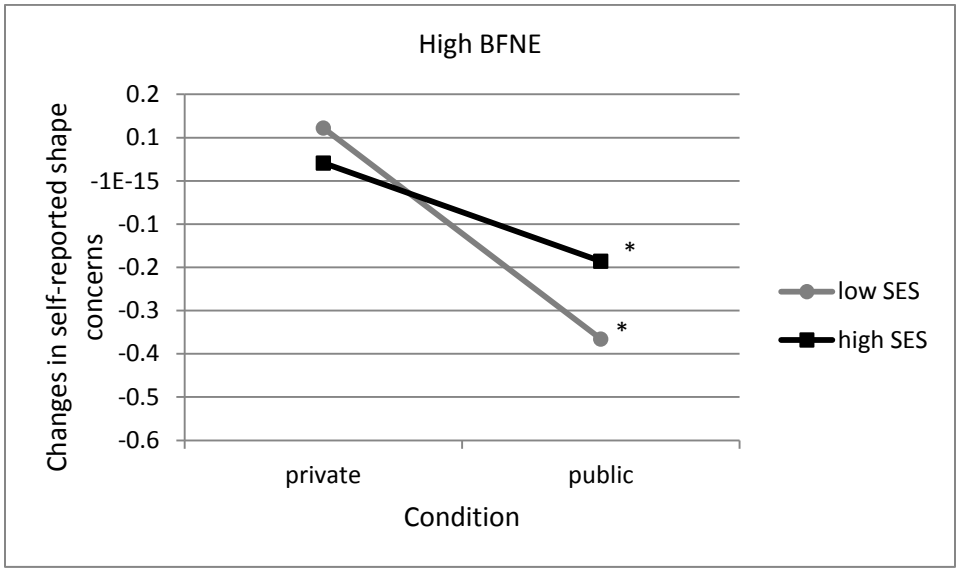

Figure 10. The effect of condition on changes in self-reported weight satisfaction when fear of negative evaluation is high.

* $p < .05$

Body Checking

None of the covariates significantly contributed to the model (*p*s > .134). Thus, they were removed from the analysis. Table 12 provides a summary of the final model. Step 1 of the model, which included the dummy code for condition, fear of negative evaluation, and self-evaluative salience was significant, $F(3,208) = 5.35$, $p < .001$, and accounted for 7.2% of the variance in the change in self-report of body checking. Consistent with my hypothesis, the condition to which participants were assigned significantly predicted changes in self-reported engagement in body checking , $\beta = .26$, $t(208) = 3.79$, $p < .001$ such that participants in the public condition had greater changes in their self-report than did participants in the private condition. Adding the second order terms in Step 2, did not significantly improve the prediction of change scores on the BCQ, $Fchange(3,205) = 0.25$, $p = .860$, nor did adding in the interaction terms in Step 3, $Fchange(1,204) = 0.13$, $p = .722$.

Table 11.

Hierarchical Regression Predicting Changes in Self-reported Body Checking, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*β*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.07	(Constant)	1.012	0.957		1.06	.292	-0.877	3.154	
		Condition	5.084	1.340	0.26	3.79	.000	2.337	7.788	.064
		BFNE	-0.059	0.068	-0.08	-0.87	.387	-0.182	0.062	.003
		ASI-R SES	0.073	0.103	0.06	0.71	.481	-0.153	0.296	.002
2	.08	(Constant)	1.143	1.010		1.13	.259	-0.704	3.269	
		Condition	5.231	1.375	0.26	3.80	.000	2.279	8.157	.065
		BFNE	-0.022	0.098	-0.03	-0.23	.820	-0.192	0.160	.000
		ASI-R SES	0.032	0.145	0.03	0.22	.825	-0.329	0.391	.000
		Condition*BFNE	-0.082	0.138	-0.08	-0.60	.552	-0.345	0.150	.002
		Condition*ASI-R SES	0.100	0.210	0.06	0.48	.635	-0.351	0.555	.001
		BFNE*ASI-R SES	-0.004	0.006	-0.04	-0.57	.571	-0.016	0.008	.001
3	.08	(Constant)	1.003	1.086		0.92	.357	-0.962	3.065	
		Condition	5.526	1.607	0.28	3.44	.001	2.353	8.820	.053
		BFNE	-0.017	0.099	-0.02	-0.17	.862	-0.189	0.160	.000
		ASI-R SES	0.028	0.146	0.02	0.19	.848	-0.331	0.369	.000
		Condition*BFNE	-0.087	0.139	-0.09	-0.63	.531	-0.350	0.151	.002
		Condition*ASI-R SES	0.103	0.210	0.07	0.49	.625	-0.340	0.553	.001
		BFNE*ASI-R SES	-0.001	0.011	-0.01	-0.06	.955	-0.020	0.021	.000
		Condition*BFNE* ASI-R SES	-0.005	0.013	-0.05	-0.36	.722	-0.034	0.019	.001

