INDIAN INSTITUTE OF TECHNOLOGY, GUWAHATI

Social and emotional factors influencing and maintaining social anxiety and comorbid disordered eating behavior and symptoms

The thesis submitted to the Indian Institute of Technology Guwahati in partial fulfillment for the Degree of Philosophy

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Declaration

I, Koninika Mukherjee, hereby declare that the work explained in the thesis entitled "Social and Emotional Factors Maintaining Social Anxiety and Comorbid Disordered Eating Symptoms" has been carried out by me under the supervision of Dr. Dilwar Hussain, Associate Professor (Psychology), Department of Humanities and Social Sciences, Indian Institute of Technology, Guwahati (IITG). Abiding by the formal practice of reporting observations, due acknowledgments have been made for the citations of other investigations and the sources of secondary data. This work has not been submitted elsewhere for the award of any degree or diploma.

Guwahati

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Certificate

This is to certify that the work contained in the thesis entitled "Social and Emotional Factors Maintaining Social Anxiety and Comorbid Disordered Eating Symptoms" by Koninika Mukherjee (Roll No. 146141002), a student of the Department of Humanities and Social Sciences, Indian Institute of Technology, Guwahati (IITG), for the award of the degree of Doctor of Philosophy was carried out under my supervision. The results embodied in the thesis have not been submitted to any other institute or university for the award of any degree or diploma.

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List of abbreviations

AN = Anorexia Nervosa

AN-BP = Anorexia Nervosa Binge/Purge type

AN-R = Anorexia Nervosa Restrictive type

BDI = Beck's Depression Inventory

BDD = Body Dysmorphic Disorder

BED = Binge Eating Disorder

BES = Body Esteem Satisfaction

BFNE = Breif Fear of Negative Evaluation

BID = Body Image Dissatisfaction

BMI = Body Mass Index

BN = Bulimia Nervosa

BN-NP = Bulimia Nervosa Non-Purging type

BN-P = Bulimia Nervosa Purging type

CI = Confidence Interval

DERS = Difficulties in Emotion Regulation Scale

DSM = Diagnostic and Statistical Manual of Mental Disorders

EAT = Eating Attitudes Test

ED = Eating Disorder

EDNOS = Eating Disorder Not Otherwise Specified

ER = Emotion Regulation

FNE = Fear of Negative Evaluation

FPE = Fear of Positive Evaluation

ICD-11 = International Classification of Diseases 11th Revision

PANAS = Positive and Negative Affect Schedule

SA = Social Anxiety

SAAS = Social Appearance Anxiety Scale

SAD = Social Anxiety Disorder

SIAS = Social Interaction Anxiety System

SEM = Structural Equation Model

SPA = Social Physique Anxiety

Abstract

The central theme of this thesis is social anxiety among young adults. The thesis investigated the risk factors for social anxiety as well as its effects, particularly with regards to emotions and affect. 411 Indian undergraduate students participated in this study. Broadly, this thesis consists of two studies. The first study attempted to evaluate the role of both shared and unique risk factors for social anxiety and disordered eating symptoms. Some factors investigated are social influence (parental influence, peer victimization), fear of negative evaluation, social appearance anxiety, and body esteem satisfaction. This study also explored the potential mediators between social influence and outcome variables (social anxiety and disordered eating symptoms). Difficulties in emotion regulation, body esteem satisfaction and social evaluative fears (fear of negative evaluation and social appearance anxiety) were identified as potential mediators. The results revealed significant associations of mother's care, relational peer victimization, fear of negative evaluation, social appearance anxiety, disordered eating, satisfaction with others' evaluations about one's body and appearance with social anxiety after controlling for gender, age, place, and depression. Disordered eating behavior was significantly associated with online victimization, social anxiety, fear of negative evaluation, social appearance anxiety, satisfaction with weight and appearance, over and above gender, age, place, and depression. So, social anxiety and disordered eating seem to have some common predictors, namely, fear of negative evaluation, social appearance anxiety, and satisfaction with appearance. When trying to identify shared vulnerabilities within these symptoms in the same path model, fear of negative evaluation and social appearance anxiety appeared to be significant. Mother's care seems to influence the comorbidity through non-acceptance of emotions, satisfaction with appearance, fear of negative evaluation, and social appearance anxiety. Father's care has an impact on social anxiety and disordered eating comorbidity through satisfaction with appearance only. Father's granting of behavioral freedom exerts its influence on this comorbid relationship through fear of negative evaluation. Denial of psychological autonomy appears to do so through non-acceptance of emotional responses. The present study reported that relational victimization influenced social anxiety and comorbid disordered eating behavior through satisfaction with appearance, fear of negative evaluation, and social appearance anxiety. Online victimization was found to exert its influence through a lack of emotional awareness, satisfaction with appearance, and social appearance anxiety. The second study is a longitudinal study aimed to

understand whether difficulties in emotion regulation have a longitudinal impact on social anxiety and difficulties in emotion regulation act as moderators in the relationship between social anxiety and longitudinal change in affect. The result revealed that non-acceptance of emotional responses and difficulties engaging in goal-directed behavior was significantly associated with social anxiety longitudinally. Moreover, high depression in tandem with difficulties engaging in goal-directed behavior significantly impacts changes in positive affect.

Synopsis

Introduction

Though fear of social situations among people had been recorded before (Marks, 1985), the term *social phobia* was first used as a clinically diagnosable disorder in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association, 1980). The latest edition of the DSM (DSM-5; American Psychiatric Association, 2013) characterizes Social Anxiety Disorder (SAD) or social phobia by an extreme but unfounded fear of public humiliation (American Psychiatric Association, 2013). It has been recognized as one of the most prevalent types of psychopathologies among the youth (Burstein, Ameli-Grillon, & Merikangas, 2011; Merikangas et al., 2010). Several comorbid disorders are associated with the onset of SAD (Wu et al., 2016).

Social anxiety is usually followed or accompanied by *eating disorders* (ED; Becker, DeViva, & Zayfert, 2004; Godart et al., 2003). Eating-related behavior resulting in detrimental effects on physical health and psychosocial functioning are usually defined as Feeding and Eating Disorders (American Psychiatric Association, 2013). The onset of SAD is usually followed by eating disorders which might imply that social anxiety confers risk for the subsequent development of EDs (Swinbourne et al. 2012). On the other hand, some researchers like Levinson et al. (2013) focussed on the role of shared vulnerabilities to better understand the comorbidity between social anxiety and EDs. Hence, the present study attempts to evaluate the impact of shared risk factors on social anxiety and disordered eating symptoms and behavior; the shared risk factors being:

1. **Social Influence:** When one person's outcome depends on another's state or exposure, such an effect is known as social influence (Yuan et al., 2013). The present study will consider parental bonding and peer victimization as part of social influence.
2. **Fear of Negative Evaluation (FNE):** It can be defined as excessive worry regarding evaluations, the expectation of being negatively evaluated, and subsequent distress over these evaluations (Kizilcik et al., 2015).
3. **Social Appearance Anxiety:** This involves paying very close attention and attaching excessive importance to how others view one's body (Ko, 2010).

4. **Body Esteem Satisfaction**: Body esteem involves self-appraisal of one's physical appearance (Mendelson, White, & Mendelson, 2001).
5. **Emotion Regulation:** Careful observation, evaluation, and alteration of emotional reactions by changing their strength, valence, and/or duration, is referred to as Emotion regulation (ER; Gross & John, 2003).

Research Questions and Hypotheses

Two quantitative studies were conducted as part of this thesis. The details of the studies and the related research questions, and the corresponding hypotheses are described in this paragraph.

Study 1: The first study is a cross-sectional study planned to deal with the following research questions and hypotheses:

1. *Do gender differences exist in social anxiety and disordered eating behavior?*

   Hypothesis 1.1: Female participants would exhibit more social anxiety than male participants.

   Hypothesis 1.2: *Female participants would exhibit more disordered eating behavior and symptoms than male participants.*
2. *What is the relationship between social anxiety and disordered eating behavior?*

   Hypothesis 2: *Social anxiety and disordered eating behavior and symptoms would be correlated and have a reciprocal relationship, with both having predictive powers over the other.*
3. *What are the predictors of social anxiety and disordered eating behavior?*

   Hypothesis 3.1: *Parental care and granting of behavioral freedom would be negatively related to social anxiety, while denial of psychological autonomy would be positively related to the same.*

   Hypothesis 3.2: *Parental care and granting of behavioral autonomy would be negatively related to disordered eating behavior and symptoms, while denial of psychological autonomy would be positively related to the same.*

   Hypothesis 3.3: *Peer victimization would be positively related to social anxiety.*

   Hypothesis 3.4: *Peer victimization would be positively related to disordered eating behavior and symptoms.*

Hypothesis 3.5: *Fear of negative evaluation and social appearance anxiety would be positively related to social anxiety.*

Hypothesis 3.6: *Fear of negative evaluation and social appearance anxiety would be positively related to disordered eating behavior and symptoms.*

Hypothesis 3.7: *Body esteem satisfaction would be negatively related to social anxiety.*

Hypothesis 3.8: *Body Esteem Satisfaction would be negatively related to disordered eating behavior and symptoms.*

4. *Are there shared underlying psychological vulnerabilities that contribute to social anxiety as well as disordered eating behavior and symptoms?*

   Hypothesis 4: *Parental Bonding, peer victimization, fear of negative evaluation, social appearance anxiety, and body esteem satisfaction are specific and shared underlying psychological vulnerabilities that contribute to the comorbidity between social anxiety and disordered eating behavior and symptoms.*

5. *Is the relationship of social influence with social anxiety and disordered eating behavior mediated by the following:*

   a. Emotion Regulation Strategies (Lack of emotional awareness, non-acceptance of emotions, and difficulties engaging in goal-directed behavior)

Hypothesis 5.1.1: *Difficulties in emotion regulation would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating.*

Hypothesis 5.1.2: *Difficulties in emotion regulation would mediate the relationship of reputational, relational, and online peer victimization with social anxiety and comorbid disordered eating.*

   b. Body Esteem Satisfaction (Satisfaction with attributions, weight, and appearance)

Hypothesis 5.2.1: *Body esteem satisfaction would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating behavior.*

Hypothesis 5.2.2: *Body esteem satisfaction would mediate the relationship of peer victimization with social anxiety and comorbid disordered eating.*

   c. Fear of Negative Evaluation and Social Appearance Anxiety

Hypothesis 5.3.1: *Fear of negative evaluation and social appearance anxiety would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating.*

Hypothesis 5.3.2: *Fear of negative evaluation and social appearance anxiety would mediate the relationship of peer victimization with social anxiety and comorbid disordered eating.*

Study 2: A longitudinal study was planned to investigate the following research questions and hypotheses:

1. Do difficulties in emotion regulation have a longitudinal impact on social anxiety?

Hypothesis 1: *Difficulties in emotion regulation would have a significant positive impact on social anxiety longitudinally.*

2. Do a lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and change in affect?

Hypothesis 2. *Lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and change in affect after four months?*

Results & Discussion

First Study

Data was collected from the 411 Indian undergraduate students to explore the research questions and hypotheses of study 1. In this subsection, the gender differences are first discussed, followed by the results of the hierarchical linear regressions. Then the shared vulnerability model is analyzed. This sub-section will draw to a close with a discussion about the mediational models.

Analyses of Group Differences

Independent sample t-tests were run for social anxiety and disordered eating behavior and symptoms. Gender differences were significant for social anxiety with females (M = 38.78, SD = 16.64) showing a significantly higher mean than males (M = 28.80, SD = 9.99); t (409) = -4.762, p < .01. Hence, *Hypothesis1.1,* which stated that *female participants would report higher levels of social interaction anxiety than male participants,* was accepted. This finding is in accordance with previous epidemiological studies (Asher, Asnaani, & Aderka, 2017; Ohayon & Schatzberg, 2010). These results have been replicated with Indian samples as well (Chhabra et al., 2009; Ganapathi et al., 2016; Ratnani et al., 2017). Caballo et al. (2014) attributed these differences to the fact that

in some cultures, women might be expected to be passive in their interactions with the opposite gender. As a result, they might express higher anxiety when asked about their social interactions, especially with strangers (Caballo et al., 2014). Social stigma regarding the expression of fear in men may also lead to an under-reporting of social anxiety (Xu et al., 2012).

Though gender differences in disordered eating behavior and symptoms did not seem to be significant t (409) = -1.091, p = .276; females (M = 4.74, SD = 5.00) seemed to report more disordered eating behavior than males (M = 4.17, SD = 4.42). Though many previous studies reported higher disordered eating among women (Gupta et al., 2017; Swanson et al., 2011; Thapa & Thapa, 2015), Vijayalakshmi et al. (2017) found more disordered eating attitudes and behaviour among young men. Though both genders report feelings of dissatisfaction with their bodies, in women, it is predominantly thinness-oriented, while men mostly report being dissatisfied with muscularity (Karazsia, Murnen & Tylka, 2017). So, it can be concluded that men and women appear to be quite similar in employing disordered eating behaviour (Brown et al., 2016), and gender differences probably exist in the motive behind engaging in such behaviour (Latzer, Azaiza & Tzischinsky, 2012).

Social Anxiety & Disordered Eating

Hierarchical regression analyses revealed that social anxiety had a substantial impact on disordered eating (R^2 = .115; β =.135, $p < .01$) and vice versa (R^2 = .199; β =.120, $p < .01$), irrespective of gender, age, native place (urban/rural), and depression. Thus, hypothesis 2 was accepted. These findings are an essential addition to a long line of similar findings in clinical as well as community samples (Levinson & Rodebaugh, 2012; Menatti, DeBoer, Weeks, & Heimberg, 2015; Spettigue et al., 2019; Wonderlich-Tierney & Vander Wal, 2010). Arlt et al. (2016) suggested that cognitive inflexibility is a common link between social anxiety and EDs. Disordered eating symptoms among socially anxious people have also been proposed to be a manifestation of negative beliefs about the self and high responsiveness to stress (Ciarma & Mathew, 2017). Fear of judgment for being unable to attain their perfectionistic physical ideals can also lead socially anxious people to engage in disordered eating behaviors (Silgado et al., 2010).

Risk and protective factors of Social Anxiety & Disordered Eating

Separate regression models were run with all the hypothesized predictors entered as independent variables and social interaction anxiety and disordered eating as the dependent variables, with gender, age, and native place held constant. Since depression is a common comorbid disorder in social anxiety (Bella & Omigbodun, 2009; Mehtalia & Vankar, 2004; Ratnani et al., 2017) as well as an eating disorder (Pike & Striegel-Moore, 1997), depression was also held constant. Mother's care (R^2 = .219; β = -.160, p < .001) significantly negatively predicted social anxiety. However, social anxiety did not show significant relationships with any of the other parental bonding dimensions. Thus, hypothesis 3.1, which stated that *parental care and granting of behavioral freedom would be negatively related to social anxiety, while denial of psychological autonomy would be positively related to the same,* was only partially supported as social anxiety. Relational peer victimization (R^2 = .258; β = .255, p < .001) was significantly positively associated with social anxiety, which provides support for *hypothesis 3.3, which stated that peer victimization is positively related to social anxiety*. Hypothesis 3.5 was accepted as fear of negative evaluation (R^2 = .371; β = .480, p < .001) and social appearance anxiety (R^2 = .314; β = .416, p < .001) both exhibited positive associations with social anxiety. Satisfaction with other's evaluations about one's attributes (R^2 = .239; β = -.117, p < .001) and appearance (R^2 = .239; β = -.164, p < .01) were significantly negatively related to social anxiety. So, *hypothesis 3.7, which stated that body esteem satisfaction would be negatively associated with social anxiety*, was partially accepted.

None of the parental bonding dimensions seemed to predict disordered eating behavior, leading to the rejection of *hypothesis 3.2, which stated that parental care and granting behavioral freedom would be negatively associated with disordered eating, and denial of psychological autonomy would be positively associated with the same*. Online peer victimization (R^2 = .074; β = .157, p < .01) was positively related to disordered eating behavior. However, none of the other types of peer victimization exhibited significant associations with disordered eating and behavior. Thus, hypothesis 3.4, which stated that *peer victimization would be positively associated with disordered eating behavior and symptoms*. Social appearance anxiety (R^2 = .191; β = .291, p < .001) and fear of negative evaluation (R^2 = .142; β = .230, p < .001) significantly predicted disordered eating. This provided support for hypothesis 3.6, which stated that fear of negative evaluation and social appearance anxiety would be positively associated with disordered eating behavior and symptoms. *Thus, hypothesis 3.6 was accepted.* Hypothesis 3.8 was partially accepted as satisfaction with

weight (R^2 = .183; β = -.157, p < .01) and appearance (R^2 = .183; β = -.273, p < .001) was significantly negatively related to disordered eating.

Shared vulnerabilities for social anxiety and disordered eating comorbidity

The variables already identified to be shared among the two symptoms (with the help of correlation and regression) were tested in a cross-sectional shared vulnerability model for identifying shared vulnerability factors of social anxiety and disordered eating comorbidity. Fear of negative evaluation, social appearance anxiety, and satisfaction with appearance were identified as common factors. The SEM model revealed that social appearance anxiety and fear of negative evaluation were shared vulnerability factors while satisfaction with appearance was a specific vulnerability for disordered eating behavior (*CFI* = 1.000, *TLI* = 1.010, *RMSEA* = .000, *GFI* = 1.000). In line with the present findings, Dakanalis et al. (2014) reported that when women are hyperaware of how their body looks, they may experience high levels of social anxiety and body shame, which in turn leads to disordered eating behaviors. Magallares (2013) proposed that social comparisons produce internalization of socio-cultural attitudes, which generates an intense fear of being negatively evaluated by others generally, as well as based on one's physical appearance leading to the development of ED and similar problems. The present findings lend support to Arlt et al. 's (2016) recent observations regarding eating disorders and social anxiety, sharing common cognitive styles and content. Both disorders seem to share anxiety and fear about social evaluations regarding eating, body image, and/or during social situations (Menatti et al., 2015). Thus, common cognitive patterns particularly pertaining to anxiety around social evaluations seem to be responsible for the high comorbidity between social anxiety and disordered eating.

Mediation Analyses

Emotion regulation strategies mediating the relationship of parental bonding with social anxiety and disordered eating

A parallel mediation analysis was conducted with the three emotion regulation strategies as mediators, social anxiety, and disordered eating as dependent variables and the eight parental bonding dimensions as independent variables. This was done to test hypothesis 5.1.1, which states that *difficulties in emotion regulation mediate the relationship of parental bonding with social*

anxiety and comorbid disordered eating. Non-acceptance of emotions had a positive relationship with both social anxiety and disordered eating. The mother's care and father's granting of behavioral freedom influenced social anxiety and disordered eating through non-acceptance of emotions (*CFI* = .980, *TLI* = .906, *RMSEA* = .059, *GFI* = .995). The results seem to imply that rigid and continuous use of emotional deactivation, developed initially as an immediate way of dealing with non-responsive attachment figures, leads to disordered eating attitudes and depressive symptoms (Tasca et al., 2009). Maternal care influences a person's ability to self-identify and describe feelings, which in turn seems to be associated with disordered eating (De Panfilis et al., 2003). Similarly, parental emotional rejection results in children employing maladaptive emotion regulation strategies, which hurt their capacity to be intimate with other human beings (Roth & Assor, 2012), ultimately manifesting in the form of social anxiety.

Emotion regulation strategies mediating the relationship of peer victimization with social anxiety and disordered eating

A parallel mediation analysis was conducted to test Hypothesis 5.1.2, which states that *difficulty in emotion regulation mediates the relationship of peer victimization with social anxiety and comorbid disordered eating*. Five types of victimization were used as independent variables, while lack of emotional awareness, non-acceptance, and difficulties in goal-directed behaviour was used as the mediators. Results indicate that the lack of emotional awareness significantly mediates the relationship between online victimization and social anxiety and disordered eating (*CFI* = 1.000, *TLI* = 1.002, *RMSEA* = .000, *GFI* = .999). Online peer victimization significantly positively impacts a lack of emotional awareness such that being bullied can lead to a decrease in awareness, which leads to increases in social anxiety and comorbid disordered eating. The experience of victimization often leads to intense negative emotions (Low, 2015), inciting one to respond to the situation in a maladaptive and inappropriate manner (Hamilton et al., 2016). This might result in further negative peer interactions. Thus, a vicious cycle of peer victimization and maladaptive emotional and behavioral responses is initiated.

Body esteem satisfaction linking parental bonding with social anxiety and disordered eating behavior

Hypothesis 5.2.1 stated that *body esteem satisfaction mediates the relationship of parental bonding with social anxiety and comorbid disordered eating behavior.* A mediation model was run with parental bonding as the independent variable, social anxiety and disordered eating as dependent variables, and the three dimensions of body esteem satisfaction (satisfaction with other's evaluations about one's body, weight, and appearance) as parallel mediators to test this hypothesis. As expected, satisfaction with appearance was negatively associated with social anxiety and disordered eating, while parental care was significantly positively related to satisfaction with appearance. In simple words, parental care positively impacts satisfaction with one's appearance, which may help decrease social anxiety and comorbid disordered eating (*CFI* = 1.039, *TLI* = .999, *RMSEA* = .000, *GFI* = 1.000). Parent's opinions seem to be highly significant in the development of a child's self-image (Cheng & Mallinckrodt, 2009). So, emotionally unresponsive parents can lead to the internalization of a negative self-image (Cheng & Mallinckrodt, 2009). Such people may also grow up to have problems with affect regulation and a high need for approval, making them vulnerable to socio-cultural influences like the media, which can affect their body image (Grenon et al., 2016).

Body esteem satisfaction linking peer victimization with social anxiety and disordered eating behavior

A mediation model was run with different types of peer victimizations as the independent variables, social anxiety, and comorbid disordered eating as dependent variables, and the three dimensions of body esteem satisfaction as parallel mediators to test hypothesis 5.2.2, which stated that *body esteem satisfaction mediates the relationship of peer victimization with social anxiety and comorbid disordered eating*. Thus, relational and online peer victimization negatively impacts satisfaction with one's appearance, which may lead to increases in social anxiety and comorbid disordered eating (*CFI* = .996, *TLI* = .981, *RMSEA* = .032, *GFI* = .997). Self-criticism and body image shame might be the underlying mechanisms linking bullying and disordered eating (Duarte, Pinto-Gouveia, & Rodrigues, 2015). Duarte et al. (2017) suggested that once established, these associations appear relatively stable and hence, helps in the maintenance of disordered eating. Its

effect on social anxiety may also follow a similar route, given the importance of body esteem in social anxiety, especially satisfaction with appearance.

Fear of negative evaluation and social appearance anxiety linking parental bonding with social anxiety and disordered eating behavior

Mother's care and father's granting of behavioral freedom significantly impact social anxiety and comorbid disordered eating behaviour via fear of negative evaluation and social appearance anxiety (*CFI* = 1.000, *TLI* = .999, *RMSEA* = .009, *GFI* = .995). Mother's care significantly negatively impacts the fear of negative evaluation and social appearance anxiety, which in turn is positively related to social anxiety and comorbid disordered eating. However, the father's denial of psychological autonomy appears to influence social anxiety and comorbid disordered eating only through fear of negative evaluation. Thus, hypothesis 5.3.1, which stated that *fear of negative evaluation and social appearance anxiety mediate the relationship of parental bonding with social anxiety and comorbid disordered eating,* is partially supported. The early parent-child relationship can shape negative self-schemas, which can lead to the development and maintenance of disordered eating and related behaviors (Cooper & Young, 2016). Thus, negative beliefs about the self, including how others perceive us or evaluate our appearance, can influence the relationship of parental bonding during the early years with social anxiety and disordered eating behavior.

Fear of negative evaluation and social appearance anxiety linking peer victimization with social anxiety and disordered eating behavior

Mediation analysis was conducted with fear of negative evaluation and social appearance anxiety as mediators to investigate hypothesis 5.3.2. Only relational and online peer victimization significantly affected social anxiety and disordered eating comorbidity, while overt, reputational, and pro-social peer victimization did not (*CFI* = 1.000, *TLI* = 1.020, *RMSEA* = .053, *GFI* = 1.000). Relational peer victimization impacted social anxiety and comorbid disordered eating indirectly through fear of negative evaluation and social appearance anxiety. All the variables are positively related to each other. Online victimization is only significantly positively related to social appearance anxiety but had no significant effect on fear of negative evaluation. Experiences of victimization is usually aversive and humiliating (Reijntjes et al., 2010). Reijntjes et al. (2010) noted that such humiliating experiences might reinforce negative self-beliefs and anxiety about

social situations. According to Slee (1994), the constant threat of peer victimization can establish an environment where peer approval is vital for the success of one's social relationships. Such an over-concern with peer evaluations may ultimately lead to anxiety (Slee, 1994) and comorbid mental health issues like disordered eating.

Second Study

The second study explored the probable consequences of social anxiety. Specifically, this study investigated the longitudinal effects of three emotion regulation strategies, namely, lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior on social anxiety. The interactions between social anxiety and emotion regulation strategies on changes in affect were also examined. All participants who took part in the first study were contacted for the second study. Data was collected from 339 participants out of the 411 who had participated in the first study. The following section discusses the results of the research questions of study 2.

Results of the study 2 indicates that at T1, lack of emotional awareness (R^2 = .225; β = .109, p < .01) and non-acceptance of emotions (R^2= .225; β = .174, p < .001) were significantly positively related to social anxiety while problems with goal-directed behavior was not. However, non-acceptance of emotional responses (R^2 = .074; β = .163, p < .01) and difficulties engaging in goal-directed behavior (R^2 = .074; β = .130, p < .05) had a significant impact on T2 social anxiety after accounting for gender, age, and native place. However, it must be pointed out that since self-report measures were used in the present study, it is not clear whether participants actually had problems with goal-directed behavior or merely believed so. Maladaptive beliefs regarding social skills and public performances held by SAD patients lead to heightened emotional reactivity and emotion dysregulation (De Castella et al., 2014). Plausibly, socially anxious participants in this study held maladaptive beliefs regarding their performance and ability to pursue goals. Such faulty beliefs might have resulted in further emotional dysregulation, which added to existing social anxiety.

Only the model designed to test the moderation effect of difficulties engaging in goal-directed behavior was found to be significant F (8, 330) = 12.0415, p < .001, R^2 = .2260. The moderation analysis portrays those difficulties engaging in goal-directed behavior and depression interact to moderate the effect of social anxiety on positive affect. These results imply that the presence of both social anxiety and difficulties engaging in goal-directed behavior causes decreases in positive

affect (b = -0.0028, 95% CI [-0.0048, 0.0008], t = -2.7075, p <.05). However, on their own, they do not seem to exert any significant influence on changes in positive affect over four months. Only when initial levels of depression are high, the presence of moderate to severe difficulties engaging in goal-directed behavior can significantly impact the relationship between social anxiety and positive affect with the overall effect of a decrease in positive affect. One of the hallmarks of social anxiety is the belief that social rejection is inevitable. In an attempt to avoid social rejection, socially anxious people tend to avoid social interactions, suppress thoughts, and conceal actual or perceived signs of anxious arousal (Clark & Wells, 1995). This leads to depletion of emotional and physical resources leaving insufficient resources to complete the task at hand (Weisman et al., 2015). By doing so, social anxiety seems to stop people from achieving their desired goals and behaviors and, therefore, can affect emotions and life experiences.

Chapter-1

Introduction

1.1 Social Anxiety

Anxiety about social interactions is pervasive among people, and in some cases, may even be adaptive. Such social anxiety appears to exist on a spectrum with the lack of social fear on one end and functionally impairing, clinically diagnosable social phobia or social anxiety disorder (SAD) on the other (Di Blasi et al., 2015). The defining feature of SAD is an irrational but extreme fear of humiliation in social or performance situations (American Psychiatric Association, 2000). It has been recognized as one of the most prevalent types of psychopathologies among the youth (Burstein, Ameli-Grillon, & Merikangas, 2011; Merikangas et al., 2010). Increasing social understanding may be partially responsible for the onset of SAD among adolescents (Weems & Costa, 2005). According to Weems and Costa (2005), emerging social comprehension during this phase can lead to concerns over being evaluated which encourages the avoidance of social situations. Such avoidance tendencies limit adolescents' opportunities for developing and maintaining social relationships and thus acquiring adequate social skills (Miers et al., 2014). Common risk indicators for this disorder include parenting styles (Schimmenti & Bifulco, 2015), coping style (Lewis et al., 2012), and depression (Kessler et al., 1994). Recent research on social phobia points to the fact that this disorder is highly prevalent among young adults (Burstein, Ameli-Grillon, & Merikangas, 2011; Merikangas et al., 2010). As such, scholars have expressed the need for more research to determine the variance contributed by implicated factors and the interplay between them (McGinn & Newman, 2013) to identify the risk and protective factors more clearly.

1.1.1. Social Anxiety and Disordered Eating Behavior

The onset of SAD is often followed or accompanied by other mental health disorders like depression, insomnia, and substance abuse (Wu et al. 2016), with rates ranging from 70%–80% (Filho et al., 2010; Magee et al., 1996). One of the most common comorbid disorders among SAD patients is *eating disorder* (ED), with 20% of all SAD patients reporting ED symptoms (Becker,

DeViva, & Zayfert, 2004; Godart et al., 2003). Feeding and Eating Disorders have been defined as eating-related behaviors leading to changes in food consumption with detrimental effects on physical health and psychosocial functioning (American Psychiatric Association, 2013). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) provides diagnostic criteria for different types of eating disorders such as:

i. pica (continuously eating substances without any nutritive value for a month at least),
ii. rumination disorder (repeated regurgitation of food for at least one month),
iii. avoidant/restrictive food intake disorder (persistent failure to meet energy needs usually associated with weight loss and psychosocial problems),
iv. anorexia nervosa (AN; extreme fear of and trying not to gain weight, irrespective of actual weight),
v. bulimia nervosa (BN; repeatedly bingeing and engaging in maladaptive compensatory behaviors at least once a week for three months) and
vi. binge-eating disorder (BED; recurrent episodes of bingeing).

AN can either be restrictive in nature (AN-R) or involve bingeing and purging (AN-BP; Tasca et al., 2009). Social anxiety is one of the most commonly reported anxiety disorders accompanying EDs (Hudson, Hiripi, Pope, & Kessler, 2007). The frequency of bingeing also seems to have a correlation with social phobia (Koskina et al., 2011). Based on the temporal precedence of SAD, social anxiety has been proposed to be a risk factor for the onset of EDs (Swinbourne et al., 2012). On the other hand, some researchers like Levinson et al. (2013) focussed on the role of shared vulnerabilities to get a clearer understanding of the comorbidity between social anxiety and EDs. The present study aimed to take a similar approach and evaluate the role of both shared and unique risk factors for social anxiety and disordered eating symptoms. The following are some of the significant variables explored in this study-

1. **Social Influence:** When someone can influence the outcome of another person, such an effect is known as a social influence (Yuan et al., 2013). Human beings are social beings who value and want to be accepted and form bonds with others (Holsen, Jones, & Birkeland, 2012). While social support might protect against SAD, certain types of parenting styles, childhood emotional abuse, and peer victimization are identified to be vulnerability factors. This study examines three dimensions of parental bonding, namely, care (warmth), denial of psychological autonomy (intrusiveness and infantilization; Anhalt

& Morris, 2008), and granting of behavioral freedom. The types of peer victimization included in this study are:

i. *Overt Victimization:* This refers to threats or acts of physical violence perpetrated by peers (Siegel, La Greca, & Harrison, 2009).

ii. *Relational Victimization:* De Los Reyes and Prinstein (2004) defined relational victimization as trying to harm peers by using one's relationship. An example of this kind of victimization can be excluding a peer from social interactions (De Los Reyes & Prinstein, 2004).

iii. *Reputational Victimization:* This involves damaging a person's reputation by spreading rumors (De Los Reyes & Prinstein 2004). Peers are generally the aggressors in this kind of victimization (Siegel, La Greca, & Harrison, 2009).

iv. *Pro-Social Victimization:* This refers to not receiving any help or pro-social behavior from peers (De Los Reyes & Prinstein, 2004).

v. *Online Victimization:* Negative peer experiences via social networking sites is known as online or cyber victimization (Landoll et al., 2015). Social networking sites (SNS) are internet-based platforms where users can create personal profiles and view and share content generated by other users (Perloff, 2014). There are also tools, such as the "like" button, which enable people to express their judgments and opinions about their peer's content. Some common SNS are Facebook and Instagram. Despite the widespread use of the internet and social media nowadays (Dempsey et al., 2009), this is a relatively lesser researched area. Thus, the present study will include online victimization as a form of peer victimization, which may significantly impact social anxiety and comorbid disordered eating symptoms.

2. **Fear of Negative Evaluation (FNE):** It can be defined as anxiety about how others perceive us, expectations of rejection or harsh evaluations, and distress over these evaluations (Kizilcik et al., 2016). Higher education involves continuous assessments. So, students are more likely to experience social interactions where they may experience FNE (Nonterah et al., 2015).

3. **Social Appearance Anxiety:** This involves paying very close attention and attaching excessive importance to how others view one's body (Ko, 2010).

4. **Body Esteem Satisfaction**: Body esteem depends on how one assesses their body or appearance (Mendelson, Mendelson, & White, 2001). This study deals with satisfaction with three distinct aspects of one's body esteem, namely satisfaction with one's appearance, satisfaction with weight, and evaluations attributed to others about one's body and appearance.
5. **Emotion Regulation**: The process of monitoring, evaluating, and modifying emotional reactions is referred to as Emotion regulation (ER; Gross & John, 2003). Common examples of adaptive ER strategies are acceptance (acknowledging emotions without attempting to modify them) and cognitive reappraisal (trying to perceive the situation in a way so as to alter its emotional effect; Aldao, Nolen-Hoeksema, & Schweizer, 2010). Conversely, maladaptive ER or emotion dysregulation can be defined as a tendency to engage in counter-productive styles of managing emotional responses (Schneider et al., 2016). According to Schneider et al. (2016), using maladaptive strategies hinder the achievement of desired cognitive, emotional, and behavioral consequences. Suppression of emotional experiences and expressions, cognitive avoidance of unwanted experiences, non-acceptance of negative emotions, and rumination as some examples of emotion dysregulation (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Aldao et al. (2010) observed that maladaptive emotion regulation strategies appeared to be more relevant for psychopathology than adaptive strategies. So, the concept of emotion dysregulation has increasingly been considered as a trans-diagnostic indicator of psychological problems (Aldao et al., 2010). Moreover, these regulation strategies seem to hold particular importance for mindfulness-based approaches in SAD treatment. The meditation practice of mindfulness finds its roots in Buddhist philosophy and teaches to focus on the current moment (Maxwell & Duff, 2016). It promotes reflection and conscious response as opposed to automatic responses and includes relaxation techniques that are effective for reducing anxiety (Sharma, Mao & Sudhir, 2012). Thus, the following three mal-adaptive emotion regulation strategies or difficulties in emotion regulation were studied in the present study:
    i. *Lack of Emotional Awareness*: Being unable to attend mindfully to one's emotional experiences (Schneider et al., 2016).

ii. *Non-acceptance of Emotions:* This refers to an inability to acknowledge emotional responses without attempting to alter them in any way (Schneider et al., 2016). As Gratz and Roemer (2004) conceptualized, this mainly deals with the non-acceptance of negative emotions.

iii. *Difficulties engaging in Goal-directed Behaviour:* This is usually characterized by problems concentrating and completing necessary assignments when distressed (Gratz & Roemer, 2004).

1.2. Research Questions and Plan of Study

Two quantitative studies were conducted as part of this thesis. The details of the studies and the related research questions are described below:

Study 1: The first study is a cross-sectional study planned to deal with the following research questions:

1. *Do gender differences exist in social anxiety and disordered eating behavior?*
2. *What is the relationship between social anxiety and disordered eating behavior?*
3. *What are the predictors of social anxiety and disordered eating behavior?*
4. *Are there shared underlying psychological vulnerabilities that contribute to social anxiety as well as disordered eating behavior and symptoms?*
5. *Is the relationship of social influence with social anxiety and disordered eating behavior mediated by the following:*
    a. Difficulties in Emotion Regulation (Lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior)
    b. Body Esteem Satisfaction (Satisfaction with attributions, weight, and appearance)
    c. Fear of Negative Evaluation and Social Appearance Anxiety

Study 2: A longitudinal study was planned to investigate the following research questions:

1. *Do difficulties in emotion regulation have a longitudinal impact on social anxiety?*
2. *Do a lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and change in affect?*

1.3. The rationale of the First Study

Despite being highly prevalent among adults and the youth (Burstein, Ameli-Grillon, & Merikangas, 2011; Merikangas et al., 2010), SAD has not received the attention it deserves. Moreover, SAD may become chronic if left untreated (Ramsawh et al., 2011). Thus, this disorder needs to be studied in greater detail to help in prognosis, diagnosis, treatment, and intervention. SAD patients with comorbid conditions seem to be the most vulnerable of the lot as they might exhibit suicidal tendencies (Erwin, Heimberg, Juster, & Mindlin, 2002; Magee et al., 1996) and be less likely to opt for and engage in treatment (Buckner, Eggleston, & Schmidt, 2006; Goodwin & Fitzgibbon, 2002). So, understanding the nature of the social anxiety and disordered eating comorbidity is another vital research aim in this study.

Anxiety can either be conceptualised as a risk factor for EDs, or they may have common shared vulnerabilities (Pallister & Waller, 2008). Due to the temporal precedence of anxiety disorders (Kaye et al., 2004), social anxiety might be proposed as a causal factor of disordered eating. However, bulimia nervosa has also been shown to increase the risk of SAD (Buckner, Silgado, & Lewinsohn 2010). On the other hand, Levinson and Rodebaugh (2016) did not find either social anxiety or ED symptoms to predict each other across time. Pallister and Waller (2008) argued that a model explaining this comorbid relationship based on common shared vulnerabilities might be more plausible. This proposition is supported by current conceptions of comorbidity, which hold overlapping risk factors responsible for the high comorbidity rates between eating and anxiety disorders (Godart et al., 2003). Some researchers have also detected considerable conceptual overlap between social anxiety and disordered eating (Levinson & Rodebaugh, 2012; Swinbourne & Touyz, 2007). So, a vulnerability model with common risk factors might help explain the nature of this comorbidity (Levinson & Rodebaugh, 2012; Menatti et al., 2015). Share vulnerability factors like fears of evaluation (Levinson & Rodebaugh, 2012; Menatti et al., 2015), shame (Grabhorn et al. 2006), and expressed emotions (McLean et al. 2007) can add value to the proposed model. According to Menatti et al. (2015), simultaneously testing various risk factors to understand how they interact with each other might aid research in this area. Therefore, the present study aims to identify shared vulnerability factors that may contribute to the comorbidity between social anxiety and disordered eating.

1.4. Proposed Research Model for the First Study

Based on the rationale presented in the preceding section (refer to Section 1.3), seven theoretical models were proposed and tested. The first model was the vulnerability model designed to identify the shared vulnerability factors leading to the comorbid relationship between social anxiety and disordered eating behavior and symptoms. In this model, all the factors identified by the literature survey and supported by preliminary analyses as having significant relationships with both these disorders were tested simultaneously. The vulnerability model predominantly decided to focus on social-evaluative concerns and anxieties. The diagrammatic representation of the first model, hereafter referred to as the vulnerability model is shown in Figure 1.1. This model examines parental bonding, peer victimization, social evaluative concerns like fear of negative evaluation and social appearance anxiety, and body esteem satisfaction as shared risk factors for social anxiety and comorbid disordered eating symptoms.

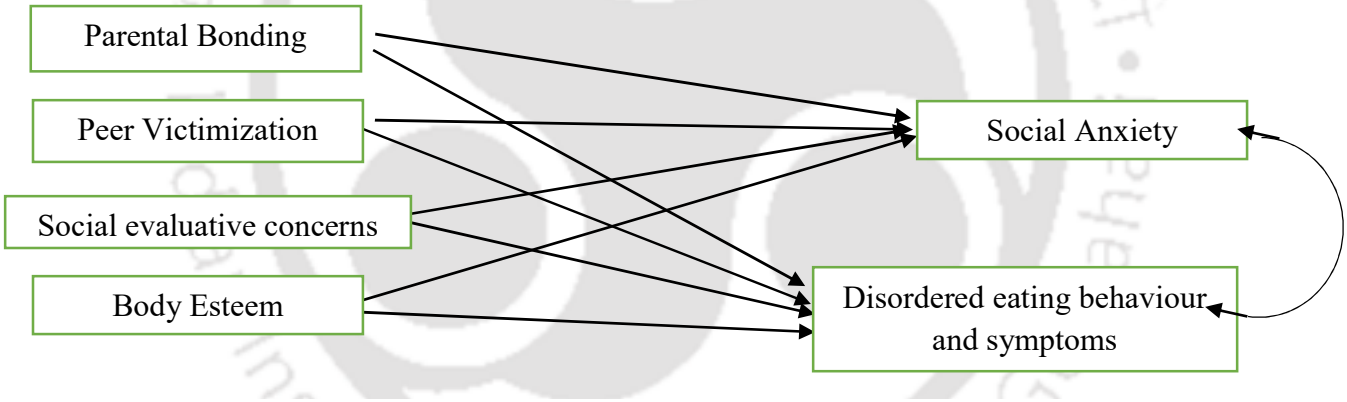

Figure 1.1. Diagrammatic Representation of the Vulnerability Model

The rest of the six models examined within the ambit of the first study were mediational in nature with body esteem satisfaction, difficulties in emotion regulation, body esteem satisfaction, fear of negative evaluation, and social appearance anxiety as mediators. These mediational models were designed to investigate the relationship between social influences like parental bonding and peer victimization, on the one hand, and social anxiety and comorbid disordered eating on the other. Separate mediational models were run for parental bonding and peer victimization in each case. Though these models were also designed to identify shared vulnerability factors, the models allowed us to examine the underlying mechanisms by which the risk or protective factors

considered in this study exerted their influence on this comorbidity. The diagrammatic representation of said mediational models is represented in Figure 1.2.

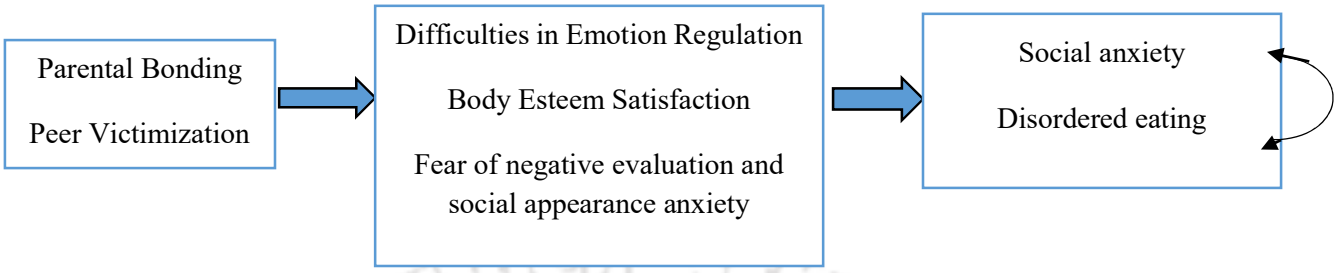

Figure 1.2. Diagrammatic representation of the Mediation Models

1.5. The rationale of the Second Study

Difficulties in emotion regulation is a defining feature of SAD (Hermann et al., 2004; Hofmann, 2007). However, research on strategies for the regulation of emotions among socially anxious people is at its infancy (Morrison & Heimberg, 2013). Moreover, the differential use of ER strategies in SAD has not been well characterized (Werner et al., 2011). Alkozei, Cooper, and Creswell (2014) have stressed the importance of investigating the emotional correlations of social anxiety as this disorder is neuro-developmental by nature, and information processing of socially anxious individuals may be biased. Notably, more longitudinal studies are required in this area to establish causal relationships (Farmer & Kashdan, 2012). Simultaneously investigating the interaction of social anxiety with multiple regulation strategies can elucidate the relationship of individual ER strategies with the disorder in the presence of other strategies (Werner et al., 2011). Given that behaviour is under the influence of several ER strategies in the real world, more than one strategy was included in the present model. Considerable thought was also put behind choosing the ER strategies to be tested in this model. This study included ER strategies such as emotional awareness, non-acceptance, and difficulties in goal-directed behaviour. These strategies were chosen primarily due to their importance in preventing and treating social anxiety, especially in mindfulness and acceptance-based therapies (Rusch, Westermann, & Lincoln, 2012). Furthermore, this study decided to investigate changes in affect as a result of the interaction between social anxiety and difficulties in emotion regulation longitudinally over a period of four months. Changes in affect was chosen as the dependent variable as more significant changes were expected to be

observed in affect than the other variables in this relatively short span of time. In this study, affect was measured with the help of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Depending on the instructions given to the respondents, it can exhibit trait-like stability (e.g., past year or general) or be sensitive to variations in affect (e.g., today or past few weeks). Thus, the research model shown in Figure 1.3 will be examined in the second study.

1.6. Proposed Research Model for the Second Study

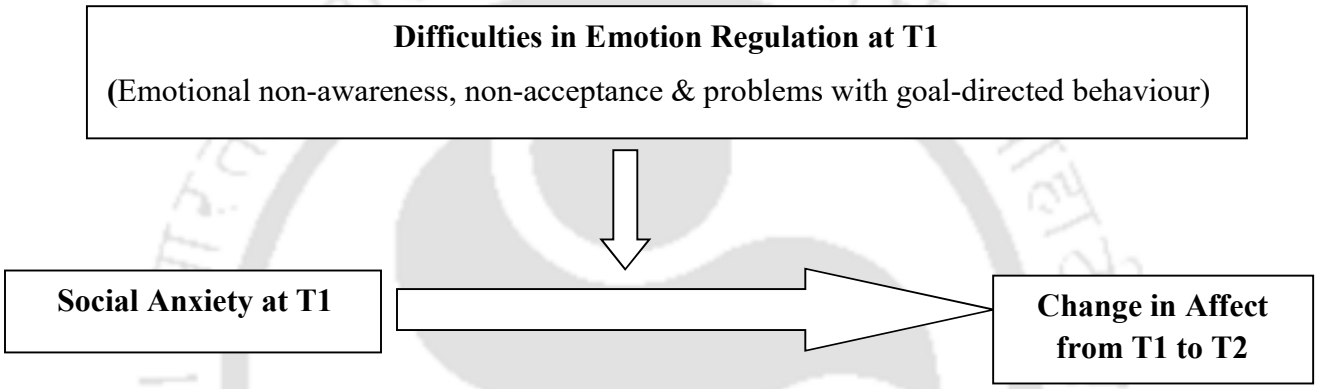

Figure 1.3. Difficulties in emotion regulation like emotional non-awareness, non-acceptance & goal-directed behavior moderates the relationship between social anxiety & affect.

The second study will investigate how different regulation strategies affect socially anxious individuals by way of change in both positive and negative affect. The difficulties in emotion regulation strategies were used as moderators. The proposed research model to be tested in the second study is shown in Figure 1.3.

1.7. The rationale for sample selection

Young adults, undergraduates to be precise, were chosen as participants for this study for several reasons. While transitioning from school to college, students experience significant changes in all aspects of their lives, and the ability to cope with these changes affects one's success in college and later life as well (Hussey & Smith, 2010). Such a significant upheaval in one's life and increasing academic pressures and the competitive environment may add to already existing social anxiety. Moreover, this is the time most people transition from having home-cooked food with their families to planning and/or making their meals themselves (Blichfeldt & Gram, 2013). As a

result, this period is crucial in shaping the eating behavior of a person. Since EDs frequently emerge during these years, testing the vulnerability model in this demographic may provide valuable insight into the comorbid relationship between social anxiety and ED (Levinson et al., 2013). Along with disordered eating behavior, body image dissatisfaction also increases during college (Juarascio et al., 2011; Costa, Vasconcelos & Peres, 2010). Thus, this age group seems to be particularly vulnerable to both the disorders under investigation, justifying the sample selection.

Chapter-2

Literature Review

This chapter summarises the present literature about all the variables and relationships that are investigated in this thesis.

2.1. Social Anxiety

Social phobia was first identified as a clinically diagnosable disorder in DSM-III (American Psychiatric Association, 1980). DSM-IV-TR (American Psychiatric Association, 2000) listed both the terms social phobia and social anxiety disorder (SAD). However, SAD seems to be the preferred label in most of the existing literature (Elizabeth et al., 2006). The major diagnostic criteria for social anxiety according to the DSM-5 (American Psychiatric Association, 2013) are:

- experiences of social fear vastly out-weighing the actual threat
- symptoms should persist for more than 6-months and
- the symptoms are not due to a substance, another psychological disorder, or a medical condition.

Social phobia has been delineated into a generalized and specific subtype (American Psychiatric Association, 2000). If a person is fearful of most social situations, he or she appears to fall into the generalized subtype while the individual experiencing fear and avoidance of only a specific situation is suffering from a particular subtype of social phobia (Elizabeth et al., 2006). Elizabeth et al. (2006) noted that the generalized subtype has an earlier age of onset, more comorbid symptoms, and more severe symptoms than the specific subtype. SAD patients mainly seem to fear social interactions, performing or being observed by others, and being assertive (Holt, Heimberg, Hope, & Liebowitz, 1992).

Clark and Wells (1995) proposed that socially phobic individuals crave to convey a favorable impression of themselves to others. Unfortunately, they believe that they run the risk of behaving inappropriately in social situations, leading to disastrous social consequences. Rapee and Heimberg (1997) also noted that socially anxious people assume to have unrealistically high expectations from them. Thus, they tend to undervalue their own performance, and expect negative

consequences, eventually triggering anxiety symptoms (Rapee & Heimberg, 1997). Socially anxious people consider the expression of such symptoms of anxiety to provoke further negative appraisal. This might be true to a certain extent. So, the person becomes preoccupied with their anxiety symptoms which significantly reduces their ability to attend to the social task at hand (Spence & Rapee, 2016). They also employ various safety behaviors to manage these symptoms. They also believe rewarding experiences to be a consequence of these safety behaviors and not due to their social skills (Clark & Wells, 1995; Rapee & Heimberg, 1997). Though safety behaviors are adopted to prevent adverse outcomes, they can help in maintaining social anxiety.

Studies in community samples reported an increase in prevalence rates from childhood through adolescence (Burstein et al., 2011; Wu et al., 2016). An increase in social understanding is accompanied by an increase in social and evaluative concerns among adolescents (Weems & Costa, 2005). However, the emergence of social anxiety during adolescence does not reflect a spike in reporting of SAD in this age group. Rukmini et al. (2014) reported that patients sought treatment only when their condition became functionally impairing. Moreover, in spite of childhood or adolescent onset of SAD, the symptoms continue to emerge until the age of 25 (Blanco et al., 2004; Faravelli et al., 2000; Grant et al., 2005).

2.1.1. Social Anxiety among Young Adults

Social anxiety disorder (SAD) is frequently reported among young adults (Leray et al., 2011; Ohayon & Schatzberg, 2010). Nowadays, it seems to be particularly prevalent among those pursuing higher studies due to the pressures generated by a competitive academic environment (Dugg & Das, 2019). Izgic et al. (2004) found a statistically insignificant but higher prevalence of social phobia in Turkish university students below the age of 25. However, Bella and Omigbodun (2009) reported that the prevalence of social phobia did not differ by age in their sample of Nigerian university students. The prevalence rates among the university students still seemed to be higher than the general population of Nigeria (Bella & Omigbodun, 2009). While Bella and Omigbodun (2009) reported lifetime and 12-month prevalence rates of 9.4% and 8.5%, respectively, the prevalence rate of social phobia in the general population was found to be 0.3% (Gureje et al., 2006). University students are more likely to encounter feared social situations like public speaking than others in the community, making them more aware of difficulties in these areas (Bella & Omigbodun, 2009). However, Tillfors and Furmark (2007) found that university

students only suffered from mild forms of the disorder. Moreover, such differences in social phobia between university students and the rest of the community were not reported in a Swedish sample (Tillfors & Furmark, 2007).