Note: BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Secrecy of Depressive Symptoms

BMI did not significantly contribute to the model and was removed from the analyses (p = .152). Thus, only self-esteem and state anxiety were retained as covariates. Table 13 provides a summary of the final model. Step 1 of the model, which included self-esteem and state anxiety, was significant, $F(2,209) = 8.50$, $p < .001$, and accounted for 7.5% of the variance in changes of self-reported depressive symptoms. Adding the dummy codes for condition, fear of negative evaluation and self-evaluative salience in Step 2 of the model, significantly improved the prediction of changes in self-reported depressive symptoms, $F_{change}(3,206) = 7.60$, $p < .001$ and accounted for an additional 8% of the variance. Self-esteem, $\beta = -0.28$, $t(206) = -3.49$, $p = .010$, state anxiety, $\beta = -0.18$, $t(206) = -2.57$, $p = .011$, and condition, $\beta = 0.29$, $t(206) = 4.41$, $p < .00$, were significant predictors in this step. The latter was such that participants in the public condition had greater change scores than did participants in the private condition. Adding the second order effects in Step 3 did not significantly improve the prediction of changes in self-reported depressive symptoms, $Fchange(3,203) = 4.78$, $p = .885$, nor did adding in the three-way interaction in Step 4, $Fchange(1,202) = 4.23$, $p = .918$.

Table 12.

Hierarchical Regression Predicting Changes in Self-reported Depressive Symptoms, N = 212

Step	R^2	Variables Entered	*b*	*SE b*	*B*	*t*	*Sig.*	*Bootstrapped 95% CI*		sr^2
								Lower	*Upper*	
1	.08	(Constant)	1.817	0.408		4.46	.000	0.971	2.615	
		RSES	-0.287	0.072	-0.28	-3.99	.000	-0.418	-0.139	.070
		SUDS	-0.049	0.021	-0.16	-2.29	.023	-0.092	-0.002	.023
2	.16	(Constant)	0.021	0.565		0.04	.971	-0.957	1.035	
		RSES	-0.290	0.083	-0.28	-3.49	.001	-0.447	-0.135	.049
		SUDS	-0.053	0.021	-0.18	-2.57	.011	-0.096	-0.010	.027
		Condition	3.494	0.791	0.29	4.41	.000	1.988	5.107	.079
		BFNE	0.029	0.044	0.06	0.67	.504	-0.057	0.123	.002
		ASI-R SES	-0.054	0.063	-0.07	-0.86	.392	-0.163	0.059	.003
3	.16	(Constant)	0.063	0.597		0.11	.916	-1.13	1.177	
		RSES	-0.287	0.085	-0.28	-3.38	.001	-0.447	-0.131	.047
		SUDS	-0.055	0.021	-0.18	-2.63	.009	-0.098	-0.011	.029
		Condition	3.549	0.813	0.29	4.36	.000	2.036	5.096	.079
		BFNE	0.002	0.060	0.01	0.04	.970	-0.130	0.130	.000
		ASI-R SES	-0.059	0.086	-0.08	-0.68	.496	-0.215	0.105	.002
		Condition*BFNE	0.050	0.082	0.08	0.61	.543	-0.109	0.212	.002
		Condition*ASI-R SES	0.000	0.124	0.00	-0.00	.998	-0.238	0.232	.000
		BFNE*ASIR	-0.001	0.004	-0.02	-0.27	.785	-0.009	0.007	.000
4	.16	(Constant)	0.087	0.642		0.14	.893	-1.063	1.278	
		RSES	-0.287	0.085	-0.28	-3.37	.001	-0.449	-0.125	.047
		SUDS	-0.055	0.021	-0.18	-2.62	.009	-0.098	0.010	.029
		Condition	3.499	0.950	-0.28	3.69	.000	1.711	5.362	.057
		BFNE	0.001	0.060	0.00	0.02	.982	-0.129	0.129	.000
		ASI-R SES	-0.058	0.086	-0.08	-0.67	.504	-0.216	0.105	.002
		Condition*BFNE	0.051	0.082	0.08	0.62	.539	-0.113	0.213	002
		Condition*ASI-R SES	-0.001	0.125	-0.00	-0.01	.994	-0.235	0.234	.000
		BFNE*ASIR	-0.002	0.006	-0.03	-0.25	.806	-0.013	0.008	.000
		Condition*BFNE* ASI-R SES	0.001	0.008	0.01	0.10	.918	-0.015	0.017	.000

Note: RSES = Rosenberg Self-Esteem Scale; SUDS = Subjective Units of Distress Scale; BFNE = Brief Fear of Negative Evaluation; ASI-R SES = Self-evaluative Salience subscale of the Appearance Schemas Inventory - Revised.

Summary of Findings

A summary of the findings are presented in Table 14. Overall, women were secretive about all constructs assessed, with the exception of dietary restraint. The three-way interaction between condition, fear of negative evaluation, and self-evaluative salience significantly predicted changes in self-reported eating concerns, bulimic symptoms, shape concerns, and appearance and weight satisfaction.

Table 13.

Summary of Findings

Dependent variable (measure)	Condition significant	Three -way interaction significant
Disordered Eating		
Dietary Restraint (EDEQ-restraint)	No	No
Eating Concerns (EDEQ-eating)	Yes	Yes
Drive for Thinness (EDI-2 DT)	Yes	No
Bulimic Symptoms (EDI-2 Bulimia)	No in Step 1, Yes in Step 3	Yes
Body Dissatisfaction		
Shape Concerns (EDEQ - shape)	Yes	Yes
Weight Concerns (EDEQ - weight)	Yes	No
Body Dissatisfaction (EDI-3 BD)	Yes in Step 1, No in Step 3	No
Appearance Satisfaction (BESAA - app)	Yes	Yes
Weight Satisfaction (BESAA - weight)	Yes	Yes
Other		
Body Checking (BCQ)	Yes	No
Depressive Symptoms (BDI-II)	Yes	No

DISCUSSION

The goal of this study was to obtain empirical evidence of secrecy of disordered eating, body dissatisfaction, and body checking among a sample of non-clinical women. Secrecy of depressive symptoms also was investigated to determine the specificity of appearance and eating based secrecy. Based on the final step of each regression model, there was a significant main effect of condition on changes in self-reported levels of disordered eating, body checking, and depressive symptoms, as hypothesized. Condition significantly predicted changes in self-reported body dissatisfaction in the first two steps of the regression model, but not the final step, although none of the predictors were significant in the final step. Overall, participants assigned to the public condition showed greater decreases in their self-report on measures of body dissatisfaction, body checking, depressive symptoms, and most measures of eating pathology from the online portion to the lab portion of the study. These same participants also reported higher appearance and weight satisfaction in the lab portion than they did online. Thus, non-clinical women were secretive about their eating pathology, similar to clinical samples (e.g., Pryor et al., 1995). As well, they were secretive about their body dissatisfaction and enhanced their self-reported satisfaction with appearance and weight when told that their responses would be shared with others. This is consistent with findings from the fat talk literature, which suggest that expressing body dissatisfaction is annoying (Salk & Engeln-Maddox, 2011), and positive body talk is more likeable than is negative body talk (Tompkins et al., 2009). Participants also were secretive about their engagement in body checking, which had not been previously investigated, as well as their depressive symptoms. The latter suggests that secrecy is not confined to appearance and eating related domains.

The only measure on which change scores were not significantly impacted by the public versus private manipulation in any step of the regression was the Restraint subscale of the EDEQ. Thus, women do not seem to be secretive about their engagement in dietary restraint, despite being secretive about other forms of disordered eating. Subclinical levels of dietary restraint may be considered normative among women and thus, not something about which they should be secretive. Indeed, the means for the Restraint subscale of the EDE-Q obtained in this study were consistent with the norms for female undergraduate students (Luce, Crowther, & Pole, 2008), and Nichter (2000) noted that many female adolescents discuss dieting with their peers. Moreover, subclinical levels of dietary restraint among women actually may be seen as reflecting positive traits. For example, Mori, Chaiken, and Pliner (1987) found that women ate less when their femininity was threatened, supposedly to appear more feminine. Thus, disclosing engagement in dietary restraint may be a way to demonstrate one's femininity. As well, it may "signal to others that a girl [is] appropriately concerned with her appearance" (Nichter, 2000, p. 73), and/or be a way of deflecting potential negative judgements associated with weight. Although the mean BMI for the women in this sample was within the normal range, approximately two percent of normal weight women experience weight discrimination (Puhl, Andreyeva, & Brownell, 2008). Moreover, 25.5% of normal weight women perceive themselves as being overweight (Paeratakul, White, Williamson, Ryan, & Bray, 2002), suggesting that a substantial portion of normal weight women may fear weight discrimination, and therefore readily disclose dieting behaviour to protect themselves.