In India, 19.5% of undergraduate students reported having social phobia (Shah & Kataria, 2009). Ganapathi et al. (2016) found that in a sample of 480 Indian medical students, 22.9% had moderate, 22.5% marked, and 17.30% reported severe levels of social anxiety. In Honnekeri et al.'s (2017) study on medical students in Mumbai, India, the prevalence of generalized SAD was reported to be 7.8%, and that of specific social phobia to be 23.1%. Ratnani et al. (2017) found the frequency of SAD to be 11.37% in a sample of Indian medical students. In a recent study of 404 Indian medical students of mean age 20.7 years, the prevalence of social anxiety was found to be 5.94%, and the prevalence of social phobia was 12.62% which is quite higher than in the general population (Dugg & Das, 2019). This might be because, unlike the general population, students are under continuous academic stress, which is likely to increase the anxiety levels (Dugg & Das, 2019). Moreover, staying away from home may exacerbate one's feelings of loneliness and perceived lack of social support, which may add to already existing social anxiety. This hypothesis is supported by the finding that staying with family seems to decrease the likelihood of experiencing social anxiety (Ratnani et al., 2017). These effects are probably most severe in first-year students as they have still not adjusted to being away from their parents and into the competitive and academically demanding nature of college life. Thus, first-year students report very high levels of social anxiety (Ganapathi et al., 2016). Dugg and Das (2019) found that the language barrier had a direct relationship with social anxiety in their sample of medical students. Students probably feel less confident if they are not fluent in English which makes them feel more anxious (Dugg & Das, 2019). So, not being fluent in English may be a relevant risk factor for social anxiety among Indian students. In conclusion, social anxiety among students appears to depend on various factors such as gender, age, joining college, living arrangement (staying with/without family), academic performance, social media usage, concerns over body image, other comorbid disorders like depression, to name a few (Dugg & Das, 2019: Elhadad et al., 2017; Ganapathi et al., 2016; Honnekeri et al., 2017; Liao et al., 2010; Ratnani et al., 2017). Thus, such relevant factors must be taken into consideration while studying social anxiety in the student population.

2.1.2. Gender differences in Social Anxiety

Previous studies have reported higher prevalence rates of SAD among women (Ohayon & Schatzberg, 2010; Xu et al., 2012) and more social fears than men (Xu et al., 2012). On the other hand, Stewart and Mandrusiak (2007) found higher social anxiety among men than women. These results may also be reflective of the finding that more men than women seek treatment (Rukmini et al., 2014). However, Yonkers, Dyck, and Keller (2001) did not find any gender differences in SAD. Results with the general population also reveal inconsistent findings, with some studies reporting significantly higher scores on social anxiety for girls than for boys (Caballo et al., 2012), whereas other show significantly higher scores for boys than for girls (Cakin Memik et al., 2010), or no sex differences at all (Ranta et al., 2012). Mixed results have been reported with Indian samples as well. While some studies report more frequent social phobia among females than their male counterparts (Chhabra et al., 2009; Ganapathi et al., 2016; Ratnani et al., 2017), some failed to find any significant gender differences in the prevalence of SAD (Mehtalia & Vankar, 2004; Shah & Kataria, 2009). These conflicting findings regarding gender differences in social anxiety warrant further research.

2.1.3. Social Anxiety in India

According to Heimberg et al. (1997), the majority of social anxiety symptoms appear to be relatively independent of cultural differences. However, prevalence rates appear to vary significantly between countries, with East Asian countries reporting lower rates than other parts of the world (Okazaki, 2000; 2002; Okazaki, Liu, Longworth, & Minn, 2002). Okazaki et al. (2002) found a negative correlation between the extent of Western acculturation and self-reported social anxiety. Moreover, its meaning, experience, and symptom expression can be culturally sensitive (Fan & Chang, 2015). Culture might influence social anxiety by influencing a person's view of acceptable social behavior (Hong & Woody, 2007). For example, apart from experiencing the common symptoms, Chinese suffering from social anxiety also express concern for others (Fan & Chang, 2015). This is probably because Chinese culture being collectivistic in nature, puts a lot of emphasis on social harmony and interdependence (Triandis, 1989).

Indian culture has also traditionally been viewed as collectivistic emphasizing interdependence and group harmony (Chadda & Deb, 2013). Khambaty and Parikh (2017) hypothesized that

interdependence can contribute to SAD through fear of negative evaluations. Social anxiety in Asian cultures may also be more closely associated with shame as compared to Western societies (Zhong et al., 2008). Indian culture appears to hold the emotion of lajya or lajja (shame) in high regard, especially in women (Khambaty & Parikh, 2017). So, levels of social anxiety may be related to feelings of shame among Indians. Indian adolescents reported the avoidance of public speaking as the most common expression of SAD (Mehtalia & Vankar, 2004). Social phobia appears to be more prevalent in urban populations (10.3%; Chhabra et al., 2009) than rural adolescents (4.8%; Nair et al., 2013). Ganapathi et al. (2016) also noticed differences in social anxiety levels according to the place of residence, with students from rural backgrounds reporting higher social anxiety levels than their urban counterparts. So, social anxiety levels in India seem to vary strongly according to the place of residence, among other things. It must be noted that prevalence rates may vary widely because of overlapping symptoms with other disorders (Shah & Kataria, 2009).

2.1.4. Social Anxiety and Comorbid Disorders

When symptoms of two or more disorders often co-occur, then they are assumed to be ‘‘comorbid’’ (McClintock & Evans, 2001). SAD is believed to have comorbid relationships with several psychological disturbances like depression, insomnia, suicidal tendencies, and substance abuse (Wu et al., 2015). Common genes, prenatal issues, adverse life events, interpersonal problems, and poor self-esteem can be responsible for the association of social anxiety with other disorders (Izgic et al., 2004; Lipsitz, & Schneier, 2000). One of the most common comorbid disorders is depression. Lifetime social phobia has been reported to increase the risk of developing lifetime depression two-fold (Bella & Omigbodun, 2009). These results have been replicated in Indian samples too. Indian high school students suffering from social anxiety also reported comorbid major depression (Mehtalia & Vankar, 2004). Ratnani et al. (2017) found that social phobia increases the likelihood of experiencing depressive symptoms.

The presence of comorbid disorders can complicate diagnosis (Crome et al., 2015; Weiller et al. 1996), increase symptom severity (Kessler et al. 1994), and reduce the quality of life in social anxiety (Acarturk et al., 2008; Chartier et al., 2003). SAD is a common mental health disorder but is often under-diagnosed in the early-stage making this disorder all the more dangerous for other comorbidities (Dugg & Das, 2019). Clarifying the interrelationship of social anxiety with

commonly co-occurring disorders might help in the development of better classifications of psychological disorders. So, one of the primary aims of the present study is to investigate the relationship between social anxiety and another important comorbid disorder: disordered eating.

2.2. Social Anxiety and Disordered Eating

Feeding and Eating Disorders can be defined as changes in eating-related behaviors which might be detrimental to physical health and psychosocial functioning (American Psychiatric Association, 2013). Eating disorder (ED) is considered a subtype of internalizing behaviour and frequently appears during adolescence (McEwen & Flouri, 2009) and rarely ceases to exist (Pearson et al., 2017). EDs have very high mortality rates as well as co-morbidity (Arcelus et al., 2011; Le et al., 2018). University students have been identified as a population highly at risk of developing disordered eating (Eisenberg et al., 2011; Lattimore et al., 2017; Wilfley et al., 2013). Thus, research on disordered eating and symptoms is long warranted, especially among college students. Although EDs have been previously regarded as a Western phenomenon, Eastern societies have also started reporting an increased prevalence of EDs (Chisuwa & O'Dea, 2010; Keel & Klump, 2003; Marcos et al. 2012). The most drastic changes have been reported in countries with considerable exposure to Western values and ideals (Marcos et al. 2012) like India. Chellappa and Karunanidhi (2013) found 30% out of their sample of 200 Indian college students had abnormal eating attitudes. Similarly, Singh et al. (2016) found that nearly 31.09% of their sample of Indian adolescents had an affinity to develop an eating disorder. Jugale et al. (2014) reported a slightly higher percentage (42.7) among 20 to 25-year-old Indian females. Indian ED patients scored higher on beliefs regarding frequent overeating than their Australian counterparts and reported similar frequencies of food restriction and vomiting (Lal et al., 2015). However, only 16.9% of medical students in India reported disordered eating behavior and symptoms (Ramaiah, 2015). The different prevalence reports recorded could be explained by the use of different scales and measures. Shashank et al. (2016) found that 17.2% and 29.2% of Indian medical students reported disordered eating behavior using the Sick, Control, One stone, Fat, Food (SCOFF) questionnaire and the Eating Attitudes Test-26 (EAT-26), respectively. The media's exaltation of the "size zero" figure, social approval of the drive for thinness, body shaming, and the resulting dissatisfaction with one's body can account for the recent rise of ED cases in the country (Vaidyanathan et al., 2019). Easy access to media outlets nowadays and an upgrade in the socioeconomic status of

Indians have further accelerated the process of thin-ideal internalization and, thus, increased risk of disordered eating (Chugh & Puri, 2001; Mishra & Mukhopadhyay, 2011; Vaidyanathan et al., 2019).

Significant relationships have been observed between eating attitudes, body shape concerns, and social anxiety (Liao et al., 2010). Binge eating frequency has been associated with social anxiety in obese (Sawaoka et al., 2012) and ED samples (Koskina et al., 2011). Buckner, Silgado, and Lewinsohn (2010) found that though SAD did not increase the risk for eating disorders, bulimia nervosa was identified to be a risk factor for SAD. Social anxiety has been linked to symptoms of ED indirectly through self-esteem and depression (Mayer et al., 2009). The relationship between social anxiety and eating disorder seems to be unaffected by ED subtypes (Abbate-Daga et al., 2015; Courty et al., 2015; Grabhorn et al., 2006; Obeid et al., 2013). Social anxiety scores were found to significantly decrease across time when ED patients were assessed at intervals of 6, 12, and 18 months (Courty et al., 2015). Courty et al. (2015) noted the largest reductions at the 6-month follow-up. Another study reported significant reductions in social anxiety at the end of a day hospital treatment for ED patients and a follow-up after 12 months (Abbate-Daga et al., 2015). Thus, these two psychological ailments seem to be related. Identifying factors affecting the relationship and examining the nature of such impact will provide clarity to this relationship.

2.3. Parental Bonding, Social Anxiety, and Disordered Eating

The early caregiving environment molds children's self-image as well as their view of the world, hence influencing their psychosocial functioning throughout life (Soares & Dias, 2007). Emotionally available and responsive caregivers help in developing functional emotion regulation strategies, while unresponsive parenting may lead to the development of dysfunctional cognitive patterns (Corte´s-Garcı´a et al., 2019). One might assume that parental attitudes are of pivotal importance only during the early years of a person's life and becomes less important as a person matures and gradually becomes independent. However, young adults are passing through a unique developmental period, and parents play a critical role in this process of adaptation to emerging adulthood (Kilic, Var & Kumandas, 2015). So, we can assume that parents continue to influence the psychological health of young adults beyond the early years.

2.3.1. Parental Bonding and Social Anxiety

High levels of social anxiety are associated with cognitions related to abandonment (the belief that they will be abandoned by their significant others) and emotional inhibition (the belief that spontaneous expression of emotions will invite disapproval from others) which arise mainly due to negative parenting experiences (Hinrichsen, Sheffield & Waller, 2007a). Parenting styles have been identified as a risk factor for SAD in adolescents (Rapee & Spence, 2004). Exposure to family violence is significantly associated with the development of SAD (Benjet, Borges & Medina-Mora, 2010; Upadhyaya et al., 2016). In a Spanish study of university students, Binelli et al., reported a positive correlation of social anxiety with family violence only but not with other childhood adversities such as abuse (Binelli et al., 2012). Patients with social phobia reported high scores in parental criticism (Rukmini et al., 2014). Studies suggest that SAD is the result of negative social learning experiences in biologically vulnerable individuals (Heimberg, Brozovich & Rapee, 2010). An overprotective family environment restricts the development of autonomy and social competence by providing fewer opportunities for socialization which can ultimately lead to higher social anxiety levels. Social anxiety, in turn, impairs proper functioning in relationships, thus creating a vicious cycle. Similar results have been reported in the Indian context, with SAD being associated with a lack of intimacy with parents (Mehtalia & Vankar, 2004). Thus, perceiving less than optimal levels of parental care and warmth along with over-protection seems to make an individual more susceptible to social anxiety. Therefore, this research explored the relationships among these variables to get insights into the relationship between parental bonding and social anxiety.

2.3.2. Parental Bonding and Disordered Eating

Since family is the predominant social institution shaping young children, many risk factors for disordered eating might be rooted within the family context (Sira & Ballard, 2011). Parental encouragement to diet is associated with disordered eating in daughters (Vincent & McCabe, 2000). Positive parental comments can sometimes lead to negative outcomes by reinforcing the emphasis on appearance (Kluck, 2010; Rodgers et al., 2009). Affectionless and over-controlling parenting has been associated with anorexia (May et al., 2006). Low levels of parental care can act as a barrier to the recovery of anorexics (Bulik et al., 2000). Less maternal support and behavioral

control along with more psychological control, have been linked with found that emotional eating among adolescents (Snoek et al., 2007). Fassino et al. (2010) found that bulimics report both low maternal and paternal care. According to Biegel (2016), perceived parental rejection or avoidance might elicit negative self-beliefs like feelings of inadequacy. So, the daughter might strive to change something about themselves, like their weight to seek their parent's approval and acceptance. Thus, disordered eating can be a maladaptive attempt to seek proximity and attention from unresponsive parents (Biegel, 2016). Thus, there is strong support for the family being one of the primary sociocultural influences on ED, the other important influences being the media and peers (Marcos et al., 2012). Therefore, this research explored the possible effect of parental bonding on disordered eating symptoms.

2.4. Peer Victimization, Social Anxiety, and Disordered Eating

Peer victimization is frequent physical or verbal acts of aggression wherein there is an actual or perceived power imbalance between the perpetrator and victim (Cook-Cottone et al., 2016). Being victimized has been associated with several adverse outcomes involving internalized distress (Cook-Cottone et al., 2016; Copeland et al., 2015; Farrow and Fox, 2011; Reijntjes et al., 2010; Williford et al., 2018). Cross-sectional as well as longitudinal research demonstrates that peer victimization, in general, is associated with decreased self-esteem (Fredstrom et al., 2011; Wigderson & Lynch, 2013), academic performance (Wigderson & Lynch, 2013) increased depression (Fredstrom et al., 2011; Wigderson & Lynch, 2013), anxiety (Fredstrom et al., 2011; Wigderson & Lynch, 2013) and social anxiety (Reijntjes et al., 2010). A relatively newer form of victimization called cyber or online victimization has recently come under much scrutiny. The widespread use of the internet, social networking sites (SNS), to be precise, is responsible for this sudden spike in online victimization. Indians are increasingly using online social media, especially Facebook (Honnekeri et al., 2017). The daily use of the Internet and the easy availability of smartphones among the youth these days make them excessively vulnerable to online victimization (Law et al., 2012). Cyber-victimization allows the anonymity of the perpetrators, a potentially infinite audience, a power imbalance between the bully and victim, and the absence of time and space constraints (Slonje & Smith, 2008). These factors may increase a person's feelings of vulnerability, embarrassment, and lack of control, which could potentially impact an adolescent's well-being more negatively than traditional victimization (Wigderson & Lynch, 2013). However,

some studies have reported that these associations do not hold up after controlling for traditional forms of bullying (Hase et al., 2015; Olweus, 2012). Another recent study reported the lack of any significant relationship between online victimization and depressive or anxiety symptoms among school children (Williford, Orsi, DePaolis, & Isen, 2018). According to Williford and colleagues (2018), the consequences of cyber victimization might be more evident in an older age group. Furthermore, cyberbullying impacts seem to be gender-specific with depressive symptoms and social stress exhibiting strong associations with online victimization in female middle school students but not in the case of males (Brown, Demaray, & Secord, 2014).

According to Wigderson and Lynch (2013), not only is victimization widespread but it tends to co-occur. Moreover, exposure to multiple forms of victimization is more harmful than being the victim of one form of bullying (Williford et al., 2018). The effects of multiple victimization experiences interact with each other and modify their specific associations with a person's functioning. Wigderson and Lynch (2013) observed that while a combination of high levels of physical and online victimization was deleterious for academic performance, the interaction between cyber and relational victimization did not have a similar cumulative association with academic performance. Instead, the negative association between cyber-victimization and academic performance was strongest at lower levels of relational victimization while it was negligible at higher levels of relational victimization (Wigderson & Lynch, 2013). There may be some overlap between relational and online victimization that makes it difficult to identify any cumulative effects of the two forms of victimization. For example, relational victimization can easily be perpetrated over cyber-mediated communication and may increasingly occur within a cyber-context (Wigderson & Lynch, 2013).

Wigderson and Lynch (2013) noted that physical victimization did not make a unique contribution to either emotional problems or academic performance when the effects of the other forms of victimization were taken into account. Online and relational victimization probably use some mechanisms that are unique to themselves, whereas perhaps the mechanisms by which physical victimization influences well-being are shared by the other forms of victimization as well (Wigderson & Lynch, 2013). So, testing the various form of victimization within one research paradigm might provide valuable information regarding the varied ways in which they might impact social anxiety and disordered eating. Therefore, this study included various forms of peer victimization and examined their influence on social anxiety and disordered eating symptoms.

2.4.1. Peer Victimization and Social Anxiety

Peer victimization has been identified as a potential risk factor for the development of social anxiety (McCabe et al., 2010). Both physical and relational victimization exhibit strong associations with lower social anxiety (Reijntjes et al., 2010). Indian adolescents with SAD reported having fewer friends (Mehtalia & Vankar, 2004). In Indian young adults, social anxiety levels were strongly associated with difficulty in making friends (Ganapathi et al., 2016; Nair et al., 2013). Studies have reported a prospective relation between overt and relational peer victimization and increased social anxiety (Siegel, La Greca, & Harrison, 2009; Storch, Masia-Warner, Crisp, & Klein, 2005). Yen et al. (2013) found victimization to be associated with more severe symptoms of social anxiety. Feelings of acceptance by peers also seems to impact social anxiety (Erath et al., 2007). This finding has been supported by longitudinal studies as well (Teachman & Allen, 2007; Tillfors et al., 2012). The tendency of socially anxious people to interpret peer behavior as threatening (Tillfors et al., 2012), can help in the maintenance of SAD (Harvey, Watkins, Mansell, & Shafran, 2004). Thus, this study decided to look into the role of different types of peer victimization in the development and maintenance of social anxiety.

2.4.2. Peer Victimization and Disordered Eating

There is strong support in the research literature for weight-based teasing being a significant predictor of disordered eating (Agras et al., 2007; Haines et al., 2006; Lee et al., 2017; Sweetingham & Waller, 2008). However, recent research has pointed out the role of other types of peer victimization in this mental health issue (Lee & Vaillancourta, 2018). Direct, relational, or online victimization appears to make adolescents preoccupied with weight loss (Lee et al., 2017) and restrict consumption of food (Farrow & Fox, 2011), irrespective of their actual weight. The impact of being victimized by peers on ED symptoms have been confirmed by longitudinal studies as well (Copeland et al., 2015). Peers seem to have the most impact on college students because people of college-going age are very vulnerable to behavioral adaptation and compared to school students, people in college spend a lot more time with their friends (Yuan, Lv, & Vanderweele, 2013). So, examining the role of various types of bullying in disordered eating appears to be particularly relevant among college students.

2.5. Body Image, Social Anxiety, and Disordered Eating

Cash, Melnyk, and Hrabosky (2004) defined *body image* as a person's perception, attitude, and thoughts regarding their body. When a discrepancy arises between one's real and idealized body image, a person is said to suffer from *body image dissatisfaction* (BID; Kluck, 2010). Body dysmorphic disorder (BDD) is marked by an intense apprehension about perceived imperfections in one's appearance (Summers & Cougle, 2018). The most potent reason behind a person's inaccurate body image appears to be comparison with one's past self and with others and has little or almost nothing to do with a person's actual body weight or percent body fat (Mase et al., 2015). People with body image issues usually have distorted cognitive processing. For example, they might magnify perceived flaws in appearance, thus holding on to their faulty beleifs about their body (Alleva, Lange, Jansen, & Martijn, 2014). Body image dissatisfaction has been traditionally viewed as a western problem and this notion is supported by several studies (Liao et al., 2010; Mahmud & Crittenden, 2007; Yang et al., 2005). This probably reflects a cultural difference in values and priorities. Eastern cultures probably put more emphasis on attributes like intellectual ability rather than one's physical appearance (Liao et al., 2010). However, the global proliferation of western media might be gradually causing a sociocultural shift in Eastern cultures (Liao et al., 2010; Yang et al., 2005). In support of this argument, Jung and Forbes (2007) found that East Asian (Chinese and South Korean) college students reported greater levels of body dissatisfaction than students in the United States of America (USA). So, research on the body image of Indian college students may contribute to the insufficient existing literature on the subject. Therefore, this variable was included in the study.

2.5.1. Body Image and Social Anxiety

Body image evaluations play a major role in the psychological functioning and social relationships of individuals (Holsen, Jones, & Birkeland, 2012). A study among Canadian university students by Igzic et al. (2004) found that those with social phobia reported lower body image scores compared to those without social phobia. Similarly, students with low body image scores had a higher prevalence of social phobia (Igzic et al., 2004). The impact of social anxiety on body image probably reflects a preoccupation with how they appear to others. For people who feel harshly judged or are dissatisfied with their bodies, this excessive attention to how one is perceived could lead to body image concerns (Mason & Lewis, 2016). In support of this hypothesis, a study of

Chinese medical students revealed that those who displayed concern with their appearance had a higher level of social anxiety symptoms (Liao et al., 2010). BDD has also been associated with social anxiety (Upadhyaya et al., 2016). BDD also seems to be highly comorbid with social phobia (Gunstad & Phillips, 2003; Phillips et al., 2005). BDD patients who seek cosmetic surgery also have higher rates of social anxiety (Sansone & Sansone, 2007). According to Barahmand and Shahbazi (2015), the fear of negative evaluation by others is the common thread between the two disorders. They have a similar age of onset and both show similar cognitive distortions (Fang & Hofmann, 2010). Indian adolescents with SAD reported having significant concerns about overweight issues (Mehtalia & Vankar, 2004). Social anxiety has been significantly associated with dissatisfaction in body image perception as well as facial appearance among young Indians (Upadhyaya et al., 2016; Dugg & Das, 2019).

2.5.2. Body Image and Disordered Eating

Body image has a very strong association with disordered eating behavior with the DSM-5 citing distorted body image as a core symptom in EDs (APA, 2013). BID appears to be a risk factor for subclinical disordered eating as well as ED (Mora-Giral et al., 2004; Shaw, Stice, & Springer, 2004). Jacobi et al. (2004) considered negative body image as one of the most important risk factors for the onset of eating disorders. Over five years, body dissatisfaction predicted disordered eating behavior like fasting, using food substitutes, and skipping meals (Neumark-Sztainer et al., 2006). Ko (2010) suggested that body dissatisfaction can lead to the development of bulimic symptoms through body shame. This may be explained by the fact that bulimia is usually maintained by a dysfunctional system involving overvaluation of achieving thinness and control of weight, shape and eating behavior (Ko, 2010). Improvements in body satisfaction were shown to terminate bingeing in older adolescents and young adults (Goldschmidt et al., 2014). Concerns over body image have shown strong associations with disordered eating in Indian samples as well (Balhara, Mathur & Kataria, 2012; Gupta et al., 2017; Ramaiah, 2015). It must be noted that the associations between body image and disordered eating are probably influenced by other risk factors and the interactions between them (Ko, 2010). This relationship might also vary depending on the aspect of body image being studied. Unlike most previous studies, the present study wanted to investigate the association between disordered eating and how satisfied one is with their weight, appearance, and other's evaluations.

2.6. Fear of Negative Evaluation, Social Anxiety, and Disordered Eating

The evolutionary significance of fear of evaluation lies in avoiding rejection and conflicts (Weeks, Heimberg, & Rodebaugh, 2008). Since man is a social being depending on mutual co-operation for survival, maintaining peace with others, especially those more powerful and dominant in the social hierarchy, can be crucial for survival. People not only seem to fear being negatively evaluated but, in some cases, positive evaluation can also be a cause for concern. Fear of positive evaluation (FPE), refers to the sense of trepidation associated with being assessed positively in public (Weeks, Heimberg, & Rodebaugh, 2008). In spite of its importance in maintaining social relationships, fear of negative evaluation (FNE) does underlie typical social challenges and is a strong predictor of state anxiety (Carter et al., 2012). Along with FPE, it also predicts the physiological sensations of anxiety (Carter et al., 2012). However, FPE seems to be primarily responsible for anxiety associated with performances that are being repeated. On the other hand, FNE is held responsible for anxieties during novel performances (Carter et al., 2012). Inaccurate interpretations of neutral expressions while being assessed (Winton et al., 1995) coupled with the desire to impress can lead to faulty perceptions of one's performance, making one more susceptible to anxiety (Fay et al., 2008). This variable appears to have strong associations with social anxiety, in particular, and disordered eating behavior, which has been discussed in more detail in the following sections.

2.6.1. Fear of Negative Evaluation and Social Anxiety

Leary, Kowalski, and Campbell (1988) found that socially anxious participants thought others, as well as themselves, would be more negatively evaluated than controls. Fear of negative evaluation (FNE) is a type of fear which gives rise to other types of anxieties, with social anxiety being one of them (Iqbal & Ajmal, 2018). Iqbal and Ajmal (2018) found that fear of negative assessment produced social nervousness in university students. While some studies reported strong correlations between the two (Fay et al., 2008), some researchers identified FNE as a risk factor for the development of social anxiety (Levinson et al., 2013). Schreier and Heinrichs (2010) also found similar associations between FNE and social anxiety. In Indian young adults, social anxiety levels were strongly associated with sensitivity to criticism (Ganapathi et al., 2016; Nair et al.,

2013). Both *Clark and Wells'* (1995) and *Rapee and Heimberg's* (1997) cognitive models of social anxiety theorized that FNE is pivotal to the onset and maintenance of social anxiety. In accordance with the existing strong theoretical and empirical support, this study included FNE as one of the risk factors for the development and maintenance of social anxiety.

2.6.2. Fear of Negative Evaluation and Disordered Eating

The association between FNE and disordered eating has been well–documented by not only cross-sectional research (Wonderlich-Tierney & Vander Wal, 2010) but longitudinal studies as well (Hamann, Wonderlich-Tierney, & Vander Wal, 2009). DeBoer et al. (2013) revealed that FNE was a determinant of subsequent body dissatisfaction, ED symptoms, and thin-ideal internalization among participants with high BMI. However, DeBoer et al. (2013) reported that FNE was not a predictor of future dietary restraint but was rather a consequence of it. Prior levels of thin-ideal internalization and body dissatisfaction also seemed to predict FNE (DeBoer et al., 2013). The strong associations between FNE and thin-ideal internalization (Maraldo et al., 2016) can suggest a possible explanation for the relationship between FNE and disordered eating. Being concerned with negative evaluation might encourage people to achieve conventional standards of beauty to avoid negative evaluation and rejection. Maladaptive eating attitudes can be a means to achieve societal beauty norms like the idealization of thinness. It has also been suggested that the more specific form of FNE focusing on appearance is responsible for the relationship between FNE in general and ED symptoms (Levinson et al., 2013).

2.7. Social Appearance Anxiety, Social Anxiety, and Disordered Eating

The terms social appearance anxiety and social physique anxiety are often used interchangeably. According to Ko (2010), previous studies mainly used the term social physique anxiety (SPA), social appearance anxiety being a comparatively new term. However, SPA seems to be exclusively related to body form and figure (Levinson & Rodebaugh, 2012). On the other hand, social appearance anxiety seems to be a more general concept comprising of SPA (Hart et al., 2008). According to Hart et al. (2008), social appearance anxiety can result from negative body image and FNE. Social appearance anxiety seems to be reasonably consistent across gender and age (Ko,

2010; Sahin, Barut, & Ersanli, 2013). This variable has been consistently and strongly related to constructs of social anxiety, disordered eating, and body image concerns. The following two sections shed light on the relationship of social appearance anxiety with social anxiety and disordered eating behavior, separately.

2.7.1. Social Appearance Anxiety and Social Anxiety

Hart et al. (2008) identified the specific situational FNE of one's appearance as a possible domain of concern for SAD patients. Social anxiety has been associated with maladaptive appearance schemas in clinical as well as community (Hinrichsen et al., 2004). Social appearance anxiety is highly correlated with measures of social anxiety (Claes et al., 2012; Hart et al., 2008). Hart et al. (2008) identified social appearance anxiety as an important factor in the etiology and maintenance of social anxiety. Repetitive negative thinking, a central maintenance process for SAD (Blackie & Kocovski, 2016; Hofmann, 2007; Kocovski et al., 2011), also seems to be positively correlated with social appearance anxiety (Reilly et al., 2018). So, repetitive negative thinking may be a connecting link between these two social evaluative concerns.

2.7.2. Social Appearance Anxiety and Disordered Eating

Higher levels of social appearance anxiety are associated with body image discrepancy and dissatisfaction, dysfunctional appearance schemas, preoccupation with weight, drive for thinness, and body mass index (BMI; Claes et al., 2012; Hart et al., 2008). Weight is a likely cause of anxiety as it is a characteristic observable by others and can lead to weight-related prejudice and discrimination (Puhl, Peterson & Luedicke, 2013). So, stigma related to one's weight might predict fear of negative appearance evaluation (FNAE), which in turn can increase susceptibility to disordered eating attitudes and behaviors (Almenara et al., 2017). Studies have repeatedly identified social appearance anxiety as a significant vulnerability factor for disordered eating (Levinson & Rodebaugh, 2012; Levinson et al., 2013; Levinson & Rodebaugh, 2015). Koskina et al. (2011) found social appearance anxiety to be significantly higher in participants suffering from bulimia than controls. A recent study found that social appearance anxiety is a significant predictor of ED symptoms at the same time point as well as after six months (Levinson & Rodebaugh, 2016). Repetitive negative thinking or rumination seems to be employed as a maladaptive emotion regulation strategy in both eating pathology (Cowdrey & Park, 2012; Rawal et al., 2010) and social

appearance anxiety (Reilly et al., 2018). So, repetitive negative thinking may act as a bridge between social appearance anxiety and disordered eating.

2.8. Emotion Regulation, Social Anxiety, and Disordered Eating

Emotion regulation is critical for social functioning irrespective of age or context (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Vranjes et al., 2018). Difficulties in emotion regulation have increasingly been considered as a trans-diagnostic indicator of psychological problems (Aldao et al., 2010). The present literature has consistently reported emotion regulation as a significant factor in the development and maintenance of social anxiety and disordered eating.

2.8.1. Emotion Regulation and Social Anxiety

People with social anxiety are extremely concerned with making a good impression and are extremely fearful of rejection. So, they attempt to hide emotional experiences and inhibit emotional expressions to appear less vulnerable, believing it will make them appear more attractive (Kashdan & Breen, 2008). SAD patients usually report greater use of maladaptive regulation strategies like suppression along with problems implementing more adaptive strategies such as cognitive reappraisal (Werner et al., 2011). When compelled to face an anxiety-provoking situation, SAD patients can utilize experiential avoidance, as defined by attempts to avoid, escape, alter, or hide unwanted thoughts and emotions (Kashdan et al., 2013). Ruminative tendencies lead to heightened social anxiety due to an extreme focus on the sources, experiences, and effects of anxiety and depression (Rukmini et al., 2014). Rukmini et al. (2014) found that the clinical sample used cognitive reappraisal by appraising the situation in a positive light less frequently than community participants.

Blalock, Kashdan, and Farmer (2016) found that SAD patients experience more negative and less positive emotions. These results could be explained by the fact that people with social anxiety tend to direct their attention more towards negative, threatening stimuli as opposed to those more positive and rewarding in nature (Blalock, Kashdan & Farmer, 2016). Maladaptive ER strategies like experiential avoidance and suppression have also been identified as a plausible reason for the deficits in positive emotions among highly socially anxious people (Kashdan & Breen, 2008; Kashdan & Steger, 2006; Kashdan et al., 2013). Weisman et al. (2015) proposed that the persistent use of strategies like suppression might help in maintaining diminished trait positive affect for

people with SAD. Thus, maladaptive emotion regulation seems to be an important factor for the etiology and maintenance of SAD.

2.8.2. Emotion Regulation and Disordered Eating

Emotion regulation strategies represent a crucial factor in the etiology, maintenance, and relapse of ED (Bernatova & Svetlak, 2017). Especially, maladaptive emotion regulation emerges as a key psychological characteristic of all eating disorders (Lavender & Anderson, 2010; Lavender et al., 2015; Merwin, 2011; Merwin et al., 2011). A prospective study showed that difficulties in emotion regulation exacerbate the influence of maladaptive beliefs and cognitions in the development of EDs in a non-clinical population (Stice et al., 2011). ED patients seem to struggle with identification, expression, as well as regulation of emotions (Clinton, 2006). In support of this notion, Hilbert and Tuschen-Caffier (2007) found that episodes of bingeing were preceded by difficulty in regulating affect in bulimic women. Women with ED seem to be less adept in discriminating between their emotional states (Bernatova & Svetlak, 2017; Bydlowski et al., 2005; Rommel et al. 2012). Obese patients engaged in more frequent emotional eating to control emotions and reduced awareness of emotions compared with normal-weight people (Rommel et al., 2012). Thus, one of the central functions of EDs appears to be an attempt to control unwanted emotions (Bydlowski et al., 2005; Lavender et al., 2015).

Some studies tried to explain the predominant use of restriction in ED patients by a limited repertoire of ER strategies (Bernatova & Svetlak, 2017; Lavender et al., 2015; Rommel et al. 2012). However, not all studies supported this finding (Parling et al., 2010). Some studies also found a positive correlation between the level of emotional awareness and emotional eating (Bernatova & Svetlak, 2017; Rommel et al., 2012). This could be because higher emotional awareness represents more contact with unwanted emotions activating automatic and rigid strategies like food restriction and emotional eating (Bernatova & Svetlak, 2017). So, Bernatova and Svetlak (2017) suggested that the relationship between being aware of one's emotions and the ability to regulate emotions in one's daily life is not as straightforward as once thought, and other psychological variables probably mediate this relationship. Moreover, emotional awareness itself does not seem to have any significant effect on behavior (Bernatova & Svetlak, 2017). Given these inconsistent findings, especially regarding the relationship between emotional awareness and disordered eating, this research further explored these aspects.

Chapter-3

Study 1: Shared vulnerabilities and risk factors for social anxiety and comorbid disordered eating

3.1. Introduction

This chapter describes the first study, which primarily looks into shared vulnerabilities and risk factors for social anxiety and comorbid disordered eating. Disordered eating has been linked to several comorbid disorders, including but not limited to anxiety disorders (Pallister & Waller, 2008). Comorbid anxiety disorders rates range above 33% for those with eating disorders (ED; Godart et al., 2002), with social anxiety being one of the most commonly co-occurring anxiety disorders with EDs (Becker, DeViva, & Zayfert, 2004; Godart et al., 2002; 2003; Kaye et al., 2004; Thompson et al., 2013). This close association between the two disorders might be explained by envisioning disordered eating symptoms as a coping mechanism for suppressed emotions like anxiety (McLean, Miller, & Hope, 2007). The association between social phobia and maladaptive eating behaviour like binge eating frequency can also be attributed to being overly concerned with how one appears to others (Koskina et al., 2011). Social anxiety can also be a risk factor for the development of an ED (Spettigue et al., 2019). The lack of proper nourishment associated with most EDs might produce and/or exacerbate anxiety symptoms (Spettigue et al., 2019). Social anxiety can also interfere with the recovery of ED patients through decreased self-esteem (Obeid et al., 2013). So, the occurrence of one of these disorders seems to make people highly susceptible to the development of the other. Moreover, the presence of comorbid disorders can pose problems for diagnosis (Crome et al., 2015) as well as treatment (Buckner, Eggleston, & Schmidt, 2006; Goodwin & Fitzgibbon, 2002). Thus, research on the relationship between disordered eating and social anxiety might help in the development of designing more effective treatment and prevention efforts.

3.2. Rationale, Research Questions, and Hypotheses

This chapter aims to answer the following research questions.

Research Question 1: *Do gender differences exist in social anxiety and disordered eating behavior?*

Some studies have reported gender differences in the prevalence and experience of social anxiety. Higher prevalence rates of social phobia were noted among female university students as compared to male subjects (Izgiç, Akyüz, Dogan, & Kugu, 2004). Moreover, women are especially vulnerable to developing social anxiety when they shift from high school to college (Parade, Leerkes, & Blankson, 2010). A large-scale study spanning across 18 countries reported small but significant gender differences in social anxiety (Caballo et al., 2014). In particular, Caballo et al. (2014) observed very weak gender differences in social anxiety concerning interactions with strangers and expressions of annoyance. Conversely, gender differences were apparent when it came to public speaking, communicating with the opposite gender, feeling embarrassed and criticised. This implies that gender differences depend on the types of social fears (Caballo et al., 2014). In certain cultures, expressions of fearfulness and anxiety might be associated with stereotypical female roles. So, girls demonstrate these behaviors as a result of socialization (Klingaman, 2012). To some extent, this may explain why more women are diagnosed with SAD than men. Gender differences in social anxiety have been reported in Indian samples as well (Chhabra et al., 2009; Ganapathi et al., 2016; Ratnani et al., 2017). Thus, the first hypothesis is:

Hypothesis 1.1: *Female participants would exhibit more social anxiety than male participants.*

Gender differences have been reported in disordered eating behavior and symptoms too. Swanson et al. (2011) found that lifetime prevalence rates of Binge Eating Disorder (BED) were approximately three times higher among female adolescents compared to their male counterparts. In a sample of Nepalese adolescents, the prevalence of ED was 29% in females and 16% in males (Thapa & Thapa, 2015). Research suggests that subclinical symptoms of pathological eating are quite common in college-going women (Eisenberg, Nicklett, Roeder, & Kirz, 2011). As the participants were college students with considerable exposure to western ideals of beauty, the following hypothesis was proposed:

Hypothesis 1.2: *Female participants would exhibit more disordered eating behavior and symptoms than male participants.*

Research Question 2: *What is the relation between social anxiety and disordered eating?*

Social anxiety precedes disordered eating and might pose a risk for EDs (Kaye et al., 2004; Menatti et al., 2015). Several studies have documented the close association between social anxiety and various types of disordered eating symptoms and behaviour (Godart et al., 2000; 2003; Hinrichsen, Waller, & van Gerko, 2004; Hudson, Hiripi, Pope, & Kessler, 2007; Koskina et al., 2011; Laessle & Schulz, 2009). Disordered eating might also be a manifestation of underlying susceptibility to social anxiety (DeBoer & Smits, 2013). Disordered eating has also been conceptualised as a maladaptive coping mechanism to deal with social anxiety (Gilbert & Meyer, 2003). The comorbidity rates appear to be lower in community samples, with Ruscio et al. (2008) reporting a lifetime prevalence of approximately 12.1% and a 12-month prevalence rate of 7.1%. Researchers have proposed several plausible mechanisms in an effort to explain this relationship. According to Silgado et al. (2010), socially anxious individuals might engage in bulimic behaviors out of fear of judgment if they are unable to attain their perfectionistic physical ideals. Levinson et al. (2013) highlighted the role of shared risk factors in understanding the nature of this relationship. Although various researchers have conceptualized this relationship in different ways, the existing research literature consistently reports the strong associations between social anxiety and disordered eating.

Hypothesis 2: *Social anxiety and disordered eating behavior and symptoms would be correlated and have a reciprocal relationship, with both having predictive powers over the other.*

Research Question 3: *What are the predictors of social anxiety and disordered eating?*

Parental Bonding

Perceiving parents, especially mothers (Parker, 1979), as less caring (Heider et al., 2008; Parker, 1979), is associated with SAD. The prevalence of this disorder was found to be almost six times as high among young women who perceived their mothers as neglectful and controlling as compared to those who perceive their mothers as caring (Castelli et al., 2015). Maternal neglect might breed feelings of inadequacy which in turn further makes them evaluate their mothers as inadequate (Castelli et al., 2015). Thus, maternal care is hypothesized to negatively impact social anxiety levels, while indifference can have a positive effect on it.

An overprotective parenting style has also been associated with SAD (Heider et al., 2008; Parker, 1979). Being overprotected as a child might lead to a belief that the world is an unsafe place, and one is incapable of dealing with such an environment alone (Castelli et al., 2015). Holding such

beliefs might trigger anxiety. Moreover, their reticence and skepticism might prompt their mothers to be more protective of them, depriving them of novel challenging experiences (Castelli et al., 2015). Hence, we hypothesized that parental over-protection in the form of denial of psychological autonomy would lead to higher levels of social anxiety in people. Conversely, being granted freedom by parents could act as a protective factor against social anxiety.

Hypothesis 3.1: *Parental care and granting of behavioral freedom would be negatively related to social anxiety, while denial of psychological autonomy would be positively related to the same.*

Association between emotional eating and parental rejection were observed in children as young as 8 to 11-year-old (Schuetzmann et al., 2008). According to Leung et al. (2000) perceived parental bonding affected disordered eating behavior through maladaptive schemas that develop early in childhood. When women perceive maternal care to be low, it leads to negative self-beliefs like one is inherently defective. They also tend to set unrealistically high standards for themselves. In the case of inadequate paternal care, anorexic women experience a lack of self-identity and a fear regarding the failure of close relationships (Leung et al., 2000).

Balottin et al. (2017) showed that parents, especially fathers of anorexia patients, recalled a careless and over-controlling parental style. According to the attachment theory, the parents' internal representation of relations with their attachment figures may impact their parenting practices (Balottin et al., 2017). Balottin et al. (2017) hypothesized that a less effective and highly protective parental bonding is probably transmitted through generations in families of anorexics. Growing up in such an environment can lead to the development of EDs (Balottin et al., 2017). Since the majority of the findings point to lower parental care and moderately high levels of over-protection perceived by patients with EDs (Tetley et al., 2014), the following hypothesis was formulated:

Hypothesis 3.2: *Parental care and granting of behavioral autonomy would be negatively related to disordered eating behavior and symptoms, while denial of psychological autonomy would be positively related to the same.*

Peer Victimization

Psychosocial adjustment is greatly influenced by social interactions (Tillfors et al., 2012). This might imply that inter-personal experiences might influence various aspects of a person's mental

health, including how they perceive future social interactions. For example, disappointing or threatening peer interactions may have an impact on how people perceive future social situations. Following this logic, the present study hypothesized that peer victimization would be positively related to social anxiety. This hypothesis also finds support in the current research literature (McCabe et al., 2010; Yen et al. (2013). Higher levels of social anxiety have been linked prospectively with both overt and relational peer victimization (Siegel, La Greca, & Harrison, 2009; Storch, Masia-Warner, Crisp, & Klein, 2005). Social anxiety has also been associated with feeling accepted by peers (Erath et al., 2007; Rubin, Coplan, & Bowker, 2009). This finding has been confirmed by longitudinal studies as well (Tillfors et al., 2012; Teachman & Allen, 2007). Tillfors et al. (2012) attributed this to the fact that socially anxious adolescents tend to interpret peer behavior as threatening. Moreover, they usually receive more negative responses in social situations, which might lead them to be anxious or uncomfortable in social situations. This might also be a reason for the increase in social anxiety over time (Tillfors et al., 2012). Thus, the next hypothesis is as follows:

Hypothesis 3.3: *Peer victimization would be positively related to social anxiety.*

The present research has mostly focussed on the role of appearance-based teasing in disordered eating behaviour and concerns. However, there is emerging evidence that other forms of bullying are also associated with disordered eating (Lee & Vaillancourt, 2018). Direct, relational, and cyber victimization seem to determine being preoccupied with weight loss (Lee et al., 2017) and attempts to restrain eating behaviour (Farrow & Fox, 2011) among adolescents. The association between peer victimization and ED symptoms has been reported in longitudinal studies as well (Copeland et al., 2015). Copeland et al. (2015) found the bullying predicted eating disorder symptoms for both bullies and victims. Cyber victimization has been associated with disordered eating even after controlling for age, gender, and "Overweight Preoccupation" (Marco & Tormo-Irun, 2018).

Hypothesis 3.4: *Peer victimization would be positively related to disordered eating behavior and symptoms.*

Fear of Negative Evaluation & Social Appearance Anxiety

Haikal and Hong (2010) noted that socially anxious people believe that others have very high expectations from them. Simultaneously, SAD is also characterized by maladaptive beliefs

regarding one's performance so that they are unsure about achieving the high standards that they set for themselves and thus assume they would be evaluated negatively by others for failing to perform satisfactorily (Haikal & Hong, 2010). A negative self-image and attentional bias towards threatening stimuli result in a heightened sensitivity to any indicator of negative evaluation among socially anxious people (Wang et al., 2012). In their model of social anxiety, Heimberg, Brozovich, & Rapee's (2010) identified FNE in social situations as a risk factor for the development of social anxiety. Cheng, Zhang, and Ding (2015) demonstrated that self-esteem, along with family socioeconomic status, enhances social anxiety in emerging adults by increasing the levels of FNE. Given that FNE has repeatedly emerged as a potential cause of social anxiety (Cheng, Zhang & Ding, 2015; Heimberg, Brozovich, & Rapee, 2010; Wang et al., 2012), the presence of a significant relationship between these two variables was hypothesized.

Perceived flaws in appearance can also trigger fear of public criticism prevalent in individuals with SAD (Moscovitch, 2009). So, in addition to general FNE, this study also hypothesizes another related social fear called social appearance anxiety to exhibit strong associations with social anxiety. This hypothesis is reasonably well supported by the existing literature, with social appearance anxiety being repeatedly identified as an important feature of social anxiety (Levinson & Rodebaugh, 2012; Levinson et al., 2013). An experimental paradigm found that social appearance anxiety conferred risk for the development of social anxiety (Levinson & Rodebaugh, 2015). Given the pivotal role of these social-evaluative fears in social anxiety, the following hypothesis was formulated:

Hypothesis 3.5: *Fear of negative evaluation and social appearance anxiety would be positively related to social anxiety.*

A well-established model for explaining the development of bulimia is the dual-pathway model (Stice & Agras, 1998). A revised version of the dual-pathway model included FNE, which improved the predictive validity of the model (Utschig et al., 2010). An experimental study found that fear of negative evaluation increased food intake (Levinson & Rodebaugh, 2015). Higher FNE increased the chances of being diagnosed with an ED, especially in people having significant body image concerns (Trompeter et al., 2019). Fear of evaluation along with internalization of societal beauty norms like the glorification of thinness might lead to the maintenance of EDs (Hamann, Wonderlich-Tierney, & Vander Wal, 2009). This effect might be more pronounced in

environments placing undue importance on physical appearance (Bardone-Cone et al., 2013; DeBoer et al., 2013).

Another social-evaluative concern closely related to disordered eating is social appearance anxiety. The presence of this association appears to be highly prevalent in people excessively concerned with their physical appearance (Rieger et al., 2010). Social appearance anxiety explains additional variance in the disordered eating composite over and above the fear of negative and positive evaluation and social interaction anxiety (Levinson & Rodebaugh, 2012). Levinson and Rodebaugh (2015) suggested that environments that encourage evaluations based on appearance might result in excessive focus on one's physical appearance. This may ultimately result in body dissatisfaction and regulatory behaviors like dieting (Levinson & Rodebaugh, 2015) in an attempt to achieve societal standards of beauty and gain social acceptance and admiration. Thus, anxiety-related cognitive vulnerabilities, particularly those related to SAD, have been identified as factors responsible for disordered eating (DeBoer et al., 2013).

Hypothesis 3.6: *Fear of negative evaluation and social appearance anxiety would be positively related to disordered eating behavior and symptoms.*

Body Esteem Satisfaction

Most studies on body image have found evidence for high comorbidity with social anxiety (Pavan et al., 2008; Pinto & Phillips, 2005). Social anxiety was a significant correlate of dysmorphic concerns for both genders (Liao et al., 2010). Rashid, Saddiqua, and Naureen (2011) found a close association between social anxiety and body esteem among female psychiatric patients. Tendency to focus on negative thoughts leads to low self-esteem among socially phobic individuals. Reduced self-esteem can lead to dissatisfaction with various aspects of the self, including one's body (Izgiç, Akyüz, Dogan, & Kugu, 2004). Izgiç, Akyüz, Dogan, and Kugu (2004) also noted a reflection of this dissatisfaction in one's relationships by avoidance or failure to form fewer interpersonal relationships. Evidence suggests that SAD patients overestimate the relation between social stimuli and aversive outcomes (Hermann, Ofer, & Flor, 2004). Such covariation bias may connect social anxiety and dissatisfaction with one's body image (Alleva, Lange, Jansen, & Martijn, 2014). FNE in social situations (Pinto & Phillips, 2005; Bögels et al., 2010), propensity to indulge in negative self-focused thoughts (Phillips et al., 2005; Neziroglu et al., 2008), and avoidance of social interactions are central to both social phobia and body dysmorphia (Kelly et al., 2013). Overall,

these findings suggest that social phobia and concerns over body image are highly comorbid and have several similar clinical features. Thus, the following hypothesis was formulated:

Hypothesis 3.7: *Body esteem satisfaction would be negatively related to social anxiety.*

Several studies have identified body image dissatisfaction as one of the strongest predictors of disordered eating (Neumark-Sztainer et al., 2006; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Stice & Bearman, 2001). The dual-pathway model of bulimic pathology identifies body image dissatisfaction as a risk factor for bulimia (Stice, 2002). Body dissatisfaction and associated negative affect when present in combination with other psychological and emotional problems, can put people at higher risk of experiencing disordered eating (Sim & Zeman, 2006). Preoccupation and dissatisfaction with the body have consistently been reported as precursors to ED symptoms (Jacobi et al., 2004; Marmorstein, von Ranson, Iacono, & Succop, 2007; Phan & Tylka, 2006; Thompson & Smolak 2001). Thus, the hypothesis pertaining to research objective 3.8 is as follows:

Hypothesis 3.8: *Body Esteem Satisfaction would be negatively related to disordered eating behavior and symptoms.*

Some researchers have put forward a model explaining the comorbid relationship between social anxiety and disordered eating based on common shared vulnerabilities (Levinson & Rodebaugh, 2012; Menatti et al., 2015; Wonderlich-Tierney & Vander Wal, 2010). The present study also attempted to test a vulnerability model with various risk and protective factors that have not necessarily been tested in a consolidated vulnerability model, in spite of having strong associations with both these disorders.

Research Question 4: *Are there shared underlying psychological vulnerabilities that contribute to social anxiety as well as disordered eating symptoms?*

Based on an extensive literature review, parental bonding, peer victimization, social-evaluative concerns like FNE, social appearance anxiety, and body esteem were identified as possible risk factors for both social anxiety and disordered eating. The relationship each of these variables has with social anxiety, and disordered eating has been discussed in detail in the preceding paragraphs as well as the previous chapter (refer to Chapter 2). Gradually, researchers are realizing their

potential as shared vulnerability factors. A few studies have explored the role of one or more of these variables in social anxiety and disordered eating comorbidity.