It is of note that although condition (private versus public manipulation) alone predicted changes in self-reported eating concerns, bulimic symptoms, shape concerns, appearance satisfaction and weight satisfaction, there also was a significant three-way interaction between condition, fear of negative evaluation, and self-evaluative salience for each of these outcome variables. Overall, despite some variability in the exact level of significance for each of the simple slopes, women seemed to be most secretive about appearance and eating domains when they presented with a combination of high self-evaluative salience and low fear of negative evaluation or a combination of low in self-evaluative salience and high fear of negative evaluation. These findings differed from my original hypothesis that it would be women high in both self-evaluative salience and fear of negative evaluation who would have the greatest changes in self-reported eating pathology, body dissatisfaction, and appearance and weight satisfaction. The rationale for this prediction was that women may be more motivated to conceal behaviours meant to enhance appearance if appearance important to them and if they fear others' judgment, which could extend to a fear of appearance judgement.

For eating and shape concerns, analyses of the simple slopes revealed that the public versus private manipulation had its greatest effect on women high in self-evaluative salience, meaning that they consider appearance to be a centrally defining feature of the self and, contrary to prediction, low in fear being evaluated negatively by others. Specifically, the most secretiveness about eating and shape concerns, which consisted of more extensive changes in responses from the online portion of the study to the lab portion of the study, occurred in women high in self-evaluative salience and low in fear of negative evaluation, who were told their responses would be shared with others.

This finding may be explained by the need for impression management, a variable extraneous to the design of this study.

Impression management is a goal directed behaviour used to manage the impressions that others form of us. It is comprised of both impression motivation and impression construction (Leary & Kowalski, 1990). Impression motivation comprises factors such as image centrality (Schlenker & Leary, 1982) that lead to a desire to influence the way we are perceived by others (Leary & Kowalski, 1990). Impression construction involves both determining what type of impression we want others to form of us, and how to obtain the desired impression (Leary & Kowalski, 1990). People are more motivated to engage in impression construction in situations involving domains that are central to their sense of self (Schlenker & Leary, 1982). Self-evaluative salience measures the importance of appearance to one's sense of self. Thus, it makes sense that women high in self-evaluative salience would be motivated to engage in impression management for dimensions related to appearance, such as shape and eating concerns. Concealment of one's shape and eating concerns may be one way of managing other's impression of the self around the self-important domain of appearance.

Fear of negative evaluation can impact impression management by affecting one's perceived likelihood of being able to form a favourable impression (Schlenker & Leary, 1982). However, these two constructs are distinct. People have expectancies about their ability to produce favourable impressions (Schlenker & Leary, 1982), which affect their likelihood of engaging in impression management. More specifically, when people do not feel able to create a particular impression, they engage in protective self-presentation (Arkin, 1981). "Protective strategies are used to ward off deterioration of one's public

image, but forgo further attempts to actively foster particular desired impressions" (Leary & Kowalski, 1990, p. 43). For example, Baumeister and Jones (1978) found that people do not challenge others' negative impressions of them when they know that these others have information supporting their negative views. However, people will enhance their self-presentation in domains of the self on which the audience has no prior information. Thus, the literature suggests that people engage in impression management when they perceive a high likelihood of being successful, and do not think that their attempts at impression management will be evident, as this could result in a loss of public esteem (Schlenker & Leary, 1982). Indeed, being exposed while concealing or distorting information about the self would destroy the goal of engagement in such behaviour, which is to enhance one's image in the eyes of others. Thus, people do engage in impression management behaviour, including enhancing the self by distorting or concealing unflattering characteristics, only if they are reasonably certain of not being exposed doing so.

People high in fear of negative evaluation are more likely to doubt their ability to create favourable impressions (Schlenker & Leary, 1982). This may increase their fears of being exposed were they to attempt engaging in impression management. This fear of being exposed may in turn decrease their engagement in such behaviour. Conversely, people who are less fearful of being negatively evaluated may be more likely to engage in impression management as they are less fearful of potential negative consequences should they be exposed engaging in such behaviour. This may explain why women high in self-evaluative salience were more secretive about their disordered eating behaviour if they were low, rather than high, in fear of negative evaluation. That is, women who

consider appearance to be self-important would be motivated to engage in impression management, but because of the loss of public esteem associated with being caught in impression management, they may do so only when this fear associated with being exposed is low, as would be the case if their fear of others' negative judgement is low.