McClintock and Evans (2001) found that a lack of parental and peer support, fear of being criticized or rejected by others, and a negative self-evaluation are essential variables in the assessment of social phobia and EDs. Poor social support also affected eating behaviors through low self-acceptance (McClintock & Evans, 2001). According to DeBoer et al. (2013), SAD and EDs may be linked due to overlapping risk factors such as FNE, and this proposition has been supported by empirical evidence as well (Menatti et al., 2015; Wonderlich-Tierney & Vander Wal, 2010). Another relevant vulnerability factor for both social anxiety and disordered eating might be *social appearance anxiety* (Kerr-Gaffney, Harrison & Tchanturia, 2018). Social appearance anxiety has consistently emerged as a common risk factor between social anxiety and ED symptoms (Levinson & Rodebaugh 2012; Levinson et al., 2013). Magallares (2013) proposed that social comparisons produce the internalization of sociocultural attitudes toward appearance. However, these social standards are really difficult to achieve for most people. So, it can lead to an intense fear of being negatively evaluated by others in general (FNE and social anxiety) as well as specifically based on one's physical appearance (social appearance anxiety). These anxieties finally lead to the development of ED-related problems (Magallares, 2013). Concerns about appearance is a common feature in EDs and social anxiety (Ko, 2010). Hence, our research on comorbidity between social anxiety and disordered eating will include measures of appearance concerns both related to others as well as one's own evaluations.

Hypothesis 4: *Parental Bonding, peer victimization, fear of negative evaluation, social appearance anxiety, and body esteem satisfaction are specific and shared underlying psychological vulnerabilities that contribute to the comorbidity between social anxiety and disordered eating behavior and symptoms.*

Research Question 5.1: *Do difficulties in emotion regulation mediate the relationship of social influence with social anxiety and comorbid disordered eating?*

The development of some ER strategies can probably be traced back to coping with difficult circumstances early in life (Wei et al., 2005). However, these strategies might not be effective in other situations or phases of life. Over time these strategies might become maladaptive and give rise to mental health problems like ED and depressive symptoms (Tasca et al., 2009). Parents

might also affect the development of ER by directly managing and evaluating their children's emotions. Parental attitudes, mainly positive and supportive in nature, have quite powerful effects on the emotional development of children (Eisenberg et al., 2005).

The influence of parental bonding on emotion regulation can also lead to other psychological problems. For example, Rommel et al. (2012) showed that parental overprotection influenced emotional eating in obese patients through emotional awareness. Mannarini et al. (2018) proposed that ambivalent parental affections may result in difficulties in identifying, describing emotions as well as feelings of anxiety and depression (Mannarini et al., 2018). Similarly, Gatta et al. (2017) reported more emotional problems among adolescents who perceived their fathers to be neglectful. The emotional difficulties can contribute to their psychiatric outcome (Gatta et al., 2017). Mannarini et al. (2018) found that high levels of adolescent alexithymia, along with a neglectful parenting style, characterized the families of patients with internalizing symptoms.

Difficulties in emotion regulation have been especially closely linked to disordered eating and related symptoms. From a neurobiological point of view, hormonal influences might play a significant role in the association between emotion and disordered eating (Leehr et al., 2015). Many theories have been proposed over the years to explain the role of ER in disordered eating from a behavioral point of view. All these theories share the assumption that the inability to properly regulate negative affect prompts one to employ accessible but maladaptive strategies like over-eating (Evers, Stok, & de Ridder, 2010). According to Kerr-Gaffney, Harrison, and Tchanturia (2018), problems in emotion regulation like avoidance of emotions might exacerbate social anxiety in ED patients. So, parental bonding, especially parental care, seems to influence awareness and acceptance of emotions, which in turn plays a massive role in the etiology and maintenance of internalizing symptoms like anxiety and ED.

Hypothesis 5.1.1: *Difficulties in emotion regulation would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating.*

Experiences of victimization are usually accompanied by heightened arousal and negative affect. The effort required to manage these emotions gradually reduces one's coping resources, leaving them vulnerable to psychological problems (McLaughlin, Hatzenbuehler, & Hilt, 2009). McLaughlin, Hatzenbuehler, and Hilt (2009) also noted that the way in which peer victimization is linked to the development of internalizing symptoms seems to differ depending on the type of

bullying. Relational and reputational victimization were linked to subsequent internalizing symptoms through maladaptive ER (McLaughlin, Hatzenbuehler, & Hilt, 2009). However, McLaughlin, Hatzenbuehler, and Hilt (2009) did not observe this relationship in case of overt victimization. Since overt victimization is more likely to elicit fear than the other two kinds of victimization, measures that tap into the expression of or reaction to fear may be more useful in understanding the association between this particular type of bullying and internalizing symptoms (McLaughlin, Hatzenbuehler, & Hilt, 2009). At the same time, strategies like poor emotional understanding and difficulties in expressing emotions are more suitable in trying to understand the relationship between relational and reputation victimization and internalizing symptoms like anxiety.

Hypothesis 5.1.2: *Difficulties in emotion regulation would mediate the relationship of reputational, relational, and online peer victimization with social anxiety and comorbid disordered eating.*

The next research question conceptualizes body esteem satisfaction as a potential mediator in the relationship of social influence with social anxiety and comorbid disordered eating symptoms and behavior.

Research Question 5.2: *Does body esteem satisfaction mediate the relationship of social influence on social anxiety and comorbid disordered eating behavior?*

Kirsch et al. (2016) reported that peer support prospectively predicted body image but not disordered eating, while familial support prospectively predicted only disordered eating. Thus, they suggested that these two domains should be analyzed separately during the transition to college. Moreover, the transition also brings about significant changes in one's relationship with one's parents as well as peers (Kirsch et al., 2016). As young adults transition into college, they not only become increasingly independent from their families (Arnett, 2006; Tanner, 2006) but might also experience shifts in peer relationships (Buote et al., 2007). Childhood friendships might grow weaker while new bonds are formed with college friends, hostel or roommates. As such, the influence of parents and peers may show unique patterns in their relationship with body esteem, disordered eating, and social anxiety in this age group.

The "interactive" hypothesis states that a daughter's body image is not only shaped by modeling but also by specific qualities of the mother-daughter relationship (Ogden & Steward, 2000). Ogden

and Steward (2000) found that adolescents who experience lower autonomy in their relationship with their mothers, report increased weight concern. Parents can influence body image positively through words of encouragement and praise and negatively through criticism (Rodgers & Chabrol, 2009). Both parental teasing and encouragement to diet are associated with body image dissatisfaction and disordered eating behavior (Keery, Boutelle, van den Berg, & Thompson, 2005; Fulkerson et al., 2002).) Early adverse experiences seem to affect body dissatisfaction through various intra- and inter-personal resources (Vartanian et al., 2014). Feelings of dissatisfaction with one's body can then lead to a range of disordered eating behaviors and symptoms (Kirsch et al., 2016; Kluck, 2010; Rodgers, Paxton, and Chabrol, 2009; Vartanian et al., 2014). Family's focus on appearance (Kluck, 2010), emphasis on thinness (Kirsch et al., 2016) and positive as well as negative parental comments (Rodgers, Paxton, & Chabrol, 2009) might lead to disordered eating by increased dissatisfaction with body image. Moreover, the role of body image in adverse social interactions and evaluations appears critical to the development and maintenance of disordered eating (Duarte, Pinto-Gouveia, & Rodrigues, 2015; Goss & Allan, 2010). Thus, the impact of negative interpersonal interactions and mental health issues like social anxiety and disordered eating symptoms might be influenced by essential mechanisms like self-evaluations and feelings about one's body.

Hypothesis 5.2.1: *Body esteem satisfaction would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating behavior.*

Hypothesis 5.2.2: *Body esteem satisfaction would mediate the relationship of peer victimization with social anxiety and comorbid disordered eating.*

Social evaluative fears are also considered as potential mediators in the relationship of social influence with social anxiety and comorbid disordered eating symptoms and behavior, leading to the next research question.

Research Question 5.3: *Do fear of negative evaluation and social appearance anxiety mediate the relationship of social influence with social anxiety and comorbid disordered eating behavior.*

Leung et al.'s (1996) proposed the dual-process family model to explain the impact of family on eating-related issues and general psychiatric symptoms like depression, obsessive-compulsive disorders, impulsivity, and mood ability. While a family's preoccupation with weight and appearance directly affects body dissatisfaction and disordered eating symptoms, general family

dysfunction can indirectly affect the same through low self-esteem (Leung et al., 1996). Thus, social influences seem to impact disordered eating and comorbid issues like social anxiety through self-concepts. The body objectification model further identified appearance-related anxiety as a link between sociocultural influences and disordered eating (Klingaman, 2012). This study hypothesized social-evaluative fears like FNE and social appearance anxiety as possible mediators in this relationship. This hypothesis was constructed based on prior studies which elucidated the role of these two constructs for the association between social anxiety and eating disorder. Both these variables have been proposed as overlapping risk factors (DeBoer et al., 2013; Levinson & Rodebaugh, 2016; Levinson et al., 2012; 2013; Menatti et al., 2015) as well as a mediator between disordered eating and social anxiety (Levinson et al., 2012; Wonderlich-Tierney & Wal, 2010). So, FNE and social appearance anxiety were hypothesized to mediate the relationship of social influences with social anxiety and disordered eating.

Hypothesis 5.3.1: *Fear of negative evaluation and social appearance anxiety would mediate the relationship of parental bonding with social anxiety and comorbid disordered eating.*

Hypothesis 5.3.2: *Fear of negative evaluation and social appearance anxiety would mediate the relationship of peer victimization with social anxiety and comorbid disordered eating.*

3.3 Method

3.3.1 Participants

411 students were recruited from a technical institute (Indian Institute of Technology) in India. Participants were predominately male (Male=75.5%; Female= 24.5%) and urbane (Urban= 87.1%; Rural=12.9%) of mean age 19.52 years (SD = 1.269).

3.3.2 Measures

In most universities and institutes of higher education in India, English seems to be the preferred medium of instruction, including the Indian Institute of Technology (IIT), from where our sample was drawn. So, it was decided to use the self-report measures in their original form, which happens to be English.

i. **Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998):** This is a self-report measure for assessing cognitive, affective, and behavioral reactions to various social

situations (Mattick & Clarke, 1998). The scale contains 20 items, and each item is rated on a Likert scale ranging from 0 (not at all) to 4 (extremely). In this study, the social interaction anxiety scale had a Cronbach alpha value of *.813* ($\alpha > 0.70$; Kline 2011).

ii. **Parental Bonding Instrument (PBI; Parker, Tupling & Brown, 1979):** The PBI was developed by Parker et al. (1979) and contains 25 items that address each parent separately. It consists of 12 items belonging to the care subscale with scores ranging from 0 to 36 and 13 over-protection items with scores ranging from 0 to 39. Parental care involves parents' affection, warmth, and empathy, while overprotection encompasses parental intrusion and control as perceived by the child (Ngai 2015). It has been established as a reliable and valid measure of actual and perceived parental features irrespective of respondent's age and gender (Parker, 1979). The PBI asks respondents to retrospectively assess how they were raised by their parents during the first 16 years of their life. The care subscale of the mother's version of the PBI had a Cronbach alpha value of .837, granting of behavioral freedom was .577, and the denial of psychological autonomy scale was .677. The care subscale for the father's version of PBI had a Cronbach alpha score of .868, granting of behavioral freedom .844, while the denial of psychological autonomy subscale was *.742* ($\alpha > 0.70$; Kline 2011).

iii. **Revised Peer Experiences Questionnaire—Victim (**R-PEQ; **De Los Reyes & Prinstein, 2004):** It reports the occurrence of overt, relational, and reputational victimization in the past two months. The three types of peer victimization were assessed with the help of three items each. The subscale scores can be calculated by summation of the individual item scores. The Likert scale ranges from 1 (never) to 5 (a few times a week). The R-PEQ has reported satisfactory reliability and convergent validity with other measures of peer victimization (De Los Reyes & Prinstein, 2004; La Greca & Harrison, 2005; Siegel et al., 2009). In this study, the Cronbach alpha value was *.738* for overt victimization, *.864* for relational victimization, *.796* for reputational victimization, and *.842* for pro-social victimization ($\alpha > 0.70$; Kline 2011).

iv. **Social Networking-Peer Experiences Questionnaire (SN-PEQ; Landoll et al., 2015):** The SN-PEQ is a 12- item measure designed to assess negative online experiences with peers over the past two months. It is measured on a five-point Likert scale ranging from 1

(never) to 5 (many times a week). When used in this sample, the social networking questionnaire had a Cronbach alpha value of *.791* (α > 0.70; Kline 2011).

v. **Eating Attitudes Test** (EAT-26; Garner & Garfinkel, 1979; Garner, Olmsted, Bohr & Garfinkel, 1982): The EAT was developed in 1979 as a 40-item clinical measure. (Garner & Garfinkel, 1979). The present study used the shortened version of the instrument comprising of 26 items (Garner et al., 1982). The EAT has been used with non-clinical samples as well (Rosen et al., 1988). Three factors named "dieting", "bulimia", and "oral control" can be obtained. Since, these factors might not always be cross-culturally applicable (Choudry & Mumford 1992), this study aggregated all three eating attitude components to obtain a single score. The EAT-26 showed a Cronbach alpha value of .766 in the present study (α > 0.70; Kline 2011).

vi. **Body Esteem Satisfaction (BES) Scale** (Mendelson, White, & Mendelson, 1997): This is a 23 item long self-report questionnaire with three subscales. The first subscale measures evaluations attributed to others about one's body and appearance and consists of 5 items. The two other subscales deal with weight satisfaction and general feelings about appearance with the help of 8, and 5 items, respectively. Responses were recorded on a 5-point Likert scale ranging from 0 (never) to 4 (always). The nine negative items were reverse-scored. The satisfaction with appearance, weight and other's evaluations of one's body subscale reported a Cronbach alpha value of *.720, .855,* and *.714,* respectively (α > 0.70; Kline 2011).

vii. **The Brief Fear of Negative Evaluation (BFNE) scale** (Leary, 1983): Only the 8 straight-forward items of the BFNE were used in this study due to their superior reliability and validity as compared to the reverse-coded items (Carleton et al., 2011; Rodebaugh et al., 2004; Weeks et al., 2005). The Likert scale ranges from 0 (not at all characteristic of me) to 4 (extremely characteristic of me). The scale was found to be highly reliable in the present sample with a Cronbach alpha value of *.937* (α > 0.70; Kline 2011).

viii. **Social Appearance Anxiety Scale** (SAAS; Hart et al., 2008): The SAAS measures anxiety about being negatively evaluated based on overall appearance. It exhibits high test-retest reliability and internal consistency (Hart et al., 2008). The scale was found to be highly reliable in the present sample as well with a Cronbach alpha value of *.924*(α > 0.70; Kline 2011).

ix. **Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004):** This is a 36-item self-report questionnaire with six subscales for assessing difficulties in various aspects of emotion regulation (Gratz & Roemer, 2004). For the purposes of this study, only three subscales were used, namely, lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior. Assessment is done with the help of a Likert scale ranging from 1 (almost never, 0–10%), to 5 (almost always, 91%–100%). DERS report adequate reliability for all subscales and concurrent validity with personality measures (Medrano & Trogolo, 2016). The lack of emotional awareness, non-acceptance of emotions, and difficulties goal-directed behavior subscale reported a Cronbach alpha value of *.787, .856*, and *.746,* respectively ($\alpha > 0.70$; Kline 2011).

x. **Beck's Depression Inventory** (BDI; Beck & Steer, 1993): This self-report measure has 21 symptom-attitude categories to measure depression intensity. This study used the shortened 13 item version (Beck and Beck, 1972). Each item has four option responses, scored, 0,1, 2 or 3. The total score is obtained by adding up all the item scores. This is a measure of severity and not a diagnostic tool (Al-Yasiri & AbdKarkosh, 2013). The scale was found to be highly reliable in the present sample with a Cronbach alpha value of *.851.*

3.3.3 Procedure

Batteries of self-report questionnaires were distributed among undergraduate students with prior permission from Professors to go into their classes. The participants were provided with all the necessary information regarding the study. All participants granted informed consent allowing the use of the data for research purposes. After which, they duly filled the battery of self-report questionnaires. All the ethical issues related to the research and data collection, such as informed consent and anonymity, were taken care of during the data collection.

3.4 Results

The following chapter presents a summary of the results of the study. SPSS version 25.0 and SPSS Amos 22.0 version were used for data analyses. The entire data set was screened using the Frequencies option in SPSS before proceeding for further analysis. Since there were no missing data or outliers, the entire data set was retained for statistical analysis.

3.4.1. Descriptive Statistics

Table 3.1 shows the detailed descriptive statistics of the variables, including mean, standard deviation (SD), range, skewness, and kurtosis. Skewness and/or kurtosis less than ±1.96 The data was considered an indicator of the data being normally distributed (Field, 2013). Following the general rule of thumb, most variables seemed to be approximately normally distributed. The only exception to this was the values for overt, reputational, and online victimization. So, the log values of these scores were used for further analysis (Field, 2013).

Table 3.1

Descriptive Statistics of all Study variables

Variables	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Social Interaction Anxiety	70.00	6.00	76.00	29.4477	10.80646	116.780	.752	1.039
Overt Peer Victimization(log)	.37	.48	.85	.5406	.10558	.011	1.450	.840
Relational Victimization	8.00	3.00	11.00	5.2092	2.07776	4.317	.886	.098
Reputational Victimization (log)	.60	.48	1.08	.6334	.17716	.031	.687	-.888
Online Victimization (log)	.52	.95	1.48	1.0753	.10856	.012	1.001	.665
Disordered Eating	34.00	.00	34.00	8.0535	6.24984	39.061	1.045	1.198
Mother's Care	31.00	.00	31.00	6.7324	6.14987	37.821	1.287	1.491
Mother's Over-Protection	23.00	10.00	33.00	21.0511	4.32292	18.688	.099	-.228
Father's Over-Protection	37.00	2.00	39.00	27.1168	7.11378	50.606	-.503	.015
Father's Care	30.00	.00	30.00	9.6472	7.179989	51.551	.692	-.176
Fear of Negative Evaluation	32.00	8.00	40.00	20.4355	7.91156	62.593	.653	-.184
Social Appearance Anxiety	60.00	.00	60.00	18.1119	12.44842	154.963	1.128	.827
Satisfaction with Evaluations	1.00	1.00	2.00	1.2360	.42515	.181	1.248	-.445
Satisfaction with Weight	32.00	.00	32.00	17.9878	7.23962	52.412	-.217	-.515
Satisfaction with Appearance	32.00	4.00	36.00	23.1533	6.07942	36.959	-.382	.184
Problems with Goals	20.00	5.00	25.00	17.032	5.289	27.972	-.301	-.882
Lack of Emotional Awareness	24.00	6.00	30.00	15.606	4.823	23.259	.329	-.213
Non-acceptance of Emotions	24.00	6.00	30.00	14.640	5.632	31.719	.597	-.098
Depression	32.00	.00	32.00	7.9124	5.86533	34.402	1.019	.804

Though initially developed for use with a Western female population (Garner & Garfinkel, 1979), the EAT has also been known to differentiate between males with and without EDs (Garfinkel & Newman, 2001; Olivardia et al., 1995). Previous studies reported the mean EAT scores for male

samples to vary between 6 to 8 (Button & Whitehouse, 1981; Garfinkel & Newman, 2001). Similar results were found in this study with a mean EAT score of 8, which is not surprising given the present sample is predominantly male.

3.4.2 Frequencies

The social interaction anxiety scale (SIAS; Mattick & Clarke 1998) has a total score of 80. Heimberg et al. (1992) and Brown et al. (1997) found that a score of 34 discriminated between SAD patients and controls. Based on the cut-off scores delineated by Heimberg et al. (1992) and Brown et al. (1997), this study divided participants into two categories:

i. no or low social anxiety
ii. high social anxiety.

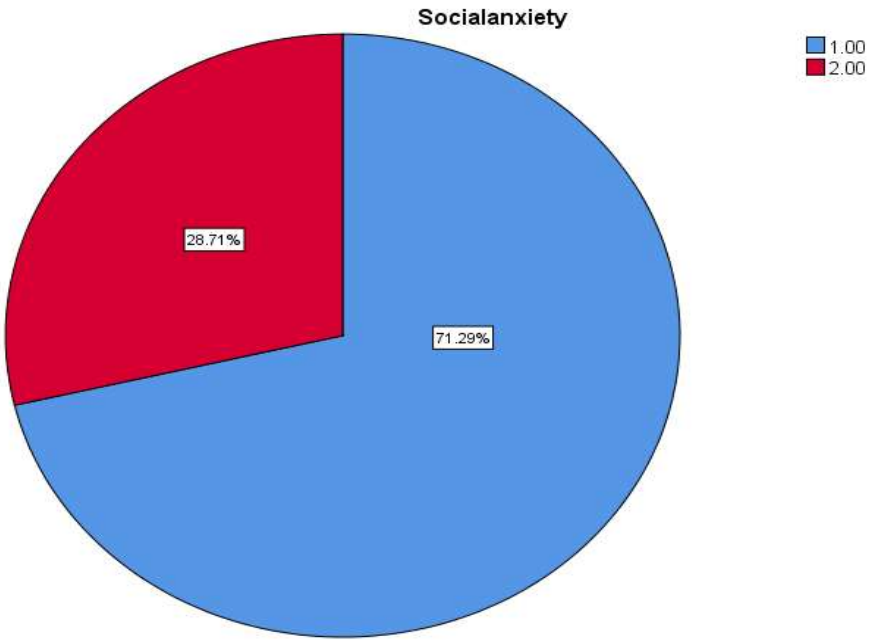

Figure 3.1. Frequency of social anxiety in the present sample

Note. 2- high social anxiety; 1-No or low social anxiety

28.71% of participants reported having social anxiety, while 71.29% did not exhibit any significant symptoms of social anxiety (refer to Figure 3.1). Previous studies conducted with Indian samples reported Social Anxiety Disorder (SAD) prevalence rates of 12.8% among high school students

(Mehtalia & Vanker, 2004). Similar results were found in a sample of Indian medical students with a SAD frequency of 11.37% (Ratnani et al., 2017). However, Dugg and Das (2019) reported slightly lower prevalence rates among medical students, with 5.94% reporting social anxiety and 12.62% with social phobia. On the other hand, Shah and Kataria found a higher prevalence rate of 19.5% among Indian undergraduates (Shah & Kataria, 2009). Ganapathi et al. (2016) found that in a sample of 480 Indian medical students, 22.9% had moderate, 22.5% marked, and 17.30% reported severe levels of social anxiety. The prevalence rates may vary widely because of overlapping symptoms with other disorders (Shah & Kataria, 2009). These prevalence rates among college or university students are higher than in the general population (Dugg & Das, 2019) as well as among adolescents (Chhabra et al., 2009; Nair et al., 2013). The higher prevalence rates in students pursuing higher studies, especially in high-pressure fields like medical and engineering, are probably due to the competitive academic environment and the constant pressure to perform well (Dugg & Das, 2019).

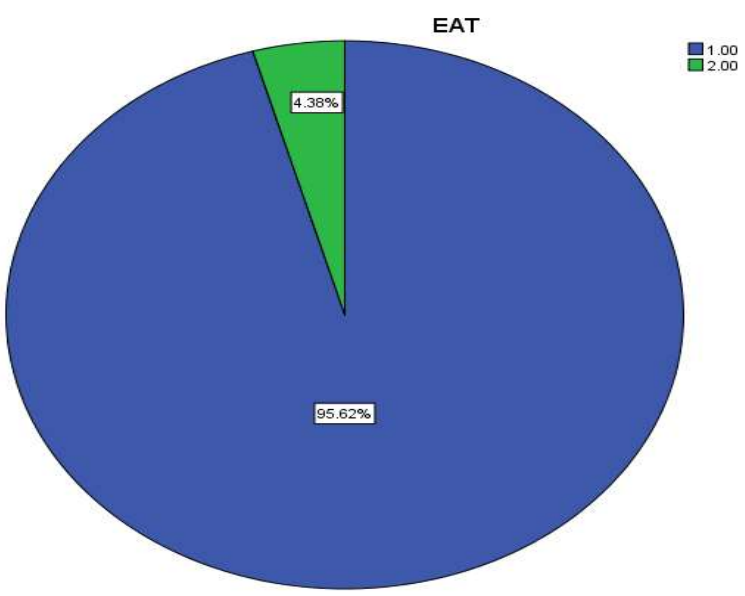

Figure 3.2. Frequency of disordered eating behavior and symptoms

Note. 2-Problematic eating behavior and concerns; 1-No or low concern overweight and dieting

For the EAT-26 a cut-off score of 20 or above indicates body weight, body shape, and eating-related issues (Garner et al., 1982). As can be seen in figure 3.2, only 4.38% of participants reported disordered eating attitudes and concerns. Previous studies vary in their reporting of high

score frequencies among boys and young men, with some studies reporting rates of 2-3% (Buddeberg-Fischer et al., 1996; King, 1986) while some studies were getting results as high as 8% (Canals et al., 1996). The present sample comprises mostly male participants (75.5%) and found 4.38% of the participants to score above the cut-off point, which falls within the range reported by previous studies among young men.

3.4.3 Factor Analysis

This process attempts to explain the co-variances between a cluster of observed variables using a smaller number of underlying latent factors (Hox & Bechger, 1998). Though all the measures used in this study are standardized, most of these were developed and have been predominantly used in Western samples. To ascertain their applicability in the present sample, both exploratory and confirmatory analyses were conducted. *The sample was divided into two halves, with the first 206 observations used for exploratory factor analysis while the remaining 205 used for conducting confirmatory factor analysis.*

Exploratory Factor Analysis (EFA)

This analysis uses a random model wherein all the variables load on to all factors to determine the factor structure and internal reliability of a measure (Hox & Bechger, 1998). The process of deciding how many factors to keep is called *extraction*. For the given study, **Principal Axis Factoring** was used as the method for factor extraction (De Winter & Dodou, 2012; Field, 2013), and only factors with eigen values greater than 1 retained (Kaiser, 1960). As this study did not assume the factors to be uncorrelated to each other oblique rotation (promax) was utilized to achieve a simple oblique structure. Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy (cut-off above .50) is used to determine whether the scales are suitable for EFA. This has been reported in Table 3.2. Following Field's (2013) recommendation factor loadings greater than .364 were retained. For example, as item 11 of the social interaction anxiety scale failed to show adequate factor loadings this item was dropped from all subsequent analyses. It should be noted that this was one of the only three reverse-coded items in the scale. This might be due to the respondent's difficulty in understanding and interpreting reverse-coded items sometimes.

Table 3.2

Table showing EFA parameters for all scales

Sr. No.	Scale	No. of factors	No. of Items	Total Variance Explained (%)	Kaiser-Meyer-Olkin
1	Social Interaction Anxiety Scale (SIAS) at T1	1	19	30.946	.868
2	Parental Bonding Instrument (PBI)-Father	3	25	47.821	.899
3	Parental Bonding Instrument (PBI)-Mother	3	25	41.999	.883
4	Revised Peer Experiences Questionnaire—Victim	2	13	43.365	.804
6	Brief Fear of Negative Evaluation	1	8	68.161	.916
7	Social Appearance Anxiety Scale	1	16	57.500	.953
8	Eating Attitudes Test-26	3	16	32.286	.672
9	Body Esteem Scale	3	20	49.897	.882
10	Difficulties in Emotion Regulation Scale	3	15	59.077	.798
11	Beck's Depression Inventory (BDI)-Shortened version	1	13	36.707	.908

3.4.4 Bivariate Analysis

Correlations

Appendix 15 shows the zero-order correlations between all the major variables of the first study, namely, social interaction anxiety, disordered eating behavior and symptoms, mother's bonding, father's bonding, fear of negative evaluation, social appearance anxiety, the three dimensions of Body Esteem Satisfaction (Appearance satisfaction, weight satisfaction and satisfaction with evaluations attributed to other people about one's own body and appearance) and difficulties in emotion regulation.

Analyses of Group Differences

To test the first research question, independent sample t-tests were run for social anxiety, the three dimensions of Body Esteem Satisfaction, and disordered eating behavior and symptoms.

Table 3.3

Table showing t-test results of gender differences

Scale	*F*	*t*	Mean	Standard Deviation
Social Interaction Anxiety	19.678**	-4.762**	28.7917(male) 38.7778(female)	9.98005(male) 16.66026(female)
Disordered eating behaviour	2.184	-1.091	4.1830(male) 4.7524(female)	4.43376(male) 5.10049(female)

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The results have been reported in Table 3.3. Gender differences were significant for social anxiety, t (409) = -4.762, $p < .01$, with females (M = 38.78, SD = 16.65) showing a significantly higher mean than males (M = 28.80, SD = 9.98). Thus, Hypothesis 1.1 is accepted. On the other hand, gender differences in disordered eating behavior and symptoms did not seem to be significant t (409) = -1.091, p = .276. Thus, Hypothesis 1.2 is rejected. However, females (M = 4.74, SD = 5.00) seemed to report more disordered eating behavior than males (M = 4.17, SD = 4.42).

3.4.5. Multivariate Analysis

To answer the third research question, separate regression models were run with all the hypothesized predictors entered as independent variables and social interaction anxiety and disordered eating as the dependent variables, with gender, age, and native place held constant. Since depression is a common comorbid disorder in social anxiety (Bella & Omigbodun, 2009; Mehtalia & Vankar, 2004; Ratnani et al., 2017) as well as ED (Pike & Striegel-Moore, 1997) depression was also held constant. The present study employed hierarchical regression analyses. This type of regression model allows for statistical control and testing incremental validity. The adjusted R^2 is calculated for every step to achieve adequate "control". This accounts for the increase in variance following the introduction of each variable or group of variables into the regression model (Pedhazur, 1997). According to Pedhazur (1997), this regression technique is most applicable when the predictor variables used in the analysis are correlated with each other.

The independent variables have to be entered sequentially in this technique. In all the models, the demographic variables were entered first, followed by the independent variables in the next step.

Predictors of social anxiety

Table 3.4 lists all the significant predictors of social anxiety. It must be noted that separate regression models were run for maternal bonding, paternal bonding, peer victimization, fear of negative evaluation, social appearance anxiety, body esteem satisfaction, and disordered eating. Only the significant associations obtained from all the regression models run were reported in Table 3.4. The demographic variables shown at the beginning of the table were common to all the models.

Table 3.4

Significant predictors of social anxiety (Summary of all regression models run with social anxiety as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Age	.184	22.922***	-.058	-.003
Gender			-1.318	-.060
Place			.167	.008
Depression			9.495***	.426***
Mother's Care	.219	16.169***	-3.196**	-.160**
Relational Victimization	.258	15.4666***	5.046***	.255***
Fear of Negative Evaluation	.371	47.718***	10.955***	.480***
Social Appearance Anxiety	.314	37.020***	8.740***	.416***
Satisfaction with appearance			-3.064**	-.164**
Disordered eating	.199	20.169***	2.556**	.120**

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

Maternal care ($R^2 = .219$; $\beta = -.160$, $p < .01$) was significantly negatively associated with social anxiety. However, social anxiety did not show any significant relationship with parental denial of psychological autonomy and granting of behavioral freedom. Thus, hypothesis 3.1 which stated that *parental care and granting of behavioral freedom would be negatively associated with social anxiety while denial of psychological autonomy would be positively associated with the same,* seems to be only partially supported. The third regression model was run with the different types

of peer victimization as independent variables. Only relational peer victimization (R^2 = .258; β = .255, p < .001) was significantly positively associated with social anxiety, which provides partial support for hypothesis 3.3, which stated that *peer victimization would be positively associated with social anxiety*. Hypothesis 3.5 was accepted as fear of negative evaluation (R^2 = .371; β = .480, p < .001) and social appearance anxiety (R^2 = .314; β = .416, p < .001) both exhibited positive associations with social anxiety. Then a regression model was run with the three-body esteem satisfaction subscales. Satisfaction with other's evaluations about one's attributes (R^2 = .239; β = -.117, p < .001) and appearance (R^2 = .239; β = -.164, p < .01) were significantly negatively related to social anxiety. So, *hypothesis 3.7, which stated that body esteem satisfaction would be negatively associated with social anxiety*, was partially accepted. Finally, disordered eating behaviour was used as the independent variable. Disordered eating behavior and symptoms (R^2 = .199; β = .120, p < .01) was also significantly positively associated with social anxiety.

Predictors of disordered eating behavior and symptoms

Table 3.5 lists all the significant predictors of disordered eating behavior and symptoms. It must be noted that separate regression models were run for maternal bonding, paternal bonding, peer victimization, fear of negative evaluation, social appearance anxiety, body esteem satisfaction, and social anxiety. Only the significant associations obtained from all the regression models run were reported in Table 3.5. The demographic variables shown at the beginning of the table were common to all the models.

The first regression model used social interaction anxiety as the independent variable and disordered eating as the dependent variable. The second regression model was run with maternal bonding followed by paternal bonding. None of the parental bonding dimensions seemed to predict disordered eating behavior, leading to rejection of hypothesis 3.2, which stated that *parental care and granting behavioral freedom would be negatively associated with disordered eating and denial of psychological autonomy would be positively associated with the same,* was rejected. The third regression model was run with the different types of peer victimization. Online peer victimization (R^2 = .074; β = .157, p < .01) was positively related to disordered eating behavior. However, none of the other types of peer victimization exhibited significant associations with disordered eating and behavior. Thus, *hypothesis 3.4, which stated that peer victimization would be positively associated with disordered eating behavior and symptoms, was partially accepted*.

The next two regression models were run with fear of negative evaluation and social appearance anxiety as independent variables. Social appearance anxiety (R^2 = .191; β = .291, p < .001) and fear of negative evaluation (R^2 = .142; β = .230, p < .001) significantly predicted disordered eating. This provided support for hypothesis 3.6, which stated that fear of negative evaluation and social appearance anxiety would be positively associated with disordered eating behavior and symptoms. *Thus, hypothesis 3.6 was accepted.* The last regression model was run with the three-body esteem satisfaction subscales. Hypothesis 3.8 was partially accepted as satisfaction with weight (R^2 = .183; β = -.157, p < .01) and appearance (R^2 = .183; β = -.273, p < .001) was significantly negatively related to disordered eating.

Table 3.5

Significant predictors of disordered eating behavior and symptoms (Summary of all regression models run with disordered eating as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.099	11.135***	-0.055	-1.151
Age			2.148*	.102*
Place			-.471	-.023
Depression			6.152***	.290***
Social Interaction Anxiety	.115	10.510***	2.705**	.135**
Online Victimization	.074	4.001 ***	2.674**	.157**
Fear of Negative Evaluation	.142	13.376***	4.498***	.230***
Social Appearance Anxiety	.191	15.194***	4.969***	.291***
Satisfaction with appearance	.183	12.892***	-4.934***	-.273***
Satisfaction with weight			-3.159**	-.157**

Note. *** p < .001. ** p < .01. * p < .05.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

Association of parental bonding and peer victimization was tested with all the other cognitive and emotional variables. In all the hierarchical linear regression analyses run, important socio-demographic variables like gender, age, and native place (urban/rural) were held constant. Paternal care (R^2 = .074; β = .119, p < .05) and father's granting of behavioral freedom (R^2 = .074; β = .138, p < .01) was significantly related to satisfaction with other's evaluations of one's body as shown in Table 3.6. Except for overt victimization, all other types of peer victimization were significantly associated with this dimension of body esteem satisfaction (refer to Table 3.6).

Table 3.6

Parental and peer predictors of satisfaction with other's evaluations of one's body (Summary of all regression models run with attributions as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.036	5.114**	-3.486***	-.173***
Age			2.096*	.103*
Place			.627	.031
Father's Care	.074	5.390***	2.139*	.119*
Father's granting of behavioral freedom			2.559**	.138**
Relational Victimization	.103	5.776***	-3.275***	-.180***
Reputational Victimization			2.650**	.160**
Prosocial Victimization			-1.942*	-.095*
Online Victimization			-2.028*	-.117*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

As reported in Table 3.7, only paternal care freedom ($R^2 = .052$; $\beta = .129$, $p < .05$) was significantly positively associated with satisfaction with weight. None of the other parental bonding dimensions or peer victimization appeared to be significantly associated with weight (refer to Table 3.7).

Table 3.7

Parental and peer predictors of satisfaction with weight (Summary of all regression models run with satisfaction with

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.007	.929	1.074	.054
Age			1.079	.054
Place			.231	.012
Father's care	.052	3.704**	2.286*	.129*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

Table 3.8

Parental and peer predictors of satisfaction with appearance (Summary of all regression models run with satisfaction with appearance as the dependent variable)

Independent Variable	R Square	*F*	*t*	*β*
Gender	.018	2.433	-1.863	-.093
Age			1.319	.065
Place			-1.295	-.065
Mother's Care	.058	4.128**	3.433***	.182***
Father's Care	.052	3.664***	2.773**	.157**
Relational Victimization	.084	4.595***	-3.761***	-.209***
Online Victimization			-2.255***	-.131*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

As reported in Table 3.8, parental care was significantly positively related to satisfaction with appearance while relational ($R^2 = .084$; $\beta = -.209$, $p < .001$) and online victimization freedom ($R^2 = .084$; $\beta = -.131$, $p < .05$) were negatively associated with the same. Table 3.9 exhibits that parental care was significantly associated with a lack of emotional awareness. Among the various types of peer victimization, only online victimization was positively related to lack of emotional awareness ($R^2 = .074$; $\beta = .155$, $p < .01$).

Table 3.9

Parental and peer predictors of lack of emotional awareness (Summary of all regression models run with lack of emotional awareness as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.019	2.685*	-1.455	-.073
Age			2.519**	.124*
Place			-.319	-.016
Mother's Care	.079	5.748***	-2.912**	-.153**
Father's Care	.075	5.452***	-3.133**	-.175**
Online Victimization	.074	4.017**	2.637**	.155**

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

Table 3.10

Parental and peer predictors of non-acceptance of emotions (Summary of all regression models run with non-acceptance of emotions as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.006	.816	-.937	-.047
Age			-.859	-.043
Place			1.014	.051
Mother's Care	.049	3.502**	-3.571***	-.190***
Mother's behavioral freedom			-2.001*	-1.669*
Mother's denial of psychological autonomy			2.064*	1.718*
Father's denial of psychological autonomy	.061	5.251***	4.032***	.214***
Relational Victimization	.083	7.323***	3.707***	.200***
Reputational Victimization			2.295*	.124*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

All the dimensions of maternal bonding were significantly associated with non-acceptance of emotions, the values of which are exhibited in the Table 3.10. Among the paternal bonding dimensions, only father's denial of psychological autonomy ($R^2 = .061$; $\beta = .214$, $p < .001$) was significantly associated with non-acceptance of emotions. Relational ($R^2 = .083$; $\beta = .200$, $p < .001$) and reputational victimization ($R^2 = .083$; $\beta = .124$, $p < .05$) also significantly impacted non-acceptance of emotions.

Table 3.11

Parental and peer predictors of problems with goal-directed behavior (Summary of all regression models run with problems with goal-directed behavior as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.008	1.048	-1.211	-.061
Age			1.394	.069
Place			.002	.000
Reputational Victimization	.022	1.154	2.068*	.129*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

None of the parental bonding dimensions were significantly related to problems with goal-directed behaviour. Of the different types of peer victimization, only reputational victimization (R^2 = .022; β = .129, p < .05) was significantly positively associated with problems with goal-directed behaviour (refer to Table 3.11).

Table 3.12

Parental and peer predictors of Fear of Negative Evaluation (Summary of all regression models run with fear of negative evaluation as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.002	.269	-.585	.559
Age			.574	.566
Place			-.356	.722
Mother's Care	.049	3.503**	-2.946**	-.157**
Father's Care	.041	2.895**	-2.890**	-.164**
Relational Victimization	.108	6.093***	5.633***	.307***

Note. *** p < .001. ** p <. 01. * p < .05.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

Table 3.13

Parental and peer predictors of social appearance anxiety (Summary of all regression models run with social appearance anxiety as the dependent variable)

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.009	1.211***	1.649	.083
Age			.034	.002
Place			.631	.032
Mother's Care	.067	4.864***	-4.480***	-.236***
Father's Care	.053	3.759***	-3.472***	-.196***
Relational Victimization	.132	7.645***	3.981***	.214***
Online Victimization			2.596**	.148**

Note. *** p < .001. ** p < .01. * p < .05.

The dotted lines attempt to demarcate the different regression models. The first block was common to all the models.

As reported in Table 3.12 and 3.13, parental care was significantly negatively linked to fear of negative evaluation and social appearance anxiety, respectively. Among the different types of peer victimization, relational victimization was significantly positively associated with both fear of

negative evaluation (R^2 = .108; β = .307, p < .001) and social appearance anxiety (R^2 = .132; β = .214, p < .001). Social appearance anxiety was also significantly associated with online peer victimization (R^2= .132; β = .148, p < .01).

3.4.5 Structural Equation Modelling (SEM)

Structural Equation Modeling or SEM is a commonly used technique in the behavioral sciences (Hox & Bechger, 1998), combining features of both factor analysis and regression. The usefulness of SEM stems from the fact that it allows the inclusion of multiple mediators or dependent variables (Danner, Hagemann, & Fiedler, 2015). These models are visualized by a graphical path diagram where rectangular or square boxes represent observed or measured variables, and circles or ellipses denote latent factors. Causal relationships are indicated by single-headed arrows known as 'paths' while correlations or covariances are indicated by the use of double-headed arrows (Hox & Bechger, 1998). The basic model is represented by the formula:

DATA = MODEL + ERROR.

The primary aim of the software is to increase model fit while taking into consideration model restrictions (Gunzler et al., 2013).

Estimation and Model Fit

A highly significant chi-square translates to the rejection of the hypothesized model. However, the power of statistical tests for model fit varies considerably with the sample size such that statistical tests will almost certainly be significant for huge samples leading to rejection of the model. Since this statistic is so sensitive to sample size, other fit indices should also be taken into consideration while assessing model fit. Some commonly used goodness-of-fit indices are GFI (Goodness of Fit), AGFI (Adjusted GFI) (Jöreskog & Sörbom, 1989), Tucker-Lewis Index (TLI) or Non-Normed Fit Index (NNFI; Tucker & Lewis, 1973), and the Normed Fit Index (NFI; Bentler & Bonett, 1980). A value of 1 indicates a perfect fit. Using the rule of thumb, a value of 0.90 is used to accept a model and a value of 0.95 or above seems to indicate 'good' model fit. Along with fit, the simplicity of the model is also taken into account, with simple models being preferred over comparatively complex ones. It must be pointed out that models are mere approximations. So, the aim should be to evaluate how well a given model approximates the true model, which can be assessed with the help of Root Mean Square Error of Approximation (RMSEA). The smaller the

RMSEA value the better is the approximation. Significance is denoted by the standard errors in parentheses next to the unstandardized loadings. If a model fails to achieve a good fit, one can remove insignificant parameters and add parameters that might improve the fit. This is usually done with the help of modification indices which basically denotes the minimum expected reduction in the chi-square statistic if the corresponding parameter is released.

Confirmatory Factor Analyses

A restricted or confirmatory factor analysis (CFA) model represents a hypothesized factor structure which is then imposed on the data. So, modeling here attempts to obtain estimates of the model parameters and assess model fit. For each factor, one loading is fixed to one.

Table 3.14

Table showing significant predictors of Confirmatory Factor Analyses (CFA) parameters of all measures used in the present study

Sr. No.	Scale	No. of Factors	Chi square	*CMIN/DF*	*CFI*	*NFI*	*GFI*	*RMSEA*	*IFI*	*TLI*
1	Social Interaction Anxiety	1	211.640	1.591	.930	.835	.893	.054	.932	.920
2	Parental Bonding (Father)	3	618.246	2.360	.903	.844	.889	.058	.904	.889
3	Parental Bonding (Mother)	3	429.875	1.628	.894	.770	.852	.055	.896	.880
4	Peer Victimization	4	91.119	1.599	.957	.896	.938	.054	.958	.942
5	Online Victimization	1	59.842	1.760	.946	.886	.948	.061	.947	.929
6	Brief Fear of Negative Evaluation	1	9.350	1.039	1.000	.993	.989	.014	1.000	.999
7	Social Appearance Anxiety	1	169.838	1.975	.982	.964	.951	.049	.982	.974
8	Eating Attitudes Test-26	3	193.104	1.951	.818	.697	.893	.063	.825	.779
9	Body Esteem Satisfaction	3	419.710	1.934	.888	.797	.840	.068	.891	.870
10	Difficulties in Emotion Regulation Scale	3	178.804	1.882	.952	.905	.904	.066	.953	.940
11	Beck's Depression Inventory-Short version	1	84.984	1.328	.968	.883	.943	.040	.968	.961

Note: DF - Degree of Freedom*; CMIN* - Chi-square equivalent in Confirmatory Factor Analysis*; GFI* - Goodness of Fit Index*; AGFI* - Adjusted Goodness of Fit Index*; NFI* - Normed Fit Index*; IFI* - Incremental Fit Index*; TLI* - Tucker Lewis Index*; CFI* - Comparative Fit Index*; RMSEA* - Root Mean Square Error of Approximation

"Factor loadings" or regression coefficients are represented by single-headed arrows from the factors to the variables. Observed variations cannot be fully explained by the latent factors. So, residual error terms represented by circles are linked with all observed variables. In the present study, the fit of the models was examined in terms of chi-square (CMIN), comparative fit index (CFI), root mean square error of approximation (RMSEA), Tucker-Lewis Index (TLI), Incremental Fit Index (IFI), GFI and NFI and have been reported in the Table 3.14. According to conventional criteria, the value of CMIN/DF < 3, CFI > 0.90, RMSEA < 0.06, TLI>0.90 and IFI>0.90 indicates as acceptable fit in confirmatory factor analysis (Schermelleh-Engell, Moosbrugger, & Müller, 2003; Uji et al. 2006; Ngai et al. 2018). *CFA was conducted on 205 out of the total 411 sample size, while the rest of the sample was used for EFA.*

The CFA confirms the results obtained through EFA (refer to Table 3.2). The Social Interaction Anxiety Scale and Social Networking-Peer Experiences Questionnaire seem to be measuring one particular variable, each. The peer victimization questionnaire seems to have four sub-factors, namely, overt, relational, reputational & pro-social victimization. The Difficulties in Emotion Regulation Scale has three sub-factors, namely, lack of emotional awareness, non-acceptance of emotions, and difficulties engaging in goal-directed behavior. The Eating Attitudes Test- 26 (EAT-26) also consists of three sub-factors, namely, dieting, oral control, and food pre-occupation, per Garner et al.'s (1982) original factor structure. The Parental Bonding Instrument had three dimensions, which are in line with the factor structure of the PBI when administered to students in the US and the UK (Murphy et al., 1997). In accordance with Murphy et al. (1997), the three factors were named *care, denial of psychological autonomy,* and *encouragement of behavioral freedom.* It differs from the original factor structure, which reported only two factors, namely care and over-protection. In the three-factor structure, the over-protection dimension was further disintegrated into psychological and behavioral control. Parental denial of psychological control primarily pertains to the management of psychological and emotional experiences and expressions, while behavioral control refers to parental supervision and regulations of a child's behavior (Steinberg, 1990).

Shared vulnerabilities for social anxiety and disordered eating comorbidity

To test the fourth hypothesis, a path analysis was run with all the common significant predictors of social anxiety and disordered eating as identified by correlation (refer to Appendix 15) and

hierarchical regression analysis (refer to Table 3.4 and Table 3.5). The model showed in Figure 3.3 has excellent parameters and is thus accepted (refer to Table 3.15). Fear of negative evaluation and social appearance anxiety emerged as a shared vulnerability factor for social anxiety and comorbid disordered eating behavior, while satisfaction with appearance is a specific predictor of disordered eating behavior and symptoms. The standard regression weights of the significant relations are exhibited in Table 3.16.

Table 3.15

Important SEM parameters for the Vulnerability Model

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
.340	1	.560	.340	1.000	.995	.999	1.001	1.010	1.000	.000

Note: DF-Degree of Freedom*; CMIN*-Chi-square equivalent in Confirmatory Factor Analysis*; GFI*-Goodness of Fit Index*; AGFI*-Adjusted Goodness of Fit Index*; NFI*-Normed Fit Index; *IFI*-Incremental Fit Index*; TLI*-Tucker Lewis Index*; CFI*-Comparative Fit Index*; RMSEA*- Root Mean Square Error of Approximation

Table 3.16

Standardized Regression Weights of the Vulnerability Model

			Estimate
Disordered Eating	<---	Satisfaction with Appearance	.233***
Social anxiety	<---	Fear of Negative Evaluation	.400***
Social anxiety	<---	Satisfaction with Appearance	.295***
Disordered Eating	<---	Satisfaction with Appearance	-.143**
Disordered Eating	<---	Fear of Negative Evaluation	.123*

Note: *** $p < .001$. ** $p < .01$. * $p < .05$.

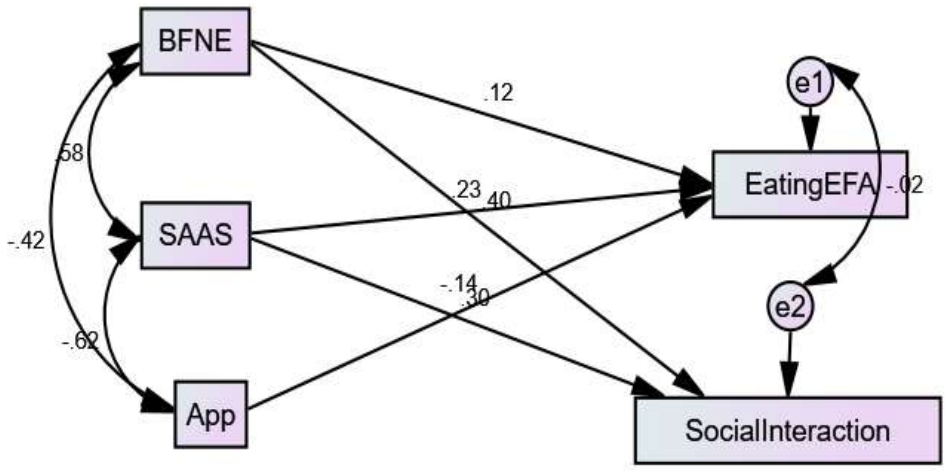

Figure 3.3. Vulnerability model. The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms; SocialInteraction- Social Anxiety; EatingEFA- disordered eating behavior and symptoms; App-satisfaction with appearance; BFNE-fear of negative evaluation; SAAS-social appearance anxiety

Mediation Analyses

This data was first subjected to correlation and multiple regression analysis to identify significant associations between variables. Then mediation analyses were conducted to understand the underlying processes that lead to the observed associations. In this process, an intermediate variable called the mediator (M) is used to explain the mechanism by which an independent variable influences the dependent variable (Gunzler et al., 2013). A variable is considered a mediator only if the independent variable significantly predicts both the mediator and outcome. Moreover, the mediator should significantly predict the dependent variable even after controlling for the predictor variable (Baron & Kenny, 1986). The error terms are assumed to be uncorrelated while performing mediation analysis (Imai, Keele & Tingley, 2010). The effect of the predictor variables on the outcome while controlling for the mediator is known as the *direct effect*. On the other hand, the pathway from the predictor to the dependent variable through the mediator is usually referred to as the *indirect effect* (Gunzler et al., 2013). Hayes and Rockwood (2017) define the indirect effect as the conjunction of the effect of the independent variable on the mediator and its effect on the outcome. The direct and indirect effects together give the total effect (Gunzler et al., 2013).

All the mediation analyses for the present study were conducted in AMOS22. The detection of

indirect effects is easier by this method as SEM inherently corrects for measurement errors. The current version of AMOS assesses indirect effects by bootstrapping. This method takes multiple samples comparable in size to the original sample from the data, samples with replacement, and calculates the indirect effect in each sample (Preacher & Hayes, 2004). To achieve the 95% confidence interval, a sorted distribution was used by arranging the elements of the vector of 2,000 estimates of the indirect effect in an incremental manner (Hayes & Scharkow, 2013; Preacher & Hayes, 2004). The lower and upper limits of the confidence interval are defined as the 25th and 976th scores, respectively (Preacher & Hayes, 2004).

SEM estimates two covariance matrices of the observed data:

i. one without any model assumptions.
ii. a model-dependent covariance matrix of the observed variables (Danner, Hagemann & Fiedler, 2015)

Lack of significant difference between the matrices indicates a good model fit (Danner, Hagemann & Fiedler, 2015). An iterative algorithm like maximum likelihood is used to assess the magnitude of an indirect effect which is divided by its standard error to test for significance (e.g., Iacobucci, Saldanha & Deng, 2007; Kline, 2011; MacKinnon, 2008).

Perfect or complete mediation occurs when the effect of X on Y is reduced to zero with the addition of M. (Preacher & Hayes, 2004). Partial mediation occurs when the effect of X on Y decreases by a nontrivial amount but does not reach zero. The present study primarily dealt with complicated mediation models where several mediators were linked in a parallel fashion. In a parallel model, mediators are often correlated (Hayes & Rockwood, 2017). According to Hayes & Rockwood (2017), for hypothesized models with multiple mediators all the indirect effects should be estimated in one model as estimating a set of simple mediation models with one mediator reduces the agreement between theory and model. So, all the mediation analyses in this study with multiple mediators have been executed as single multiple-mediator models.

Emotion regulation strategies mediating the relationship of parental bonding with social anxiety and disordered eating comorbidity

To test hypothesis 5.1.1, a parallel mediation analysis was conducted with the three emotion regulation strategies as mediators, social anxiety, and disordered eating as dependent variables and the eight parental bonding dimensions as independent variables. After removing the non-

significant pathways, the model showed in Figure 3.4 was obtained, whose parameters are listed in Table 3.17.

Table 3.17

Table showing important parameters of the SEM model for Emotion Regulation mediating the link of Parental Bonding with Social Anxiety and Disordered Eating

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
4.489	2	.089	2 .425	.995	.965	.970	.982	.906	.980	.059

Note: DF-Degree of Freedom*; CMIN*-Chi-square equivalent in Confirmatory Factor Analysis*; GFI*-Goodness of Fit Index*; AGFI*-Adjusted Goodness of Fit Index*; NFI*-Normed Fit Index*; IFI*-Incremental Fit Index*; TLI*-Tucker Lewis Index*; CFI*-Comparative Fit Index*; RMSEA*- Root Mean Square Error of Approximation

As exhibited by Table 3.18, non-acceptance of emotions had a positive relationship with both social anxiety and disordered eating. Thus, an increase in non-acceptance of emotions leads to an increase in maladaptive symptoms and attitudes. These results are in line with the regression results (refer to Table 3.10), which also found a significant negative relationship of non-acceptance of emotions with both mother's care and father's denial of psychological autonomy. Non-acceptance of emotions seems to partially mediate the relationship between mother's care with social anxiety and disordered eating behavior as mother's care had a direct relationship with social anxiety and comorbid disordered eating. The relationship between the father's denial of psychological autonomy with social anxiety and comorbid disordered eating was completely mediated by non-acceptance of emotions (refer to Table 3.29).

Table 3.18

Standardized Regression Weights of the emotion regulation and parental bonding mediation model

			Estimate
Non-Acceptance	<---	Father's denial of psychological autonomy	.197***
Non-Acceptance	<---	Mother's Care	-.110*
Social Anxiety	<---	Non-Acceptance	.260***
Disordered Eating	<---	Non-Acceptance	.098*
Social Anxiety	<---	Mother's Care	-.246***
Disordered Eating	<---	Mother's Care	-.128**

Note: *** $p < .001$. ** $p < .01$. * $p < .05$.

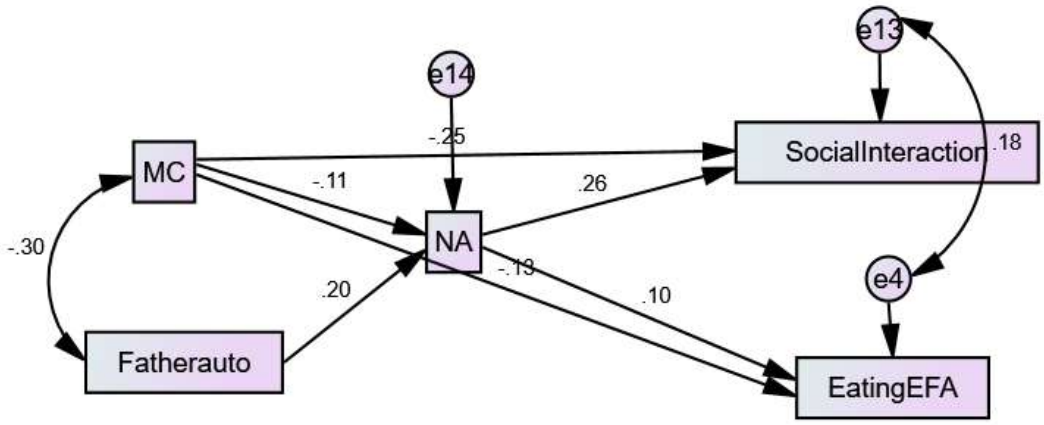

Figure 3.4. Non-acceptance of emotions (NA) serving as a mechanism linking mother's care and father's denial of psychological autonomy (Fatherauto) with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Emotion regulation strategies mediating the relationship of peer victimization with social anxiety and disordered eating comorbidity

Parallel mediation analysis with three difficulties in emotion regulation, namely, lack of emotional awareness, non-acceptance of emotional responses and difficulties engaging in goal-directed behavior, as mediators, social anxiety and disordered eating as dependent variables and overt, reputational, relational, pro-social and online victimization as independent variables, was set up to provide support for hypothesis 5.1.2. After removing the non-significant pathways, the model showed in Figure 3.5 was obtained, whose parameters are listed in Table 3.19, and the standardized regression weights are listed in Table 3.20.

Table 3.19

Table showing important parameters of SEM model exhibiting emotion regulation strategies mediating the relationship of peer victimization with social anxiety and disordered eating

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
1.147	2	.564	.573	.999	.993	.999	1.001	1.002	1.000	.000

Note. DF-Degree of Freedom; *CMIN*-Chi-square equivalent in Confirmatory Factor Analysis; *GFI*-Goodness of Fit Index; *AGFI*-Adjusted Goodness of Fit Index; *NFI*-Normed Fit Index; *IFI*-Incremental Fit Index; *TLI*-Tucker Lewis Index; *CFI*-Comparative Fit Index; *RMSEA*- Root Mean Square Error of Approximation

All the variables have a positive relationship with each other. Online peer victimization significantly positively impacts a lack of emotional awareness such that being bullied can lead to increased difficulty in regulating negative emotions. Lack of emotional awareness, in turn, leads to increases in social anxiety and comorbid disordered eating. Since online victimization does not significantly directly influence either social anxiety or disordered eating behavior, a lack of emotional awareness can be said to completely mediate the association of online victimization with social anxiety and comorbid disordered eating (refer to Table 3.29).

Table 3.20

Standardized Regression Weights of the emotion regulation and peer victimization mediation model

			Estimate
Lack of Emotional Awareness	<---	Online Victimization	.210***
Disordered eating	<---	Lack of Emotional Awareness	.972***
Social Anxiety	<---	Lack of Emotional Awareness	.225***

Note: *** $p < .001$. ** $p < .01$. * $p < .05$.

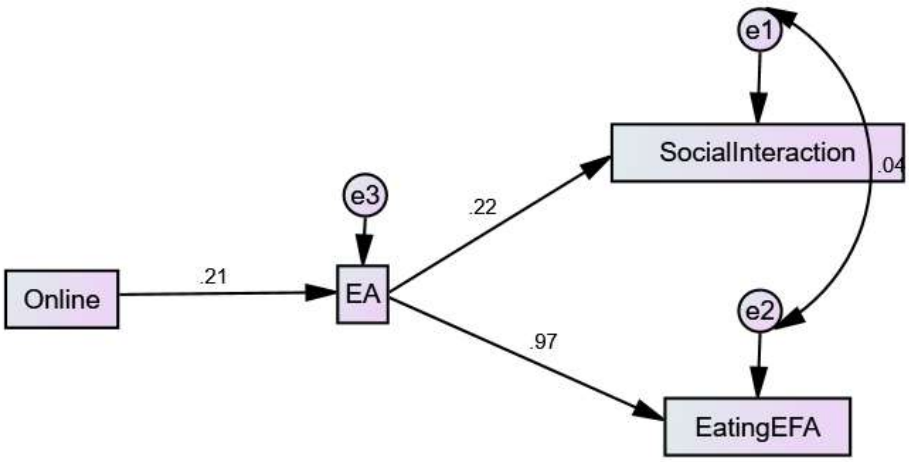

Figure 3.5 Lack of emotional awareness (EA) serving as a mechanism linking online peer victimization with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represent standardized regression coefficients, while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Body esteem satisfaction linking parental bonding with social anxiety and disordered eating comorbidity

To provide support for hypothesis 5.2.1, a mediation model was run with parental bonding as the independent variable, social interaction anxiety and comorbid disordered eating as dependent variables and the three dimensions of Body Esteem Satisfaction, namely satisfaction with other's evaluations about one's body, weight, and appearance, as parallel mediators. After removing the non-significant pathways, the SEM model shown in Figure 3.6 emerged, whose important parameters and standardized regression weights are listed in Tables 3.21 and 3.22, respectively.

Table 3.21

Table showing essential parameters of the SEM model exhibiting body esteem satisfaction mediating the link of parental bonding with social anxiety and disordered eating

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
.134	1	.715	.134	1.000	.998	.999	1.006	1.039	1.000	.000

Note: DF-Degree of Freedom*; CMIN*-Chi-square equivalent in Confirmatory Factor Analysis*; GFI*-Goodness of Fit Index*; AGFI*-Adjusted Goodness of Fit Index*; NFI*-Normed Fit Index*; IFI*-Incremental Fit Index*; TLI*-Tucker Lewis Index*; CFI*-Comparative Fit Index*; RMSEA*- Root Mean Square Error of Approximation

As expected, satisfaction with appearance is negatively associated with social anxiety and disordered eating, while parental care was positively related to satisfaction with appearance (refer to Table 3.22). Simply put, care has a positive impact on satisfaction with an appearance which may help in decreasing social anxiety and comorbid disordered eating.

Table 3.22

Standardized Regression Weights of the body esteem satisfaction and parental bonding mediation model

			Estimate
Satisfaction with Appearance	<---	Father's Care	.193***
Disordered Eating	<---	Satisfaction with Appearance	-.337***
Social Anxiety	<---	Satisfaction with Appearance	-.342***
Social Anxiety	<---	Father's Care	-.129**

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

Mother's care had a direct influence on social anxiety (refer to 3.29). So, satisfaction with appearance partially mediates the relation between mother's care and social anxiety. Given the lack of a direct relation between mother's care and disordered eating, satisfaction with appearance appears to completely mediate this relationship. Given the lack of direct associations of father's care with social anxiety and disordered eating, satisfaction with appearance seemed to completely mediate the effect of mother's care on social anxiety and comorbid disordered eating behaviour (refer to 3.29).

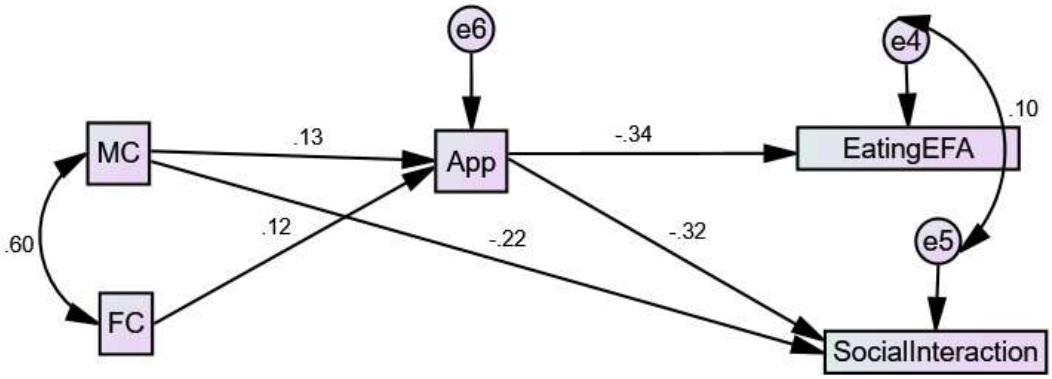

Figure 3.6. Satisfaction with appearance (App) serving as a mechanism linking mother's (MC) and father's care (FC) with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Body esteem satisfaction linking peer victimization with social anxiety and disordered eating comorbidity

To provide support for hypothesis 5.2.2, a mediation model was run with the different types of peer victimizations as the independent variables, social interaction anxiety, and comorbid disordered eating as dependent variables, and the three dimensions of Body Esteem Satisfaction as parallel mediators. After removing the non-significant pathways, the SEM model is shown in figure 3.7 emerged, whose important parameters are listed in table 3.23. All the variables are negatively related to each other (refer to Table 3.24). Thus, relational and online peer victimization negatively impacts satisfaction with appearance, which may lead to increases in social anxiety and

comorbid disordered eating. The association between online victimization and social anxiety was completely mediated by satisfaction with appearance, while it partially mediates the link between online victimization and disordered eating (refer to Table 3.29).

Table 3.23

Table showing parameters of the SEM model exhibiting body esteem satisfaction mediating the link of peer victimization with social anxiety and disordered eating

Chi-square	**DF**	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
2.857	2	.240	1.429	.997	.979	.988	.996	.981	.996	.032

Note. *DF* - Degree of Freedom*; CMIN* - Chi-square equivalent in Confirmatory Factor Analysis*; GFI* -Goodness of Fit Index*; AGFI* - Adjusted Goodness of Fit Index*; NFI* - Normed Fit Index*; IFI* - Incremental Fit Index*; TLI* - Tucker Lewis Index*; CFI*-Comparative Fit Index*; RMSEA* - Root Mean Square Error of Approximation

Table 3.24

Standardized Regression Weights of the body esteem satisfaction and peer victimization mediation model

			Estimate
Satisfaction with Appearance	<---	Online Victimization	-.128**
Satisfaction with Appearance	<---	Relational Peer Victimization	-.211***
Social Anxiety	<---	Satisfaction with Appearance	-.299***
Social Anxiety	<---	Relational Peer Victimization	.276***
Disordered Eating	<---	Satisfaction with Appearance	-.308***
Disordered Eating	<---	Online Victimization	.153**

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

Relational peer victimization affected social anxiety both directly as well as indirectly through satisfaction with appearance (refer to Table 3.29). Thus, satisfaction with appearance partially mediates the association of relational victimization with social anxiety. Disordered eating behavior and symptoms were influenced by relational victimization only through satisfaction with appearance. Hence, satisfaction with appearance completely mediates the association of relational peer victimization with disordered eating (refer to Table 3.29).

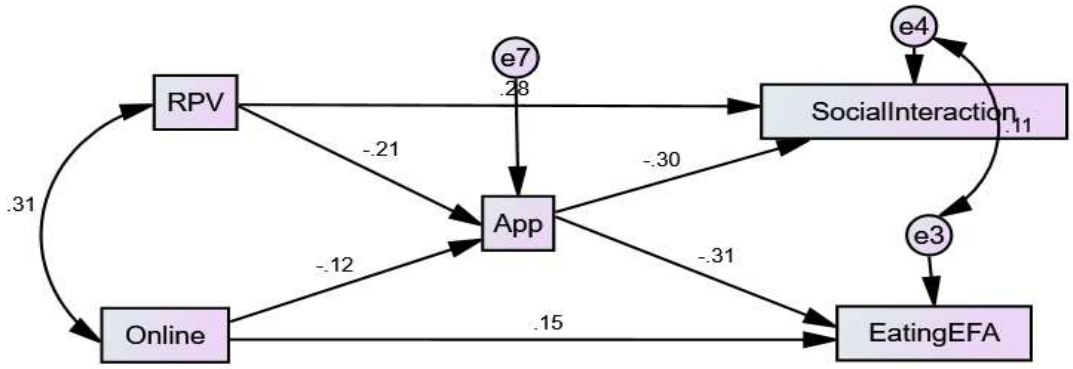

Figure 3.7. Satisfaction with attributions serving as a mechanism linking Relational (RPV), and Online peer victimization with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Fear of negative evaluation and social appearance anxiety linking parental bonding with social anxiety and disordered eating comorbidity

To test hypothesis 5.3.1., mediation analysis was conducted whose significant model parameters are reported in Table 3.25. The significant associations are listed in Table 3.26.

Table 3.25

Significant parameters of the SEM model exhibiting fear of negative evaluation and social appearance anxiety mediating the link of parental bonding with social anxiety and disordered eating

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
7.250	7	.403	1.036	.995	.980	.989	1.000	.999	1.000	.009

Note: DF - Degree of Freedom; CMIN - Chi-square equivalent in Confirmatory Factor Analysis; GFI - Goodness of Fit Index; AGFI - Adjusted Goodness of Fit Index; NFI - Normed Fit Index; IFI - Incremental Fit Index; TLI - Tucker Lewis Index; CFI - Comparative Fit Index; RMSEA- Root Mean Square Error of Approximation

The final mediation model obtained after removing all the insignificant pathways is exhibited in Figure 3.8. Mother's care and father's granting of behavioral freedom affected social anxiety and disordered eating through fear of negative evaluation and social appearance anxiety. However, none of the other dimensions of parental bonding seemed to feature in this relationship. Thus, hypothesis 5.3.1 is partially supported.

Table 3.26

Standardized Regression Weights of the fear of negative evaluation, social appearance anxiety, and parental bonding mediation model

			Estimate
Fear of Negative Evaluation	<---	Mother's Care	-.194***
Social Appearance Anxiety	<---	Mother's Care	-.245***
Social Appearance Anxiety	<---	Father's granting of behavioral freedom	-.092*
Social Appearance Anxiety	<---	Father's denial of psychological autonomy	.082*
Disordered Eating	<---	Fear of Negative Evaluation	.136**
Social Anxiety	<---	Social Appearance Anxiety	.267***
Disordered Eating	<---	Social Appearance Anxiety	.315***
Social Anxiety	<---	Mother's Care	-.151***
Social Anxiety	<---	Fear of Negative Evaluation	.387***

Note: *** $p < .001$. ** $p < .01$. * $p < .05$.

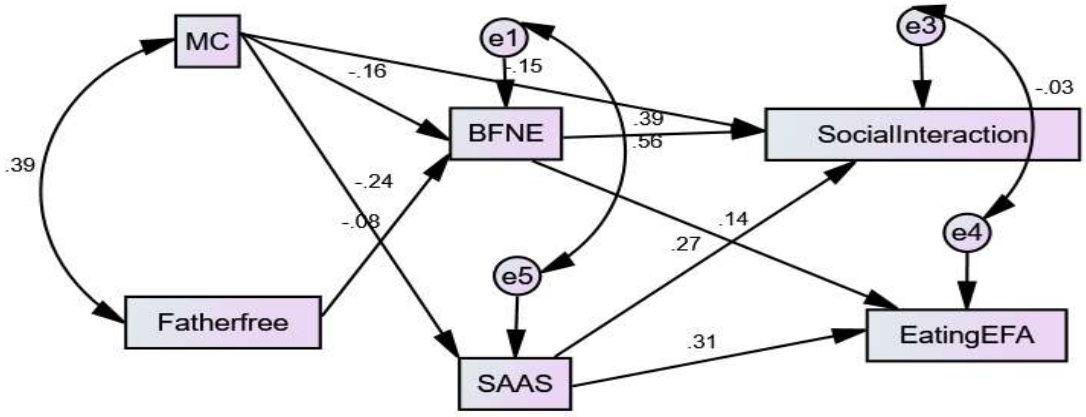

Figure 3.8. Fear of negative evaluation (BFNE) and social appearance anxiety (SAAS) serving as a mechanism linking mother's care (MC) and father's granting of behavioral freedom (Fatherfree) with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Mother's care is directly as well as indirectly related to social anxiety through fear of negative evaluation and social appearance anxiety. On the other hand, it is only indirectly related to disordered eating behavior and symptoms through fear of negative evaluation and social

appearance anxiety. So, fear of negative evaluation and social appearance anxiety partially mediates the relation between mother's care and social anxiety while it completely mediates the association between mother's care and disordered eating behavior and symptoms (refer to Table 3.29). Only fear of negative evaluation completely mediates the impact of the father's granting of behavioral freedom on social anxiety and comorbid disordered eating (refer to Table 3.29).

Fear of negative evaluation and social appearance anxiety linking peer victimization with social anxiety and disordered eating comorbidity

To investigate research objective 5.3.2, mediation analysis was conducted with fear of negative evaluation and social appearance anxiety as mediators. The final mediation model is exhibited in figure 3.9, and the significant parameters of the SEM model are noted in table 3.27. As shown in Table 3.28, only relational and online peer victimization significantly affected social anxiety and disordered eating comorbidity while overt, reputational, and pro-social peer victimization did not.

Table 3.27

Significant parameters of the SEM model exhibiting fear of negative evaluation and social appearance anxiety mediating the link of relational and online peer victimization with social and disordered eating

Chi-square	***DF***	**Probability**	***CMIN/DF***	***GFI***	***AGFI***	***NFI***	***IFI***	***TLI***	***CFI***	***RMSEA***
.527	3	.090	2.163	1.000	.996	.999	1.003	1.020	1.000	.053

Note: DF-Degree of Freedom*; CMIN*-Chi-square equivalent in Confirmatory Factor Analysis*; GFI*-Goodness of Fit Index; *AGFI*-Adjusted Goodness of Fit Index*; NFI*-Normed Fit Index*; IFI*-Incremental Fit Index*; TLI*-Tucker Lewis Index*; CFI*-Comparative Fit Index*; RMSEA*- Root Mean Square Error of Approximation

Relational peer victimization impacted social anxiety directly as well as indirectly through fear of negative evaluation and social appearance anxiety (refer to Table 3.29). Thus, fear of negative evaluation and social appearance anxiety partially mediates the relationship between relational victimization and social anxiety. All the variables are positively related to each other (refer to Table 3.28). Disordered eating behavior and symptoms seem to be affected only indirectly by relational peer victimization through fear of negative evaluation as well as social appearance anxiety (refer to Table 3.29). Thus, fear of negative evaluation and social appearance anxiety completely mediates the link between relational victimization and disordered eating behavior.

Table 3.28

Standardized Regression Weights of the fear of negative evaluation, social appearance anxiety, and peer victimization mediation model

			Estimate
Social Appearance Anxiety	<---	Relational Peer Victimization	.250***
Fear of Negative Evaluation	<---	Relational Peer Victimization	.310***
Social Appearance Anxiety	<---	Online Victimization	.184***
Disordered Eating	<---	Fear of Negative Evaluation	.144**
Social Anxiety	<---	Social Appearance Anxiety	.265***
Disordered Eating	<---	Social Appearance Anxiety	.279***
Social Anxiety	<---	Relational Peer Victimization	.159***
Social Anxiety	<---	Fear of Negative Evaluation	.369***
Disordered Eating	<---	Online Victimization	.113*

Note: *** $p < .001$. ** $p < .01$. * $p < .05$.

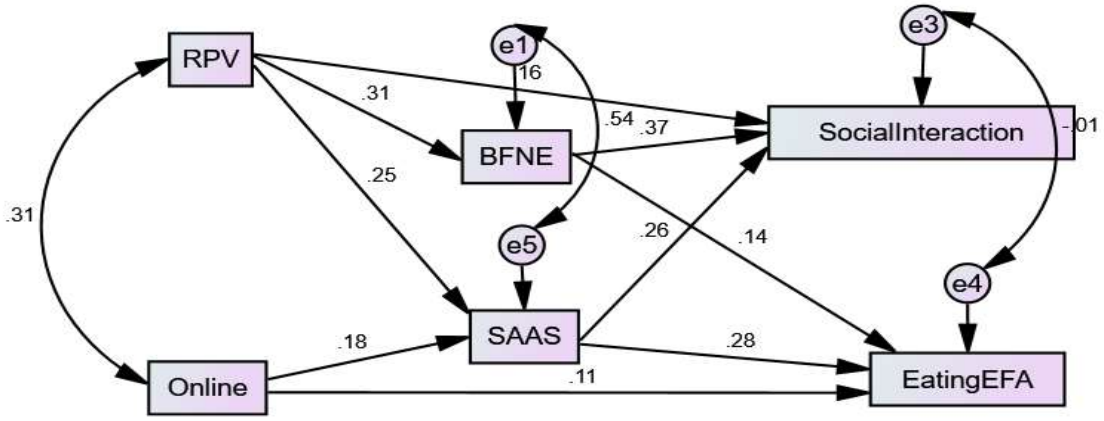

Figure 3.9. Fear of negative evaluation (BFNE) and social appearance anxiety (SAAS) serving as a mechanism linking relational peer (RPV) and Online peer victimization with social anxiety (SocialInteraction) and disordered eating behavior and symptoms (EatingEFA). The values shown on the single-headed arrow represents standardized regression coefficients while the double-headed arrows represent the correlation.

Note. e – Measurement error terms

Online victimization influenced disordered eating directly as well as indirectly through social appearance anxiety. So, social appearance anxiety partially mediates the association of online victimization with social anxiety and comorbid disordered eating (refer to Table 3.29). Conversely,

given the lack of association between online victimization and social anxiety, social appearance anxiety completely mediates the relationship between online victimization and social anxiety (refer to Table 3.29). Table 3.29 summarises the results of the mediation analyses. To summarise, among the parental bonding dimensions, mother's care, father's denial of psychological autonomy, and parent's granting of behavioral freedom significantly impacted social anxiety and disordered eating comorbidity. Out of the various types of peer victimization, relational and online victimization emerged significant vulnerability factors.

Table 3.29

Table showing direct and indirect effects of mediation analyses

Hypothesis	Direct Effect	Indirect Effect	Comments
Mother's Care → Non-acceptance of emotions → Social Anxiety	-.246***	-.029**	Partial Mediation
Mother's Care → Non-acceptance of emotions → Disordered Eating	-.128**	-.011*	Partial Mediation
Father's denial of psychological autonomy → non-acceptance of emotions → Social anxiety	Non-significant	.051***	Complete Mediation
Father's denial of psychological autonomy → non-acceptance of emotions → Disordered eating	Non-significant	.019*	Complete Mediation
Online Victimization → Lack of emotional awareness → Disordered Eating	Non-significant	.204***	Complete Mediation
Online Victimization → Lack of emotional awareness → Social Anxiety	Non-significant	.047***	Complete Mediation
Mother's Care → Satisfaction with appearance → Social Anxiety	-.219***	-.041*	Partial Mediation
Mother's Care → Satisfaction with appearance → Disordered Eating	Non-significant	-.043*	Complete Mediation
Father's Care → Satisfaction with appearance → Social Anxiety	Non-significant	-.038*	Complete Mediation
Father's Care → Satisfaction with appearance → Disordered Eating	Non-significant	-.039*	Complete Mediation
Relational Victimization → Satisfaction with appearance → Social Anxiety	.276***	.063***	Partial Mediation
Relational Victimization → Satisfaction with appearance → Disordered Eating	Non-significant	.065***	Complete Mediation
Online Victimization → Satisfaction with appearance → Social Anxiety	Non-significant	-.038**	Complete Mediation
Online Victimization → Satisfaction with appearance → Disordered eating	.153**	-.039**	Partial Mediation
Mother's Care → Fear of Negative Evaluation and social appearance anxiety → Social anxiety	-.152**	-.128***	Partial Mediation
Mother's Care → Fear of Negative Evaluation and social appearance anxiety → Disordered eating	Non-significant	-.098***	Complete Mediation
Father's granting of behavioral freedom → fear of negative evaluation → Social anxiety	Non-significant	-.029*	Complete Mediation
Father's granting of behavioral freedom → fear of negative evaluation → Disordered eating	Non-significant	-.010*	Complete Mediation
Relational Peer Victimization → Fear of Negative Evaluation and Social Appearance Anxiety → Social Anxiety	.159***	.181***	Partial Mediation
Relational Peer Victimization → Fear of Negative Evaluation and Social Appearance Anxiety → Disordered Eating	Non-Significant	.114***	Complete Mediation
Online Victimization → Social Appearance Anxiety → Social Anxiety	Non-Significant	.049***	Complete Mediation
Online Victimization → Social Appearance Anxiety → Disordered Eating	.108*	.052***	Partial Mediation

Note: *** $p < .001$. ** $p < .01$. * $p < .05$

3.5 Discussion

The following section is dedicated to discussing the results reported in the previous (refer to Section 3.4 Results) section. All the significant findings of the study will be discussed in this section, starting from the first hypothesis.

3.5.1 Gender Differences

The first research question pertained to investigating gender differences in social anxiety and disordered eating.

Gender differences in social anxiety

Gender differences were significant for social anxiety, with females showing a significantly higher mean than males. Hence, *Hypothesis 1.1,* which stated that *female participants would exhibit more social anxiety than male participants,* was accepted. This finding is in line with the DSM-5, which states that the prevalence of Social Anxiety Disorder (SAD) is higher in women (American Psychiatric Association, 2013). While women reported higher SAD prevalence rates with an odds ratio of 1.6 in a European sample (Ohayon & Schatzberg, 2010), a female to male ratio of 1.35 was reported for lifetime prevalence of SAD among American young adults (Xu et al., 2012). So, the finding that women tend to report higher prevalence rates compared to men appears to be quite consistent across epidemiological studies, though the rates may vary (Asher, Asnaani & Aderka, 2017). These results have been replicated with Indian samples as well, with female school students reporting more frequent social phobia than their male counterparts (Chhabra et al., 2009). SAD is more frequent among women than men (Ratnani et al., 2017). Ganapathi et al. (2016) found a female preponderance to increasing levels of social anxiety among medical undergraduates.

However, not all studies on social anxiety reported gender differences. Several studies reported no differences between men and women among social anxiety disorder patients (Caballo et al., 2014; McLean, Asnaani, Litz, & Hofmann, 2011; Stewart & Mandrusiak, 2007). Thus, Caballo et al. (2014) suggested that the gender difference in social anxiety is not consistent among clinical samples. Some studies among Indian students also failed to find significant gender differences (Mehtalia & Vankar, 2004; Shah & Kataria, 2009). The one consistent finding across studies was that men and women vary in the social situations they fear with women reporting more fears related to professional situations while men were more likely to fear courtship (Xu et al., 2012). Among

community samples, sex differences were explicitly observed in anxiety during public speaking, speaking to authority figures, interactions with strangers, and with the opposite sex (Caballo et al., 2014). This is in line with the present findings, as this study measured social interaction in particular. Caballo et al. (2014) attributed these differences to the fact that women in some societies seem to be more passive in interactions with the opposite gender. In such societies, the social behavior of women is under more scrutiny and restrictions by parents and society in general as compared to men. As a result, they might experience more anxiety when asked about interactions with others, especially strangers (Caballo et al., 2014).

Gender differences in disordered eating behavior and symptoms

Though gender differences in disordered eating behavior and symptoms were not significant, females (M = 4.74, SD = 5.00) did report more disordered eating behavior than males (M = 4.17, SD = 4.42; refer to Table 3.4). Most previous studies report more disordered eating behaviour among females than males (Buchanan et al., 2013; Farrow & Fox, 2011; Haines et al., 2006; McCabe et al., 2002). Most disordered eating behavior among women seems to be rooted in a desire to lose weight (McCabe & Ricciardelli, 2005; McCabe, Ricciardelli & Finemore, 2002). This reflects the importance associated with being this in today's society and the extent to which it has been internalized by women (Ali & Lindström, 2006; Karazsia, Murnen & Tylka, 2017; Swami et al., 2010). However, one must not assume that males are not subjected to such societal pressures to achieve the 'perfect body'. For men, achieving the ideal body usually centers around the pursuit of a more muscular physique (Karazsia, Murnen & Tylka, 2017). A study among Indian medical and nursing students reported more disordered eating attitudes and behavior in men than women (Vijayalakshmi et al., 2017). Moreover, the gender differences reported in previous studies might also reflect under-reporting disordered eating symptoms among men. Men may refrain from reporting disordered eating symptoms, especially those pertaining to one's emotions, because of a lack of social acceptance of emotionally expressive men (Lee-Winn et al., 2016). The present sample consisted of young adults studying in a highly renowned technical institute of the country. Probably, the male participants in this study don't adhere as strongly to traditional gender roles as other populations and felt comfortable sharing any eating-related concerns. So, it can be concluded that men and women appear to be quite similar in employing disordered eating behaviour (Brown

et al., 2016), and gender differences probably exist in the motive behind engaging in such behaviour (Latzer, Azaiza & Tzischinsky, 2012).

3.5.2 Social Anxiety and Disordered Eating

To answer the second research question, which pertained to the relationship between social anxiety and disordered eating, correlational as well as regression analyses were conducted. Correlational analysis (refer to Appendix 15) revealed significant associations between social anxiety and disordered eating behavior and symptoms. Hierarchical regression analyses also revealed that social anxiety had a substantial impact on disordered eating and vice versa, irrespective of gender, age, native place (urban/rural), and depression (refer to Tables 3.4 and 3.5). *Thus, hypothesis 2 was accepted*. These findings are an essential addition to a long line of similar findings in clinical as well as community samples (Grabhorn, Stenner, Stangier, & Kaufhold, 2006; Hinrichsen, Wright, Waller, & Meyer, 2003; Levinson & Rodebaugh, 2012; McLean, Miller, & Hope, 2007; Menatti, DeBoer, Weeks, & Heimberg, 2015; Spettigue et al., 2019; Wonderlich-Tierney & Vander Wal, 2010). Arlt et al. (2016) suggested common cognitive patterns as the link between disordered eating and social anxiety. Inflexible and maladaptive cognitive patterns like an unwillingness or inability to adapt to challenging situations seem to be a common feature of both EDs and social anxiety (Arlt et al., 2016).

Gilbert and Meyer (2003) concluded that social anxiety is an important transmission mechanism in the context of anorexic psychopathology. Thereby it was proposed that disturbed eating might be a maladaptive tool to cope with social anxiety (Gilbert & Meyer, 2003). Disordered eating symptoms among socially anxious people is probably a manifestation of negative beliefs about the self and high responsiveness to stress (Ciarma & Mathew, 2017). The perfectionistic beliefs of socially anxious individuals might also lead to the development of bulimic behaviors (Silgado et al., 2010). According to Silgado et al. (2010), engaging in bulimic behaviors might be used as a coping mechanism to manage the fear of being negatively evaluated based on one's physical appearance. However, persistent use of such safety behaviors might aid the maintenance of social anxiety (Silgado et al., 2010). Mayer et al. (2009) also found that social anxiety appeared to be linked indirectly with eating pathology symptoms via self-esteem and depression, independent of BMI and body dissatisfaction. Given the correlational nature of the study, the researchers failed to draw conclusions regarding the causality of the obtained relationships (Mayer et al., 2009). The

bidirectional nature of relationships discovered between social anxiety and disordered eating is a possible indication of comorbidity between these disorders.

3.5.3. Risk and Protective Factors of social anxiety and disordered eating

The second research question was concerned with identifying the dimensions of parental bonding, peer victimization, body esteem satisfaction, social evaluative concerns, and maladaptive emotion regulation strategies responsible for the development and maintenance of social anxiety and disordered eating.

Parental bonding, social anxiety, and disordered eating

Maternal care significantly negatively predicted social anxiety (refer to Table 3.4). However, social anxiety did not show any significant relationship with either dimension of parental over-protection, namely granting of behavioral autonomy and denial of psychological autonomy. *Thus, hypothesis 3.1, which stated that parental care and granting of behavioral freedom are negatively related to social anxiety, while denial of psychological autonomy is positively associated with the same, was only partially supported.* The present findings may be attributed to the fact that perceptions of low maternal care result in the formation of a relationship without adequate levels of trust. This might lead to the development of negative self-beliefs (Turner, Rose, & Cooper, 2005), feelings of inadequacy, and social insecurity (Fassino et al., 2010). Perceiving oneself as unlovable and inadequate (Turner, Rose, & Cooper, 2005), they might constantly fear rejection and failure in relationships. This might ultimately lead to the avoidance of relationships (Eggert et al., 2007), and social interactions. Persistent fear and avoidance of social situations can result in the development of social anxiety.

None of the parental bonding dimensions were significantly related to disordered eating (refer to Table 3.5). *Thus, hypothesis 3.2, which stated that parental care and granting of behavioral freedom are negatively related to disordered eating, while denial of psychological autonomy is positively related to the same, was rejected.* Parental influence has consistently been reported to be one of the significant predictors of disordered eating (Snoek et al., 2007; Topham et al., 2011). However, for the most part, it is specific to eating disorder-related factors, such as the encouragement of parents to lose weight or modeling of parental eating habits. The lack of significant relationships between parental bonding and disordered eating behavior in the present

study may be partly because the dimensions of parental bonding tested in this study were of a general nature instead of weight or shape-related matters. While eating-specific parental influences may have a direct relationship with disordered eating behavior, parental bonding is probably indirectly linked to disordered eating through psychological functioning (Lee & Vaillancourt, 2018).

Peer victimization, social anxiety, and disordered eating

Relational peer victimization significantly positively predicted social anxiety (refer to Table 3.4). *Thus, hypothesis 3.3, which stated that peer victimization is positively related to social anxiety, was partially accepted.* This finding was supported by longitudinal studies as well, indicating a strong causal relation between peer victimization and social anxiety (Tillfors et al., 2012). Peer victimization has been consistently identified as a potential risk factor for the development of social anxiety (McCabe et al., 2010). Children with SAD seem to be extremely fearful of signs of peer rejection (Compton et al., 2000). So, they may be more vigilant and sensitive to any indications of rejection, real or imagined. This can lead to higher *perceived* victimization. The strong impact of relational victimization on social anxiety is also supported by Siegel et al.'s study (2009). They observed that relational peer victimization was a predictor of social anxiety. The presence of social anxiety can also invite further victimization. Moreover, the effect of relational victimization seemed to be much stronger than that of overt victimization (Siegel et al. study, 2009). Relational victimization may be the most potent kind of victimization concerning social anxiety, as friends are usually the perpetrators (Crick et al., 2002). Thus, it is the most personal type of peer victimization. Moreover, inherent to this victimization seems to be a fear of being harshly judged by peers or FNE, which is one of the critical features of social anxiety (La Greca & Lopez 1998). The significance of relational victimization in this sample can also reflect the importance of friendships and social status among young adults (Hamilton et al., 2016).

Online victimization was significantly positively associated with disordered eating behavior and symptoms (refer to Table 3.5). *Thus, hypothesis 3.4, which stated that peer victimization is positively related to disordered eating behavior and symptoms, was partially accepted.* Cyberbullying is increasingly being associated with the frequency of dieting (Ramos-Salazar, 2017) and eating psychopathology (Marco & Tormo-Irun, 2018). Receiving negatively tinged comments on personally revealing status updates on Facebook seems to be associated with later

increases in eating, weight, and shape concerns (Hummel & Smith, 2014). According to Cohen, Newton-John, and Slater (2018), the unique combination of peer influences and media depictions of idealized bodies makes SNS a fertile ground for the internalization of societal norms of beauty. This might encourage evaluations based on appearance (Cohen, Newton-John, & Slater, 2018), ultimately resulting in body dissatisfaction and disordered eating (Cohen, Newton-John, & Slater, 2018; Rodgers, Chabrol, & Paxton, 2011).

Fear of negative evaluation, social appearance anxiety, social anxiety & disordered eating

Hypothesis 3.5 was accepted as fear of negative evaluation, and social appearance anxiety is significantly positively related to social anxiety (refer to Table 3.4). Both fear of negative evaluation (FNE) (Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2010; Hofmann, 2007; Moscovitch, 2009; Rapee & Heimberg, 1997) and social appearance anxiety (Levinson & Rodebaugh, 2012; Levinson et al., 2013; Levinson & Rodebaugh, 2015) have been consistently identified as fundamental components of social anxiety. The attentional bias towards threatening stimuli in SAD patients leads to expectations of unfavorable evaluations and outcomes (Teale Sapach et al., 2015). Simultaneously, underestimating one's performance might also result in increased fear and expectation of being negatively evaluated, leading to increased levels of social anxiety (Kocovski & Endler, 2000). Self-esteem also seems to impact the relationship between FNE and social anxiety (Cheng, Zhang, & Ding, 2015; Kocovski & Endler, 2000). Low self-esteem might impact social anxiety by exacerbating FNE (Kocovski & Endler, 2000). The present findings reiterate the idea that social evaluative fears like FNE and social appearance anxiety are pivotal in the development and maintenance of SAD.

Social appearance anxiety and fear of negative evaluation significantly predicted disordered eating (refer to Table 3.5). *Thus, hypothesis 3.6, which stated that fear of negative evaluation and social appearance anxiety is positively related to disordered eating, was accepted.* These results are an important addition to a long line of research showing the close associations between FNE and disordered eating (DeBoer et al., 2013; Gilbert & Meyer 2003; 2005; Levinson & Rodebaugh, 2012; Utschig et al., 2010; Wonderlich-Tierney & Vander Wal, 2010). Excessive concern over being evaluated and about the loss of social approval among those high in FNE makes them highly likely to follow societal standards of beauty such as the 'thin ideal' to protect themselves from adverse social outcomes (Utschig et al., 2010) like excessive scrutiny and rejection. The

association between social appearance anxiety and disordered eating behavior reported in this study is also consistent with previous research (Koskina et al., 2011; Levinson & Rodebaugh, 2012; Levinson et al., 2013; Levinson & Rodebaugh, 2015; Levinson & Rodebaugh, 2016). According to Levinson and Rodebaugh (2012), social appearance anxiety triggers the development of EDs through increased body dissatisfaction. The present findings further highlight the role of social-evaluative fears in the development of disordered eating.

Body esteem satisfaction, social anxiety & disordered eating

Satisfaction with other's evaluations about one's body and appearance was significantly negatively related to social anxiety (refer to Table 3.4). However, satisfaction with weight showed no significant associations with social anxiety, indicating that in the present sample, satisfaction with the overall appearance and how others perceive one is more critical for social anxiety compared to one's weight. A previous study by Upadhyaya et al. (2016) supports the present findings by reporting no significant associations between dissatisfaction with weight and social anxiety. Thus, only satisfaction with appearance and attributions seems to be significantly associated with symptoms of social anxiety. *So, hypothesis 3.9, which stated that body esteem satisfaction is negatively related to social anxiety, was partially accepted.* Several studies have reported strong associations between social anxiety and body esteem (Abdollahi & Abu Talib, 2015; De Jong et al., 2012; Izgic, Dogan, & Kugu, 2004; Pinto & Phillips, 2005; Schreiber et al., 2012; Tarkhan, Esmaeilpour, & Tizdast, 2013). This association has been noted among Indian youth as well, irrespective of gender (Dixit & Luqman, 2018). This association appears to be stronger in those who do not fall into the accepted and desirable weight bracket like obese individuals (Abdollahi et al., 2016). Since these people are not conventionally attractive, they might be more concerned with being negatively evaluated and not have healthy levels of body esteem. Poor self-esteem and body esteem might encourage the use of various avoidance behaviors, which, ultimately, leads to social anxiety (Abdollahi et al., 2016). Thus, people who perceive that other do not hold their appearance in high regard may experience anxiety in social or performance situations.

Satisfaction with weight and appearance was significantly negatively related to disordered eating when depression, gender, age, and place (urban/rural) were held constant (refer to Table 3.5). However, satisfaction with other's evaluations of one's body was not significantly associated with disordered eating. *Thus, hypothesis 3.10, which stated that body esteem satisfaction would be*

negatively related to disordered eating behavior and symptoms, was partially accepted. The present findings are well supported by the present research literature with several studies reporting the association of body image concerns with different types of disordered eating attitudes, symptoms, and behaviour (Bryant, Kiezebrink, King, & Blundell, 2010; Duarte et al., 2017; Fairburn et al. 2003; Liang, Jackson, & McKenzie, 2011; Stice et al. 2011). The DSM-5 lists body image disturbances as one of the core features of EDs (American Psychiatric Association, 2013). This association seems to highly relevant for young adults and adolescents (Goldschmidt et al., 2014). Disordered eating seems to develop via body image in young adults, irrespective of cultural influence (Chng & Fassnacht, 2016). Thus, participants in this study, all of whom belong to the developmental period of young adulthood, show strong associations between body esteem satisfaction and disordered eating.

Body dissatisfaction has even been reported to be a significant predictor the development of eating pathology (Rohde, Stice, & Marti, 2015; Stice, Ng, & Shaw, 2010). Body esteem, especially the appearance esteem subscale, which measures the general feelings about appearance, has been significantly associated with eating attitudes (Karacan et al., 2014). Maladaptive eating attitudes and behaviors appear to be perpetuated by perceptual and cognitive distortions related to appearance such as an excessive fear of weight gain (Linardon et al., 2018). This is probably because people's beliefs regarding how society judges them influences how they think about themselves (Mendelson, Mendelson & White, 2001). Negative self-beliefs and the desire to achieve their ideal body and appearance might encourage people to employ maladaptive eating behaviors.

3.5.4. Shared vulnerabilities of social anxiety and disordered eating comorbidity

The fourth research question aimed *to identify shared vulnerability factors of social anxiety and disordered eating comorbidity*. For answering this research question, the variables already determined to be shared among the two symptoms (with the help of correlation and regression) were tested in a cross-sectional shared vulnerability model. As evident from tables 3.4 and 3.5 and the previous section of the chapter (Section 3.5.3), fear of negative evaluation, social appearance anxiety, satisfaction with appearance were identified as common factors. The Structural Equation Model (refer to Figure 3.3) revealed that fear of negative evaluation and social appearance anxiety

was shared vulnerability factors for social anxiety. Satisfaction with appearance was a specific vulnerability for disordered eating behavior (refer to Tables 3.15 and 3.16). The fact that every ED patient does not report SAD points to substantial but partial comorbidity between these disorders implying the critical role of both specific as well as shared vulnerability factors between the two disorders (Levinson & Rodebaugh, 2016). In line with the present findings, Levinson and Rodebaugh (2012) found that FNE and social appearance anxiety were vulnerability factors and mediators in the relationship between social anxiety symptoms and disordered eating. Social anxiety might cause anxiety over one's overall appearance, including body image (Levinson & Rodebaugh, 2012). So, socially anxious people might try to change their appearance by indulging in maladaptive eating attitudes and behaviors to alleviate their anxieties and concerns about their appearance.

Appearance fears have been theorized to play a central role in both social anxiety and disordered eating (Levinson & Rodebaugh, 2012). Even in the presence of FNE and perfectionism, social appearance anxiety seemed to pose a significant risk to both social anxiety and ED symptoms (Levinson et al., 2013). Though maladaptive perfectionism emerged as the only shared vulnerability in the prospective model, social appearance anxiety still emerged as the most significant shared vulnerability factor between social anxiety and eating disorder symptoms in the cross-sectional model (Levinson & Rodebaugh, 2016). According to Levinson and Rodebaugh (2016), social appearance anxiety is a component of social anxiety that might help explain the increased susceptibility to EDs. Hence, the significant relationship observed between social appearance anxiety, social anxiety, and disordered eating found in the present study seems justified.

It must be noted that societal judgments of appearance do not necessarily depend solely on one's physical characteristics (Kerr-Gaffney, Harrison & Tchanturia, 2018). Thus, FNE also emerged as a significant vulnerability factor along with social appearance anxiety. These results are supported by previous studies (DeBoer et al., 2013; Menatti et al., 2015). FNE may be one of the most critical candidates for understanding the comorbidity between social anxiety and disordered eating. This is because FNE is not only a primary characteristic of social anxiety, but it also centers around fearing events leading to the kinds of negative emotions most relevant to disordered eating behaviors (Zeeck et al., 2011). Both eating disorders and social anxiety seem to involve rigid beliefs and fears regarding social evaluations about one's body, eating or social interactions

(Menatti et al., 2015). Thus, the association between the two disorders can be at least partially explained by the presence of common cognitive styles and content (Arlt et al., 2016), especially regarding how one is perceived by society in general as well as with regard to one's appearance.

3.5.5. Mediational Models

The mediating role of emotion regulation strategies in the relationship of social influence with social anxiety and disordered eating comorbidity

One of the research questions the present study investigated was whether *difficulties in emotion regulation mediate the relationship of social influence with social anxiety and comorbid disordered eating?* Two separate path models were run with parental bonding and peer victimization, respectively, to answer research question 5.1. Mother's care, father's granting of behavioral freedom, relational and reputational victimization appeared to influence social anxiety and disordered eating comorbidity through non-acceptance of emotions (refer to Table 3.29). The important role of emotion regulation, especially non-acceptance, in ED and social anxiety has been established by previous research (Helbig-Lang et al. 2015; Lavender et al., 2015; Rusch, Westermann, & Lincoln, 2012; Rommel et al., 2012; Wolz et al., 2015). Weinbach, Sher, and Bohon (2018) went as far as to call non-acceptance of emotion a transdiagnostic feature in EDs. On the other hand, social influences like parental bonding and peer victimization can significantly impact difficulties in emotion regulation as they are known to be learned responses (Wolz et al., 2015). The two models have been discussed separately in the following paragraphs.

Emotion regulation strategies mediating parental bonding with social anxiety and disordered eating comorbidity

Mother's care and father's denial of psychological autonomy influenced social anxiety and disordered eating through non-acceptance of emotions (refer to Tables 3.17 and 3.18). Thus, hypothesis 5.1.1, which stated that the difficulties in emotion regulation mediate the relationship of parental bonding with social anxiety and comorbid disordered eating, is partially accepted. These results have been supported by previous research showing the impact of parents on psychopathology being mediated by emotion regulation (Baker & Hoerger, 2012; McEwen & Flouri, 2009). Hierarchical regression analysis also lent additional support to the mediational

model by showing a significant negative association of mother's care and father's denial of psychological autonomy with non-acceptance of emotions (refer to Table 3.11).

Mother's care influenced social anxiety and disordered eating directly as well as indirectly through non-acceptance of emotional responses. Maternal warmth and care have been proposed to influence to identify and describe feelings (De Panfilis et al., 2003) and promote the development of ER strategies (Morris et al. 2007). Conversely, low maternal care might lead one to believe that they will always be emotionally deprived, prompting them to hide their feelings (Leung et al., 2000). Similarly, parental emotional rejection results in children employing maladaptive emotion regulation strategies, which hurt their capacity to be intimate with other human beings (Roth & Assor, 2012). The problems may ultimately manifest as social anxiety and comorbid disordered eating.

However, paternal care did not feature significantly in this model (refer to Figure 3.4). Parental warmth may attenuate negative arousal in case of emotion dysregulation among children (Manzeske & Stright, 2009). Gradually children become increasingly independent in their ability to regulate their emotions, and by young adulthood, parental care might no longer be relevant to ER (Manzeske & Stright, 2009). The fact that maternal and not paternal influence emerged as a significant predictor of non-acceptance in this model probably highlights the active influence of Asian mothers well into their children's adulthood (Chng & Fassnacht, 2016). It may also be possible that paternal care seems to exert its influence through a different route. Low paternal care leads to feelings of uncontrollability over one's feelings so that one often under-estimates or even sacrifices one's needs (Leung et al., 2000). Since the emotion dysregulation strategies used in this study did not capture these emotional dimensions, the effect of paternal care was probably not visible here.