In addition to the potential effect of engagement in impression management, details associated with the experimental procedure may have had an effect on the results. Although participants seemed to believe the manipulation, it is possible that they did not fully believe the cover story that the online and lab portions of this study were separate studies. When asked about their impressions of the study, some participants indicated to the experimenters that they noticed that the online questionnaires and lab questionnaires were similar. As well, some participants guessed that the purpose of the lab study was to investigate birth order, which was the cover story for the online study, but not the lab study. Overall, 17% of all participants whose data were analyzed (19% and 15% of participants in the private and public conditions, respectively) provided one of the aforementioned responses spontaneously. However, given that participants were not directly asked whether they believed the two portions were in fact separate studies, this may not be an accurate reflection of the percentage of participants who suspected that the two portions of this study were not distinct. For participants who are fearful of negative evaluation the belief that perhaps the two studies were connected may have prompted a fear of being exposed should they change their answers on the lab questionnaires. This fear may have outweighed the desire to attempt to form a favourable impression. Moreover, it may have contributed to the lesser changes in response from the online to the lab portion of the study for women for whom appearance is important but who also

are fearful of negative evaluation. For those for whom appearance also is important but who are less fearful of negative evaluation, the fear of being found changing their answers may not have been sufficient to inhibit the wish to engage in impression management, hence their more extensive changes in self-report from the online to the lab portion of the study. Given that the actual percentage of participants who thought that the two parts of this study were in fact related is unclear, a conclusion as to whether the procedure increased self-presentational concerns, or participants were concerned about being caught engaging in impression management more generally cannot be made.

The pattern of results for bulimic symptoms was similar to that of shape and eating concerns for participants low in fear of negative evaluation in that participants high in self-evaluative salience reported significantly lower bulimic symptoms when told that their answers would be public rather than private. Among participants high in fear of negative evaluation, those for whom appearance is an important domain did not change their answers differentially from the online questionnaires whether they were assigned to the public or the private condition. Thus this pattern of not being secretive about self-important domains when fears of being judged negatively by others are higher seems consistent.

For weight and appearance satisfaction, the private versus public manipulation significantly predicted changes in self-reported appearance and weight satisfaction, under high and low levels of both fear of negative evaluation and self-evaluative salience. Specifically, all participants became more secretive when told that their responses would be shared with others. There was a significant three-way interaction between condition, self-evaluative salience and fear of negative evaluation for both weight and appearance

satisfaction. However, all of the simple slopes were significant, which limits the interpretability of these three-way interactions. Nevertheless, visual inspection of the graphs suggests that the three way interactions are attributable to a reversal in the response pattern of women high and low in self-evaluative salience depending on whether they also are high and low in fear of negative evaluation. Specifically, women high in self-evaluative salience appear to be most secretive if they are low in fear of negative evaluation but the reverse is true for women low in self-evaluative salience. The latter are more secretive if they are high in fear of negative evaluation. This pattern of results is consistent with the explanation proposed above whereby women for whom appearance is important engage in more impression management when they are less fearful of incurring negative judgement should they be exposed distorting their public image. However, they engage in less impression management behaviour when they fear negative judgement as being exposed manipulating a self-important domain would be more damaging to their self-image. Conversely, women for whom appearance is less important engage in more impression management behaviour if they are more fearful of others' judgement. It appears that here, the fear of negative evaluation motivates impression management but because the latter is applied to a less important domain of the self, concerns about the negative consequence associated with being exposed doing so are lowered.

As for depressives symptoms, self-evaluative salience did not in any way (i.e., on its own or as part of an interaction) predict changes in self-reports. This is as would be expected, given that the extent to which physical appearance is a defining feature of the self should have no bearing on one's motivation to be secretive about depressive

symptoms. These results support the proposed specificity of the effect of self-evaluative salience on secretiveness about eating pathology, appearance and weigh matters.

Limitations and Future Directions

Overall, women seem to be secretive about their eating pathology, body dissatisfaction, body checking and depressive symptoms. It is of note that this finding can only be generalized to secrecy among women who are not familiar with each other, given that precautions were took to minimize the likelihood that participants would know each other, and all of the participants were female. Another key point is that women's level of fear of negative evaluation does not necessarily reflect engagement in impression management. Future studies should include separate measures of impression management and fear of negative evaluation to clarify the findings obtained here. Moreover, a between subjects design as opposed to the within and between design used in the present study may help to decrease the likelihood that participants would be concerned about being caught altering their self-reported levels of eating pathology and body dissatisfaction. It also may be interesting to test the predictors examined here with peer groups to determine if women also are secretive among individuals they know. Lastly, replication with a more diverse sample in terms of ethnicity, age, and level of education, will help to increase the generalisability of these findings, given that most of the participants in the present study were Caucasian.