Over-protective parenting is not developmentally healthy, especially in early adulthood (Kilic, Var & Kumandasa, 2015). Developmentally inappropriate parental control may cause emotion dysregulation (Kilic, Var & Kumandasa, 2015; Manzeske & Stright, 2009). Maternal control has been related to lower emotion regulation among college students, even when maternal affection was high (Manzeske & Stright, 2009). So, perceptions of a controlling attitude of the parents during the first 16 years of life, which might persist in the present, too seems to significantly affect the participants' emotional functioning.

It should be noted that the present model only incorporates the psychological control dimension while granting of behavioral freedom was not significant (refer to Figure 3.4). This was also reflected in the regression analysis where the father's denial of psychological autonomy was the only paternal bonding dimension significantly associated with non-acceptance of emotions (refer to Table 3.10). A recent study found faster but less accurate responses to emotional conflict among children experiencing higher psychological control by mothers (Marusak et al., 2018). Psychological control appears to be more relevant for the development of dysfunctional ER compared to the functional regulation strategies (Ha & Jue, 2018). The use of difficulties in emotion regulation in the present model probably helped in bringing the role of psychological control in subsequent mental health issues to the fore.

Emotion regulation strategies mediating the relation of peer victimization with social anxiety and disordered eating comorbidity

The mediation model (refer to Figure 3.5) exhibited that online peer victimization impacts both social anxiety and disordered eating through a lack of emotional awareness, which implies that cyber-bullying and lack of emotional awareness may be shared vulnerabilities between these two disorders. Thus, hypothesis 5.1.2, which stated that the *difficulties in emotion regulation mediate the relationship of relational, reputational, and online peer victimization with social anxiety and comorbid disordered eating, is partially accepted.* As can be seen from Tables 3.19 and 3.20, online victimization is significantly positively associated with a lack of emotional awareness, which in turn is significantly positively related to both social anxiety and disordered eating behavior. So, cyber-bullying seems to lead to a lack of emotional awareness, which increases the risk of social anxiety and comorbid disordered eating behavior. Previous studies have also noted the link between emotion regulation and cyberbullying (Hemphill & Heerde, 2014; Hemphill, Tollit, Kotevski, & Heerde, 2015; Vranjes et al., 2018). The inability to effectively regulate one's emotions may lead to dysfunctional emotion-driven behavior online (Vranjes et al., 2018). Such behaviour puts one at a higher risk of being bullied (Erdur-Baker, 2010; Wolak, Mitchell, & Finkelhor, 2007). Moreover, deficits in ER, like a lack of emotional clarity, reduces one's capability to respond appropriately to the victimization experience (Flynn & Rudolph 2010; 2014). This may also lead to maladaptive responses to the perceived peer victimization (Hamilton et al., 2016), which further invokes negative peer interactions, initiating a vicious cycle of peer

victimization and maladaptive emotional and behavioral responses. These results further highlight the importance of the victim's emotional reaction to teasing compared to other aspects of the bullying experience like frequency or intensity (Kvalem, von Soest, Roald, & Skolleborg, 2006).

Body esteem satisfaction mediating the relationship of social influence with social anxiety and disordered eating comorbidity

Parental care, relational and online peer victimization appeared to influence social anxiety and disordered eating comorbidity through satisfaction with appearance (refer to Table 3.29). Thus, hypotheses 5.2.1 and 5.2.2 are partially accepted. Body image is influenced by several factors, including, but not limited to, family and friends, and the strength of this influence vary with age (Dixit & Luqman, 2018). The tripartite influence model proposes that the risk factors for body image disturbance and eating pathology are multi-factorial and include familial and peer interactions (Kirsch et al., 2016). People can make assumptions about how others perceive them on the basis of their behaviours and interactions with them. If one believes that others judge them negatively and harshly, it may give rise to the feeling of inadequacy and negative self-evaluations. So, threatening or unpleasant interpersonal experiences might give rise to the feeling of dissatisfaction with various aspects of the self, including appearance, by eliciting feelings of shame (Matos, Pinto-Gouveia, & Duarte, 2013; Pinto-Gouveia & Matos, 2011). Holsen et al. (2012) reported a reciprocal relationship between body image dissatisfaction and the quality of relationships with parents and peers. So, body image issues, once triggered, can cause people to behave in ways that might lead to adverse social outcomes (Tantleff-Dunn & Lindner, 2011), maintain problems in inter-personal relationships as well as body image concerns.

In the present study, satisfaction with appearance acted as a mediator linking social influence with social anxiety and disordered eating. Placing disproportionate importance on appearance might lead to body shame and social anxiety, which in turn can result in disordered eating (Dakanalis et al., 2014). Duarte and Pinto-Gouveia (2016) hypothesized that the influence of adverse internal experiences is mediated by critical self-regulatory processes, especially those related to body image. In conclusion, risk factors like interpersonal relationships are crucial in shaping body-related attitudes (Cash & Smolak, 2011). Such values and attitudes about one's body, in turn, significantly affects disordered eating (Chng & Fassnacht, 2016; Mora-Giral et al., 2004; Shaw, Stice, & Springer, 2004; Stice, Ng, & Shaw, 2010) as well as social anxiety (Abdollahi & Abu

Talib, 2016; De Jong et al., 2012; Pinto & Phillips, 2005: Schreiber et al., 2012; Tarkhan, Esmaeilpour, & Tizdast, 2013). It must be pointed out that parental and peer influences were examined in two separate models as a variety of parental and peer dimensions were analyzed in the given study. Two separate models for parents and peers were expected to bring out the effects of such varied influence more clearly than putting both these social influences in the same model. In support of the SEM model, the hierarchical regression analysis also showed that satisfaction with appearance has significant negative relationships with both social anxiety and disordered eating (refer to Tables 3.4 and 3.5).

Body esteem satisfaction mediating the relation of parental bonding with social anxiety and disordered eating comorbidity

Out of the three parental bonding dimensions, only care seemed to influence satisfaction with appearance (refer to Tables 3.21 and 3.22). Thus, hypothesis 5.2.1, which stated that *body esteem satisfaction would serve as a mechanism linking parental bonding with social anxiety and comorbid disordered eating,* is partially accepted. Leung et al.'s (1996) dual-process family model suggested that general family dysfunction indirectly impacted eating and psychiatric symptoms through negative self-esteem. So, social influences like parental bonding might impact disordered eating behavior and comorbid social anxiety through self-esteem and related self-concepts like body esteem. This mediation analysis is also supported by the regression analyses, which revealed that satisfaction with appearance appeared to have a significant positive association with both maternal and paternal care (refer to Table 3.8). The present findings are in line with Cheng and Mallinckrodt's (2009) results which reported that high parental care significantly predicted body satisfaction in females. The discrepancy between parent's emotional availability and a child's needs early in life might result in the development of a negative view of the self while perceiving others in a positive light. Such people may also grow up to have problems with affect regulation and a high need for approval, making them vulnerable to socio-cultural influences like the media which can affect their body image (Grenon et al., 2016).

One interesting finding was the significance of the father's care in the present model (refer to Figure 3.8). These results are in line with reports of cold and distant parenting by fathers related to greater body dissatisfaction among ED patients (Pace, Cacioppo, & Schimmenti, 2012). Perceptions of low paternal care and affection might make the child crave for attachment and

approval (Grenon et al., 2016). This heightened need for approval and acceptance makes them especially vulnerable to prevalent cultural norms and socially accepted ideas of beauty, leading to the gradual internalization of these ideas propagated by the media (Cheng & Mallinckrodt, 2009; Grenon et al., 2016). Admiration and the desire to achieve the "ideal body'' can ultimately result in dissatisfaction with one's body. Subsequently, one might engage in maladaptive eating behaviors to achieve the idealized body image along with experiencing anxieties in social settings due to real or perceived flaws in appearance.

Body esteem satisfaction mediating the relation of peer victimization with social anxiety and disordered eating comorbidity

Relational and online peer victimization appears to exert its influence on social anxiety and comorbid disordered eating behavior through satisfaction with appearance (refer to Tables 3.23 and 3.24). The hierarchical regression analyses (refer to Table 3.8) revealed a significant negative impact of relational and online peer victimization on satisfaction with appearance. This model (refer to Figure 3.7) depicts how some types of peer victimization are more relevant and significant when it comes to body esteem, more specifically, satisfaction with appearance. Both traditional forms of victimization (Lunde, Frise´n, & Hwang, 2007; Lunde & Frise´n, 2011) and cyberbullying have shown strong associations with body image in previous studies as well (Frisén et al., 2014; Ramos-Salazar, 2017). Frisén, Berne, and Lunde (2014) found that being victimized online is associated with lower body esteem than those who were not subjected to cyberbullying. The bully might send harassing messages or derogatory jokes via SNS. Posting offensive images on these sites might also be considered online harassment specifically targeted at one's appearance (Menzel et al., 2010). Some researchers have even deemed cyber-victimization more significant in the development or lack of body-esteem than traditional victimization (Olenik-Shemesh & Heiman, 2017). The anonymity and distance of online communication might encourage disinhibited behavior by making it harder for aggressors to empathize with the suffering of their victims (Hinduja & Patchin, 2015). According to Hinduja and Patchin (2015), this lack of empathy also increases the likelihood of repeating the act of aggression. Thus, online bullying seems to be a particularly persistent and harmful type of peer victimization, especially with regard to body image-related issues.

Fear of negative evaluation and social appearance anxiety mediating the relationship of social influence with social anxiety and disordered eating comorbidity

The last research question of the first study was concerned with investigating the mediating role of fear of negative evaluation and social appearance anxiety in the relation between social influence and social anxiety and comorbid disordered eating. In the case of parental bonding, the mother's care impacted social anxiety and disordered eating comorbidity through fear of negative evaluation and social appearance anxiety, while the father's granting of behavioral freedom does so through social appearance anxiety (refer to Table 3.25 and 3.26). When considering peer victimization as an independent variable, relational peer victimization affects social interaction anxiety and its comorbidity with disordered eating behavior through both fear of negative evaluation and social appearance anxiety, while online victimization seems to influence this comorbidity solely through social appearance anxiety (refer to Table 3.27 and 3.28). In line with the present findings, McClintock and Evans' (2001) reported that low self-acceptance mediates the relation of poor social support and FNE with social anxiety and eating behaviors. Moreover, these relations seem to be more evident in the general population than in a clinical population (McClintock & Evans, 2001). The role of social appearance anxiety and FNE in social anxiety and disordered eating comorbidity has been discussed in detail in section 3.5.4. So, in the following paragraphs, we will explore the effect of social influence on fear of negative evaluation and social appearance anxiety and try to understand the implications of the SEM models shown in figures 3.8 and 3.9.

Fear of negative evaluation and social appearance anxiety mediating the relation of parental bonding with social anxiety and disordered eating comorbidity

Of the maternal bonding dimensions, mother's care seemed significant in the proposed model, and its impact on social anxiety and disordered eating comorbidity is manifested through fear of negative evaluation and social appearance anxiety. Among the paternal bonding dimensions, the father's granting of behavioral freedom affected the comorbidity with the help of fear of negative evaluation. The importance of fear of negative evaluation and social appearance anxiety in social anxiety and disordered eating comorbidity has already been discussed, especially while explaining the results of the shared vulnerability model in the previous (refer to Section 3.5.4). The present model can be better understood by exploring the relationship between parental bonding and the

mediators of the model, namely, fear of negative evaluation and social appearance anxiety. In support of the mediation analysis, the hierarchical regression showed that only parental care was significantly associated with fear of negative evaluation and social appearance anxiety (refer to Tables 3.12 and 3.13). Parental bonding early in life has been hypothesized to shape self-beliefs (Cooper & Young, 2016). The rejection sensitivity model proposes that facing rejection results in heightened anticipation of rejection leading to dysfunctional emotional and behavioral reactions, like social withdrawal (Rudolph, & Zimmer-Gembeck, 2013). So, experiencing rejection, and psychological control, along with lack of warmth and support from parents, might lead to social anxiety by increasing rejection sensitivity and susceptibility to react negatively and maladaptively when dealing with the threat of rejection (Rudolph, & Zimmer-Gembeck, 2013). Similarly, negative self-cognitions also aid in the development and maintenance of disordered eating and related behaviors (Cooper, Todd, & Wells, 2009).

However, father's granting of behavioral freedom affected this relationship only through fear of negative evaluation (refer to Figure 3.8 and Table 3.29). Fathers can put children at risk of developing anxiety if they are not warm and do not encourage the child's autonomy (Bogels & Phares, 2008). Denial of behavioral freedom hinders a child's problem-solving abilities along with communicating doubt regarding a child's competencies and, thus, appears to be anxiety-inducing (Greco & Morris, 2002). Father's investment in parenting seems to have evolved from physical interactions, like defending against dangers and managing social interactions outside any extended family (Bogels & Perotti, 2011). Since men seem to have specialized in confronting the external environment, children might learn to rely on fathers for insight about the same (Bogels & Perotti, 2011). In a modern society where the external environment is relatively predictable, the most potent challenge seems to be navigating the complex social world. So, logic follows that if children take their cues of social interactions primarily from their fathers, their fear of others evaluating them negatively depends on their relationship with their fathers. In particular, the father's denial of behavioral freedom communicates distrust in a child's abilities in the social realm or otherwise as a result of which children seem perturbed by others' evaluations leading to higher social anxiety and possible comorbid disordered eating. However, it did not show a significant association with evaluations uniquely associated with appearance. These findings highlight the role of parenting practices in children's social and emotional functioning in early adulthood.

Fear of negative evaluation and social appearance anxiety mediating the relation of peer victimization with social anxiety and disordered eating comorbidity

Relational peer victimization impacted social anxiety both directly as well as indirectly through fear of negative evaluation and social appearance anxiety, while it influenced disordered eating only indirectly through fear of negative evaluation and social appearance anxiety. Online victimization had an impact on social anxiety and disordered eating through social appearance anxiety apart from directly influencing disordered eating behavior (refer to Tables 3.29). Thus, peer victimization influences fear of negative evaluation, social appearance anxiety, social anxiety, as well as disordered eating. Episodes of peer abuse usually elicit feelings of humiliation which might reinforce negative self-evaluations and fear of social interactions (Reijntjes et al., 2010). According to Slee (1994), the constant threat of peer victimization can establish an environment where peer approval is of vital importance for the success of one's social relationships. Such an over-concern with peer evaluations may ultimately lead to anxiety (Slee, 1994) and comorbid mental health issues like disordered eating.

An interesting aspect of these results is that online victimization was exclusively related to social appearance anxiety and not fear of negative evaluation (refer to Figure 3.9). This is reflected not only in the path model exhibited in the figure but also in the hierarchical regression analysis (refer to Table 3.13). Appearance seems to a critical issue for younger people in virtual relations (Stefanone, Lackaff, & Rosen, 2011). People who are emotionally invested in highly visual social media platforms can be more concerned with their appearances (Tras, Öztemel, & Baltacı, 2019). Continuous exposure to others' photos further induces comparisons based on physical appearance (Rutledge, Gillmor, & Gillen, 2013). Unwanted feedbacks or social comparisons from others might lead to anxiety (Nesi & Prinstein, 2015). Thus, negative interactions or experiences online might increase scrutiny of one's appearance, which in turn may decrease one's satisfaction with appearance. A decrease in satisfaction with appearance may gradually lead to increases in social anxiety and disordered eating behavior and symptoms. Thus, online victimization seems to be uniquely related to social appearance anxiety.

Chapter-4

Study 2: Longitudinal effects of emotion regulation strategies on social anxiety and affect

4.1. Introduction

In the previous chapter, we discussed the possible risk and maintenance factors of social anxiety and related comorbid issues. This chapter intends to explore the probable consequences of this type of anxiety. Specifically, this study aims to investigate the longitudinal effects of three emotion regulation strategies, namely, lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior on social anxiety. The interactions between social anxiety and emotion regulation strategies on changes in affect were also examined. Changes in affect were chosen as the dependent variable in the longitudinal study based on the assumption that it will show more significant changes over the short period (four months in this case) compared to the other variables discussed in the previous chapter.

Cognitive theories state that patients with Social Anxiety Disorder (SAD) are highly attentive to their perceptions of threat (Clark, 2001). So, Helbig-Lane et al. (2015) suggested that in spite of successful recognition, they probably suppress their emotional experiences, resulting in a lack of emotional understanding. Simply put, people with social anxiety seem to struggle with the execution of regulation strategies rather than identifying emotions per se. Over the years, several empirical findings have also been published supporting this hypothesis. Poor emotional understanding is one of the best predictors of a SAD diagnosis (Helbig-Lang et al. 2015; Mennin et al. 2007). A lack of emotional awareness was correlated with social anxiety, while non-acceptance of emotions and lack of ER strategies predicted social interaction anxiety among students (Rusch, Westermann, & Lincoln, 2012). Helbig-Lane et al. (2015) reported that when controlling for depression, SAD is characterized by a wide range of ER difficulties. Moreover, those with SAD report more suppression and less reappraisal of both positive and negative

emotions (Blalock, Kashdan & Farmer, 2016; Werner et al. 2011). Thus, highly socially anxious people seem unable to use adaptive emotion regulation strategies while exhibiting an over-reliance on maladaptive ones. Such an inability can either reflect a deficit in the way brain responds to social threats or a skill deficit in the execution of regulation strategies (Farmer & Kashdan, 2012). Thus, this study was designed to examine the relationship between social anxiety and problems in emotion regulation and its probable consequences on affect.

4.2. Rationale, Research Questions, and Hypotheses

This study aimed to assess the effect of emotion regulation on social anxiety longitudinally. Of the various maladaptive regulation strategies frequently employed by socially anxious people, this study focused on three ER strategies in particular. These strategies are lack of emotional awareness, non-acceptance of emotions, and difficulties engaging in goal-directed behavior. These strategies were selected owing to their growing importance in mindfulness-based treatments for social anxiety. The concept of mindfulness is gradually attracting much attention in basic emotion research and social anxiety interventions. Increasingly studies are trying to examine the effectiveness of mindfulness-based approaches (Kocovski et al., 2009), like mindfulness-based stress reduction (MBSR) in alleviating symptoms of social anxiety (Goldin & Gross, 2010; Khoury et al., 2015). Though, mindfulness-based programs are becoming steadily popular among the youth (Burke, 2010; Huppert & Johnson, 2010), most research on the relationship between mindfulness, emotion dysregulation, and the resulting symptoms have focussed on adults.

Emotion dysregulation shows moderate negative correlations with mindfulness (Brown, Goodman, & Inzlicht, 2013; Pepping, O'Donovan, Zimmer-Gembeck, & Hanisch, 2014). Difficulties in emotion regulation seem to be closely related to dispositional mindfulness, in particular (Hambour et al., 2018). The trait-like dispositional mindfulness usually comprises of emotional and cognitive processes, observing and describing inner experiences, and acting with awareness and without judgment (Baer et al., 2006; Brown, Ryan, & Creswell, 2007). There is strong theoretical support for the potential associations of social anxiety with dispositional mindfulness and emotion dysregulation (Baer et al., 2006; Gratz & Roemer, 2004). Empirical research is also fast emerging to support this notion (Marks et al., 2010). For example, a recent study by Hambour et al. (2018) investigated the factor structure of the subscales of the Difficulties in Emotion Regulation Scale (DERS) and the Five Factor Mindfulness Questionnaire (FFMQ;

Baer et al., 2006). Based on the 11 subscales of these two scales, Hambour et al. (2018) identified two overarching factors. The first factor, called active dysregulation comprised of all the subscales of the DERS, except for awareness, along with the acting with awareness and non-judging subscales of the FFMQ (Hambour et al., 2018). Lack of awareness, and the FFMQ subscales of non-reactivity, observing, and describing loaded onto the second factor named passive dysregulation. Both types of dysregulations were assosciated with increased social anxiety symptoms (Hambour et al., 2018). However, the cross-sectional nature of Hambour et al.'s (2018) research design does not allow to draw causal relationships between problems in emotion regulation, dispositional mindfulness and social anxiety. Thus, the present study aims to replicate and extend research on the prospective relationship between social anxiety and difficulties in ER, particularly those targeted in mindfulness-based interventions and therapies.

Research Question 1. Do difficulties in emotion regulation have a longitudinal impact on social anxiety?

Patients with social phobia report greater difficulty regulating their emotions (Turk et al., 2005). Patients with Social Anxiety Disorder (SAD) struggle with attending to, describing, expressing, and regulating their emotional experiences (Werner et al., 2011). Results of study 1 showed that lack of emotional awareness and non-acceptance of emotional responses were significantly associated with social anxiety at T1. Schneider et al. (2016) also reported a significant impact of emotion dysregulation on anxiety symptoms that is relatively stable over time. In particular, social anxiety exhibited prospective associations with emotion non-awareness and goal-directed behavior (Schneider et al., 2016). So, it was hypothesized that:

Hypothesis 1: *Difficulties in emotion regulation would have a significant positive impact on social anxiety longitudinally.*

Already existing over trait positive affect among SAD patients is further weakened due to the use of maladaptive emotion regulation strategies (Eisner et al., 2009). Apart from being stressed out and anxious about the actual social interaction, SAD patients also suffer from additional exhaustion due to the use of counterproductive emotion regulation strategies, which may ultimately impact their emotions (Kashdan et al., 2013). For example, positive emotions appear to diminish considerably when people high in social anxiety suppress their emotions (Kashdan & Steger, 2006). Conversely, low social anxiety interacts with high cognitive reappraisal and low

emotional suppression to produce lesser adverse social events (Farmer & Kashdan, 2012) and heightened positive affect (Kashdan & Breen, 2008), respectively. However, this finding failed to be replicated in a subsequent study that reported increases in positive social events following emotion suppression among people low in social anxiety (Farmer & Kashdan, 2012). Farmer and Kashdan (2012) attributed this finding to the superior social skills of people low in social anxiety as compared to highly anxious individuals. Using suppression effectively might be responsible for increases in positive events observed in case of low social anxiety (Farmer & Kashdan, 2012). So, the use of suppression in people with low social anxiety does not produce such adverse effects as they do in the case of highly socially anxious individuals. Similar effects were reported by Anderson et al. (2010). No differences in positive affect were observed between the socially anxious and non-anxious groups (Anderson et al., 2010). However, participants with social phobia reported higher positive affect than adolescents in the socially anxious group (Anderson et al., 2010). So, these findings also point out the differential impact of ER strategies on people with varying levels of social anxiety. Though Blalock, Kashdan, and Farmer (2016) did not find any differences in overall patterns of cognitive reappraisal in the daily lives of people with SAD when compared to healthy adults, it seemed to be more effective in increasing positive emotions in SAD patients. To summarise, though there seems to be a complex interplay between social anxiety levels, emotion regulation, and affect, it is not as straightforward as once imagined. So, the next research question is as follows:

Research Question 2. Do a lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and change in affect?

SAD patients typically hold distorted views of themselves, including but not limited to their social skills (Hofmann, 2007), their use of emotion regulation strategies, and their response to the adverse consequences of using maladaptive strategies (Blalock, Kashdan & Farmer, 2016). They also tend to downplay the health consequences of their emotion regulation strategies (Blalock, Kashdan & Farmer, 2016). People with social anxiety also seem to have exaggerated adverse emotional reactions and attenuated positive emotional responses (Goldin et al., 2009). Farmer and Kashdan (2012) found that cognitive reappraisal results in fewer negative social situations subsequently. However, this effect was evident only in people low in social anxiety and not highly anxious

individuals (Farmer & Kashdan, 2012). It may be hypothesized that socially anxious individuals may not necessarily differ from controls in employing different emotion regulating strategies. Instead, different strategies may impact affect differently in socially anxious people than they do in those low in social anxiety. The present study wanted to examine this hypothesis concerning three particular emotion dysregulation strategies, namely, lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior. Hence the following hypotheses are formulated:

Hypothesis 2. *Lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and longitudinal change in affect.*

4.3. Method

4.3.1. Participants

Participants were 339 undergraduates out of the 411 who had participated in the first study. Most of the participants were male (Male=72%; Female= 28%; refer to Figure 4.1) of a mean age of 20 years (*SD* = 1.29). Thus, 33.84% of the participants seemed to be high in social anxiety. Most of the students belonged to metropolitans, cities, and towns (Urban= 87%; Rural=13%; refer to Figure 4.2).

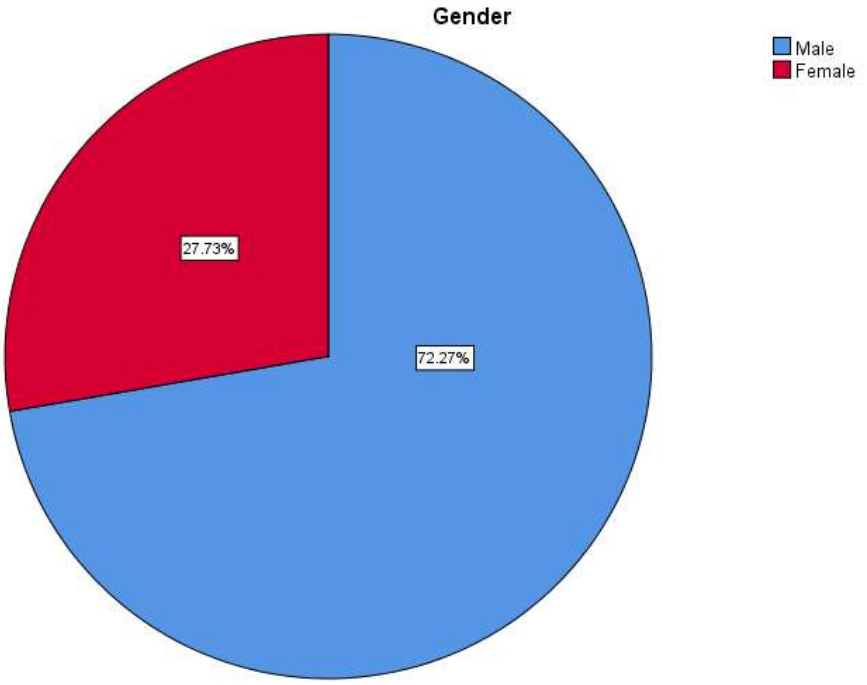

Figure 4.1. Gender distribution of participants at T2

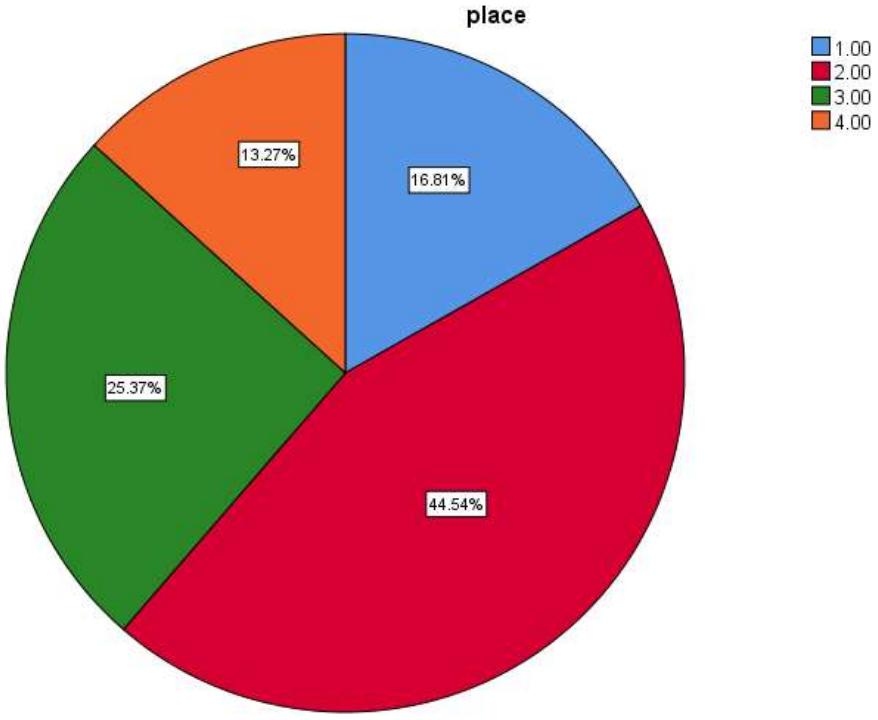

Figure 4.2. Geographical distribution of the participants at T2

Note. 1-Metropolitan cities; 2-Urban; 3-Town; 4-Village

4.3.2. Measures

Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998): The SIAS was discussed in detail in the previous chapter (please refer to section 3.3.2). At T2, the SIAS was reported to be highly reliable in the present sample with a Cronbach alpha value of .90.

Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004): This scale was used in study 1 and has been described in the previous chapter (please refer section 3.3.2).

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988): It comprises of two subscales containing ten items each. One subscale assesses positive affect while the other measures negative affect. Responses are recorded with a 5-point Likert scale ranging from 1 (very slightly) to 5 (extremely). At T1, the positive and negative affect subscales were reported to be .871 and .852, respectively. At the second time point, the Cronbach alpha values were .893 for the positive affect subscale and .870 for the negative affect subscale.

4.3.3. Procedure

At T1, the participants completed self-reported measures of social anxiety (Social Interaction Anxiety Scale), emotion regulation (Difficulties in Emotion Regulation Scale), and affect (PANAS). The participants also provided written informed consent and agreed to participate in the follow-up survey. Four months later, the participants were contacted again to fill the follow-up survey, which comprised only of PANAS and SIAS. All the ethical norms related to research, such as confidentiality, informed consent and so on were followed while collecting the data.

4.3.4. Data Analysis

This study dealt with testing two hypotheses. The first hypothesis stating that *maladaptive emotion regulation strategies have a significant positive impact on social anxiety longitudinally* was tested with the help of regression analyses using SPSS version 25.0. The second hypothesis stating that *lack of emotional awareness, non-acceptance of emotional responses, and difficulties engaging in goal-directed behavior act as moderators in the relationship between social anxiety and change in affect* was tested using Haye's PROCESS model. This method employs multiple hierarchical regression models. In the first step, two variables, social anxiety, and the emotion regulation variable, were included. An interaction term between social anxiety and emotion regulation was created. The variables were centered to avoid problems of multi-collinearity with the interaction

term (Aiken & West, 1991). This was followed by incorporating the interaction term in the regression model to examine if it accounts for a significant proportion of the variance in positive and negative affect. PROCESS yields a b-value for each predictor along with the associated standard errors. A significant interaction effect is proof of moderation. Previous research shows frequent comorbidity of clinically diagnosed social anxiety disorder and major depression among adult individuals (Ohayon & Schatzberg, 2010). Given the highly comorbid nature of these disorders and their significant association with emotions, we examined the synergistic effect between social anxiety and depression on affect. This study used model 3 of the PROCESS model as 2 moderators were used simultaneously, namely, difficulties in emotion regulation and depression. These models are technically termed moderated moderation.

4.4. Results

The following section presents a summary of the results of the study. The entire data set was screened using the Frequencies option in SPSS version 25.0 before proceeding for further analysis. Since there was no missing data or outliers, the whole data set was retained for statistical analysis.

4.4.1. Descriptive Statistics

All the variables of the study were tested for descriptive statistics like mean, standard deviation (SD), range, skewness, and kurtosis. The data was approximately normally distributed following the general rule of thumb of skewness and/or kurtosis to be less than ±1.96 (Field, 2013).

Table 4.1

Descriptive Statistics of Study 2 variables

Study2 Variables	Range	Minimum	Maximum	Mean	Standard Deviation	Variance	Skewness	Kurtosis
T2 Social Anxiety	73.00	.00	73.00	30.1062	13.44836	180.859	.390	-.028
T1 Positive Affect	40.00	10.00	50.00	32.7713	7.86820	61.909	-.203	-.450
T1 Negative Affect	40.00	10.00	50.00	22.5426	7.65028	58.527	.814	.316
T2 Positive Affect	40.00	10.00	50.00	33.0147	7.97461	63.594	-.441	.215
T2 Negative Affect	37.00	10.00	47.00	23.1799	7.90476	62.485	.464	-.368

Table 4.1 shows the detailed descriptive statistics of the variables under study. It can be deciphered from the mean values of T1 and T2 affect (refer to Table 4.1) that there was a slight increase in both positive and negative affect.

4.4.2. Factor Analysis

Both exploratory and confirmatory factor analyses were conducted. *The sample was divided into two halves such that the 169 observations were used to conduct exploratory factor analysis while the rest 170 were used for confirmatory factor analysis.*

Table 4.2

Exploratory Factor Analysis of Study 2 variables

Sr. No.	Scale	No. of factors	No. of Items	Total Variance Explained (%)	Kaiser-Meyer-Olkin
1	Positive Affect Negative Affect Schedule (PANAS)-shortened version at T1	2	20	45.832	.889
2	Social Interaction Anxiety Scale (SIAS) at T2	1	19	35.863	.909
3	Positive Affect Negative Affect Schedule (PANAS)-shortened version at T2	2	20	49.793	.898

Table 4.3

Table showing important CFA parameters of Study 2 variables

Sr. No.	Scale	No. of Factors	Chi square	*CMIN/DF*	*CFI*	*NFI*	*GFI*	*RMSEA*	*IFI*	*TLI*
1	Positive Affect Negative Affect Scale at T1	2	327.895	1.999	.892	.809	.863	.070	.894	.875
2	Social Interaction Anxiety at T2	1	327.759	1.986	.928	.866	.909	.055	.928	.917
3	Positive Affect Negative Affect Scale at T2	2	673.016	4.706	.811	.775	.858	.106	.814	.749

Note: DF-Degree of Freedom; *CMIN*-Chi-square equivalent in Confirmatory Factor Analysis; *GFI*-Goodness of Fit Index; *AGFI*-Adjusted Goodness of Fit Index; *NFI*-Normed Fit Index; *IFI*-Incremental Fit Index; *TLI*-Tucker Lewis Index; *CFI*-Comparative Fit Index; *RMSEA*- Root Mean Square Error of Approximation

The results of the factor analyses are reported in Tables 4.2 and 4.3. Exploratory analyses of SIAS produced one factor. However, item 11 did not report significant factor loadings. This was one of the three reverse-coded items on the scale. These EFA results might imply the difficulty of participants properly understanding and responding to reverse-coded items. Thus, this item was dropped from the final computations.

4.4.3. Multivariate Analysis

A hierarchical regression model was run with the three difficulties in emotion regulation subscales. Since gender and age have been reported to bring about variations in emotion dysregulation (Zimmermann & Iwanski, 2014) both were held constant along with native place and depression. These variables were entered in the first block followed by the difficulties in emotion regulation subscales in the next. The significant predictors of T1 and T2 social anxiety are listed in Tables 4.4 and 4.5, respectively. Lack of emotional awareness (R^2 = .225; β = .109, p < .01) and non-acceptance of emotions (R^2= .225; β = .174, p < .001) were significantly positively related to social anxiety at T1 while problems with goal-directed behavior was not. A regression model was run with all the hypothesized predictors as independent variables and social interaction anxiety at T2 as the dependent variables to answer the first research question.

Table 4.4.:

Effect of difficulties in emotion regulation on social anxiety at T1

Independent Variable	*R* Square	*F*	*t*	*β*
Age	.184	22.922***	-.058	-.003
Gender			-1.318	-.060
Place			.167	.008
Depression			9.495***	.426***
Non-acceptance of emotions	.225	19.556***	3.648***	.174***
Lack of Emotional Awareness			2.355**	.109**

Note. *** p < .001. ** p < .01. * p < .05.

Non-acceptance of emotional responses (R^2 = .074; β = .163, p < .01) and difficulties engaging in goal-directed behavior (R^2 = .074; β = .130, p < .05) had a significant impact on T2 social anxiety. Thus, the first hypothesis, which stated that *difficulties in emotion regulation would have a significant positive impact on social anxiety longitudinally,* seems to be only partially supported.

However, once initial depression levels were accounted for, none of the difficulties in emotion regulation subscales had an impact on social anxiety longitudinally.

Table 4.5

Effect of ER strategies at T1 on T2 Social Anxiety keeping gender, age, and native place constant

Independent Variable	*R* Square	*F*	*t*	*β*
Gender	.016	1.798	-1.413*	-.078
Age			-.454	-.025
Native			1.552	.086
Non-acceptance of emotions	.074	4.400***	2.852**	.163**
Difficulties engaging in goal-directed behaviour			2.241*	.130*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

4.4.5. Moderation Analysis

Social anxiety at T1 was entered as the independent variable (X), affect at T2 was the dependent variable (Y), and difficulties in emotion regulation were the moderators (M) to test moderation effects. A total of six such models were run. Affect at T1 was entered as a covariate in each case as the baseline affect to account for substantial variance in T2 affect. Only the model designed to test the moderation effect of difficulties engaging in goal-directed behavior was found to be significant F (8, 330) = 12.0415, $p < .001$, $R^2 = .2260$. The result is shown in Table 4.6, while the moderation effect graphs are shown in Figures 4.3, 4.4, and 4.5.

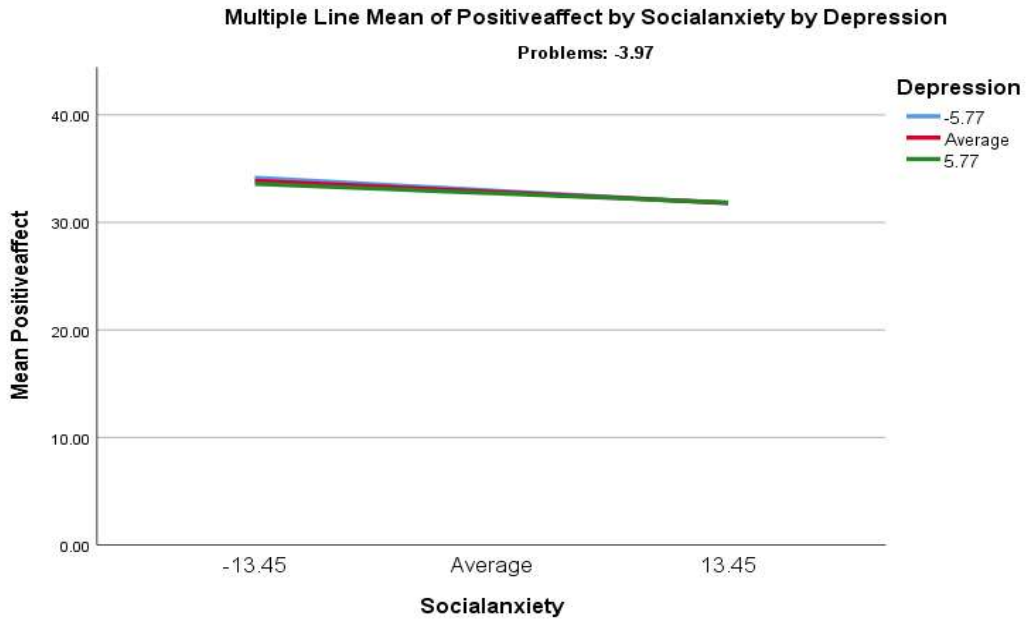

Figure 4.3. Effect of social anxiety on positive affect moderated by depression levels when difficulties engaging in goal-directed behavior is low

Examination of the interaction plot in Figure 4.3, along with the given values in Tables 4.5 and 4.6, shows that when difficulties engaging in goal-directed behavior are low social anxiety has a negative, albeit non-significant effect on positive affect. Levels of depression appear to have no impact on this relationship. As exhibited in Table 4.6, since interaction 4 is significant (b = -0.0028, 95% *CI* [-0.0048, 0.0008], t = -2.7075, p <.05), both problems with goal-directed behaviour and depression seems to moderate the impact of social anxiety on decreases in positive affect. Though not significant, social anxiety (b = -0.0385, 95% *CI* [-0.1253, 0.0089], t = -1.2381, p > .05) and problems with goal-directed behavior (b = -0.0659, 95% *CI* [-0.1722, 0.1386], t = -.6119, p > .05) negatively impacts change in positive affect levels. Social anxiety appears to effect levels of positive affect in conjunction with depression as exhibited by the significant levels of interaction 2 (b = -0.0090, 95% *CI* [-0.0179, -0.0001], t = -1.9798, p < .05).

Table 4.6

Difficulties engaging in goal-directed behaviour at T1 moderating the effect of T1 social anxiety on changes in positive affect

	B	***SE B***	***t***	***p***
Constant	19.9179	1.9202	10.3727	.000
	(16.1405, 23.6953)			
Social Anxiety	-.0385	.0311	-1.2381	.217
	(-.0998, .0227)			
Difficulties in goal-directed behavior	.0659	.1077	.6119	.541
	(-.1722, .1386)			
Interaction 1	.0096	.0078	1.2184	.224
	(-.0059, .0250)			
Depression	.0149	.0815	.1828	.855
	(-.1454,.1752)			
Interaction 2	-.0090	.0045	-1.9798	.049
	(-.0179, -.0001)			
Interaction 3	.0093	.0188	.4956	.620
	(-.0276,.0462)			
Interaction 4	-.0028	.0010	-2.7075	.007
	(-.0048.-.0008)			
Positive Affect at T1	.4054	.0578	7.0164	.000
	(.2918, .5191)			

Note:

Interaction 1: Social Anxiety x Difficulties engaging in goal-directed behavior

Interaction 2: Social Anxiety x Depression

Interaction 3: Difficulties with goal-directed behavior x Depression

Interaction 4: Social Anxiety x Difficulties engaging in goal-directed behavior x Depression

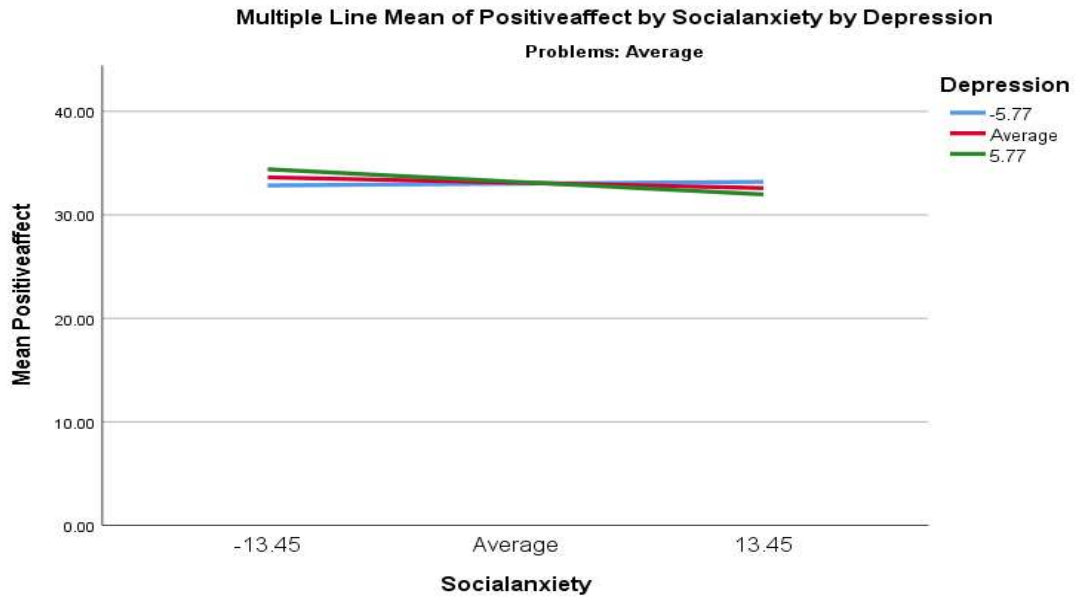

Figure 4.4. Effect of social anxiety on positive affect moderated by depression levels when difficulties engaging in goal-directed behavior was at a moderate level

Examination of the interaction plot in Figure 4.4, along with the given values in Tables 4.5 and 4.6, shows that at a moderate level of difficulties engaging in goal-directed behavior, social anxiety has a negative impact on positive affect, and levels of depression also moderated this relationship.

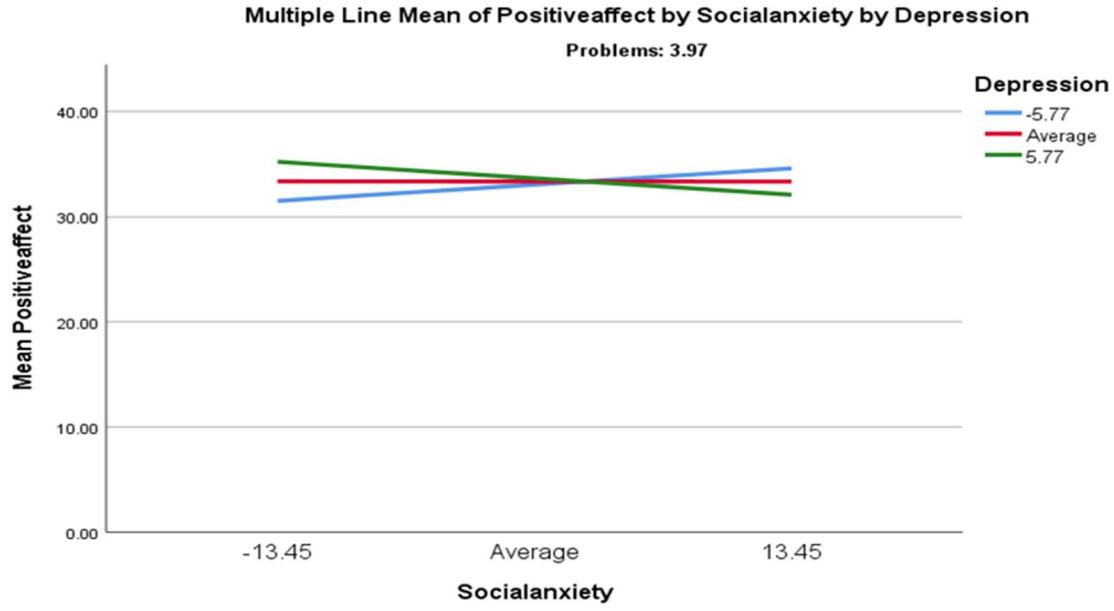

Figure 4.5. Effect of social anxiety on positive affect moderated by depression levels when difficulties with goal-directed behavior was high

While the effect of social anxiety remained insignificant on positive affect when depression levels were low, high depression in tandem with moderate levels of difficulties engaging in goal-directed behavior exerts a significant negative effect on changes in positive affect.

Table 4.7

Conditional effects of the focal predictor at values of the moderator

Difficulties with goal levels	Depression Levels	Effect
Low	Low	Not significant
Low	Average	Not significant
Low	High	Not significant
Average	Low	Not significant
Average	Average	Not significant
Average	High	*Social anxiety decreases positive affect*
		B = -.0902, 95% *CI* (-.1654, .0150), t = -2.3068, p < .05
High	Low	Not significant
High	Average	Not significant
High	High	*Social anxiety decreases positive affect*
		B = -.1158, 95% *CI* (-.2085, -.0231), t = -2.4568, p < .01

Examination of the interaction plot in Figure 4.5, along with the given values in Tables 4.6 and 4.7 shows that when difficulties engaging in goal-directed behavior is high, social anxiety has a significant negative effect on positive affect even after controlling for initial levels of positive affect. However, this relationship was not significant when depression levels were low. As summarised in Table 4.7, social anxiety decreases positive affect only in the presence of high depression levels and moderate to high difficulties in goal-directed behavior. In other words, difficulties engaging in goal-directed behavior influence the relationship between social anxiety and positive affect only in the presence of high levels of depression.

4.5. Discussion

The following section will discuss the results reported in the previous (Results) section. Lack of emotional awareness and non-acceptance of emotions significantly positively predicted social anxiety (refer to Table 4.4). This is in line with previous studies on clinical as well as subclinical

samples, which have found that, compared to low socially anxious people, those suffering from social anxiety report more problems with emotion regulation (Helbig-Lang et al. 2015; Mennin et al., 2007; Rusch, Westermann, & Lincoln, 2012; Schneider et al., 2016). Lack of proper emotion regulation before, during, or after social interactions may lead to anxiety and avoidance of social situations (Farmer & Kashdan, 2012). Studies have also highlighted the fact that socially anxious individuals may have doubts about the efficacy of their ER attempts (Sung et al., 2012; Werner et al., 2011). These findings point to the fact that people with social anxiety often tend to interpret the presence of negative primary emotions as a sign of weakness and hence, might try to reject such emotional responses altogether (Rusch, Westermann, & Lincoln, 2012). Thus, they might pay excessive attention to their physiological and emotional responses in an attempt to regulate and modify them. Such high self-focused attention is a maintaining factor for social anxiety (Rusch, Westermann, & Lincoln, 2012). Diverting cognitive resources in trying to curb or avoid emotional reactions might diminish resources available for comprehending and then properly responding to social information (Helbig-Lang, Rusch, & Lincoln, 2015). This, too, might exacerbate pre-existing social anxiety symptoms.

This study revealed that non-acceptance of emotional responses and difficulties engaging in goal-directed behavior predicted T2 social anxiety after accounting for gender, age, and native place (refer to Table 4.5). In line with these results, Weisman et al. (2015) reported that participants with general Social Anxiety Disorder (SAD) had significantly higher scores on non-acceptance of emotions and difficulty focusing on other things when upset than the control group. Schneider et al. (2016) also found that difficulties with goal-directed behavior significantly impact the development of social anxiety over and above initial anxiety symptoms. Alvares et al. (2014) noted a lack of flexibility in goal-directed behavior among SAD patients. This reflects an inability to modify behavior with variations in the outcome value of particular actions (Alvares et al., 2014). Maladaptive beliefs regarding social skills and public performances held by SAD patients lead to heightened emotional reactivity and emotion dysregulation (De Castella et al., 2014). Social anxiety is thought to arise when an individual does not behave in a manner consistent with his or her goals (Kocovski & Endler, 2000). Kocovski and Endler (2000) found that individuals who were higher on social anxiety were lower on the expectancy to achieve goals, which again, seems to serve as a coping mechanism in social anxiety (Kocovski & Endler, 2000). So, it may be that socially anxious people do not differ in goal-directed behavior from non-socially anxious

individuals but happen to perceive themselves as unable to do so. Since self-report measures were used in the present study, it is not clear whether participants actually had problems with goal-directed behavior or merely believed so. Plausibly socially anxious participants held maladaptive beliefs regarding their performance and ability to pursue goals resulting in further emotional dysregulation, which added to existing social anxiety.

Lack of emotional awareness failed to show significant associations with social anxiety at T2 though it was significantly positively associated with social anxiety at T1 (refer to Tables 4.4 and 4.5). These results may partially be attributed to the fact that lack of emotional awareness becomes maladaptive over time only when it leads to behavioral changes (Schneider et al., 2016). Another way to view the present results can be through the lens of active and passive dysregulation identified by Hambour et al. (2018). As discussed in section 4.2., Hambour et al. (2018) identified a lack of emotional awareness as a passive mode of emotional dysregulation. On the other hand, non-acceptance of negative emotions and difficulties engaging in goal-directed behavior were grouped as active dysregulation (Hambour et al., 2018). Thus, the present results imply that active dysregulation of emotion relates to social anxiety longitudinally, while passive dysregulation did not. It must be pointed out that none of the emotion regulation strategies had a significant effect on social anxiety after four months after accounting for initial depression and anxiety levels.

Given the seemingly pivotal role of depression in the relationship between social anxiety and emotion regulation, the next logical step was to investigate how these three variables interact with each other. In particular, the impact of social anxiety on changes in affect was examined with difficulties in emotion regulation and depression as moderators. The moderation analysis portrays the interaction between difficulties engaging in goal-directed behavior and depression to moderate the effect of social anxiety on positive affect. As presented in Table 4.6, the relationship between social anxiety and positive affect is negative but insignificant. The link between difficulties engaging in goal-directed behavior and positive affect also shows a similar pattern (refer to Table 4.6). These results imply that the presence of both social anxiety and difficulties engaging in goal-directed behavior causes decreases in positive affect. However, on their own, they do not seem to exert any significant influence on changes in positive affect over four months. Only when initial levels of depression are high, the presence of moderate to severe difficulties engaging in goal-directed behavior can produce a significant impact on the relationship between social anxiety and positive affect with the overall effect of a decrease in positive affect (refer to Table 4.7).

Kashdan and Breen (2008) noted that situational and personal factors like depression and emotion dysregulation could confer or deny chances for the development of constructive skills. Thus, these factors might be relevant for experiencing positive affect among socially anxious people (Kashdan & Breen, 2008). Depression-sensitive people are anxious and distressed as they believe that the cognitive difficulties accompanying depression can result in various adverse consequences (Tull et al., 2006). Tull et al. (2006) proposed that this heightened anxiety may then hamper engagement in goal-directed behavior, ultimately limiting one's exposure to positive reinforcement. This can further maintain the depressed mood (Tull et al., 2006). Thus, positive emotions in socially anxious people may be disrupted by depression and difficulties engaging in goal-directed behavior operating in tandem.

Though reduced positive affect has traditionally been considered specific to depression (DSM-IV-TR; American Psychiatric Association, 2000), gradually, this affective pattern is emerging as an important feature of SAD (Weisman et al., 2015). SAD is probably the only anxiety disorder associated with lower positive affect (Brown, Ryan & Creswell, 2007). Hughes et al. (2006) found that social phobia, specifically social interaction anxiety, is associated with the low positive affect or Anhedonic Depression factor when controlling for negative affect. Excessive social anxiety has been linked with a lower incidence of positive life events among non-clinical samples (Farmer & Kashdan, 2012; Kashdan & Steger, 2006; Kashdan et al., 2011). A meta-analysis found that the comorbidity between depression and SAD could not explain the inverse relationship between SAD and positive emotions (Kashdan, 2007). Higher social anxiety has consistently been associated with lower levels of dispositional positive affect and expression of positive emotions, lesser positive experiences, and fearful responses to overtly positive social experiences (Kashdan, Weeks, & Savostyanova, 2011; Turk et al., 2005). It should be pointed out that this study specifically assessed social interaction anxiety. This is one of the two distinct types of social anxiety, the other one being performance anxiety (Hughes et al., 2006). Positive affect is usually more closely associated with social events and interactions as compared to performance situations (Hughes et al., 2006). The use of maladaptive ER strategies further diminishes the already lower trait positive affect among SAD patients (Eisner, Johnson, & Carver, 2009).

An interesting finding in this study is the role of difficulties engaging in goal-directed behavior in the relationship between social anxiety and affect. Another longitudinal study also identified difficulties in concentration when upset as a significant predictor of positive affect (Weisman et

al., 2015). Weisman et al. (2015) attempted to explain this association witnessed among those with social anxiety with the help of the common negative cognitions found in social anxiety. One of the hallmarks of social anxiety is the belief that social rejection is inevitable. To avoid rejection, socially anxious people tend to avoid social interactions, suppress thoughts, and conceal actual or perceived signs of anxious arousal (Clark & Wells, 1995). Too much concern for controlling and hiding intense and recurrent anxiety may deplete self-regulatory resources and hinder completing the task at hand (Weisman et al., 2015). So, social anxiety seems to deter people from achieving their goals and, therefore can affect emotions and life experiences.

Chapter-5

Conclusion, Implications, and Limitations

The last chapter of this thesis lays out the concluding remarks by highlighting the main findings of this study, its strengths, and its practical implications. Finally, some limitations and future directions are mentioned.

5.1. Conclusion

The central theme of this thesis is social anxiety among young adults. The thesis investigated the risk factors for social anxiety as well as its effects, particularly with regards to emotions and affect. Significant life changes characterize young adulthood. Effectively coping with these changes increases one's chances of success in various aspects of life, including academics (Hussey & Smith, 2010). Thus, social anxiety is particularly challenging in this developmental period and can even impair functioning in various life domains (Blanco et al., 2004). Prevalence studies conducted in the West showed that Social Anxiety Disorder (SAD) is highly prevalent among the youth (Burstein, Ameli-Grillon, & Merikangas, 2011; Merikangas et al., 2010). According to Rapee and Spence's (2004) model, different risk factors of SAD may be more or less influential at different ages. So, one of the primary aims of this study was to identify intra-individual and environmental factors responsible for developing and maintaining social anxiety among college-going young adults.

The results of the first study indicated significant associations of mother's care, relational peer victimization, fear of negative evaluation, social appearance anxiety, disordered eating, satisfaction with others' evaluations about one's body and appearance with social anxiety when gender, age, place, and depression were held constant. Disordered eating behavior was significantly associated with online victimization, social anxiety, fear of negative evaluation, and body esteem satisfaction, over and above gender, age, place, and depression. So, social anxiety and disordered eating seem to have some common predictors, namely, fear of negative evaluation, social appearance anxiety, and satisfaction with one's appearance. Fear of negative evaluation (FNE) and social appearance anxiety emerged as shared vulnerabilities within social anxiety and

disordered eating symptoms. However, it must be pointed out that the vulnerability model is only comprised of cognitive and emotional factors. The effect of social factors, namely parental bonding and peer victimization, manifested more clearly through cognitive, and emotional variables, which were tested with the help of mediation models. The present study helps in understanding how the dimensions of parental bonding differentially affect social anxiety and comorbid disordered eating by following varied routes and mechanisms. Mother's care seems to influence the comorbidity through non-acceptance of emotions, satisfaction with appearance, fear of negative evaluation, and social appearance anxiety. Father's care exerted influence only through satisfaction with appearance. The Father's denial of psychological autonomy does the same only through non-acceptance of emotions, while the father's granting of behavioral freedom impacts only through fear of negative evaluation. This is probably because mothers and fathers have different roles in their children's social development (Bogels & Perotti, 2011). According to Bogels and Perotti (2011), women and men have traditionally specialized in nurturing and confronting the external environment, respectively. Thus, the care dimension of maternal bonding played a pivotal role in understanding social anxiety and disordered eating comorbidity, while the father's care did not seem to be as significant. However, unlike maternal over-protection, both paternal over-protection dimensions appeared to be important in the development and maintenance of these comorbid disorders. Father's over-protection exerts influence through non-acceptance of emotions while granting behavioral freedom does so via fear of negative evaluation.

The examination of peer relationships is particularly critical in young adults as this is the period when people crave peer approval and acceptance (Klingaman, 2012). So, the impact of friends was assumed to be more in this developmental period compared to other age groups. The fact that this study was carried out in a residential campus makes it more relevant to the study of peer relationships. All participants lived in hostels and so spent the maximum time with their peer group. Relational and online victimization emerged as two of the most critical types of peer victimization. The present study reported that relational victimization influenced social anxiety and comorbid disordered eating behavior through satisfaction with appearance, fear of negative evaluation, and social appearance anxiety. Online victimization exerted its influence through a lack of emotional awareness, satisfaction with appearance, and social appearance anxiety.

Another important factor that played a pivotal role in social anxiety and disordered eating comorbidity and appeared to influence the impact of social anxiety on affect is emotion regulation.

Most importantly, culture seems to influence people's motivations to regulate their emotions (Ford & Mauss, 2015). Markus and Kitayama (1991) pointed out that a common framework useful in characterizing this influence is differentiating cultures on the basis of their emphasis on interdependence and social harmony. Cultures that emphasize independence are called individualistic cultures, while collectivistic cultures are predominantly concerned with interdependence (Markus & Kitayama 1991). Emotions are compelling internal experiences and can be an expression of one's individuality (Matsumoto, 1990). So, regulation of emotions is more acceptable in collectivist cultures as compared to those more individualistic (Butler, Lee, & Gross 2007). Depending on their levels of education and other demographic criteria, Indians appear to endorse either solely collectivist or a fusion of individualist and collectivist intentions and actions. (Sinha et al. 2001). This may partially explain the role, awareness, and acceptance of emotions or the lack thereof, appear to play in social interactions.

However, the two most important factors in social anxiety and disordered eating comorbidity appear to be fear of negative evaluation and social appearance anxiety. They serve as shared risk factors and mediators in the relationship between mother's care, father's granting of behavioral freedom, father's denial of psychological autonomy, relational and online victimization with social anxiety, and comorbid disordered eating. Past experiments have repeatedly shown that people react more favorably to physically attractive people (Izgiç, Akyüz, Dogan, & Kugu, 2004). Izgic and colleagues (2004) noted that most people have an unconscious bias towards conventionally good-looking people such that they associate virtues like competence and confidence with good looks. Thus, physical appearance, particularly social evaluation of one's appearance, plays a significant role in almost every aspect of a person's life. For example, a prominent symptom of eating disorders is a preoccupation with appearance (Striegel-Moore, Silberstein, & Rodin, 1993). ED patients seem exquisitely tuned in to the evaluations, and expectations of others, both regarding physical appearance and at a broader behavioral level (Striegel-Moore, Silberstein, & Rodin, 1993). Dissatisfaction with one's physical appearance also results in social anxiety (Gunstad & Phillips, 2003; Pinto & Phillips, 2005; Striegel-Moore, Silberstein, & Rodin, 1993). Similarly, in the present study with satisfaction with one's appearance also seemed to play a pivotal role in the relationship between social anxiety and disordered eating behavior. Thus, concerns about physical appearance and associated appearance-related safety behaviors feature prominently in both SAD and ED. However, the purpose and motivation behind these behaviors have nuanced

phenomenological differences across disorders (Summers & Cougle, 2018). In conclusion, socio-evaluative concerns like fear of negative evaluation and social appearance anxiety appeared to be a critical factor in the relationship between social anxiety and disordered eating.

The second study highlighted the role of problems in goal-directed behavior in social anxiety, which has been an under-researched aspect of social anxiety and difficulties in emotion regulation. Along with non-acceptance, difficulties engaging in goal-directed behavior seemed to predict social anxiety at T2 after accounting for gender, age, and native place (refer to Table 4.5). The second study brought to the fore the importance of situational and personal factors like difficulties in emotion regulation and depression in the relationship between social anxiety and positive affect. Presence of depression as well as difficulties engaging in goal-directed behavior disrupts positive emotions in socially anxious people (refer to Table 4.7). Beliefs regarding rejection among socially anxious individuals and excess concern with exhibiting signs and symptoms of anxiety might lead to the depletion of self-regulatory resources. This leaves the person with comparatively limited resources to focus and complete the task at hand. Perceived or actual inability to pursue goals in a directed manner among socially anxious individuals might exacerbate problems in emotion regulation, thus aggravating existing social anxiety symptoms. Finally, being incapable of achieving one's goals might hinder the experience of positive life events and positive affect.

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5.2. Strengths and Implications

Though social anxiety is an under-researched area in this country, Indian college students have consistently reported high levels of social anxiety. One of the very first studies conducted among Indian undergraduates found that 19.5% of the participants had social phobia (Shah & Kataria, 2009). Ganapathi et al. (2016) found that in a sample of 480 Indian medical students, 22.9% had moderate, 22.5% marked, and 17.30% reported severe levels of social anxiety. However, clinical levels of social anxiety seem to be lower, with only 11.37% meeting the criteria for SAD (Ratnani et al., 2017). A recent study has reported prevalence rates of 5.94% for social anxiety and 12.62% for social phobia among undergraduates, which is relatively higher than in the general population (Dugg & Das, 2019). The present study found even higher levels of social anxiety, with 17.27% of participants reporting probable social phobia and 12.17% probable social anxiety. Hence, social anxiety seems to be a significant concern among college students, irrespective of their stream of study. Given the rise of Social Anxiety Disorder (SAD) over the past few decades (Blanco et al.,

2004), especially among young adults, this thesis enriches the present literature by highlighting vulnerability factors that could act as crucial points for intervention. Moreover, most of the studies done on Indian young adults have chosen medical students as samples (Dugg & Das, 2019; Ganapathi et al., 2016; Honnekeri et al., 2017; Ratnani et al., 2017). Thus, the present study, which looks into social phobia among engineering students, maybe an essential addition to the current literature.

The etiology of SAD is best understood as a complex interplay between intra-individual and environmental factors (Spence & Rapee, 2016). An essential contribution of this thesis is studying the impact of several factors on social anxiety in a single model. The present study looks into the contribution of various intra-individual factors like emotion regulation and social-evaluative concerns along with environmental factors like parental bonding and peer victimization in the etiology of social anxiety. Thus, the interplay between the various factors and their impact on social anxiety can be understood better. In doing so, this thesis identified several potential targets of intervention in the treatment of social anxiety.

Parenting during the early years of a child's life lays the foundation for how one reacts in a challenging socio-emotional situation later in life (Marusak et al., 2018). Given the enduring impact of parenting practices, it might be a valuable target for intervention and treatment programs. A vital contribution of this study is instead of looking at the over-protection dimension of parental bonding as a single construct, breaking it down into two related constructs. One concerned with the psychological aspect while the other deals with the behavioral concept. So, this study's unique contribution is examining the relation of social anxiety and comorbid disordered eating concerning both over-protection dimensions. The first study highlights the importance of parental bonding in social anxiety and comorbid disordered eating. It thus supports the inclusion of family therapy in the arsenal of treatments of SAD and eating disorders. Such interventions should address parental behaviors that interfere with the recovery process (Zucker, Ferriter, Best, & Brantley, 2005). Few of these behaviors have been identified in this study, like insufficient amounts of parental care and not granting behavioral enough freedom to their young adult children. Research, policy, and funding need to be invested in the area of teaching effective parenting techniques in this country. Moreover, the findings also suggest the possibility of intervention at a later stage in development like during young adulthood and not exclusively during childhood.

Another type of social influence considered in the first study was peer victimization. Peers seem to have the most impact on college students because people of college-going age are vulnerable to behavioral adaptation, and compared to school students, spend a lot more time with their friends (Yuan, Lv, & Vanderweele, 2013). So, a significant contribution of the present study is investigating the effect of peer victimization on social anxiety and disordered eating comorbidity. Both overt and relational victimization are strongly related to social anxiety (La Greca & Harrison, 2005; Storch & Masia-Warner, 2004). However, most studies on peer victimization have not considered the different forms of victimization. This study tries to fill in this research gap by looking into a total of five types of peer victimization, namely, overt, relational, reputational, pro-social, and online victimization. The inclusion of online or cyber-victimization is particularly crucial as it is a comparatively novel form of victimization and is hence, is an under-researched area, as of now. Results identified relational and online victimization as two relevant types of peer victimization for social anxiety and comorbid disordered eating. Targeting these two types of victimization, in particular, may have important clinical implications for preventive interventions designed to address mental health issues among young adults facing difficulties in friendships or peer relationships (McLaughlin, Hatzenbuehler, & Hilt, 2009).

The first study also found fear of negative evaluation and social appearance anxiety are shared risk factors for social anxiety and comorbid disordered eating. So, social evaluative concerns are constructs with promising potential avenues for future treatments and prevention efforts in both the social anxiety and eating disorder sphere. The identification of such a broad range of shared and specific vulnerability factors for social anxiety and comorbid disordered eating lends further support to the suggestion of regular screening for a broad range of psychological and socio-environmental issues (Pearson et al., 2017). These findings have implications for academicians and clinicians working with at-risk groups such as adolescents and young adults (McClintock & Evans, 2001).

Most research examining emotional competence primarily focuses on childhood with a lack of understanding of how these competencies manifest in later development (Rileya et al., 2019). So, evaluating the predictors and outcomes of emotion regulation in later stages of life is also essential. It is more so in the case of young adults as emotional competencies become vital to the achievement of social goals, which is of utmost importance at this stage of life. This study looks into the relationship between social anxiety and emotion dysregulation through different lenses;

the prospective relationship between these two factors, as a mediator in the relation between social influence and social anxiety and as a moderator in the association between social anxiety and affect. Out of the three difficulties in emotion regulation examined in this thesis, non-acceptance of negative emotions seems to be most closely associated with social anxiety as it reported significant relationships with social anxiety cross-sectionally as well as longitudinally. It also played a critical role in understanding the comorbidity between social anxiety and disordered eating behavior by acting as a mediator between parental bonding and the two disorders. Lack of emotional awareness played a role in social anxiety and disordered eating comorbidity by acting as a mediator in the relationship between peer victimization and the two disorders. Finally, difficulties engaging in goal-directed behavior reported significant association with social anxiety after four months and also moderated the effect of social anxiety on positive affect. Thus, all the different kinds of difficulties in emotion regulation analysed in this study appeared to influence social anxiety, albeit in different ways. The finding of the second study may have implications for intervention programs addressing emotional problems in socially anxious youth by targeting underlying emotion regulation abilities.

5.3. Limitations and Future Directions

The generalisability of the present findings is limited by the inclusion of only a particular age group (young adults) from one educational institute in India. So, future research should try to replicate the present findings in other clinical as well as non-clinical populations. There are issues with establishing causality due to the cross-sectional nature of the first study. Assessing all the variables in the first study at the same time point can also complicate the interpretation of a mediational model. However, cross-sectional research can be used to validate the pathways proposed in developmental models before verifying them longitudinally (Stice, 2002). Thus, this study provides a base for future longitudinal studies to test the proposed mediational models.

Due to the skewed male-to-female ratio, it was not possible to see gender differences adequately. Future studies should try to have equal representation of both genders to get more robust results regarding gender differences in the proposed models. Additionally, the measure of disordered eating probably is much more applicable to females than males as male body image concerns revolve more around attaining a muscular body instead of achieving the “thin ideal” (Tylka, Bergeron, & Schwartz, 2005). So, future studies looking into gender differences in disordered

eating behavior and symptoms should use measures that incorporate body image concerns more commonly experienced by males.

This study was conducted on Indian college students. More studies are required to replicate the current findings in relevant clinical populations. Some researchers think that some of the risk factors considered in this study like social appearance anxiety might get expressed differently at an earlier developmental stage (Levinson & Rodebaugh, 2016). Thus, future studies can test these models with a younger age group. One of the most significant contributions of this study is investigating the role of parental bonding in the relationship between social anxiety and disordered eating. However, only the child's perception of parental bonding was considered here. Future research can extend and strengthen the present study by focussing on both child and parental perceptions of parenting style.

The second study focussed solely on the association between social anxiety and emotion regulation. Most empirical findings regarding emotion regulation in social anxiety are limited to student samples (Mennin et al., 2007; Mennin, McLaughlin, & Flanagan, 2009; Rusch, Westermann, & Lincoln, 2012), including the present study. So, future studies may attempt to replicate these findings in other samples like a clinical population. This study used self-report measures for assessing emotion regulation strategies. It seems to be paradoxical to invite people who may be unaware of their emotional states to evaluate their level of emotional awareness. Future studies should probably use performance-based measures like the Level of Emotional Awareness Scale (LEAS; Lane & Schwartz, 1987; Lane et al., 1990). Finally, no one model can include every single variable responsible for the outcome (Cole & Maxwell, 2003). So, future studies can extend the proposed models by adding relevant risk factors.

References

Abbate-Daga G et al. (2015) Day hospital treatment for anorexia nervosa: a 12-month follow-up study. *European Eating Disorders Review, 23*, 390–398.

Abdollahi, A., Abu Talib, M., Reza, M., & Mobarakeh, V., Momtaz, V., and Mobarake, R. K. (2016) Body-Esteem Mediates the Relationship between Self-Esteem and Social Anxiety: The Moderating Roles of Weight and Gender. *Child Care in Practice, 22*(3), 296-308.

Abdollahi, A., & Abu Talib, M. (2015). Sedentary behaviour and social anxiety in obese individuals: The mediating role of body esteem. *Psychology, Health and Medicine*, *20*(2), 205–209. doi:10.1080/13548506.2014.913799

Acarturk, C., de Graaf, R., van Straten, A., ten Have, M., & Cuijpers, P. (2008). Social phobia and number of social fears, and their association with comorbidity, health-related quality of life and help seeking. *Social Psychiatry and Psychiatric Epidemiology*, *43*, 273–279.

Adams, C.E., Myers, V.H., Barbera, B.L., & Brantley, P.J. (2011). The role of fear of negative evaluation in predicting depression and quality of life four years after Bariatric surgery in women. *Psychology*, *2*, 150-154.

Agras, W. S., Bryson, S., Hammer, L. D., & Kraemer, H. C. (2007). Childhood risk factors for thin body preoccupation and social pressure to be thin. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(2), 171–178.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA, US: Sage Publications, Inc.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*, 217–237.

Ali, S. M., & Lindström, M. (2006). Socioeconomic, psychosocial, behavioural, and psychological determinants of BMI among young women: Differing patterns for under-weight and overweight/obesity. *The European Journal of Public Health*, *16*(3), 324–330.

Alleva, J. M., Lange, W., Jansen, A., & Martijn, C. (2014). Seeing ghosts: Negative body evaluation predicts overestimation of negative social feedback. *Body Image*, *11*, 228–232.

Alkozei, A., Cooper, P. J., & Creswell, C. (2014). Emotional reasoning and anxiety sensitivity: associations with social anxiety disorder in childhood. *Journal of affective disorders*, *152-154*, 219–228. doi:10.1016/j.jad.2013.09.014

Almenara, C. A., Aimé, A., Maïano, C., Ejova, A., Guèvremont, G., Bournival, C., Ricard, M. M. (2017). *Revue européenne de psychologie appliquée*, *67*, 155–162.

Alvares, G. A., Balleine, B.W, & Guastella, A. J. (2014). Impairments in Goal-Directed Actions Predict Treatment Response to Cognitive-Behavioral Therapy in Social Anxiety Disorder. *PLoS ONE, 9*(4): e94778. doi:10.1371/journal.pone.0094778

Álvarez-García, D., Núñez, A., Pérez-Fuentes, M. C., & Núñez, J. C. (2020). Peer Victimization in Overweight Adolescents and Its Effect on Their Self-Esteem and Peer Difficulties. *International Journal of Environmental Research and Public Health*, *17*(1), 16. https://doi.org/10.3390/ijerph17010016.

Al-Yasiri, A., & AbdKarkosh, Y. S. (2013). The Validity of Beck Depression Inventory –Short Version in Depressed Patients Diagnosed According to ICD10. *The Iraqi Postgraduate Medical Journal, 12*(4), 603-613.

American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed., DSM-III). Washington, DC: American Psychiatric Press.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed., DSM-IV). Washington, DC: American Psychiatric Press.

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Revision, DSM-IV-TR). Washington, DC: American Psychiatric Press.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Amianto, F., Martini, M, Spalatro, A., Abbate Daga, G., & Fassino, S. (2017). Body Image Development within the Family: Attachment Dynamics and Parental Attitudes in Cross Sectional and Longitudinal Studies. *Acta Psychopathologica*, 3(4:50). DOI: 10.4172/2469-6676.100122

Anderson, E. R., Veed, G. J., Inderbitzen-Nolan, H. M., & Hansen, D. J. (2010). An Evaluation of the Applicability of the Tripartite Constructs to Social Anxiety in Adolescents. *Journal of Clinical Child & Adolescent Psychology*, *39*(2), 195–207.

Anhalt, K., & Morris, T. L. (2008). Parenting characteristics associated with anxiety and depression: A multivariate approach. *Journal of Early and Intensive Behavior Intervention, 5*(3), 122-137. http://dx.doi.org/10.1037/h0100427

Arat, G. (2015). Emerging protective and risk factors of mental health in Asian American students: findings from the 2013 Youth Risk Behavior Survey. *Vulnerable Children and Youth Studies, 10*, 192–205.

Arcelus, J., Mitchell, A. J., Wales, J., & Nielsen, S. (2011). Mortality rates in patients with anorexia nervosa and other eating disorders: a meta-analysis of 36 studies. *Archives of General Psychiatry*, *68*(7), 724–731.https ://doi.org/10.1001/archg enpsy chiat ry.2011.74

Arlt, J., Yiua, A., Eneva, K., Dryman, M. T., Heimberg, R. G.& Chen, E. Y. (2016). Contributions of cognitive inflexibility to eating disorder and social anxiety symptoms. *Eating Behavior*, *21*, 30–32. doi:10.1016/j.eatbeh.2015.12.008.

Arnett, J. J. (2004). *Emerging Adulthood: The Winding Road from the Late Teens through the Twenties.* Oxford University Press.

Arnett, J. J. (2006). Emerging Adulthood: Understanding the new way of coming of age. In J. J. Arnett, and J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century.* Washington, DC: American Psychological Association Press.

Asher, M., Asnaani, A., & Aderka, I. M. (2017). Gender differences in social anxiety disorder: A review. *Clinical Psychology Review*, *56*, 1–12.

Ata, R. N., Ludden, A. B., & Lally, M. M. (2007). The effects of gender and family, friend, and media influences on eating behaviors and body image during adolescence. *Journal of Youth and Adolescence*, *36,* 1024–1037.

Aupperle, R. L., & Martin, P. P. (2010). Neural systems underlying approach and avoidance in anxiety disorders. *Dialogues in Clinical Neuroscience*, *12*, 517–531.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, *13*, 27–45. http://dx.doi.org/10.1177/1073191105283504.

Baker, C. N. & Hoerger, M. (2012). Parental child-rearing strategies influence self-regulation, socio-emotional adjustment, and psychopathology in early adulthood: evidence from a retrospective cohort study. *Personality and Individual Differences, 52*, 800-805.

Balhara, Y. P. S., Mathur, S., & Kataria, D. K. (2012). Body shape and eating attitudes among female nursing students in India. *East Asian Archives of Psychiatry*, *22,* 70-74.

Balottin, L., Mannarini, S., Rossi, M., Rossi, G., & Balottin, U. (2017). The parental bonding in families of adolescents with anorexia: attachment representations between parents and offspring. *Neuropsychiatric Disease and Treatment, 13,* 319–327.

Barahmand, U., & Shahbazi, Z. (2015). Prevalence of and associations between body dysmorphic concerns, obsessive beliefs and social anxiety. *Asia Pacific Psychiatry*, *7*(1), 54-63. doi:10.1111/appy.12085

Bardone-Cone, A. M., Brownstone, L. M., Higgins, M. K., Fitzsimmons-Craft, E. E., & Harney, M. B. (2013). Anxiety, appearance contingent self-worth, and appearance conversations with friends in relation to disordered eating: Examining moderator models. *Cognitive Therapy and Research*, *37*, 953–963.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The skinny on body dis- satisfaction. A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence, 35*, 229–241.

Beck, A. T., & Beck, R. W. (1972). Screening depressed patients in family practice. *Postgraduate Medicine, 52*, 81-85.

Beck, A. T., & Steer, R. A. (1993). *Beck Depression Inventory Manual*. San Antonio: Psychological Corporation.

Becker, C. B., Deviva, J. C., & Zayfert, C. (2004). Eating disorder symptoms among female anxiety disorder patients in clinical practice: The importance of anxiety comorbidity assessment. *Journal of Anxiety Disorders*, *18*, 255–274.

Bella, T., & Omigbodun, O. (2009). Social phobia in Nigerian university students: prevalence, correlates and co-morbidity. *Social Psychiatry and Psychiatric Epidemiology*, *44*, 458–463.

Benjet, C., Borges, G., & Medina-Mora, M. E. (2010). Chronic childhood adversity and onset of psychopathology during three life stages: Childhood, adolescence and adulthood. *Journal of Psychiatric Research*, *44*, 732-740.

Bentler, P.M. & Bonett, D.G. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin*, *88,* 588-606.

Bernatova, T., & Svetlak, M. (2017). Emotional and Interoceptive Awareness and Its Relationship to Restriction in Young Women with Eating Disorders and Healthy Controls: a Cascade from Emotional to Behavioral Dysregulation. *Activitas Nervosa Superior, 59*, 78-86.

Biegel, R. (2016). Attachment and Disordered Eating: The Mediating Impact of Body Dissatisfaction. *Culminating Projects in Community Psychology, Counseling and Family Therapy*. 25. https://repository.stcloudstate.edu/cpcf_etds/25

Binelli, C., Ortiz, A., Muñiz, A., Gelabert, E., Ferraz, L. S. Filho, A., et al. (2012). Social anxiety and negative early life events in university students. *Revista Brasileira de Psiquiatria*, *34*(1), 69-74.

Blackie, R. A., & Kocovski, N. L. (2016). Letting go of yesterday: Effect of distraction on post-event processing and anticipatory anxiety in a socially anxious sample. *Cognitive Behaviour Therapy*, *45*, 60–72. http://dx.doi.org/10.1080/16506073.2015.1104383

Blalock, D. V., Kashdan, T. B., & Farmer, A. S. (2016). Trait and Daily Emotion Regulation in Social Anxiety Disorder. *Cognitive Therapy and Research, 40*(3), 416-425.

Blanco, C., Garcia, C. & Liebowitz, M. R. (2004). Epidemiology of social anxiety disorder. In B. Bandelow & D. J. Stein (Eds.), *Social anxiety disorder* (pp. 35-45). New York: Marcel Dekker.

Blichfeldt, B. S., & Gram, M. (2013). Lost in transition? Student food consumption. *Higher Education*, *65*(3), 277–289.

Bogels, S. M., & Perotti, E. C. (2011). Does Father Know Best? A Formal Model of the Paternal Influence on Childhood Social Anxiety. *Journal of Child and Family Studies*, *20*, 171–181.

Bo¨gels, S. M., & Phares, V. (2008). The role of the father in the development, prevention and treatment of childhood anxiety disorders: A review and new model. Clinical Psychology Review, *28*, 539–558.

Brown, E. J., Turovsky, J., Heimberg, R. G., Juster, H. R., Brown, T. A., & Barlow, D. H. (1997). Validation of the Social Interaction Anxiety Scale and the Social Phobia Scale across the anxiety disorders. *Psychological Assessment, 9,* 21–27.

Brown, C. F., Demaray, M. K., & Secord, S. M. (2014). Cyber victimization in middle school and relations to social emotional outcomes. *Computers in Human Behavior*, *35,* 12–21. https://doi.org/10.1016/j.chb.2014.02.014.

Brown, C. L., Skelton, J. A., Perrin, E. M., & Skinner, A. C. (2016). Behaviors and motivations for weight loss in children and adolescents. *Obesity*, *24*(2), 446–452.

Brown, K. W., Goodman, R. J., & Inzlicht, M. (2013). Dispositional mindfulness and the attenuation of neural responses to emotional stimuli. *Social Cognitive and Affective Neuroscience*, *8*, 93–99. http://dx.doi.org/10.1093/scan/nss004.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, *18*, 211–237. http://dx.doi.org/10.1080/10478400701598298.

Bryant, E. J., Kiezebrink, K., King, N.A., & Blundell, J.E. (2010). Interaction between disinhibition and restraint: Implications for body weight and eating disturbance. *Eating and Weight Disorders*, *15*(1), 43–51.

Buchanan, N. T., Bluestein, B. M., Nappa, A. C., Woods, K. C., & Depatie, M. M. (2013). Exploring gender differences in body image, eating pathology, and sexual harassment. *Body Image*, *10*(3), 352–360.

Buckner, J. D, Eggleston, A. M., & Schmidt, N. B. (2006). Social anxiety and problematic alcohol consumption: the mediating role of drinking motives and situations. *Behaviour Therapy*, *37*, 381–391.

Buckner, J. D., Silgado, J., & Lewinsohn, P. M. (2010). Delineation of differential temporal relations between specific eating and anxiety disorders. *Journal of Psychiatric Research*, *44*, 781–787.

Buddeberg-Fischer, B., Bernet, R., Sieber, M., Schmid, J., & Buddeberg, C. (1996). Epidemiology of eating behaviour and weight distribution in 14-to 19-year-old Swiss students. *Acta Psychiatr. Scand.*, *93*, 296-304.

Bulik, C. M. (1995). Anxiety disorders and eating disorders: a review of their relationship. *New Zealand Journal of Psychology*, *24*, 51 – 62.

Bulik, C. M., Sullivan, P. F., Fear, J. L., & Pickering, A. (2000). Outcome of anorexia nervosa: eating attitudes, personality, and parental bonding. *International Journal of Eating Disorders*, *28*, 139-147.

Buote, V., Pancer, M., Pratt, M., Adams, G., Birnie-Lefcovitch, S., Polivy, J., & Wintre, M. (2007). The importance of friends: Friendship and adjustment among 1st-year university students. *Journal of Adolescent Research, 22*(6), 665–689.

Burke, C. A. (2010). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies, 19*, 133–144. http://dx.doi.org/10.1007/s10826-009-9282-x.

Burstein, M., He, J.-P., Kattan, G., Albano, A. M., Avenevoli, S., & Merikangas, K. R. (2011). Social phobia and subtypes in the National Comorbidity Survey adolescent supplement: Prevalence, correlates, and comorbidity. *Journal of the American Academy of Child & Adolescent Psychiatry*, *50*(9), 870-880.

Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: are the social consequences of emotion suppression culture-specific? *Emotion, 7*(1), 30-48.

Button, E. J., & Whitehouse, A. (1981). Subclinical anorexia nervosa. *Psychological Medicine, 11,* 509-516.

Bydlowski, S., Corcos, M., Jeammet, P., Paterniti, S., Berthoz, S., Luarier, C., et al. (2005). Emotion-processing deficits in eating disorders. *International Journal of Eating Disorders*, *37,* 321–329. doi:10.1002/eat.20132.

Caballo, V. E., Arias, B., Salazar, I. C., Calderero, M., Irurtia, M. J., and Ollendick, T. H. (2012). A new self-report assessment measure of social phobia/anxiety in children: The Social Anxiety Questionnaire for Children (SAQ-C24). *Behavioral Psychology/ Psicología Conductual*, *20,* 485–503.

Caballo, V. E., Salazar, I. C., Irurtia, M. J., Arias, B., Hofmann, S. G., and CISO-A Research Team. (2014). Differences in social anxiety between men and women across 18 countries. *Personality and Individual Differences*, *64,* 35–40.

Cakin Memik, N., Sismanlar, S. G., Yildiz, O., Karakaya, I., Isik, C., & Agaoglu, B. (2010). Social anxiety level in Turkish adolescents. *European Child and Adolescent Psychiatry*, *19,* 765–772.

Canals, J., Carbajo, G., Fernandez J., Marti-Henneberg, C., & Domenech, E. (1996). Biopsychopatholoqic risk profile of adolescents with eating disorder symptoms. *Adolescence*, *31*, 443-450.

Carbone-Lopez, K., Esbensen, F.-A., & Brick, B. T. (2010). Correlates and consequences of peer victimization: Gender differences in direct and indirect forms of bullying. *Youth Violence and Juvenile Justice, 8*, 332–350. doi:10.1177/1541204010362954

Carleton, R. N., Collimore, K. C., & Asmundson, G. J. G. (2007). Social anxiety and fear of negative evaluation: construct validity of the BFNE-II. *Journal of Anxiety Disorders, 21,* 131–141.

Carleton, R. N., Collimore, K. C., McCabe, R. E., & Antony, M. M. (2011). Addressing revisions to the Brief Fear of Negative Evaluation scale: Measuring fear of negative evaluation across anxiety and mood disorders *Journal of Anxiety Disorders, 25*, 822– 828.

Carter, M. M., Sbrocco, T., Rileya, S., & Mitchell, F. E. (2012). Comparing Fear of Positive Evaluation to Fear of Negative Evaluation in Predicting Anxiety from a Social Challenge. *Journal of Experimental Psychopathology*, *3*(5), 782–793.

Cash, T. F., & Smolak, L. (2011). *Body image, second edition: A handbook of science, practice, and prevention*. Guilford Press.

Cash, T. F., Melnyk, S. E., & Hrabosky, J. I. (2004). The assessment of body image investment: an extensive revision of the appearance schemas inventory. *International Journal of Eating Disorders, 35*(3), 305-16. doi: 10.1002/eat.10264. PMID: 15048946.

Cassidy, W., Jackson, M., & Brown, K. N. (2009). Sticks and stones can break my bones, but how can pixels hurt me? Students' experiences with cyber-bullying. *School Psychology International, 30*, 383–402.

Castonguay, A. L., Brunet, J., Ferguson, L., & Sabiston, C. M. (2012). Weight-related actual and ideal self-states, discrepancies, and shame, guilt, and pride: Examining associa-tions within the process model of self-conscious emotions. *Body Image*, *9*(4), 488–494. http://dx.doi.org/10.1016/j.bodyim.2012.07.003.

Castelli, R. D., de A´. Quevedo, L., Coelho, F. M., Mariane A. Lopez, M. A., da Silva, R. A., Bohm, D. M., Souza, L. D., de Matos, M. B., Pinheiro, K. A., & Pinheiro, R. T. (2015). Association between perception of maternal bonding styles and social anxiety disorder among young women. *Revista Brasileira de Psiquiatria*, *37*, 331–333.

Chadda, R. K., & Deb, K.S. (2013). Indian family systems, collectivistic society and psychotherapy. *Indian Journal of Psychiatry*, *55*(2), 299-309.

Chartier, M. J., Walker, J. R., & Stein, M. B. (2003). Considering comorbidity in social phobia. *Social Psychiatry and Psychiatric Epidemiology*, *38*, 728–734.

Chellappa, A. R., & Karunanidhi, S. (2013). Eating attitudes and its psychological correlates among female college students. *Global Journal of Human Social Science Arts and Humanities, 13,* 32-39.

Cheng, H., & Mallinckrodt, B. (2009). Parental bonds, anxious attachment, media internalization, and body image dissatisfaction: Exploring a mediation model. *Journal of Counseling Psychology, 56*(3), 365-375. doi:10.1037/a0015067

Cheng, G., Zhang, D., & Ding, F. (2015). Self-esteem and fear of negative evaluation as mediators between family socioeconomic status and social anxiety in Chinese emerging adults. *International Journal of Social Psychiatry*, *61*(6), 569-76.

Chen, V., & Drummond, P.D. (2008). Fear of negative evaluation augments negative affect and somatic symptoms in social-evaluation situations. *Cognition and Emotion*, *22*(1), 21-43.

Chhabra, V., Bhatia, M.S., Gupta, S., Kumar, P., & Srivastava, S. (2009). Prevalence of social phobia in school-going adolescents in an urban area. *Delhi Psychiatry Journal, 12*(1), 18–25.

Chisuwa, N., & O'Dea, J. A. (2010). Body image and eating disorders amongst Japanese adolescents. A review of the literature. *Appetite*, *54*, 5–15.

Choudry I. Y., & Mumford D.B. (1992). A pilot of eating disorders in Mirpur (Pakistan) using an Urdu version of the eating attitudes test. *International Journal of Eating Disorder*, *11*, 243-251.

Chng, S. C. W., & Fassnacht, D. B. (2016). Parental comments: Relationship with gender, body dissatisfaction, and disordered eating in Asian young adults. *Body Image*, *16*, 93–99.

Chugh, R., & Puri, S. (2001). Affluent adolescent girls of Delhi: Eating and weight concerns. *British Journal of Nutrition*, *86,* 535-542.

Ciarma, J. L. & Mathew, J. M. (2017). Social anxiety and disordered eating: the influence of stress reactivity and self-esteem. *Eating Behaviors*, *26*, 177–181.

Claes, L., Hart, T. A., Smits, D., Van Den Eynde, F., Mueller, A., & Mitchell, J. E. (2012). Validation of the social appearance anxiety scale in female eating disorder patients. *European Eating Disorder Review*, *20*, 406–409.

Clark, D. M. (2001). A cognitive perspective on social phobia. In W. R. Crozier & L. E. Alden (Eds.), *International handbook of social anxiety: Concepts, research and interventions relating to the self and shyness* (pp. 405–430). New York: John Wiley & Sons Ltd.

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. Heimberg, M. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: diagnosis, assessment and treatmen*t. New York: Guilford Press.

Clinton, D. (2006). Affect regulation, object relations and the central symptoms of eating disorders. *European Eating Disorders Review*, *14*, 203–211.

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of facebook and conventional media on body image dissatisfaction. *Journal of Eating Disorders*, 3(23). doi:10.1186/s40337-015-0061-3

Cohen, R., Newton-John, T., & Slater, A. (2018). 'Selfie'-objectification: The role of selfies in self-objectification and disordered eating in young women. *Computers in Human Behavior*, *79*, 68-74.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558–577.

Compton, S. N., Nelson, A. H., & March, J. S. (2000). Social phobia and separation anxiety symptoms in community and clinical samples of children and adolescents. Journal of American Academy of Child & Adolescent Psychiatry, *39*, 1040–1046.

Cook-Cottone, C., Serwacki, M., Wendy Guyker, W., Sodano, S., Nickerson, A., Keddie-Olka, E., & Anderson, L. (2016). The Role of Anxiety on the Experience of Peer Victimization and Eating Disorder Risk. *School Mental Health*, *8*(3) 354-367.

Cooper, M. J., & Young, E. (2016). Parental Bonding and Body Mass Index in a Female Community Sample: The Mediating Role of Eating Disorder Thoughts and Core Beliefs. *Behavioural and Cognitive Psychotherapy*, *44*, 123–127.

Cooper, M. J., Todd, G. & Wells, A. (2009). *Treating Bulimia Nervosa and Binge Eating: an integrated metacognitive and cognitive therapy manual*. London: Taylor & Francis.

Copeland, W. E., Bulik, C. M., Zucker, N., Wolke, D., Lereya, S. T., & Costello, E. J. (2015). Does childhood bullying predict eating disorder symptoms? A prospective. Longitudinal analysis. *International Journal of Eating Disorders*, *48,* 1141–1149.

Corte´s-Garcı´a, L., Takkouche, B., Seoane, G., and Senra, C. (2019). Mediators linking insecure attachment to eating symptoms: A systematic review and meta-analysis. *PLoS ONE, 14*(3): e0213099. https://doi.org/10.1371/journal.pone.0213099

Costa, L. C. F. C, Vasconcelos, F. A. G., & Peres, K. G. (2010). Influence of biological, social and psychological factors on abnormal eating attitudes among female university students in Brazil. *Journal of Health & Population Nutrition*, *28*(2), 173-81.

Courty, A et al. (2015). Alexithymia, a compounding factor for eating and social avoidance symptoms in anorexia nervosa. *Comprehensive Psychiatry, 56,* 217–228.

Cowdrey, F. A., & Park, R. J. (2012). The role of experiential avoidance, rumination and mindfulness in eating disorders. *Eating Behaviors, 13*, 100-105. http://dx.doi.org/10.1016/j.eatbeh.2012.01.001.

Crespo, C., Kielpikowski, M., Jose, P. E., & Pryor, J. (2010). Relationships between family connectedness and body satisfaction: A longitudinal study of adolescent boys and girls. *Journal of Youth and Adolescence*, *39*, 1392–1401.

Crick, N. R., & Nelson, D. A. (2002). Relational and physical victimization within friendships: Nobody told me there'd be friends like these. *Journal of Abnormal Child Psychology, 30*, 599–607. doi:10.1023/A:1020811714064

Crome, E., Grove, R., Baillie, A. J., Sunderland, M., Teesson, M., & Slade, T. (2015). DSM‐IV and DSM‐5 social anxiety disorder in the Australian community. *Australian and New Zealand Journal of Psychiatry*, *49,* 227‐35.

Cross, D., Lester, L., & Barnes, A. (2015). A longitudinal study of the social and emotional predictors and consequences of cyber and traditional bullying victimisation. *International Journal of Public Health*, *60,* 207–217.

Cubis, J., Lewin, T., & Dawes, F. (1989). Australian adolescents' perceptions of their parents. *Australian and New Zealand Journal of Psychiatry, 23*, 35–47.

Dakanalis, A., Clerici, M., Caslini, M., Favagrossa, L., Prunas, A., Volpato, C., Riva, G., and Zanetti, M. A. (2014). Internalization of sociocultural standards of beauty and disordered eating behaviours: the role of body surveillance, shame and social anxiety. *Italian Journal of Psychopathology, 20*(1), 33-37.

Damiano, S. R. Gregg, K. J., Spiel, E. C., McLean, S. A., Wertheim, E. H., & Paxton, S. J. (2015). Relationships between body size attitudes and body image of 4-year-old boys and girls, and attitudes of their fathers and mothers. *Journal of Eating Disorders*, *3*(16), 1-10.

Danner, D., Hagemann, D., and Fiedler, K. (2015). Mediation analysis with structural equation models: Combining theory, design, and statistics. *European Journal of Social Psychology, 45*(4), 460-481.

DeBoer, L.B., & Smits, J. A. J. (2013). Anxiety and Disordered Eating. *Cognitive Therapy and Research,* 37, 887–889. https://doi.org/10.1007/s10608-013-9565-9

DeBoer, L. B., Medina, J. L., Davis, M. L., Presnell, K. E., Powers, M. B., & Smits, J. A. (2013). Associations between Fear of Negative Evaluation and Eating Pathology during Intervention and 12-Month Follow-up. *Cognitive Therapy and Research*, *37*(5) 941-952. doi: 10.1007/s10608-013-9547-y.

De Castella, K., Goldin, P., Jazaieri, H., Ziv, M., Heimberg, R. G., & Gross, J. J. (2014). Emotion beliefs in social anxiety disorder: Associations with stress, anxiety, and well-being. *Australian Journal of Psychology, 66,* 139–148. DOI: 10.1111/ajpy.12053

De Los Reyes, A., & Prinstein, M. J. (2004). Applying Depression-Distortion Hypotheses to the Assessment of Peer Victimization in Adolescents. *Journal of Clinical Child and Adolescent Psychology, 33*(2), 325–335. https://doi.org/10.1207/s15374424jccp3302_14

De Panfilis, C. D., Rabbaglio, P., Rossi, C., Zita, G., & Maggini, C. (2003). Body image disturbance, parental bonding and alexithymia in patients with eating disorders. *Psychopathology*, *36,* 239–246. http://dx.doi.org/10.1159/000073449

De Jong, P. J., Sportel, B. E., De Hullu, E., and Nauta, M. H. (2012). Co-occurrence of social anxiety and depression symptoms in adolescence: Differential links with implicit and explicit self-esteem? *Psychological Medicine, 42*(03), 475–484.

Demir, T., Karacetin, G., Eralp Demir, D., and Uysal, O. (2013). Prevalence and some psychosocial characteristics of social anxiety disorder in an urban population of Turkish children and adolescents. *European Psychiatry, 28*, 64–69.

Dempsey, A. G., Sulkowski, M. L., Nichols, R., & Storch, E. A. (2009). Differences between peer victimization in cyber and physical settings and associated psychosocial adjustment in early adolescence. *Psychology in the Schools*, *46*, 962–972.

Denham, S. A., Blair, K. A., DeMulder, E., Levitas, J., Sawyer, K., Auerbach-Major, S., et al. (2003). Preschool emotional competence: pathway to social competence. *Child Development*, *74,* 238–256.

De Panfilis, C., Rabbaglio, P., Rossi, C., Zita, G., & Maggini, C. (2003). Body image disturbance, parental bonding and alexithymia in patients with eating disorders. *Psychopathology*, *36,* 239–246.

De Winter, J. C., & Dodou, D. (2012). Factor recovery by principal axis factoring and maximum likelihood factor analysis as a function of factor pattern and sample size. *Journal of Applied Statistics, 39*, 695–710.

De Wit, D. J., Chandler-Coutts, M., Offord, D. R., King, G., McDougall, J., Specht, J., et al. (2005). Gender differences in the effects of family adversity on the risk of onset of DSM-III-R social phobia. *Journal of Anxiety Disorders*, *19*, 479–502.

Di Blasi, M., Cavani, P., Pavia, L., Lo Baido, R., La Grutta, S., & Schimmenti, A. (2015). The relationship between self-Image and social anxiety in adolescence. *Child and Adolescent Ment Health,* 20(2), 74-80. doi: 10.1111/camh.12071.

Dixit, S. S., & Luqman, N. (2018). Body Image, Social Anxiety and Psychological Distress among Young Adults. *Journal of Psychology and Clinical Psychiatry*, *9*(1), 149-152. DOI: 10.15406/jpcpy.2018.09.00513

Duarte, C., Pinto-Gouveia, J., & Ferreira, C. (2014). Escaping from body image shame and harsh self-criticism: Exploration of underlying mechanisms of binge eating. *Eating Behaviors, 15*(4), 638–643. http://dx.doi.org/10.1016/j.eatbeh.2014.08.025.

Duarte, C., Pinto-Gouveia, J., & Rodrigues, T. (2015). Being bullied and feeling ashamed: Implications for eating psychopathology and depression in adolescent girls. *Journal of Adolescence, 44,* 259-268.

Duarte, C., Pinto-Gouveia, J., & R Duarte, C., & Pinto-Gouveia, J. (2016). Body image flexibility mediates the effect of body image-related victimization experiences and shame on binge eating and weight. *Eating Behaviors*, *23,* 13–18.

Duarte, C., Pinto-Gouveia, J., & Stubbs, R. J. (2017). The prospective associations between bullying experiences, body image shame and disordered eating in a sample of adolescent girls. *Personality and Individual Differences*, *116*, 319–325.

Dugg, P., & Das, P. (2019). Prevalence of social anxiety disorder and its determinants among undergraduate medical students of East Delhi. *International Journal of Community Medicine and Public Health*, *6*(3), 1335-1339.

Eggert, J., Levendosky, A. and Klump, K. (2007). Relationships among attachment styles, personality characteristics, and disordered eating. International *Journal of Eating Disorders, 40*(2), 149-155.

Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health*, *59*(8), 700–707.

Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., and Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: a three-wave longitudinal study. *Child Development*, *76,* 1055–1071.

Eisner, L. R., Johnson, S. L., & Carver, C. S. (2009). Positive affect regulation in anxiety disorders. *Journal of Anxiety Disorders*, *23*, 645–649.

Elhadad, A. A., Alzaala, M. A., Alghamdi, R. S., Asiri, S. A., Algarni, A. A., & Elthabet, M. M. (2017). Social phobia among Saudi medical students. *Middle East Current Psychiatry*, *24*(2), 68-71.

Elizabeth, J., King, N., Ollendick, T. H., Gullone, E., Tonge, B., Watson, S., & Macdermott, S. (2006). Social anxiety disorder in children and youth: A research update on aetiological factors. *Counselling Psychology Quarterly*, *19*(2), 151-163.

Erath, S. A., Flanagan, K. S., & Bierman, K. L. (2007). Social anxiety and peer relations in early adolescence: behavioral and cognitive factors. *Journal of Abnormal Child Psychology, 35*, 405–416.

Erdur-Baker, Ö. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media and Society*, *12*, 109–125.

Erwin, B. A., Heimberg, R. G., Juster, H., & Mindlin, M. (2002). Comorbid anxiety and mood disorders among persons with social anxiety disorder. *Behaviour Research and Therapy*, *40,* 19–35.

Evans, I. M. (1993). Dynamic response relationships: the challenge for behavioral assessment. *European Journal of Psychological Assessment, 9,* 206–212.

Evers, C., F. Stok, M., & de Ridder, D. T. D. (2010). Feeding Your Feelings: Emotion Regulation Strategies and Emotional Eating. *Personality and Social Psychology Bulletin, 36*(6), 792–804.

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

Fang, A., & Hofmann, S. G. (2010). Relationship between social anxiety disorder and body dysmorphic disorder. *Clinical Psychology Review*, *30*, 1040-1048.

Fan, Q., & Chang, W. C. (2015). Social Anxiety among Chinese People. *The Scientific World Journal,* Article ID 743147, 1-12. https://doi.org/10.1155/2015/743147.