Implications

Despite the limitations of the present study, the findings suggest that secrecy of disordered eating behaviours is not limited to clinical populations. As well, women who have not been diagnosed with an eating disorder seem to be secretive about their body

dissatisfaction. This finding is especially interesting, given that body dissatisfaction is so common among women that it has been termed normative discontent (Rodin, Silberstein, & Striegel-Moore, 1985). Thus, although women are dissatisfied with their bodies, it may be the case that recent media campaigns promoting appearance and size acceptance have introduced a prescriptive norm that women should be satisfied with their bodies and appearance. Rather than creating true appearance and size acceptance, this norm may be leading women to hide their body dissatisfaction. Indeed, women in Rubin et al.'s (2004) focus groups indicated that they believed that women should accept their body and reject the thin ideal, but at the same time were dissatisfied with their own body. However, further research is required to verify that these campaigns are in fact affecting women's disclosure of body dissatisfaction and engagement in behaviours used to manage their appearance.

Secrecy has been associated with negative outcomes such as an obsessive preoccupation with whatever one is being secretive about (Smart & Wegner, 1999). Thus, if these media campaigns are in fact promoting secrecy of body dissatisfaction and behaviours used to manage appearance, they may be doing more harm than good. This is similar to findings that eating disorder prevention programs sometimes result in increases in disordered eating (e.g., Carter, Stewart, Dunn & Fairburn, 1997). The findings of this study suggest that placing a high importance on appearance for one's sense of self may motivate women to be secretive about their body dissatisfaction and engagement in disordered eating behaviours. Thus, rather than promoting size and appearance acceptance, interventions should perhaps be targeted at reducing the extent to which women consider appearance to be a defining feature of the self. In addition to being

associated with secrecy of body dissatisfaction and disordered eating, self-evaluative salience has been associated with internalization of the thin-ideal (Cash et al., 2004), disordered eating attitudes (Cash et al., 2004), and dietary restraint (Lamarche & Grammage, 2012), suggesting that reducing self-evaluative salience among women may have a number of benefits.

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APPENDICES

Appendix A. Participant Pool Advertisement

Title: Two studies: (1) Birth Order and Self-esteem among Women (2)Employment, Depression and Opinions of Self.

Researchers : Felicia Chang

Duration: 30 minutes (Study 1 - online study: Birth Order and Self-esteem among Women)
60 minutes (Study 2 -laboratory study: Employment, Depression, and Opinions of Self)

Credits: 0.5 credits (Study 1 - online study: Birth Order and Self-esteem among Women)
1.0 credits (Study 2 - laboratory study: Employment, Depression, and Opinions of Self)
(1.5 credits total)

Description:
These are two separate studies being run by the same researcher. They are being advertised together as a two part study to make recruitment easier and more efficient for her.

The first study, "Relation between Birth Order and Self-esteem among Women", is an online study. It will be take no more than 30 minutes of your time and is worth 0.5 bonus points if you are registered in the pool and you are registered in one or more eligible psychology courses. You will be asked to complete a number of questionnaires alone in one sitting. Upon completion of this study, you will be e-mailed potential time slots for the second study, and asked to reply with your top 2 choices if you would like to participate in the second study.

The second study, " Employment, Depression, and Opinions of Self" will take no more than 60 minutes of your time and is worth 1 bonus point if you are registered in the pool and you are registered in one or more eligible psychology courses. Groups of four will come into the lab and complete a number of questionnaires and may be asked to participate in a group discussion upon completion of the questionnaires.

Appendix B. Demographics Questionnaire

Age: _____ Sex: _____

Marital status: Married/common law ☐ Divorced/separated ☐ Single ☐ Widowed ☐
Number of children: 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ more than 4 ☐

What is your ethnic background? (Check all that apply)

South Asian ☐ East Asian ☐ White ☐ Black ☐ Arab ☐ Latin American ☐ Aboriginal ☐

Other: _____
Prefer not to answer ☐

School enrolment: Full time student ☐ Part time student ☐

Years in University:
First year ☐ Second year ☐ Third year ☐ Fourth year ☐ More than 4 years ☐
Including your current psychology course, how many psychology courses have you taken so far? _____
What is/are your major(s)? _____
What is/are your minor(s)? _____

If currently employed, your occupation is: Full time ☐ OR Part time ☐
And in what area?

Sales and service	☐	Natural resources, agriculture, and related production	☐
Management	☐	Business Finance and Administration	☐
Health	☐	Education, law and social, community and government services	☐
Manufacturing and utilities	☐	Trades, transport, and equipment operation	☐
Natural and applied sciences	☐	Art, culture, recreation and sport	☐

Other: _____

Mother or guardian's occupation is: Full time ☐ OR Part time ☐
And in what area?

Sales and service	☐	Natural resources, agriculture, and related production	☐
Management	☐	Business Finance and Administration	☐
Health	☐	Education, law and social, community and government services	☐
Manufacturing and utilities	☐	Trades, transport, and equipment operation	☐
Natural and applied sciences	☐	Art, culture, recreation and sport	☐

Other: _____

Father or guardian's occupation is: Full time ☐ OR Part time ☐
And in what area?