Faravelli, C., Zucchi, T., Viviani, B., Salmoria, R., Perone, A., Paionni, A. et al. (2000). Epidemiology of social phobia: A clinical approach. *European Psychiatry, 15,* 17–24.

Fardouly, J., Diedrichs, P. C., Vartanian, L. R., & Halliwell, E. (2015). The mediating role of appearance comparisons in the relationship between media usage and self-objectification in young women. *Psychology of Women Quarterly*, *39*(4), 447-457.

Fardouly, J., & Vartanian, L. R. (2015). Negative comparisons about one's appearance mediate the relationship between Facebook usage and body image concerns. *Body Image*, *12*, 82–88.

Farmer, A. S., & Kashdan, T. B. (2012). Social anxiety and emotion regulation in daily life: Spillover effects on positive and negative social events. *Cognitive Behavior Therapy, 41*(2), 152–162. doi:10.1080/16506073.2012.666561.

Farrow, C. V., & Fox, C. L. (2011). Gender differences in the relationships between bullying at school and unhealthy eating and shape-related attitudes and behaviours. *British Journal of Educational Psychology*, *81*(3), 409-420.

Fassino, S., Amianto, F., Rocca, G., & Daga, G. A. (2010). Parental bonding and eating psychopathology in bulimia nervosa: personality traits as possible mediators. *Epidemiologia e Psichiatria Sociale*, *19*(3), 214-222.

Fay, N., Page, A., Serfaty, C., Tai, V., & Winkler, C. (2008). Speaker overestimation of communication effectiveness and fear of negative evaluation: Being realistic is unrealistic. *Psychonomic Bulletin & Review*, *15*(6), 1160–1165.

Field, A. (2013). *Discovering Statistics Using SPSS: Introducing Statistical Method* (4th ed.). Thousand Oaks, CA: Sage Publications.

Filho, A. S., Hetem, L.A.B., Ferrari, M.C.F., Trzesniak, C., Martín-Santos, R., Borduqui, T. et al. (2010). Social anxiety disorder: What are we losing with the current diagnostic criteria? *Acta Psycftiatrica Scandinavica*, *121*, 216–226.

Flynn, M., & Rudolph, K. D. (2010). The contribution of deficits in emotional clarity to stress responses and depression. *Journal of Applied Developmental Psychology*, *31*(4), 291–297.

Flynn, M., & Rudolph, K. D. (2014). A Prospective Examination of Emotional Clarity, Stress Responses, and Depressive Symptoms During Early Adolescence. *The Journal of Early Adolescence*, *34*, 923–939.

Ford, B. Q., & Mauss, I. B. (2015). Culture and emotion regulation. *Current Opinion in Psychology*, *3*, 1–5.

Frank, E. (2000). *Gender and its effects on psychopathology*. Washington, DC: American Psychiatric Publishing, Inc.

Fredstrom, B. K., Adams, R. E., & Gilman, R. (2011). Electronic and school-based victimization: Unique contexts for adjustment difficulties during adolescence. *Journal of Youth and Adolescence*, *40*(4), 405–415. https://doi.org/10.1007/s10964-010-9569-7.

Frisén, A., Berne, S., & Lunde, C. (2014). Cybervictimization and body esteem: experiences of Swedish children and adolescents. *European Journal of Developmental Psychology*, *11,* 331–343.

Fulkerson, J. A., McGuire, M. T., Neumark-Sztainer, D., Story, M., French, S. A., & Perry, C. L. (2002). Weight-related attitudes and behaviors of adolescent boys and girls who are encouraged to diet by their mothers. *International Journal of Obesity*, *26*, 1579– 1587.

Furmark, T. (2002). Social phobia: Overview of community surveys. *Acta Psycftiatrica Scandinavica*, *105*, 84–93.

Galambos, N. L., Barker, E. T., & Almeida, D. M. (2003). Parents do matter: trajectories of change in externalizing and internalizing problems in early adolescence. *Child Development*, *74,* 578–594.

Ganapathi, K. C., Duraimurugan, M., & Kokila, K. (2016). A study on the prevalence of social anxiety disorder (SAD) among medical undergraduate students and its relation with self-esteem. *Stanley Medical Journal*, *3*(4), 31-35.

Garfinkel, P. E., & Newman, A. (2001). The Eating Attitudes Test: Twenty-five years later. *Eating Weight Disorders*, *6,* 1-24.

Garner, D., & Garfinkel, P. (1979). The Eating Attitudes Test: An Index of the Symptoms of Anorexia Nervosa. *Psychological Medicine*, *9,* 273–279.

Garner, D.M., Olmsted, M.P., Bohr, Y., & Garfinkel, P.E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, *12*, 871-878.

Gatta, M., Balottin, L., Mannarini, S., Chesani, G., Del Col, L., Spoto, A., et al. (2017). Familial factors relating to alexithymic traits in adolescents with psychiatric disorders. *Clinical Psychology*, *21*, 252–262.

Gilbert, N. & Meyer, C. (2003). Social anxiety and social comparison: differential links with restrictive and bulimic attitudes among nonclinical women. *Eating Behaviors*, *4*, 257– 264.

Gilbert, N., & Meyer, C. (2005). Fear of negative evaluation and the development of eating psychopathology: A longitudinal study among nonclinical women. *International Journal of Eating Disorders, 37*, 307−312.

Gilbert, P. (2001). Evolution and social anxiety: The role of attraction, social competition, and social hierarchies. *The Psychiatric Clinics of North America*, *24*, 723–751.

González-Díez, Z., Orue, I., & Calvete, E. (2017). The role of emotional maltreatment and looming cognitive style in the development of social anxiety symptoms in late adolescents. *Anxiety, Stress, and Coping, 30*(1), 26-38.

Godart, N. T., Flament, M. F., Curt, F., Perdereau, F., Lang, F., Venisse, J. L., and Fermanian, J. (2003). Anxiety disorders in subjects seeking treatment for eating disorders: a DSM-IV controlled study. *Psychiatry Research*, *117*, 245–258.

Godart, N. T., Flament, M. F., Lecrubier, Y., & Jeammet, P. (2000). Anxiety disorders in anorexia nervosa and bulimia nervosa: co-morbidity and chronology of appearance. *European Psychiatry*, *15*, 38–45.

Godart, N. T., Flament, M. F., Perereau, F., & Jeammet, P. (2002). Co-morbidity between eating disorders and anxiety disorders: A review. *International Journal of Eating Disorders, 32,* 253–270.

Goldin, P. R., & Gross, J. J. (2010). Effects of Mindfulness-Based Stress Reduction (MBSR) on Emotion Regulation in Social Anxiety Disorder. *Emotion*, *10*(1), 83–91.

Goldin, P. R., Manber, T., Hakimi, S., Canli, T., & Gross, J. J. (2009). Neural bases of social anxiety disorder. *Archives of General Psychiatry*, 66, 170–180.

Goldschmidt, A. B., Wall, M. M., Loth, K. A., Bucchianeri, M. M., & Neumark-Sztainer, D. (2014). The course of binge eating from adolescence to young adulthood. *Health Psychology*, *33*(5), 457–460.

González-Díez, Z., Orue, I., & Calvete, E. (2017). The role of emotional maltreatment and looming cognitive style in the development of social anxiety symptoms in late adolescents. *Anxiety, Stress & Coping, 30*(1), 26-38, DOI: 10.1080/10615806.2016.1188920

Goodwin, R. D., & Fitzgibbon, M. L. (2002). Social anxiety as a barrier to treatment for eating disorders. *International Journal of Eating Disorders*, *32*, 103–106.

Goss, K., & Allan, S. (2010). Compassion focused therapy for eating disorders. *International Journal of Cognitive Therapy*, *3*(2), 141–158. http://dx.doi.org/10.1521/ijct.2010.3.2.141.

Grabhorn, R. Stenner, H., Stangier, U., & Kaufhold, J. (2006). Social anxiety in anorexia and bulimia nervosa: the mediating role of shame. *Clinical Psychology and Psychotherapy, 13*, 12–19.

Grant, B. F., Hasin, D. S., Blanco, C., Stinson, F. S., Chou, S. P., Goldstein, R. B. et al. (2005). The epidemiology of social anxiety disorder in the United States: Results from the national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry*, *66,* 1351–1361.

Gratz, K., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41- 54.

Greco, L. A., & Morris, T. L. (2002). Paternal Child-Rearing Style and Child Social Anxiety: Investigation of Child Perceptions and Actual Father Behavior. *Journal of Psychopathology and Behavioral Assessment*, *24*(4), 259-267.

Grenon, R., Tasca, G. A., Maxwell, H., Balfour, L., Proulx, G., & Bissada, H. (2016). Parental bonds and body dissatisfaction in a clinical sample: the mediating roles of attachment anxiety and media internalization. *Body Image*, *19*, 49-56.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362.

Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: an affective Science perspective. *Clinical Psychological Science, 2*(4), 387–401.

Gross, J. J., & Thompson, R. A. (2007). *Emotion regulation: Conceptual foundations*. In J. J. Gross (Ed.), Handbook of emotion regulation (pp. 3–24). New York: Guilford Press.

Gunstad, J., & Phillips, K. A. (2003). Axis I comorbidity in body dysmorphic disorder. *Comprehensive Psychiatry*, *44*(4), 270-276.

Gunzler, D., Chen, T., Wu, P., and Zhang, H. (2013). Introduction to mediation analysis with structural equation modeling. *Shanghai Archives of Psychiatry*, *25*(6), 390-394.

Gupta, N., Bhargava, R., Chavan, B. S., & Sharan, P. (2017). Eating attitudes and body shape concerns among medical students in Chandigarh. *Indian Journal of Social Psychiatry*, *33,* 219-224.

Gureje, O. O., Laosebikan, V. O., Kola, L., & Makanjuola, V. A. (2006). Lifetime and 12 month prevalence of mental disorders in the Nigerian survey of mental health and well-being. *British Journal of Psychiatry*, *188*, 465–471.

Haikal, M., & Hong, R. Y. (2010). The effects of social evaluation and looming threat on self-attentional biases and social anxiety. *Journal of Anxiety Disorders, 24*, 345–352.

Haines, J., Neumark-Sztainer, D., Hannan, P., and Robinson-O'Brien, R. (2008). Child versus parent report of parental influences on children's weight-related attitudes and behaviors. *Journal of Pediatric Psychology*, *33*, 783–788.

Haines, J., Neumark-Sztainer, D., Eisenberg, M. E., & Hannan, P. J. (2006). Weight teasing and disordered eating behaviors in adolescents: Longitudinal findings from project EAT (eating among teens). *Pediatrics*, *117*(2), 209–215.

Ha, J. H., & Jue, J. (2018). The Mediating Effect of Emotion Inhibition and Emotion Regulation Between Adolescents' Perceived Parental Psychological Control and Depression. *SAGE Open*, *8*(3). doi:10.1177/2158244018793680

Hambour. V. K., Zimmer-Gembeck, M. J., Clear, S., Rowe, S., & Avdagic, E. (2018). Emotion regulation and mindfulness in adolescents: Conceptual and empirical connection and associations with social anxiety symptoms. *Personality and Individual Differences*, *134*, 7–12.

Hamilton, J. L., Kleiman, E. M., Rubenstein, L. M., Stange, J. P., Flynn, M., Abramson, L. Y., & Alloy, L. B. (2016). Deficits in emotional clarity and vulnerability to peer victimization

and internalizing symptoms among early adolescents. *Journal of Youth and Adolescence, 45*(1), 183-194.

Hamann, D. M., Wonderlich-Tierney, A. L., & Vander Wal, J. S. (2009). Interpersonal sensitivity predicts bulimic symptomatology cross-sectionally and longitudinally. *Eating Behavior*, *10*(2), 125-127. doi: 10.1016/j.eatbeh.2009.01.001.

Harrison, C., Mitchison, D., Rieger, E., Rodgers, B., & Mond, J. (2016). Emotion regulation difficulties in binge eating disorder with and without the overvaluation of weight and shape. *Psychiatry Research*, *245*, 436–442.

Hart, C. H., Newell, L. D., & Olsen, S. F. (2003). Parenting skills and social-communicative competence in childhood. In J. O. Greene, & B. R. Burleson (Eds.), *Hand-book of communication and social interaction skills* (pp 753–797). Lawrence Erlbaum Associates, Mahwah.

Hart, T. A., Mora, D. B., Palyo, S. A., Fresco, D. M., Holle, C., & Heimberg, R. G. (2008). Development and examination of the social appearance anxiety scale. *Assessment, 15*, 48–59.

Harvey, A., Watkins, E., Mansell, W., & Shafran, R. (2004). *Cognitive behavioral processes across psychological disorders: A transdiagnostic approach to research and treatment*. New York: Oxford University Press Inc.

Hase, C. N., Goldberg, S. B., Smith, D., Stuck, A., & Campain, J. (2015). Impacts of traditional bullying and cyberbullying on the mental health of middle and high school students. *Psychology in the Schools*, *52*, 607–617. https://doi.org/10.1002/pits.21841.

Hayes, A. F., & Rockwood, N. J. (2017). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy, 98*, 39-57.

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science*, *24*(10), 1918–1927.

Heatherton, T. F., & Wagner, D. D. (2011). Cognitive neuroscience of self-regulation failure. *Trends in Cognitive Science, 15*, 132–139.

Heider, D., Matschinger, H., Bernert, S., Alonso, J., Brugha T. S., Bruffaerts, R., et al. (2008). Adverse parenting as a risk factor in the occurrence of anxiety disorders: a study in six European countries. *Social Psychiatry and Psychiatric Epidemiology*, *43*, 266-272.

Heimberg, R. G., Brozovich, F. A., & Rapee, R. M. (2010). A cognitive behavioral model of social anxiety disorder: Update and extension. In S. G. Hofmann, & P. M. DiBartolo, (Eds). *Social Anxiety: Clinical, Developmental, and Social Perspectives* (pp. 395-422). New York: Elsevier.

Heimberg, R. G., Makris, G. S., Juster, H. R., Öst, L-G., Ronald, M., & Rapee, R. M. (1997). Social phobia: a preliminary cross-national comparison. *Depression and Anxiety*, *5,* 130-133.

Heimberg, R. G., Mueller, G. P., Holt, C. S., Hope, D. A., & Liebowitz, M. R. (1992). Assessment of anxiety in social interaction and being observed by others: The Social Interaction Anxiety Scale and the Social Phobia Scale. *Behavior Therapy*, *23*, 53–73.

Helbig-Lang, S., Rusch, S., & Lincoln, T. M. (2015). Emotion Regulation Difficulties in Social Anxiety Disorder and Their Specific Contributions to Anxious Responding. *Journal of Clinical Psychology*, *71*(3), 241–249.

Hemphill, S. A., & Heerde, J. A. (2014). Adolescent predictors of young adult cyberbullying perpetration and victimization among Australian youth. *Journal of Adolescent Health*, *55,* 580–587.

Hemphill, S. A., Tollit, M., Kotevski, A., & Heerde, J. A. (2015). Predictors of traditional and cyber-bullying victimization: A Longitudinal study of Australian secondary school students. *Journal of Interpersonal Violence*, *30,* 2567–2590.

Hermann, C., Ofer, J., & Flor, H. (2004). Covariation bias for ambiguous social stimuli in generalized social phobia. *Journal of Abnormal Psychology*, *113*, 646–653. http://dx.doi.org/10.1037/0021-843X.113.4.646

Herzog, T. K., Hill-Chapman, C., Hardy, T. K., Wrighten, S. A., & El-Khabbaz, R. (2015). Trait Emotion, Emotional Regulation, and Parenting Styles. *Journal of Educational and Developmental Psychology*, *5*(2), 119-135.

Hilbert, A., & Tuschen-Caffier, B. (2007). Maintenance of binge eating through negative mood: A naturalistic comparison of binge eating disorder and bulimia nervosa. International Journal of Eating Disorders, *40*, 521–530.

Hill, C. L., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion*, *12*(1), 81-90.

Hinduja, S., & Patchin, J.W. (2015). *Bullying beyond the Schoolyard: Preventing and Responding to Cyberbullying* (2nd ed). Thousand Oaks, CA: Corwin.

Hinrichsen, H., Sheffield, A. & Waller, G. (2007a). The role of parenting experiences in the development of social anxiety and agoraphobia in the eating disorders. *Eating Behaviours*, *8,* 285–290.

Hinrichsen, H., Waller, G., & Dhokia, R. (2007b). Core beliefs and social anxiety in the eating disorders. *Eating and Weight Disorders, 12,* 14–18.

Hinrichsen, H., Waller, G., & van Gerko, K. (2004). Social anxiety and agoraphobia in the eating disorders: Associations with eating attitudes and behaviours. *Eating Behaviors*, *5*, 285-290.

Hinrichsen, H., Wright, F., Waller, G., & Meyer, C. (2003). Social anxiety and coping strategies in the eating disorders. *Eating Behaviors, 4*, 117–126.

Hoek, H. W. (2016). Review of the worldwide epidemiology of eating disorders. *Current Opinion in Psychiatry*, *29*, 336-339.

Hofmann, S. G. (2007). Cognitive factors that maintain social anxiety disorder: A comprehensive model and its treatment implications. *Cognitive Behaviour Therapy*, *36*, 193 – 209.

Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image*, *17*, 100–110.

Holsen, I., Jones, D. C., & Birkeland, M. S. (2012). Body image satisfaction among Norwegian adolescents and young adults: A longitudinal study of the influence of interpersonal relationships and BMI. *Body Image*, *9*, 201–208.

Holt, C. S., Heimberg, R. G., Hope, D. A., & Liebowitz, M. R. (1992). Situational domains of social phobia. *Journal of Anxiety Disorders*, *6,* 63-77.

Hong, J. J., & Woody, S. R. (2007). Cultural mediators of self-reported social anxiety. *Behaviour Research and Therapy*, *45*, 1779–1789.

Honnekeri, B. S., Goel, A., Umate, M., Shah, N., De Sousa, A. (2017). Social anxiety and Internet socialization in Indian undergraduate students: An exploratory study. *Asian Journal of Psychiatry*, *27,* 115-120.

Hox, J. J., & Bechger, T. M. (1998). An Introduction to Structural Equation Modeling. *Family Science Review*, *11*, 354-373.

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

Hughes, A. A., Heimberg, R. G., Coles, M. E., Gibb, B. E., Michael R. Liebowitz, M. R., Schneier, F. R. (2006). Relations of the factors of the tripartite model of anxiety and depression to types of social anxiety. *Behaviour Research and Therapy*, *44*, 1629–1641.

Hummel, A. C., & Smith, A. R. (2014). Ask and you shall receive: Desire and receipt of feedback via Facebook predicts disordered eating concerns. *International Journal of Eating Disorders, 48*, 436–442. http://dx.doi.org/10.1002/eat.22336

Huppert, F. A., & Johnson, D. M. (2010). A controlled trial of mindfulness training in schools: The importance of practice for an impact on well-being. *The Journal of Positive Psychology, 5,* 264–274. http://dx.doi.org/10.1080/17439761003794148.

Hussey, T., & Smith, P. (2010). Transitions in higher education. *Innovations in Education and Teaching International*, *47*(2), 155-164. doi: 10.1080/14703291003718893.

Hutchinson, D. M., & Rapee, R. M. (2007). Do friends share similar body image and eating problems? The role of social networks and peer influences in early adolescence. *Behaviour Research and Therapy*, *45*(7), 1557–1577.

Iacobucci, D., Saldanha, N., & Deng, X. (2007). A meditation on mediation: Evidence that structural equations models perform better than regressions. *Journal of Consumer Psychology*, *17*(2), 139–153.

Imai, K., Keele, L., & Tingley, D. (2010). A general approach to casual mediation analysis. *Psychological Methods, 15*(4), 309-334.

Iqbal, A., & Ajmal, A. (2018). Fear of Negative Evaluation and Social Anxiety in Young Adults. *Peshawar Journal of Psychology and Behavioral Sciences*, *4*(1), 49-57.

Izgiç, F., Akyüz, G., Dogan, O., & Kugu, N. (2004). Social Phobia Among University Students and Its Relation to Self-Esteem and Body Image. *The Canadian Journal of Psychiatry-Brief Communication, 49*(9), 630–634.

Jacobi, C., Hayward, C., de Zwaan, M., Kraemer, H. C., & Agras, W. S. (2004). Coming to terms with risk factors for eating disorders: Application of risk terminology and suggestions for a general taxonomy. *Psychological Bulletin*, *130*(1), 19–65.

Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: A prospective analysis. *Journal of Abnormal Psychology*, *114,* 119–125.

Jöreskog, K.G. & D. Sörbom (1989). *Lisrel 7: A guide to the program and applications*. Chicago: SPSS.

Juarascio, A. S., Perone, J., & Timko, A. C. (2011). Moderators of the relationship between body image dissatisfaction and disordered eating. *Eating Disorders*, *19*, 346–54.

Jugale, P. V., Pramila, M., Murthy, A. K., & Rangath, S. (2014). Oral manifestations of suspected eating disorders among women of 20-25 years in Bangalore City, India. *Journal of Health, Population and Nutrition*, *32*, 46-50.

Jung, J., & Forbes, G. B (2007). Body dissatisfaction and disordered eating among college women in China, South Korea, and the United States: contrasting predictions from sociocultural and feminist theories. *Psychology of Women Quarterly*, *31,* 381–393.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141–151.

Karacan, E., Gamze Sinem Caglar, G. S., Geursoy, A. Y., & Yilmaz, M. B. (2014). Body Satisfaction and Eating Attitudes among Girls and Young Women with and without Polycystic Ovary Syndrome. *Journal of Pediatric and Adolescent Gynecology, 27*, 72-77.

Karazsia, B. T., Murnen, S. K., & Tylka, T. L. (2017). Is body dissatisfaction changing across time? A cross-temporal meta-analysis. *Psychological Bulletin*, *143*(3), 293–320.

Kashdan, T. B., & Breen, W. E. (2008). Social anxiety and positive emotions: A prospective examination of a self-regulatory model with tendencies to suppress or express emotions as a moderating variable. *Behavior Therapy*, *39*, 1-12.

Kashdan, T. B., & Steger, M. F. (2006). Expanding the topography of social anxiety. *Psychological Science, 17,* 120–128.

Kashdan, T. B., Farmer, A. S., Adams, L. M., Ferssizidis, P., McKnight, P. E., & Nezlek, J. B. (2013). Distinguishing healthy adults from people with social anxiety disorder: Evidence for the value of experiential avoidance and positive emotions in everyday social interactions. *Journal of Abnormal Psychology*, *122*(3), 645–655.

Kashdan, T. B. (2007). Social anxiety spectrum and diminished positive experiences: theoretical, synthesis and meta-analysis. Clinical Psychology Review, *27*, 348-365.

Kashdan, T. B., Weeks, J. W., & Savostyanova, A. A. (2011). Whether, how, and when social anxiety shapes positive experiences and events: A self-regulatory framework and treatment implications. *Clinical Psychology Review*, *31*, 786–99.

Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Masters, K. (2004). Comorbidity of Anxiety Disorders with Anorexia and Bulimia Nervosa. *The American Journal of Psychiatry*, *161,* 2215–2221.

Keel, P. K., & Klump, K. L. (2003). Are eating disorders culture-bound syndromes? Implications for conceptualizing their etiology. *Psychological Bulletin*, *129*(5), 747– 769.

Keel, P. K., Forney, K. J., Brown, T. A., & Heatherton, T. F. (2013). Influence of college peers on disordered eating in women and men at 10-year follow-up. *Journal of Abnormal Psychology*, *122*(1), 105–110.

Keery, H., Boutelle, K., van den Berg, P., & Thompson, J. K. (2005). The impact of appearance-related teasing by family members. *Journal of Adolescent Health*, *37*, 120–127.

Kelly, M. M., Dalrymple, K., Zimmerman, M., & Phillips, K. A. (2013). A comparison study of body dysmorphic disorder versus social phobia. *Psychiatry Research*, *205*(1-2), 109–116. doi:10.1016/j.psychres.2012.08.009.

Kenny, T. E., Singleton, C., & Carter, J. C. (2017). Testing predictions of the emotion regulation model of binge-eating disorder. *International Journal of Eating Disorders*, *50,* 1297-1305.

Kenny, U., Sullivan, L., Callaghan, M., Molcho, M., & Kelly, C. (2018). The relationship between cyberbullying and friendship dynamics on adolescent body dissatisfaction: A cross-sectional study. *Journal of Health Psychology*, *23*, 629–639.

Kerr-Gaffney, J., Harrison, A., & Tchanturia, K. (2018). Social anxiety in the eating disorders: a systematic review and meta-analysis. *Psychological Medicine*, *48*(15), 2477-2491. DOI: 10.1017/S0033291718000752.

Kessler, R., Mc Gonagle, K., Shanyang, Z., Nelson, C., Hughes, M., Ehleman, S., Wittchen, H. U., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results of the National Comorbidity Study. *Archives of General Psychiatry*, *51*, 8–19.

Kessler, R. C., Stein, M. B., & Berlund, P. (1998). Social phobia subtypes in the National Comorbidity Survey. *American of Journal of Psychiatry, 155,* 613–619.

Khambaty, M., & Parikh, R. M. (2017). Cultural aspects of anxiety disorders in India. *Dialogues in Clinical Neuroscience*, *19,* 117-125.

Khoury, B., Sharma, M., Rush, S. E., and Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: a meta-analysis. *Journal of Psychosomatic Research*, *78,* 519–528. doi: 10.1016/j.jpsychores.2015.03.009

Kilic, S., Var, E. C., & Kumandas, H. (2015). Effect of Parental Attitudes on Skills of Emotional Management in Young Adults. *Procedia -Social and Behavioral Sciences*, *191,* 930 – 934.

King, M. B. (1986). Eating disorders in general practice. *British Medical Journal*, *293*, 1412-1414.

Kirsch, A. C., Shapiro, J. B., Conley, C. S., & Heinrichs, G. (2016). Explaining the pathway from familial and peer social support to disordered eating: Is body dissatisfaction the link for male and female adolescents? *Eating Behaviors*, *22*, 175–181.

Kizilcik, I. N., Gregory, B., Baillie, A. J., & Crome, E. (2016). An empirical analysis of Moscovitch's reconceptualised model of social anxiety: How is it different from fear of negative evaluation? *Journal of Anxiety Disorders, 37*, 64–70.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York: Guilford Press.

Klingaman, E. A. (2012). *Body Image and Social Anxiety: Integration, comparison, and extension of Bioecological models*. (Doctoral Dissertation, University of Maryland). Retrieved from https://pdfs.semanticscholar.org/3a9b/ebcba0b6f7e5b4bc068c6bc03f5314f7fb6e.pdf

Kluck, A. (2010). Family influence on disordered eating: The role of body image dissatisfaction. *Body Image*, *7*, 8–14.

Kocovski, N. L., & Endler, N. S. (2000). Social anxiety, self-regulation, and fear of negative evaluation. *European Journal of Personality*, *14*, 347–358.

Kocovski, N. L., Fleming, J. E., & Rector, N. A. (2009). Mindfulness and acceptance-based group therapy for social anxiety disorder: An open trial. *Cognitive and Behavioral Practice*, *16*, 276–289.

Kocovski, N. L., MacKenzie, M. B., & Rector, N. A. (2011). Ruminaton and distraiction periods immediately follow a speech task: Effect on post-event processing in social anxiety. *Cognitive Behaviour Therapy*, *40*, 45–56. http://dx.doi.org/10.1080/16506073.2010.526631

Ko, N. (2010). The Role of Body Shame, Social Appearance Anxiety, and Body Checking Behavior on Body Dissatisfaction and Disordered Eating Behaviors: A Cross Cultural Study in Germany and Korea, (Inaugral Dissertation, University of Freiburg, Germany) FreiDok plus, Freiburg University Library. https://freidok.uni-freiburg.de/data/7926

Koskina, A., Van den Eynde, F., Meisel, S., Campbell, I., & Schmidt, U. (2011). Social appearance anxiety and bulimia nervosa. *Eating and Weight Disorders*, *16*(2), 142–145. https ://doi.org/10.1007/BF033 25321

Kvalem, I. L., von Soest, T., Roald, H. E., & Skolleborg, K. C. (2006). The interplay of personality and negative comments about appearance in predicting body image. *Body Image, 3,* 263–273.

Laessle, R. G, & Schulz, S. (2009). Stress-induced laboratory eating behaviour in obese women with binge eating disorder. *International Journal of Eating Disorders*, *42*, 505–510.

La Greca, A. M., & Lopez, N. (1998). Social Anxiety Among Adolescents: Linkages with Peer Relations and Friendships. *Journal of Abnormal Child Psychology, 26*, 83–94. doi:10.1023/A:1022684520514

La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology*, *34*, 49–61.

Lal, M., Abraham, S., Parikh, S., & Chhibber, K. (2015). A comparison of eating disorder patients in India and Australia. *Indian Journal of Psychiatry*, *57,* 37-42.

Landoll, R. R., La Greca, A. M., Lai, B. S., Chan, S. F., & Herge, W. M. (2015). Cyber-victimization by peers: Prospective associations with adolescent social anxiety and depressive symptoms. *Journal of Adolescence*, *42*, 77–86. https://doi.org/10.1016/j.adolescence.2015.04.002.

Lane, R. D., Quinlan, D. M., Schwartz, G. E., Walker, P. A., & Zeitlin, S. B. (1990). The levels of emotional awareness scale. A cognitive-developmental measure of emotion. *Journal of Personality Assessment*, *55,* 124–134.

Lane, R. D., & Schwartz, C. (1987). Levels of emotional awareness. A cognitive- developmental theory and its application of psychopathology. *American Journal of Psychiatry, 144*, 133–143.

Lattimore, P., Mead, B. R., Irwin, L., Gricea, L., Carsonc, R., & Malinowskia, P. (2017). I can't accept that feeling': Relationships between interoceptive awareness, mindfulness and eating disorder symptoms in females with, and at-risk of an eating disorder. *Psychiatry Research*, *247*, 163–171.

Latzer, Y., Azaiza, F., & Tzischinsky, O. (2012). Not just a western girls' problem: Eating attitudes among Israeli-Arab adolescent boys and girls. *International Journal of Adolescence and Youth, 19*(3), 382–394.

Lavender, J. M., Wonderlich, S. A., Engel, S. G., Gordon, K. H., Kaye, W. H., & Mitchel, J. E. (2015). Dimensions of emotion dysregulation in anorexia nervosa and bulimia nervosa: a conceptual review of the empirical literature. *Clinical Psychology Review*, *40*, 111–122. doi:10.1016/j.cpr.2015.05.010.

Lavender, J. M., & Anderson, D. A. (2010). Contribution of Emotion Regulation Difficulties to Disordered Eating and Body Dissatisfaction in College Men. *International Journal of Eating Disorders*, *43*(4), 352–357.

Law, D. M., Shapka, J. D., Hymel, S., Olson, B. F., & Waterhouse, T. (2012). The changing face of bullying: An empirical comparison between traditional and internet bullying and victimization. *Computers in Human Behavior*, *28*, 226–232. https://doi.org/10.1016/j.chb.2011.09.004.

Leary, M. R., Kowalski, R. M., & Campbell, C. D. (1988). Self-presentational concerns and social anxiety: The role of generalized impression expectancies. *Journal of Research in Personality, 22*(3), 308-321.

Leary, M. R. (1983). A brief version of the Fear of Negative Evaluation Scale. *Personality and Social Psychology Bulletin*, *9*, 371–375.

Leehr, E. J., Krohmer, K., Schag, K., Dresler, T., Zipfel, S., & Giel, K. E. (2015). Emotion regulation model in binge eating disorder and obesity—a systematic review. *Neuroscience Biobehavioral Review, 49*, 125–134. doi:10.1016/j.neubiorev.2014.12.008

Lee, J., & Lee, Y. (2016). The association of body image distortion with weight control behaviors, diet behaviors, physical activity, sadness, and suicidal ideation among Korean high school students: A cross-sectional study. *BMC Public Health*, *16*(39). doi:10.1186/s12889-016-2703-z

Lee, K., Dale, J., Guy, A., & Wolke, D. (2018). Bullying and negative appearance feedback among adolescents: Is it objective or misperceived weight that matters? *Journal of Adolescence, 63*, 118–128.

Lee, K., Guy, A., Dale, J., & Wolke, D. (2017). Adolescent desire for cosmetic surgery: associations with bullying and psychological functioning. *Plastic and Reconstructive Surgery- Global Open, 139,* 1109–1118.

Lee, K. S., & Vaillancourt, T. (2018). Developmental pathways between peer victimization, psychological functioning, disordered eating behavior, and body mass index: A review and theoretical model. *Aggression and Violent Behavior*, *39,* 15–24.

Lee, S., Ng, K. L., Kwok, K. P. S., & Tsang, A. (2009). Prevalence and correlates of social fears in Hong Kong. *Journal of Anxiety Disorders*, *23*, 327–332.

Lee-Winn, A. E., Reinblatt, S. P., Mojtabai, R., & Mendelson, T. (2016). Gender and racial/ethnic differences in binge eating symptoms in a nationally representative sample of adolescents in the United States. *Eating Behaviors*, *22*, 27–33.

Leray, E., Camara, A., Drapier, D., Riou, F., Bougeant, N., Pelissolo, A., et al. (2011). Prevalence, characteristics and comorbidities of anxiety disorders in France: results from the ‘‘Mental Health in General Population’’ survey (MHGP). *European Psychiatry*, *26*, 339-45.

Leung, F., Schwartzman, A., & Steiger, H. (1996). Testing a dual-process family model in understanding the development of eating pathology: A structural equation modeling analysis. *International Journal of Eating Disorders, 20*(4), 367-375.

Leung, N., Thomas, G., & Waller, G. (2000). The relationship between parental bonding and core beliefs in anorexic and bulimic women. *Journal of Clinical Psychology*, *39*, 205–213.

Levinson, C. A., & Rodebaugh, T. L. (2016). Clarifying the prospective relationships between social anxiety and eating disorder symptoms and underlying vulnerabilities. *Appetite*, 107, 38–46.

Levinson, C. A., & Rodebaugh, T. L. (2015). Negative social evaluative fears produce social anxiety, food intake, and body dissatisfaction: Evidence of similar mechanisms through different pathways. *Clinical Psychological Science*, 1–14.

Levinson, C. A., & Rodebaugh, T. L. (2012). Social anxiety and eating disorder comorbidity: The role of negative social evaluation fears. *Eating Behaviours*, *13*(1), 27–35.

Levinson, C.A., & T.L. Rodebaugh. (2011). Validation of the Social Appearance Anxiety Scale: Factor, Convergent, and Divergent Validity. *Assessment*, *18* (3), 350-356.

Levinson, C. A., Rodebaugh, T. L., White, E. K., Menatti, A. R., Weeks, J. W., Iacovino, J. M., & Warren, C. S. (2013). Social appearance anxiety, perfectionism, and fear of negative evaluation. Distinct or shared risk factors for social anxiety and eating disorders? *Appetite*, *67*, 125–133.

Lewis, K. M., Byrd, D. A., & Ollendick, T. H. (2012). Anxiety symptoms in African–American and Caucasian youth: Relations to negative life events, social support, and coping. *Journal of Anxiety Disorders*, *26*, 32–39.

Liang, V. X., Jackson, A. C., & McKenzie, V. L. (2011). The Effects of Teasing in Childhood or Adolescence on Young Adults' Body Image. *The Australian Educational and Developmental Psychologist*, *28*(2), 101–115. DOI 10.1375/aedp.28.2.101

Liao, Y., Knoesen, N. P., Deng, Y., Tang, J., Castle, D. J., Bookun, R., et al. (2010). Body dysmorphic disorder, social anxiety and depressive symptoms in Chinese medical students. *Social Psychiatry and Psychiatric Epidemiology*, *45*, 963-971.

Linardon, J., Phillipou, A., Castle, D., Newton, R., Harrison, P., Cistullo, L. L., et al. (2018). Feeling fat in eating disorders: Testing the unique relationships between feeling fat and measures of disordered eating in anorexia nervosa and bulimia nervosa. *Body Image*, *25,* 163–167. http://dx.doi.org/10.1016/j.bodyim.2018.04.001

Lipsitz, J. D., & Schneier, F. R. (2000). Social phobia epidemiology and cost of illness. *Pharmacoeconomics*, *18*(1), 23–32.

Liu, Y. L., & Huang, F. M. (2012). Mother–adolescent conflict in Taiwan: Links between attachment style and psychological distress. *Social Behavior and Personality*, *40*(6), 919–932.

Low, S.Y. (2015). *The interplay of emotional awareness and emotion regulation strategies in peer victimization* [Masters dissertation, The University of British Columbia, Vancouver]. The University of British Columbia Library.

Lunde, C., & Frise´n, A. (2011). On being victimized by peers in the advent of adolescence: Prospective relationship to objectified body consciousness. *Body Image*, *8,* 309–314.

Lunde, C., Frise´n, A., & Hwang, C. P. (2007). Ten years old girls' body composition and peer victimization experiences: Prospective associations with body satisfaction. *Body Image, 4,* 11–28. DOI:10.1016/j.bodyim.2006.10.002

Mabe, A. G., Forney, K. J., & Keel, P. K. (2014). Do you "like" my photo? Facebook use maintains eating disorder risk. *International Journal of Eating Disorders*, *47*, 516-523.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York, NY: Taylor & Francis Group/ Lawrence Erlbaum Associates.

Magallares, A. (2013). Social risk factors related to eating disorders in women, *Revista latinoamericana de psicología*, *45*, 147-154.

Magee, W. J., Eaton, W. W., Wittchen, H.-U., McGonagle, K. A., & Kessler, R. C. (1996). Agoraphobia, simple phobia, and social phobia in the national comorbidity survey. *Archives of General Psychiatry*, *53,* 159–168.

Mahmud, N., & Crittenden, N. (2007). A comparative study of body image of Australian and Pakistani young females. *British Journal of Psychology*, *98,* 187–197.

Mannarini, S., Balottin, L., Palmieri, A., & Carotenuto, F. (2018). Emotion Regulation and Parental Bonding in Families of Adolescents with Internalizing and Externalizing Symptoms. *Frontiers in Psychology*, *9*(1493). DOI:10.3389/fpsyg.2018.01493

Manzeske, D. P., & Stright, A. (2009). Parenting styles and emotional regulation: The role of behavioral and psychological control during young adulthood. *Journal of Adult Development, 16*, 223-229.

Maraldo, T. M., Zhou, W., Dowling, J., & Wal, J. S. (2016). Replication and extension of the dual pathway model of disordered eating: The role of fear of negative evaluation, suggestibility, rumination, and self-compassion. *Eating Behaviors*, *23*, 187–194.

https://doi.org/10.1016/j.eatbeh.2016.10.008

Marco, J. H., & Tormo-Irun, M. P. (2018). Cyber Victimization Is Associated with Eating Disorder Psychopathology in Adolescents. *Frontiers in Psychology*, 9(987).

Marcos, Y. Q., Quiles Sebastia´, M. J., Aubalat, L. P., Ausina, J. B., & Treasure, J. (2012). Peer and family influence in eating disorders: A meta-analysis. *European Psychiatry, 28*, 199-206.

Marks, A. G. M., Sobanski, D. J., & Hine, D. W. (2010). Do dispositional rumination and/or mindfulness moderate the relationship between life hassles and psychological dysfunction in adolescents? *Australian and New Zealand Journal of Psychiatry*, *44*, 831–838. http://dx.doi.org/10.3109/00048674.2010.487478.

Marks, I. M. (1985). Behavioral psychotherapy for anxiety disorders. *Psychiatric Clinics of North America*, *8*, 25–45.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224-253.

Marmorstein, N. R., von Ranson, K. M., Iacono, W. G., & Succop, P. A. (2007). Longitudinal associations between externalizing behavior and dysfunctional eating attitudes and behaviors: a community-based study. *Journal of clinical child and adolescent psychology*, *36*(1), 87-94. doi: 10.1207/s15374424jccp3601_9.

Marusak, H. A., Thomason, M. E., Sala-Hamrick, K. Crespo, L. & Rabinak C. A. (2018). What's parenting got to do with it: emotional autonomy and brain and behavioral responses to emotional conflict in children and adolescents. *Developmental Science, 21*(4): e12605. doi:10.1111/desc.12605.

Mase, T., Ohara, K., Miyawaki, C., Kouda, K., & Nakamura, H. (2015). Influences of peers' and family members' body shapes on perception of body image and desire for thinness in Japanese female students. *International Journal of Women's Health, 7,* 625–633.

Mason, T. B., & Lewis, R. J. (2016). Minority Stress, Body Shame, and Binge Eating Among Lesbian Women: Social Anxiety as a Linking Mechanism. *Psychology of Women Quarterly, 40,* 428-440.

Matos, M., Pinto-Gouveia, J., & Duarte, C. (2013). Internalizing early memories of shame and lack of safeness and warmth: The mediating role of shame on depression. *Behavioural and Cognitive Psychotherapy*, *41*(4), 479–493.

Matsumoto, D. (1990). Cultural similarities and differences in display rules. *Motivation and Emotion*, *14*(3), 195-214.

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy*, *36*, 455–470.

Maxwell, L., & Duff, E. (2016). Mindfulness: an effective prescription for depression and anxiety. *Journal of Nursing and Practice*, *12*(6), 403-409.

May, A. L., Kim, J. Y., McHale, S. M., & Crouter, A. C. (2006). Parent–adolescent relationships and the development of weight concerns from early to late adolescence. *International Journal of Eating Disorders*, *39*(8), 729–740.

Mayer, B., Muris, P., Meesters, C., & Zimmermann-van Beuningen, R. (2009). Brief report: Direct and indirect relations of risk factors with eating behavior problems in late adolescent females. *Journal of Adolescence*, *32*, 741-745.

McCabe, M. P., & Ricciardelli, L. A. (2005). Prospective study of pressures from parents, peers, and the media on extreme weight change behaviors among adolescent boys and girls. *Behaviour Research and Therapy*, *43*, 653–668.

McCabe, M. P., & Ricciardelli, L. A. (2003). Sociocultural influences on body image and body changes among adolescent boys and girls. *Journal of Social Psychology*, *143*, 5–26.

McCabe, M. P., Ricciardelli, L. A., & Finemore, J. (2002). The role of puberty, media and popularity with peers on strategies to increase weight, decrease weight and increase muscle tone among adolescent boys and girls. *Journal of Psychosomatic Research, 52*(3), 145–153.

McCabe, R. E., Miller, J. L., Laugesen, N., Antony, M. M., & Young, L. (2010). The relationship between anxiety disorders in adults and recalled childhood teasing. *Journal of Anxiety Disorders*, *24*(2), 238-243.

McClintock, J. M., & Evans, I. M. (2001). The underlying psychopathology of eating disorders and social phobia: A structural equation analysis. *Eating Behaviors*, *2*, 247 – 261.

McEwen, C. & Flouri, E. (2009). Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: the role of emotion regulation. *European Journal of Child and Adolescent Psychiatry, 18*, 206–216.

McGinn, L. K. & Newman, M. G. (2013). Status Update on Social Anxiety Disorder. *International Journal of Cognitive Therapy, 6*(2), 88–113.

McLaughlin, K. A., Hatzenbuehler, M. L., & Hilt, L. M. (2009). Emotion dysregulation as a mechanism linking peer victimization to internalizing symptoms in adolescents. *Journal of Consulting and Clinical Psychology*, *77*(5), 894-904.

McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion dysregulation and adolescent psychopathology: a prospective study. *Behaviour Research and Therapy, 49*(9), 544-54.

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity and burden of illness. *Journal of Psychiatric Research*, *45*(8), 1027–1035.

McLean, C. P., Miller, N. A., & Hope, D. A. (2007). Mediating social anxiety and disordered eating: The role of expressive suppression. Eating Disorders: *The Journal of Treatment and Prevention*, *15*, 41–54.

Medrano, L.A., & Trógolo, M. (2016). Construct Validity of the Difficulties in Emotion Regulation Scale: Further Evidence Using Confirmatory Factor Analytic Approach. *Abnormal and Behavioural Psychology*, *2*(2), 1-7.

Mehtalia, K., & Vankar, G. K. (2004). Social anxiety in adolescents. *Indian Journal of Psychiatry*, *46,* 221-227.

Menatti, A. R., DeBoer, L. B. H., Weeks, J.W., & Heimberg, R. G. (2015). Social anxiety and associations with eating psychopathology: Mediating effects of fears of evaluation. *Body Image, 14*, 20–28.

Mendelson, B. K., Mendelson, M. J., & White, D. R. (2001). Body-Esteem Scale for Adolescents and Adults. *Journal of Personality Assessment, 76*, 1, 90-106. DOI:10.1207/S15327752JPA7601_6

Mendelson, B. K., White, D. R., & Mendelson, M. J. (1997). Manual for the body-esteem scale for adolescents and adults. *Research Bulletin, 16*(2). Montreal: Concordia University.

Meng, X., & D'Arcy, C. (2015). Comorbidity between lifetime eating problems and mood and anxiety disorders: results from the Canadian community health survey of mental health and well-being. *European Eating Disorders Review*, *23*(2), 156–162.

Mennin, D. S., Holaway, R., Fresco, D. M., Moore, M. T., & Heimberg, R. G. (2007). Delineating components of emotion and its dysregulation in anxiety and mood psychopathology. *Behavior Therapy*, *38,* 284–302.

Mennin, D. S., McLaughlin, K. A., & Flanagan, K. J. (2009). Emotion regulation deficits in generalized anxiety disorder, social anxiety disorder, and their co-occurrence. *Journal of Anxiety Disorders*, *23*, 866–871.

Menzel, J. E., Schaefer, L. M., Burke, N. L., Mayhew, L. L., Brannick, M. T., & Thompson, J. K. (2010). Appearance-related teasing, body dissatisfaction, and disordered eating: A meta-analysis. *Body Image*, *7,* 261–270. doi:10.1016/j.bodyim.2010.05.004

Merikangas, K.R., He, J., Burstein, M., Swanson, S.A., Avenevoli, S., & Cui, L., & Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: Results from the National Comorbidity Study-Adolescent Supplement (NCS-A). *Journal of American Academy of Child and Adolescent Psychiatry*, *49*, 980–989.

Merwin, R. M. (2011). Anorexia nervosa as a disorder of emotion regulation: theory, evidence, and treatment implications. *Clinical Psychology: Science and Practice*, *18*(3), 208–214. http://dx.doi.org/10.1111/j.1468-2850.2011.01252.x.

Merwin, R. M., Timko, C. A., Moskovich, A. A., Ingle, K. K., Bulik, C. M., & Zucker, N. L. (2011). Psychological inflexibility and symptom expression in anorexia nervosa. *Eating Disorder*, *19*(1), 62–82.

Mesquita, B., De Leersnyder, J., & Albert, D. (2014). The cultural regulation of emotions. In Gross J. J. (Ed.), *Handbook of Emotion Regulation* (pp. 284-304). New York: The Guilford Press.

Miers, A. C., Blöte, A. W., Heyne, D. A., & Westenberg, P. M. (2014). Developmental pathways of social avoidance across adolescence: the role of social anxiety and negative cognition. *Journal of Anxiety Disorders, 28*(8), 787-94. doi: 10.1016/j.janxdis.2014.09.008.

Mishna, F., Khoury-Kassabri, M., Gadalla, T., & Daciuk, J. (2012). Risk factors for involvement in cyber bullying: Victims, bullies, and bully-victims. Children and Youth Sciences Review, *34*(1), 63–70. doi:10.1016/j.childyouth.2011.08.032

Mishra, S. K., & Mukhopadhyay, S. (2011). Eating and weight concerns among Sikkimese adolescent girls and their biocultural correlates: An exploratory study. *Public Health Nutrition, 14,* 853-859.

Mora-Giral, M., Raich-Escursell, R. M., Segues, C. V., Torras-Claraso, J., & Huon, G. (2004). Bulimia symptoms and risk factors in university students. *Eating and Weight Disorders*, *9,* 163–169.

Morrison, A. S., & Heimberg, R. G. (2013). Social Anxiety and Social Anxiety Disorder. *Annual Review of Clinical Psychology, 9*, 249–74.

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development*, *16*, 361–388.

Moscovitch, D. A. (2009). What is the core fear in social phobia?: A new model to facilitate individualized case conceptualization and treatment. *Cognitive and Behavioral Practice, 16,* 123–134.

Murphy, E., Brewin, C. R., & Silka, L. (1997). The assessment of parenting using the Parental Bonding Instrument: Two or three factors? *Psychological Medicine*, *27*, 233–342.

Nair, M.K., Russell, P.S., Mammen, P., Abhiram Chandran, R., Krishnan, R., Nazeema, S., Chembagam, N., & Peter, D. (2013). ADad3: the epidemiology of Anxiety Disorders among adolescents in a rural community population in India. *Indian Journal of Pediatrics, 80*(2), 144–148.

Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: gender and popularity moderate associations with depressive symptoms. *Journal of Abnormal Child Psychology, 43*(8), 1427-1438. https://doi.org/10.1007/s10802-015-0020-0

Neumark-Sztainer, D., Bauer, K. W., Friend, S., Hannan, P. J., Story, M., and Berge, J. M. (2010). Family weight talk and dieting: How much do they matter for body dissatisfaction and disordered eating behaviors in adolescent girls? *Journal of Adolescent Health*, *47*, 270–276. http://dx.doi.org/10.1016/j.jadohealth.2010.02. 001

Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., and Story, M. (2006). Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. *Journal of Adolescent Health*, *39,* 244–251.

Neziroglu, F., Khemlani-Patela, S., & Veale, D. (2008). Social learning theory and cognitive behavioral models of body dysmorphic disorder. *Body Image, 5*, 28–38.

Ngai, S. S. Y. (2015). Parental bonding and character strengths among Chinese adolescents in Hong Kong. *International Journal of Adolescence and Youth, 20,* 317–333.

Ngai, S. S., Cheung, C., Xie, L., Ng, Y., Ngai, H., Liu, Y., & Ho, J. C. (2018). Psychometric Properties of the Parental Bonding Instrument: Data from a Chinese Adolescent Sample in Hong Kong. *Journal of Child and Family Studies, 27*, 2112–2124.

Nonterah, C. W., Nathasha C. Hahn, N. C., Utsey, S. O., Joshua N. Hook, J. N., Abrams, J. A., Hubbard, R. R., & Opare-Henako, A. (2015). Fear of Negative Evaluation as a Mediator of the Relation between Academic Stress, Anxiety and Depression in a Sample of Ghanaian College Students. *Psychology and Developing Societies*, *27*(1), 125–142.

Obeid, N., Buchholz, A., Boerner, K. E., Henderson, K. A., & Norris, M. (2013). Self-esteem and social anxiety in an adolescent female eating disorder population: age and diagnostic effects. *Eating Disorders*, *21*(2), 140–153. doi:10.1080/10640266.2013.761088

Ogden, J., Reynolds, R., & Smith, A. (2006). Expanding the concept of parental control: A role for overt and covert control in children's snacking behaviour? *Appetite*, *47*(1), 100–106.

Ohayon M. M., & Schatzberg, A. F. (2010). Social phobia and depression: prevalence and comorbidity. *Journal of Psychosomatc Research*, *68,* 235-43.

Okazaki, S. (2000). Asian American and White American differences on affective distress symptoms: Do symptom reports differ across reporting methods? *Journal of Cross-Cultural Psychology*, *31,* 603–625.

Okazaki, S. (2002). Self-other agreement on affective distress scales in Asian Americans and White Americans. *Journal of Counseling Psychology, 49,* 428–437.