Sales and service	☐	Natural resources, agriculture, and related production	☐
Management	☐	Business Finance and Administration	☐
Health	☐	Education, law and social, community and government services	☐
Manufacturing and utilities	☐	Trades, transport, and equipment operation	☐
Natural and applied sciences	☐	Art, culture, recreation and sport	☐

Other: _____

Appendix C. Initial Manipulation Check

1. Do you know any of the other participants in this study from elsewhere?

☐ Yes ☐ No

If you responded 'yes', what is your relation to this person (e.g., friend, roommate, cousin)? _____

2. What is the purpose of this study?_____

_____

_____

Please answer the following questions using a number from 1 (*strongly disagree*) to 5 (*strongly agree*).

3. My responses to the questionnaires I just completed will be kept confidential.

____

4. My answers on the questionnaires I just completed were anonymous.

____

5. My answers on the questionnaires I just completed will be kept private.

____

6. I was not concerned by what the other participants would think of my responses.

____

7. I was not concerned with what the experimenter would think of my responses.

____

Appendix D. Online Consent Form

Birth Order and Self-esteem Among Women

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Birth Order and Self-esteem among Women

You are asked to participate in a research study conducted by Felicia Chang, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfill the requirements of a Master's thesis. If you have any questions or concerns about the research, please feel free to contact the primary investigator, Felicia Chang by e-mail at chang19@uwindsor.ca, or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000, extension 2237.

Purpose of the Study
The purpose of this study is to gain information on self-esteem, mood and eating behaviours among women according to birth order.

Procedures
By checking off the 'yes' box below you are indicating that you want to participate in this study. Once you have signed this consent form by typing your name, you will complete an online survey that consists of several questionnaires in randomized order. Please complete the survey alone in a quiet place where you are able to concentrate fully. The survey will take up to 30 minutes to complete, and you are required to complete the questionnaires in one sitting. After completing the online survey, you will be directed to a page where you can fill in your personal information to obtain your bonus course credit. Additionally, upon successful completion of the online survey, you will be invited to participate in a separate study that is currently being conducted by Felicia Chang that is worth 1 bonus credit.

Potential Risks and Discomforts
During the course of your participation in this study, you may be asked to answer questions that are personal or make you feel uncomfortable. If you do experience discomfort, you are welcome to contact the primary investigator, Felicia Chang, to address your concerns. Alternatively, if you have any concerns you wish to discuss with an independent party, please feel free to contact the Student Counselling Centre at 519-253-3000 Ext. 4616.

Potential Benefits to Participants and/or To Society
Your participation in this study provides you the opportunity to learn about and contribute to psychological research. Additionally, the information provided by individuals who participate in this study may increase society's knowledge of self-esteem, mood and eating behaviours among women according to birth order.

Compensation for Participation
You will receive 0.5 bonus points for up to 30 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

Confidentiality
Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Note that we must collect your name and student number at the end of the study in order for you to receive bonus credit for your participation. Your data will be kept separate from your name and student number. Both files will be encrypted and stored on the primary investigator's computer and on the Fluid Surveys' server. Your data will be retained for 10 years, after which point it will be securely wiped from the server and the primary investigator's computer.

Participation and Withdrawal
Your participation in this study is completely voluntary. If you decide to participate, you may withdraw from the study at any time. Withdrawing from the study after having agreed to participate does not result in any penalties (i.e., negative bonus points), nor do you forfeit your course credit. Moreover, a decision not to participate will not affect your academic standing or your relationship with the university. You do not have to answer any questions that you are not comfortable answering, and can request to have your data removed from this study.

Feedback of the Results of this Study to the Participants
Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.
Web address: www.uwindsor.ca/reb
Date when results are available: October 2014

Subsequent Use of Data
These data from this study may be used in subsequent studies, publications and presentations.

Rights of Research Participants
If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e mail: ethics@uwindsor.ca

I have read the above and understand the information provided for the study 'Birth Order and Self-esteem among Women' as described herein.

By clicking **'yes'**, I AGREE to participate in this study. I will print a copy of this consent form for my own reference.

By clicking **'no'**, I am indicating that I DO NOT agree to participate in this study.

- ○ Yes
- ○ No

If you selected yes (i.e., you agree to participate in this study), please type your name in the box below in place of a signature.

Please enter today's date.

YYYY/MM/DD

Next

Appendix E. Lab Consent Form

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Employment, Depression, and Opinions of self

You are asked to participate in a research study conducted by Felicia Chang, supervised by Dr. Josée Jarry, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Master's thesis.

If you have any questions or concerns about the research, please feel to contact the primary investigator, Felicia Chang at chang19@uwindsor.ca, or the faculty supervisor, Dr. Josée Jarry at (519) 253-3000, extension 2237.

Purpose of the Study

The purpose of this study is to better understand depression, opinions of self, and eating behaviours based on employment.

Procedures

By signing this consent form you are indicating that you would like to participate in this study. Once you have signed this consent form you will be asked to complete several questionnaires. Upon completion of the questionnaires you may be asked to engage in a group conversation with other participants in this study. The entire session will last approximately 60 minutes.

Potential Risks and Discomforts

During the course of your participation in this study, you may be asked to answer questions that are personal or make you feel uncomfortable. You may also feel uncomfortable about your interactions with the other participants in this study. If you do experience discomfort, you are welcome to contact the primary investigator, Felicia Chang, to address your concerns. Alternatively, if you have any concerns you wish to discuss with an independent party, please feel free to contact the Student Counselling Centre at 519-253-3000 Ext. 4616.

Potential Benefits to Participants and/or To Society

Your participation in this study provides you the opportunity to learn about and contribute to psychological research. Additionally, the information provided by individuals who participate in this study may increase society's knowledge of depression, opinions of self, and eating behaviours based on employment.

Compensation For Participation

You will receive credit proportional to your participation in this study. If you choose to participate in this study, you will receive 1 bonus point for up to 60 minutes of participation towards a psychology course of your choice, as long as the course instructor is providing an

opportunity to earn bonus points. If you do not wish to participate in this study, or decide to withdraw early in the study, you will receive 0.5 credits to compensate you for the time taken to come to the study. However, you may still earn the full bonus point by reading through the questionnaires (without responding to them) and being debriefed so that you have the opportunity experience being part of a psychological study.

Confidentiality

Any information that is obtained as part of this study that can be identified with you will remain confidential within the lab space and will be disclosed outside of the lab only with your permission. Your data will be retained on the primary investigator's computer and the data from the questionnaires completed on the computer will be kept on the Fluid Surveys' server for 10 years. After this, the data will be destroyed.

Participation and Withdrawal

Your participation in this study is completely voluntary. Given that you are receiving this consent form in a group setting, it is possible that you may feel uncomfortable indicating that you do not want to participate in this study in front of the other participants. If this is the case, you can sign the consent form and agree to participate in this study and then let the researcher know that you would like to withdraw from the study once you are in your individual room. Similarly, even if you do sign the consent form with the intent to participate in this study, you may withdraw at any time during the study. If you withdraw, any data you provide until that point then will be discarded. Deciding not to participate in this study or withdrawing from this study before it is complete will not result in any penalty (i.e., receiving negative bonus points). Additionally, a decision not to participate or to withdraw will not affect your academic standing or your relationship with the university. As mentioned previously, in either case, you will receive 0.5 bonus points to acknowledge the time it took you to come into the lab. If you would like to earn your full bonus point, but do not feel comfortable providing data you may read through the questionnaires without having to respond, and be debriefed so that you will have still gained the experience of taking part in a psychological study. Please note that should you decide to participate in this study, you do not have to answer any questions that you are not comfortable answering, and can request to have your data removed from this study. The investigator can also remove your data from this study if circumstances arise which warrant doing so (e.g. incomplete questionnaires).

Feedback of the Results of this Study to the Participants

Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb

Date when results are available: October 2014

Subsequent Use of Data

These data from this study may be used in subsequent studies, publications and presentations.

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If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

Signature of Research Participant/Legal Representative

I understand the information provided for the study, **'**Employment, Depression, and Opinions of Self' as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this consent form for my own reference.

_____

Name of Participant

_____ _____

Signature of Participant Date

Signature of Investigator

In my judgement, the participant is voluntarily and knowingly giving informed consent to participate in this research study. These are the terms under which I will conduct research.

_____ _____

Signature of Investigator Date

Appendix F. Revised Manipulation Check

Please answer the following questions using a number from 1 (*not at all true*) to 5 (*true*).

1. I signed a consent form.

   _____

2. There will be a group discussion once everyone has completed their questionnaires.

   _____

3. There will be a group discussion where everyone's responses to the questionnaires we just completed will be discussed.

   _____

4. If there is a group discussion, my responses to the questionnaires we just completed will not be mentioned in the group discussion unless I mention them.

   _____

5. My responses to the questionnaires will be shared with the other participants.

   _____

6. I am concerned about what the other participants might think of my responses to the questionnaires.

   _____

7. I am concerned about what the experimenter might think of my responses to the questionnaires.

   _____

8. **Do you know any of the other participants in this study from elsewhere?** □ Yes □ No

If you responded 'yes', what is your relation to this person (e.g., friend, roommate, cousin)?

_____

VITA AUCTORIS

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