Okazaki, S., Liu, J. F., Longworth, S. L., & Minn, J. Y. (2002). Asian American–White American differences in expressions of social anxiety: A replication and extension. *Cultural Diversity and Ethnic Minority Psychology*, *8,* 234–247.

Olenik-Shemesh, D., & Heiman, T. (2017). Cyberbullying Victimization in Adolescents as Related to Body Esteem, Social Support, and Social Self-Efficacy. *Journal of Genetic Psychology*, *178*, 28–43.

Olivardia, R., Pope, H. G., Klangweth, B., & Hudson J. I. (1995). Eating disorders in college men. *American Journal of Psychiatry*, *152*, 1279-1285.

Olweus, D. (2012). Cyberbullying: An overrated phenomenon? *European Journal of Developmental Psychology*, *9,* 520–538. https://doi.org/10.1080/17405629.2012. 682358.

Ostrovsky, N. W., Swencionis, C., Wylie-Rosett, J., & Isasi, C. R. (2013). Social anxiety and disordered overeating: an association among overweight and obese individuals. *Eating Behavior*, *14*(2),145–148. https://doi.org/10.1016/j.eatbe h.2013.01.009

Pace, U., Cacioppo, M., & Schimmenti, A. (2012). The moderating role of father's care on the onset of binge eating symptoms among female late adolescents with insecure attachment. *Child Psychiatry and Human Development*, *43,* 282–292.

Pallister, E., & Waller, G. (2008). Anxiety in the eating disorders: Understanding the overlap. *Clinical Psychology Review*, *28*, 366–386.

Parade, S. H., Leerkes, E. M., & Blankson, A. N. (2010). Attachment to parents, social anxiety, and close relationships of female students over the transition to college. *Journal of youth and adolescence*, *39*(2), 127-37. doi: 10.1007/s10964-009-9396-x.

Parker, G. (1979). Reported parental characteristics of agoraphobics and social phobics. *British Journal of Psychiatry*, *135*, 555-60.

Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. British *Journal of Medical Psychology*, *52*(1), 1–10.

Parling, T., Mortazavi, M., & Gfaderi, A. (2010). Alexithymia and emotional awareness in anorexia nervosa: time for a shift in the measurement of the concept? *Eating Behaviors*, *11*, 205–210. DOI:10.1016/j.eatbeh.2010.04.001.

Pavan, C., Simonato, P., Marini, M., Mazzoleni, F., Pavan, L., & Vindigni, V. (2008). Psychopathologic aspects of body dysmorphic disorder: a literature review. *Aesthetic Plastic Surgery*, *32*, 473–484.

Paxton, S. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Prospective predictors of body dissatisfaction in adolescent girls and boys: A five-year longitudinal study. *Developmental Psychology*, *42,* 888–899.

Pearson, C. M., Miller, J., Ackard, D. M., Loth, K. A., Wall, M. M., Haynos, A. F., & Neumark-Sztainer, D. (2017). Stability and change in patterns of eating disorder symptoms from adolescence to young adulthood. *International Journal of Eating Disorders, 50*(7), 748–757.

Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd ed.). Orlando, FL: Harcourt Brace.

Pepping, C. A., O'Donovan, A., Zimmer-Gembeck, M. J., & Hanisch, M. (2014). Is emotion regulation the process underlying the relationship between low mindfulness and psychosocial distress? *Australian Journal of Psychology*, *66*, 130–138. http://dx.doi.org/10.1111/ajpy.12050.

Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex Roles: A Journal of Research, 71*(11-12), 363–377. https://doi.org/10.1007/s11199-014-0384-6

Perry, J. A., Silvera, D. H., Neilands, T. B., Rosenvinge, J. H., & Hanssen, T. (2008). A study of the relationship between parental bonding, self-concept and eating disturbances in Norwegian and American college populations. *Eating Behaviors*, *9*, 13–24.

Perry, S., DiTommaso, E., Robinson, B., & Doiron, Y. (2007). Attachment and coping: Implications for problematic eating behaviors and body image disturbances. *Canadian Psychology, 48*, 86.

Phan, T., & Tylka, T. L. (2006). Exploring a model and moderators of disordered eating with Asian American college women. *Journal of Counseling Psychology*, *53*(1), 36-47. DOI: 10.1037/0022-0167.53.1.36.

Phares, V., Steinberg, A. R., & Thompson, J. K. (2004). Gender differences in peer and pa- rental influences: Body image disturbance, self-worth, and psychological functioning in preadolescent children. *Journal of Youth and Adolescence*, *33*(5), 421–429.

Phillips, K. A., Menard, W., Fay, C., & Weisberg, R. (2005). Demographic characteristics, phenomenology, comorbidity, and family history in 200 individuals with body dysmorphic disorder. *Psychosomatics, 46*, 317-325.

Pike, K. M., & Striegel-Moore, R. (1997). Disordered eating and eating disorders. In S. G. Gallant, G. Puryear Keita, & R. Royak-Schaler (Eds.), *Healthcare for women: Psychological social and behavioural influences* (pp. 97–114). Washington, DC: American Psychological Association.

Pinto, A., & Phillips, K. A. (2005). Social anxiety in body dysmorphic disorder. *Body Image*, *2*(4), 401–405. doi:http://dx.doi.org/10.1016/j.bodyim.2005.10.003

Pinto-Gouveia, J., & Matos, M. (2011). Can shame memories become a key to identity? The centrality of shame memories predicts psychopathology. *Applied Cognitive Psychology*, *25*, 281–290. http://dx.doi.org/10.1002/acp1689.

Pinto-Gouveia, J., Ferreira, C., & Duarte, C. (2014). Thinness in the pursuit for social safeness: An integrative model of social rank mentality to explain eating psychopathology. *Clinical Psychology and Psychotherapy*, *21*(2), 154–165. http://dx.doi.org/10.1002/cpp.1820.

Plaisier, I., de Bruijn, J. G. M., Smit, J. H., de Graaf, R., Ten Have, M., Beekman, A. T. F., van Dyck, R., & Penninx, B. W. (2008). Work and family roles and the association with depressive and anxiety disorders: differences between men and women. *Journal of Affective Disorders*, *105,* 63–72.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36*(4), 717–731.

Presnell, K., Bearman, S. K., & Stice, E. (2004). Risk factors for body dissatisfaction in adolescent boys and girls: A prospective study. *International Journal of Eating Disorders, 36,* 389–401.

Pruzinsky, T. & Cash, T. F. (2002). Understanding body images. In T. F. Cash & T. Pruzinsky (Eds.) *Body image: a handbook of theory, research, and clinical practice* (pp. 65-73). New York: The Guilford Press.

Puhl, R. M., Peterson, J. L., & Luedicke, J. (2013). Weight-based victimization: Bullying experiences of weight loss treatment–seeking youth. *Pediatrics*, *131*(1), e1–e9. doi:10.1542/peds.2012-1106

Racine, S. E., & Wildes, J. E. (2015). Emotion Dysregulation and Anorexia Nervosa: An Exploration of the Role of Childhood Abuse. *International Journal of Eating Disorder*, *48*(1), 55-58.

Ramaiah, R. R. (2015). Eating disorders among medical students of a rural teaching hospital: A cross-sectional study. *International Journal of Community Medicine Public Health, 2,* 25-28.

Ramos-Salazar, L. (2017). Cyberbullying victimization as a predictor of cyberbullying perpetration, body image dissatisfaction, healthy eating and dieting behaviors, and life satisfaction. *Journal of Interpersonal Violence,*

DOI: https://journals.sagepub.com/doi/10.1177/0886260517725737

Ramsawh, H. J., Weisberg, R. B., Dyck, I., Stout, R., & Keller, M. B. (2011). Age of onset, clinical characteristics, and 15-year course of anxiety disorders in a prospective, longitudinal, observational study. *Journal of Affective Disorders*, *132*, 260–264.

Ramzan, N., & Amjad, N. (2017). Cross Cultural Variation in Emotion Regulation: A Systematic Review. *Annals volume*, *23*(1), 77-90.

Ranta, K., Junttila, N., Laakkonen, E., Uhmavaara, A., La Greca, A. M., & Niemi, P. M. (2012). Social Anxiety Scale for Adolescents (SAS-A): Measuring social anxiety among Finnish adolescents. *Child Psychiatry and Human Development*, *43*, 574–591.

Rao, P. A., Beidel, D. C., Turner, S. M., Ammerman, R. T., Crosby, L. E., & Sallee, F. R. (2007). Social anxiety disorder in childhood and adolescence: Descriptive psychopathology. *Behaviour Research and Therapy*, *45*(6), 1181-1191.

Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy*, *35*, 741–756.

Rapee, R. M., & Spence, S. H. (2004). The etiology of social phobia: Empirical evidence and an initial model. *Clinical Psychology Review*, *24*, 737–767.

Rashid, T., Saddiqua, A., & Naureen, S. (2011). Relationship of Self-Esteem and Body Esteem with Social Anxiety among Psychiatric Patients. *A.P.M.C., 5*(2), 134-139.

Ratnani, I. J., Vala, A. U., Panchal, B. N., Tiwari, D. S., Karambelkar, S. S., Sojitra, M. G., & Nagori, N. N. (2017). Association of social anxiety disorder with depression and quality of life among medical undergraduate students. *Journal of Family Medicine and Primary Care*, *6*(2), 243-248.

Rawal, A., Park, R. J., & Williams, J. M. G. (2010). Rumination, experiential avoidance, and dysfunctional thinking in eating disorders. *Behaviour Research and Therapy*, *48,* 851 – 859. http://dx.doi.org/10.1016/j.brat.2010.05.009.

Rieger, E., Van Buren, D. J., Bishop, M., Tanofsky-Kraff, M., Welch, R., & Wilfley, D. E. (2010). An eating disorder- specific model of interpersonal psychotherapy (IPT-ED): Causal pathways and treatment implications. *Clinical Psychology Review*, *30,* 400–410.

Reijntjes, A., Kamphuisb, J. H., Prinziea, P., & Telch. M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse and Neglect*, *34,* 244–252.

Reilly, E. E., Gordis, E. B., Boswell, J. F., Donahue, J. M., Emhoff, S. M., & Anderson, D. A. (2018). Evaluating the role of repetitive negative thinking in the maintenance of social appearance anxiety: An experimental manipulation. *Behavior Research and Therapy, 102,* 36-41. doi: 10.1016/j.brat.2018.01.001. Epub 2018 Jan 5. PMID: 29328947.

Ricciardelli, L. A., & McCabe, M. P. (2003). A longitudinal analysis of the role of biopsychosocial factors in predicting body change strategies among adolescent boys. *Sex Roles*, *48,* 349–359.

Ricciardelli, L. A., McCabe, M. P., & Banfield, S. (2000). Body image and body change methods in adolescent boys: Role of parents, friends, and the media. *Journal of Psychosomatic Research*, *49,* 189–197.

Rileya, T. N., Sullivana, T. N., Hintonb, T. S., & Kliewer, W. (2019). Longitudinal relations between emotional awareness and expression, emotion regulation, and peer victimization among urban adolescents, *Journal of Adolescence, 72*, 42–51.

Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., & Chambless, D. L. (2004). More information from fewer questions: The factor structure and item properties of the original and Brief Fear of Negative Evaluation Scale. *Psychological Assessment, 16*(2), 169–181.

Rodebaugh, T.L., Weeks, J.W., Gordon, E.A., Langer, J.K., & Heimberg, R.G. (2012). The longitudinal relationship between fear of positive evaluation and fear of negative evaluation. *Anxiety, Stress & Coping*, *25*(2), 167–182.

Rodgers, R., & Chabrol, H. (2009). Parental attitudes, body image disturbance and disordered eating amongst adolescents and young adults: a review. European Eating Disorders Review: *The Journal of the Eating Disorders Association*, *17*(2), 137-151.

Rodgers, R., Chabrol, H., & Paxton, S. (2011). An exploration of the tripartite influence model of body dissatisfaction and disordered eating among Australian and French college women. *Body Image*, *8,* 208-215.

Rodgers, R.F., Paxton, S.J., & Chabrol, H. (2009). Effects of Parental Comments on Body Dissatisfaction and eating disturbance in young adults: A sociocultural model. *Body Image*, *6,* 171–177.

Rohde, P., Stice, E., & Marti, C. N. (2015). Development and predictive effects of eating disorder risk factors during adolescence: implications for prevention efforts. *International Journal of Eating Disorders*, *48*, 187–98.

Rommel, D., Nandrino, J., Ducro, C., Andrieux, S., Delecourt, F., & Antoine, P. (2012). Impact of emotional awareness and parental bonding on emotional eating in obese women. *Appetite, 59,* 21–26.

Rosen, L. H., Underwood, M. K., Beron, K. J., Gentsch, J. K., Wharton, M. E., & Rahdar, A. (2009). Persistent versus periodic experiences of social victimization: Predictors of adjustment. *Journal of Abnormal Child Psychology*, *37*, 693–704.

Roth, G. & Assor, A. (2012). The costs of parental pressure to express emotions: Conditioned regard and autonomy support as predictors of emotion regulation in intimacy. *Journal of Adolescence*, *35*, 799-808.

Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology*, *60*, 11.1–11.31.

Rudolph, J., & Zimmer-Gembeck, M. J. (2013). Parent relationships and adolescents' depression and social anxiety: Indirect associations via emotional sensitivity to rejection threat. *Australian Journal of Psychology*, *66*, 110-121. DOI: 10.1111/ajpy.12042

Rukmini, S., Sudhir, P. M., Bada Math, S. (2014). Perfectionism, Emotion Regulation and Their Relationship to Negative Affect in Patients with Social Phobia. *Indian Journal of Psychological Medicine, 36*(3), 239-245.

Rusch, S., Westermann, S., & Lincoln, T. M. (2012). Specificity of emotion regulation deficits in social anxiety: An internet study. *Psychology and Psychotherapy: Theory, Research and Practice*, *85*, 268-277.

Ruscio, A. M., Brown, T. A., Chiu, W. T., Sareen, J., Stein, M. B., & Kessler, R. C. (2008). Social fears and social phobia in the USA: Results from the National Comorbidity Survey Replication. *Psychological Medicine*, *38*, 15–28.

Ruscitti, C., Rufino, K., Goodwin, N., & Wagner, R. (2016). Difficulties in emotion regulation in patients with eating disorders. *Borderline Personality Disorder and Emotion Dysregulation*, *3*(3), DOI 10.1186/s40479-016-0037-1.

Russell, J. D., Kopec-Schrader, E., Rey, J. M., and Beumont, P. J. (1992). The Parental Bonding Instrument in adolescent patients with anorexia nervosa. *Acta Psychiatrica Scandinavia, 86*(3), 236–239.

Rutledge, C. M., Gillmor, K. L., & Gillen, M. M. (2013). Does this profile picture make me look fat? Facebook and body image in college students. *Psychology of Popular Media Culture, 2*(4), 251. https://doi.org/10.1037/ppm0000011

Saarni, C. (1999). *The Development of Emotional Competence*. Guilford, New York.

Sahin, E., Barut, Y., & Ersanli, E. (2013). Sociodemographic variables in relation to social appearance anxiety in adolescents. *The International Journal of Social Sciences, 15*(1), 56-63.

Sansone, R. A., & Sansone, L. A. (2007). Cosmetic surgery and psychological issues. *Psychiatry Edgmont*, *4*, 65-8.

Sawaoka, T., Barnes, R. D., Blomquist, K. K., Masheb, R. M., & Grilo, C. M. (2012). Social anxiety and self-consciousness in binge eating disorder: associations with eating disorder psychopathology. *Comprehensive Psychiatry*, *53*(6), 740–745. doi: https ://doi.org/10.1016/j.comppsych.2011.10.003

Schermelleh-Engell, K., Moosbrugger, H., Müller, H. (2003). Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*, 23-74.

Schimmenti, A., & Bifulco, A. (2015). Linking lack of care in childhood to anxiety disorders in emerging adulthood: The role of attachment styles. *Child and Adolescent Mental Health*, 20, 41–48.

Schneider, R. L., Arch, J. J., Landy, L. N. & Hankin, B. L. (2016). The Longitudinal Effect of Emotion Regulation Strategies on Anxiety Levels in Children and Adolescents. *Journal of Clinical Child & Adolescent Psychology*, *00*(00), 1-14.

Schoenefeld, S. J., & Webb, J. B. (2013). Self-compassion and intuitive eating in college women: Examining the contributions of distress tolerance and body image acceptance and action. *Eating Behaviors*, *14*(4), 493–496.

Schreiber, F., Bohn, C., Aderka, I. M., Stangier, U., & Steil, R. (2012). Discrepancies between implicit and explicit self-esteem among adolescents with social anxiety disorder. *Journal of Behavior Therapy and Experimental Psychiatry*, *43*(4), 1074–1081.

Schreier, S., & Heinrichs, N. (2010). Parental fear of negative child evaluation in child social anxiety. *Behaviour Research and Therapy*, *48*, 1186–1193.

Schuetzmann, M., Richter-Appelt, H., Schulte-Markwort, M., & Schimmelmann, B. G. (2008). Associations among the perceived parent–child relationship, eating behavior, and body weight in preadolescents. Results from a community-based sample. *Journal of Pediatric Psychology, 33,* 772–782.

Schutz, H. K., & Paxton, S. J. (2007). Friendship quality, body dissatisfaction, dieting and disordered eating in adolescent girls. *British Journal of Clinical Psychology*, *46*, 67–83.

Schwartz, J. P., Thigpen, S. E., & Montgomery, J. K. (2006). Examination of parenting styles of processing emotions and differentiation of self. *The Family Journal*, *14,* 41–48.

Shah, P., & Kataria, L. (2009). Social phobia and its impact in Indian university students. *The Internet Journal of Mental Health*, *6*(2), 1-8.

Sharma, M., Mao, A., & Sudhir, P. (2012). Mindfulness-based cognitive behaviour therapy in patients with anxiety disorders: a case series. *Indian Journal of Psychological Medicine*, *34*(3), 263-269.

Sharpe, H., Naumann, U., Treasure, J., & Schmidt, U. (2013). Is fat talking a causal risk factor for body dissatisfaction? A systematic review and meta-analysis. *International Journal of Eating Disorders*, *46*, 643–652. http://dx.doi.org/10.1002/eat. 22151

Shashank, K. J., Gowda, P., & Chethan, T. K. (2016). A cross-sectional study to assess the eating disorder among female medical students in a rural medical college of Karnataka State. *National Journal of Community Medicine*, *7*, 524-527.

Shaw, H. E., Stice, E., & Springer, D. W. (2004). Perfectionism, body dissatisfaction, and self-esteem in predicting bulimic symptomatology: Lack of replication. *International Journal of Eating Disorders*, *36*, 41–47.

Sheffield, J. K., Tse, K. H., & Sofronoff, K. (2005). A comparison of body-image dissatisfaction and eating disturbance among Australian and Hong Kong women. *European Eating Disorders Review, 13*, 112–124.

Siegel, R. S., La Greca, A. M., & Harrison, H. M. (2009). Peer victimization and social anxiety in adolescents: prospective and reciprocal relationships. *Journal of Youth and Adolescence, 38*, 1096–1109.

Silgado, J. Timpano, K. R. Buckner, J. D., & Schmidt, N. B. (2010). Social Anxiety and Bulimic Behaviors: The Moderating Role of Perfectionism. *Cognitive Therapy Research, 34*, 487–492.

Sim, L., & Zeman, J. (2004). Emotional awareness and identification skills in adolescent girls with bulimia nervosa. *Journal of Clinical Child and Adolescent Psychology*, *33*, 760–771.

Sim, L., & Zeman, J. (2005). Emotion regulation factors as mediators between body dissatisfaction and bulimic symptoms in early adolescent girls. *Journal of Early Adolescence*, *25*, 478–496.

Sim, L., & Zeman, J. (2006). The contribution of emotion regulation to body dissatisfaction and disordered eating in early adolescent girls. *Journal of Youth and Adolescence*, *35*, 219–228.

Singh, M., Parsekar, S. S., & Bhumika, T. (2016). Body image, eating disorders and role of media among Indian adolescents. *Journal of Indian Association of Child and Adolescent Mental Health*, *12*, 9-35.

Sinha, J. B. P., Sinha, T. N., Verma, J., and Sinha, R. B. N. (2001). Collectivism coexisting with individualism: an Indian scenario. *Asian Journal of Social Psychology, 4,* 133–145.

Sira, N., & Ballard, S. M. (2011). Gender differences in body Satisfaction: An examination of familial and individual level variables. *Family Science Review, 16*(1), 57-73.

Slee, P. T. (1994). Situational and Interpersonal correlates of anxiety associated with peer victimisation. *Child Psychiatry and Human Development*, *25*(2), 97-107.

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*, *49*, 147–154. doi:10.1111/j.1467-9450.2007.00611.x

Sjursø, I. R., Fandrem, H., & Roland, E. (2016). Emotional problems in traditional and cyber victimization. *Journal of School Violence*, *15*, 114–131. https://doi.org/10. 1080/15388220.2014.996718.

Smith, J. E., Erickson, S. J., Austin, J. L., Winn, J. L., Lash, D. N., & Amrhein, P. C. (2016). Mother–Daughter Relationship Quality and Body Image in Preadolescent Girls. *Journal of Child and Family Studies*, *25,* 2683–2694.

Smolak, L., & Stein, J. A. (2006). The relationship of drive for muscularity to sociocultural factors, self-esteem, physical attribute gender role, and social comparison in middle school boys. *Body Image*, *3,* 121–129.

Smolak, L. (2002). Body image development in children. In T. F. Cash & T. Pruzinsky (Eds.) *Body image: a handbook of theory, research, and clinical practice* (pp. 65-73). New York: The Guilford Press.

Snoek, H. M., Engels, R. C. M. E., Janssens, J. M. A. M., & van Strien, T. (2007). Parental behaviour and adolescents' emotional eating. *Appetite*, *49*, 223–230.

Soares, I., & Dias, P. (2007). Attachment and psychopathology in adults: Recent contributions from research. *International Journal of Clinical and Health Psychology*, *7,* 177–195.

Spence, S. H., & Rapee, R. M. (2016). The etiology of social anxiety disorder: An evidence-based model. *Behaviour Research and Therapy*, *86*, 50-67.

Spettigue, W., Obeid, N., Santos, A., Norris, M., Hamati, R., Hadjiyannakis, S., & Buchholz, A. (2019). Binge eating and social anxiety in treatment-seeking adolescents with eating disorders or severe obesity. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, *25*, 787–793. https://doi.org/10.1007/s40519-019-00689-6

Spokas, M., Luterek, J. A., & Heimberg, R. G. (2009). Social anxiety and emotional suppression: the mediating role of beliefs. *Journal of behavior therapy and experimental psychiatry*, *40*(2), 283-291.

Spoor, S. T. P., Bekker, M. H. J., van Strien, T., & van Heck, G. L. (2007). Relations between negative affect, coping, and emotional eating. *Appetite*, *48*(3), 368–376.

Stavrinides, P., & Georgiou, S.N. (2016). Parenting and children's adjustment problems: The mediating role of self-esteem and peer relations. *Emotional and Behavioural Difficulties, 23*, 203–212. doi: 10.1080/13632752.2016.1236228.

Stefanone, M. A., Lackaff, D., & Rosen, D. (2011). Contingencies of self-worth and social worth and social-networking-site behaviour. *Cyberpsychology Behavior, and Social Networking, 14*(1-2), 41-49. http://dx.doi.org/10.1089/cyber.2010.0049r.2010.0049

Steinberg, L. (1990). *Autonomy, conflict, and harmony in the family relationship.* In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 255–276). Harvard University Press.

Stewart, D. W., & Mandrusiak, M. (2007). Social phobia in college students. *Journal of College Student Psychotherapy*, *22*, 65–76.

Stice, E., & Agras, W. S. (1998). Predicting onset and cessation of bulimic behaviors during adolescence: A longitudinal grouping analyses. *Behavior Therapy, 29,* 257-276.

Stice, E., & Bearman, S. K. (2001). Body image and eating disturbances prospectively predict growth in depressive symptoms in adolescent girls: A growth curve analysis. *Developmental Psychology*, *37*, 597–607.

Stice, E. (1994). A review of the evidence for a sociocultural model of bulimia nervosa and an exploration of the mechanisms of action. *Clinical Psychology Review*, *14*, 633–661.

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

Stice, E., & Whittenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: A longitudinal investigation. *Developmental Psychology*, *38*(5), 669–678.

Stice, E. (2016). Interactive and mediational etiologic models of eating disorder onset: Evidence from prospective studies. *Annual Review of Clinical Psychology*, *12,* 359–81.

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

Stice, E., Ng, J., & Shaw, H. (2010). Risk factors and prodromal eating pathology. *Journal of Child Psychology and Psychiatry*, *51*, 518–525.

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic re- view. *Psychological Bulletin*, *128*(5), 825–848.

Storch, E. A., & Masia-Warner, C. (2004). The relationship of peer victimization to social anxiety and loneliness in adolescent females. *Journal of Adolescence*, *27*, 351–362.

Storch, E. A., Masia-Warner, C., Crisp, H., & Klein, R. G. (2005). Peer victimization and social anxiety in adolescence: a prospective study. *Aggressive Behavior*, *31*, 437–452.

Striegel-Moore, R., Dohm, F., Pike, C., Wilfley, D., & Fairburn, C. (2002). Abuse, bullying, and discrimination as risk factors for binge eating disorder. *American Journal of Psychiatry*, *159*, 1902–1907. http://dx.doi.org/10.1176/appi.ajp.159.11.1902.

Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., & Kraemer, H. C. (2009). Gender difference in the prevalence of eating disorder symptoms. *The International Journal of Eating Disorders*, *42*(5), 471–474.

Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1993). The social self in bulimia nervosa: Public self-consciousness, social anxiety, and perceived fraudulence. *Journal of Abnormal Psychology, 102,* 297−303.

Summers, B. J., & Cougle, J. R. (2018). An Experimental Test of the Role of Appearance-Related Safety Behaviors in Body Dysmorphic Disorder, Social Anxiety, and Body Dissatisfaction. *Journal of Abnormal Psychology, 127*(8), 770–780. http://dx.doi.org/10.1037/abn0000387.

Sung, S. C., Porter, E., Robinaugh, D. J., Marks, E. H., Marques, L. M., Otto, M. W., . . . Simon, N. M. (2012). Mood regulation and quality of life in social anxiety disorder: An examination of generalized expectancies for negative mood regulation. *Journal of Anxiety Disorders*, *26*, 435–441.

Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., et al. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the international body project I. *Personality and Social Psychology Bulletin*, *36*(3), 309–325.

Swanson, S. A., Crow, S. J., Le Grange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the national co-morbidity survey replication adolescent supplement. *Archives of General Psychiatry, 68*(7), 714–723.

Sweetingham, R., & Waller, G. (2008). Childhood experiences of being bullied and teased in the eating disorders. *European Eating Disorders Review*, *16*, 401–407.

Swinbourne, J. M., & Touyz, S. W. (2007). The co-morbidity of eating disorders and anxiety disorders: a review. *European Eating Disorders Review*, *15*, 253–274.

Swinbourne, J. et al. (2012). The comorbidity between eating disorders and anxiety disorders: prevalence in an eating disorder sample and anxiety dis-order sample. *Australian & New Zealand Journal of Psychiatry*, *46*, 118–131.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston: Pearson.

Tanner, J. L. (2006). Recentering during emerging adulthood: A critical turning point in life span human development. In J. J. Arnett, & J. L. Tanner (Eds.), Emerging adults in America: Coming of age in the 21st century. Washington, DC: American Psychological Association.

Tantleff-Dunn, S., & Lindner, D. M. (2011). Body image and social functioning. In T. F. Cash & L. Smolak (Eds.), *Body image: A hand book of science, practice, and prevention* (pp. 263–270). New York, NY: GuilfordPress.

Tarkhan, M., Esmaeilpour, M., & Tizdast, T. (2013). A study of the relationship between social anxiety, social self-efficacy and body image in the girl students of the Islamic Azad University at Tonekabon Branch. *European Online Journal of Natural and Social Sciences, 2*(4), 510-515.

Tasca, G. A., & Balfour, L. (2014). Attachment and eating disorders: A review of current research. *International Journal of Eating Disorders, 47*, 710–717. https://doi.org/10.1002/eat.22302 PMID: 24862477

Tasca, G. A., Szadkowski, L., Illing, V., Trinneer, A., Grenon, R., Demidenko, N., Valerie Krysanski, V., Balfour, L., & Bissada, H. (2009). Adult attachment, depression, and eating disorder symptoms: The mediating role of affect regulation strategies. *Personality and Individual Differences*, *47*, 662–667.

Teachman, B. A., & Allen, J. P. (2007). Development of social anxiety: social interaction predictors of implicit and explicit fear of negative evaluation. *Journal of Abnormal Child Psychology*, *35*, 63–78.

Teale Sapach, M. J. N., Carleton, R. N., Mulvogue, M. K., Weeks, J. W., & Heimberg, R. G. (2015). Cognitive Constructs and Social Anxiety Disorder: Beyond Fearing Negative Evaluation. *Cognitive Behaviour Therapy*, *44*(1), 63-73.

Tetley, A., Moghaddam, N. G., Dawson, D. L., & Rennoldson, M. (2014). Parental bonding and eating disorders: a systematic review. *Eating Behavior*, *15*(1), 49–59.

Thapa, D. K., & Thapa, S. (2015). Gender Differences in Body Image Dissatisfaction and Eating Disorder among Nepalese Adolescents: a Paradigm Shift from Fatness to Thinness. *Clinical Psychiatry*, *1*(12), 1-5.

Thompson, J. E., Phillips, A. B., McCracken, A., Thomas, K., & Ward, W. L. (2013) Social anxiety in obese youth in treatment setting. *Child and Adolescent Social Work Journal*, *30*(1), 37–47. https ://doi.org/10.1007/s10560-012-0274-0

Thompson, J. K., & Smolak, K. (2001). Introduction. In J. K. Thompson & L. Smolak (Eds.), *Body image, eating disorders, and obesity in youth: Assessment, prevention, and treatment* (pp. 1–18). Washington, DC: American Psychological Association.

Tiggemann, M., & Miller, J. (2010). The Internet and adolescent girls' weight satisfaction and drive for thinness. *Sex Roles*, *63*, 79-90.

Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, *46,* 630-633.

Tillfors, M., & Furmark, T. (2007). Social phobia in Swedish university students: prevalence, subgroups and avoidant behavior. *Social Psychiatry and Psychiatric Epidemiology, 42*(1), 79-86.

Tillfors, M., Persson, S., Willén, M., & Burk, W. J. (2012). Prospective links between social anxiety and adolescent peer relations. *Journal of Adolescence*, *35*, 1255–1263.

Topham, G. L., Hubbs-Tait, L., Rutledge, J. M., Page, M. C., Kennedy, T. S., Shriver, L. H., et al. (2011). Parenting styles, parental response to child emotion, and family emotional responsiveness are related to child emotional eating. *Appetite*, *56*, 261–264.

Tras, Z., Öztemel, K., & Baltacı, U. B. (2019). Role of Problematic Internet Use, Sense of Belonging and Social Appearance Anxiety in Facebook Use Intensity of University Students. *International Education Studies*, *12*(8). doi:10.5539/ies.v12n8p1

Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, *96*(3), 506–520.

Trompeter, N., Bussey, K., Hay, P., Scott Griffiths, S., Murray, S. B., Mond, J., Lonergan, A., Pike, K. M., & Mitchison, D. (2019). Fear of negative evaluation among eating disorders: Examining the association with weight/shape concerns in adolescence. *International Journal of Eating Disorders*, *52*(3), 261-269. doi: 10.1002/eat.23018.

Tucker, C. & C. Lewis (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, *38*(1), 1-10.

Tull, M. T., & Gratz, K. L. (2008). Further examination of the relationship between anxiety sensitivity and depression: The mediating role of experiential avoidance and difficulties engaging in goal-directed behavior when distressed. *Anxiety Disorders*, *22*, 199–210.

Tull, M. T., Gratz, K. L., & Lacroce, D. M. (2006). The role of anxiety sensitivity and lack of emotional approach coping in depressive symptom severity among a non-clinical sample of uncued panickers. *Cognitive Behaviour Therapy, 35*, 74–87.

Turk, C. L., Heimberg, R. G., Luterek, J. A., Mennin, D. S., & Fresco, D. M. (2005). Delineating emotion regulation deficits in generalized anxiety disorder: A comparison with social anxiety disorder. *Cognitive Therapy and Research*, *29*, 89–106.

Turner, H. M., Rose K. S. & Cooper, M.J. (2005). Parental bonding and eating disorder symptoms in adolescents: the meditating role of core beliefs. *Eating Behaviors, 6*, 113-118.

Tylka, T. L., Bergeron, D., & Schwartz, J. P. (2005). Development and psychometric evaluation of the Male Body Attitudes Scale (MBAS). *Body Image*, *2*(2), 161–175

Uji, M., Tanaka, N., Shono, M., & Kitamura, T. (2006). Factorial structure of the parental bonding instrument (PBI) in Japan: A study of cultural, developmental, and gender influences. *Child Psychiatry and Human Development, 37*, 115–132

Upadhyaya, S. K., Raval, C. M., Sharma, D. K., & Charan, J. (2016). Risk factors of social anxiety in medical college students. *Journal of Health Specialties*, *4*(3), 207-211.

Utschig, A. C, Presnell, K., Madeley, M., & Smits, J. J. (2010). An investigation of the relationship between fear of negative evaluation and bulimic psychopathology. *Eating Behaviors. 11,* 231–238.

Vaidyanathan, S., Patnaik Kuppili, P., & Menon, V. (2019). Eating Disorders: An Overview of Indian Research. *Indian Journal of Psychological Medicine,* 50-56.

Vandenbosch, L., & Eggermont, S. (2012). Understanding sexual objectification: A comprehensive approach toward media exposure and girls' internalization of beauty ideals, self-objectification, and body surveillance. *Journal of Communication*, *62*, 869-887.

Vandereycken, W. (2002). *Families of Patients with Eating Disorders*. In: C. G. Fairburn, & K. D. Brownell (Eds), Eating Disorders and Obesity: A Comprehensive Handbook (pp. 215-220). New York: Guilford Press.

Vander Wal, J. S., & Thomas, N. (2004). Predictors of body image dissatisfaction and disturbed eating attitudes and behaviors in African American and Hispanic girls. *Eating Behaviors*, *5,* 291–301.

Van Kleef, G. A. (2009). How emotions regulate social life. *Current Directions in Psychological Science, 18*, 184–188.

van Strien, T., Engels, R. C. M. E., Leuwe, J. V., & Snoek, H. M. (2005). The Stice model of overeating. Tests in clinical and non-clinical samples. *Appetite*, 45, 203– 213.

Vartanian, L. R., Smyth, J. M., Zawadzki, M. J., Heron, K. E., & Coleman, S. R. M. (2014). Early Adversity, Personal Resources, Body Dissatisfaction and Disordered Eating. *International Journal of Eating Disorder*, *47*, 620–629.

Vijayalakshmi, P., Thimmaiah, R., Nikhil Reddy, S. S., Kathyayani, B. V., Gandhi, S., BadaMath, S. (2017). Gender Differences in Body Mass Index, Body Weight Perception, weight satisfaction, disordered eating and Weight control strategies among Indian Medical and Nursing Undergraduates. *Invest Educ Enferm., 35*(3), 276-268.

Vincent, M. A., & McCabe, M. P. (2000). Gender differences among adolescents in family, and peer influences on body dissatisfaction, weight loss, and binge eating behaviors. *Journal of Youth and Adolescence*, *29,* 205–221.

Vranjes, I., Baillien, E., Vandebosch, H., Erreygers, S., & De Witte, H. (2018). The dark side of working online: Towards a definition and an Emotion Reaction model of workplace cyberbullying. *Computers in Human Behavior*, *69,* 324–334.

Waasdorp, T. E., & Bradshaw, C. P. (2015). The overlap between cyberbullying and traditional bullying. *Journal of Adolescent Health*, *56*(5), 483–488.

Wal, J. S., Gibbons, J. L., & Grazioso, M. (2008). The sociocultural model of eating disorder development: Application to a Guatemalan sample. *Eating Behaviors*, *9*, 277–284.

Wang, W.T., Hsu, W.Y., Chiu, Y.C., & Liang, C.W. (2012). The hierarchical model of social interaction anxiety and depression: The critical roles of fears of evaluation. *Journal of Anxiety Disorders*, *26*(1), 215–224.

Ward, A., Ramsay, R., Turnbull, S., Steele, M., Steele, H., & Treasure, J. (2001). Attachment in anorexia nervosa: a transgenerational perspective. *British Journal of Medical Psychology*, *74*(4), 497–505.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Weeks, J. W., Heimberg, R. G., & Rodebaugh, T. L. (2008). The Fear of Positive Evaluation Scale: assessing a proposed cognitive component of social anxiety. *Journal of Anxiety Disorders*, *22*, 44–55. http://dx.doi.org/10.1016/j.janxdis.2007.08.002

Weeks, J. W., Jakatdar, T. A., & Heimberg, R. G. (2010). Comparing and contrasting fears of positive and negative evaluation as facets of social anxiety. *Journal of Social and Clinical Psychology, 29,* 68-94. http://dx.doi.org/10.1521/jscp.2010.29.1.68

Weeks, J. W., Heimberg, R. G., Fresco, D. M., Hart, T. A., Turk, C. L., Schneier, F. R., et al. (2005). Empirical validation and psychometric evaluation of the brief fear of negative

evaluation scale in patients with social anxiety disorder. *Psychological Assessment, 17,* 179–190.

Weems, C. F., & Costa, N. M. (2005). Developmental differences in the expression of childhood anxiety symptoms and fears. *Journal of American Academy of Child and Adolescent Psychiatry, 44*, 656–663.

Weiller, E., Bisserbe, J. C., Boyer, P., Lépine, J. P., & Lecrubier, Y. (1996). Social phobia in general health care: an unrecognized, undertreated disabling disorder. *British Journal of Psychiatry, 168*, 169–174.

Wei, M., Vogel, D. L., Ku, T., & Zakalik, R. A. (2005). Adult attachment, affect regulation, negative mood, and interpersonal problems: The mediating roles of emotional reactivity and emotional cutoff. *Journal of Counseling Psychology*, *52,* 14–24.

Weinbach, N., Sher, H., & Bohon, C. (2018). Differences in Emotion Regulation Difficulties Across Types of Eating Disorders During Adolescence. *Journal of Abnormal Child Psychology*, *46*(6), 1351–1358. https://doi.org/10.1007/s10802-017-0365-7

Weisman, J. S., Rodebaugh, T. L., Limi, M. H., & Fernandez, K. C. (2015). Predicting Short-Term Positive Affect in Individuals with Social Anxiety Disorder: The Role of Selected Personality Traits and Emotion Regulation Strategies. *Journal of Anxiety Disorders, 34,* 53–62. doi:10.1016/j.janxdis.2015.05.012.

Werner, K., & Gross, J. J. (2010). Emotion Regulation and Psychopathology. A Conceptual Framework. In A. M. Kring, & D. M. Sloan (Eds.), *Emotion Regulation and Psychopathology. A Transdiagnostic Approach to Etiology and Treatment* (pp. 13-37). New York: Guilford Press.

Werner, K. H., Goldin, P. R., Ball, T. M., Heimberg, R. G., & Gross, J. J. (2011). Assessing emotion regulation in social anxiety disorder: The emotion regulation interview. *Journal of Psychopathology and Behavioral Assessment*, *33*, 346–354.

Wigderson, S., & Lynch, M. (2013). Cyber- and Traditional Peer Victimization: Unique Relationships with Adolescent Well-Being. *Psychology of Violence*, *3*(4), 297–309. https://doi.org/ 10.1037/a0033657.

Wilfley, D. E., Agras, W. S., & Taylor, C. B. (2013). Reducing the burden of eating disorders: a model for population-based prevention and treatment for university and college campuses. *International Journal of Eating Disorders*, *46*(5), 529–532.

http://dx.doi.org/10.1002/eat.22117.

Williford, A., Orsi, R., DePaolis, K. J., & Isen, D. (2018). Cyber and traditional peer victimization: Examining unique associations with children's internalizing difficulties. *Children and Youth Services Review*, *93*, 51–59.

Winton, E.C., Clark, D.M., & Edlemann, R.J. (1995). Social anxiety, fear of negative evaluation and the detection of negative emotion in others. *Behaviour Research and Therapy*, *33*(2), 193–196.

Wittchen, H.-U., & Jacobi, F. (2005). Size and burden of mental disorders in Europe: a critical review and appraisal of 27 studies. *European Neuropsychopharmacology*, *15*, 357–376.

Wolak, J., Mitchell, K. J., & Finkelhor, D. (2007). Does online harassment constitute bullying? An exploration of online harassment by known peers and online-only contacts. *Journal of Adolescent Health*, *41,* 51–58.

Wolz, I., Agüera, Z., Granero, R., Jiménez-Murcia, S., Gratz, K. L., Menchón J. M., & Fernández-Aranda, F. (2015). Emotion regulation in disordered eating: Psychometric properties of the Difficulties in Emotion Regulation Scale among Spanish adults and its interrelations with personality and clinical severity. *Frontiers in Psychology,* *6*(907). DOI: 10.3389/fpsyg.2015.00907

Wonderlich-Tierney, A. L., & Vander Wal, J. S. (2010). The effects of social support and coping on the relationship between social anxiety and eating disorders. *Eating Behaviors*, *11*, 85–91.

Wu, Y., Zhao, X., Li, Y., Ding, X., Yang, H., Bi, P., & Sun, Y. (2016). The risk and protective factors in the development of childhood social anxiety symptoms among Chinese children. *Psychiatry Research*, *240*, 103–109.

Xu, Y., Schneier, F., Heimberg, R. G., Princisvalle, K., Liebowitz, M. R., Shuai Wang, S., & Blanco, C. (2012). Gender differences in social anxiety disorder: Results from the national epidemiologic sample on alcohol and related conditions. *Journal of Anxiety Disorders, 26,* 12–19.

Yang, C. F., Gray, P., & Pope, H. G. Jr. (2005). Male body image in Taiwan versus the West: Yanggang Zhiqi meets the Adonis complex. *American Journal of Psychiatry*, *162,* 263–269.

Yen, C. F., Huang, M. F., Kim, Y. S., Wang, P. W., Tang, T. C., Yeh, Y. C., & Yang, P. (2013). Association between types of involvement in school bullying and different dimensions of anxiety symptoms and the moderating effects of age and gender in Taiwanese adolescents. *Child Abuse and Neglect*, *37*(4), 263–272.

Yonkers, K. A., Dyck, I. R., & Keller, M. B. (2001). An eight-year longitudinal comparison of clinical course and characteristics of social phobia among men and women. *Psychiatric Services*, *52*, 637–643.

Yuan, C., Lv, J., & VanderWeele, T. J. (2013). An Assessment of Health Behavior Peer Effects in Peking University Dormitories: A Randomized Cluster-Assignment Design for Interference. *PLoS ONE*, *8*(9). https://doi.org/10.1371/journal.pone.0075009

Zeeck, A., Stelzer, N., Linster, H. W., Joos, A., & Hartmann, A. (2011). Emotion and eating in binge eating disorder and obesity. *European Eating Disorders Review, 19,* 426–437. https://doi.org/10.1002/erv.1066

Zhong, J., Wang, A., Qian, M., Zhang, L., Gao, J., Yang, J., Li, B., & Chen, P. (2008). Shame, personality, and social anxiety symptoms in Chinese and American nonclinical samples: a cross-cultural study. *Depression and anxiety, 25,* 449–460.

Zimmermann, P., & Iwanski, A. (2014). Emotion regulation from early adolescence to emerging adulthood and middle adulthood: Age differences, gender differences, and emotion-specific developmental variations. *International Journal of Behavioral Development, 38*, 182–194. http://dx.doi.org/10.1177/0165025413515405.

Zucker, N. L., Ferriter, C., Best, S., & Brantley, A. (2005). Group parent training: A novel approach for the treatment of eating disorders. Eating Disorders: *The Journal of Treatment & Prevention*, *13*, 391–405.

Appendices

Appendix 1

Consent Form

Dear Students,

As part of my PhD research work, I am conducting a study to find out the *Social and Emotional Factors maintaining Social Anxiety and Comorbid Symptoms* among college students. So, I would request you to kindly participate in this study and to answer the questions asked in the following sections to the best of your knowledge.

The identity of the respondents will not be disclosed at any stage. All the information provided by the participants will be kept **confidential** and will only be used for research purpose. Your participation in this study is totally **voluntary.** There is no right or wrong answer. Please make sure that you answer each and every item.

I understand your time constraints, but, as you realize, without your help, it would not be possible to carry out this study. Therefore, I request you to kindly extend your cooperation.

Thanking you in advance.

Appendix 2

Demographic Details

Name (optional):_____

Age (in years): _____ Gender (M/F): _____

Batch: _____ Native Place: Metro/Urban/ Town/Village

Email id: _____

Phone No. (optional):_____ Date: _____

Appendix 3.

Social Interaction Anxiety Scale (SIAS)

For each item, please circle the number to indicate the degree to which you feel the statement is characteristic or true for you.

Sr. No.	Characteristic	Not at all	Slightly	Moderately	Very	Extremely
01.	I get nervous if I have to speak with someone in authority (teacher, boss).	0	1	2	3	4
02.	I have difficulty making eye contact with others.	0	1	2	3	4
03.	I become tense if I have to talk about myself or my feelings.	0	1	2	3	4
04.	I find it difficult to mix comfortably with the people I work with.	0	1	2	3	4
05.	I find it easy to make friends my own age.	0	1	2	3	4
06.	I tense up if I meet an acquaintance in the street.	0	1	2	3	4
07.	When mixing socially, I am uncomfortable.	0	1	2	3	4
08.	I feel tense when I am alone with just one person.	0	1	2	3	4
09.	I am at ease meeting people at parties, etc.	0	1	2	3	4
10.	I have difficulty talking with other people.	0	1	2	3	4
11.	I find it easy to think of things to talk about.	0	1	2	3	4
12.	I worry about expressing myself in case I appear awkward.	0	1	2	3	4
13.	I find it difficult to disagree with another's point of view.	0	1	2	3	4
14.	I have difficulty talking to attractive persons of the opposite sex.	0	1	2	3	4
15.	I find myself worrying that I won't know what to say in social situations.	0	1	2	3	4
16	I am nervous mixing with people I don't know well.	0	1	2	3	4
17	I feel I'll say something embarrassing when talking.	0	1	2	3	4
18	When mixing in a group, I find myself worrying I will be ignored.	0	1	2	3	4
19	I am tense mixing in a group.	0	1	2	3	4
20	I am unsure whether to greet someone I know only slightly.	0	1	2	3	4

Appendix 4.

Parental Bonding Instrument-Mother (PBI-M)

This questionnaire lists various attitudes and behaviors of mothers. As you remember your **MOTHER** in **your first 16 years**, please tick the most appropriate box next to each question.

Sr. No.	Mother's Attitude &/or Behavior	Very likely	Moderately Likely	Moderately unlikely	Very unlikely
1	Spoke to me in a warm and friendly voice.	0	1	2	3
2	Did not help me as much as I needed.	0	1	2	3
3	Let me do those things I liked doing.	0	1	2	3
4	Seemed emotionally cold to me.	0	1	2	3
5	Appeared to understand my problems and worries.	0	1	2	3
6	Was affectionate to me.	0	1	2	3
7	Liked me to make my own decisions.	0	1	2	3
8	Did not want me to grow up.	0	1	2	3
9	Tried to control everything I did.	0	1	2	3
10	Invaded my privacy.	0	1	2	3
11	Enjoyed talking things over with me.	0	1	2	3
12	Frequently smiled at me.	0	1	2	3
13	Tended to baby me.	0	1	2	3
14	Did not seem to understand what I needed or wanted.	0	1	2	3
15	Let me decide things for myself.	0	1	2	3
16	Made me feel I wasn't wanted.	0	1	2	3
17	Could make me feel better when I was upset.	0	1	2	3
18	Did not talk with me very much.	0	1	2	3
19	Tried to make me feel dependent on her/him.	0	1	2	3
20	Felt I could not look after myself unless she/he was around.	0	1	2	3
21	Gave me as much freedom as I wanted.	0	1	2	3
22	Let me go out as often as I wanted.	0	1	2	3
23	Was overprotective of me	0	1	2	3
24	Did not praise me	0	1	2	3
25	Let me dress in any way I pleased.	0	1	2	3

Appendix 5.

Parental Bonding Instrument-Father (PBI-F)

This questionnaire lists various attitudes and behaviors of Fathers. As you remember your **FATHER** in **your first 16 years**, please tick the most appropriate box next to each question.

Sr. No.	Father's Attitude &/or Behavior	Very likely	Moderately likely	Moderately unlikely	Very unlikely
1	Spoke to me in a warm and friendly voice.	0	1	2	3
2	Did not help me as much as I needed.	0	1	2	3
3	Let me do those things I liked doing	0	1	2	3
4	Seemed emotionally cold to me	0	1	2	3
5	Appeared to understand my problems and worries	0	1	2	3
6	Was affectionate to me	0	1	2	3
7	Liked me to make my own decisions	0	1	2	3
8	Did not want me to grow up	0	1	2	3
9	Tried to control everything I did	0	1	2	3
10	Invaded my privacy	0	1	2	3
11	Enjoyed talking things over with me	0	1	2	3
12	Frequently smiled at me	0	1	2	3
13	Tended to baby me	0	1	2	3
14	Did not seem to understand what I needed or wanted	0	1	2	3
15	Let me decide things for myself	0	1	2	3
16	Made me feel I wasn't wanted	0	1	2	3
17	Could make me feel better when I was upset	0	1	2	3
18	Did not talk with me very much	0	1	2	3
19	Tried to make me feel dependent on her/him	0	1	2	3
20	Felt I could not look after myself unless she/he was around	0	1	2	3
21	Gave me as much freedom as I wanted	0	1	2	3
22	Let me go out as often as I wanted	0	1	2	3
23	Was overprotective of me	0	1	2	3
24	Did not praise me	0	1	2	3
25	Let me dress in any way I pleased	0	1	2	3

Appendix 6.

Revised Peer Experiences Questionnaire

Please read each item carefully and circle the number to the right of the statement that best describes **your feelings towards your peers** and **their behavior towards you** according to the following scale:

0= Never 1= about once a month

2= about 2-3 times a month 3= about once a week

4= A few times a week

Here peer (Latin for equal) refers to your friends, batch mates, class mates, fellow hostellers and so on.

Sr. No.	Behavior of friends	0	1	2	3	4
1	A peer chased me like he or she was really trying to hurt me.					
2	A peer threatened to hurt or beat me up.					
3	A peer hit, kicked, or pushed me in a mean way.					
4	Some peers left me out of an activity or conversation that I really wanted to be included in.					
5	A peer did not invite me to a party or other social event even though they knew that I wanted to go.					
6	Some peers left me out of what they were doing.					
7	A peer tried to damage my social reputation by spreading rumors about me.					
8	A peer/s gossiped about me so that others would not like me.					
9	A peer said mean things about me so that people would think that I was a loser.					
10	A peer helped me when I was having a problem.					
11	Peer/s was/were nice and friendly to me when I needed help.					
12	A peer helped me join into a group or conversation.					
13	A peer teen stuck up for me when I was being picked on or excluded.					
14	A peer spent time with me when I had no one else to hang out with.					

Appendix 7.

Aversive Peer Experiences in Social Networking Sites

Please read each item carefully and circle the number to the right of the statement that best describes your **virtual experience** and **interactions with your friends online** in the **past 2 months.**

Sr. No.	A peer….	Never	Once or twice	Once a week	Few times a week	Many times a week
1	……I wanted to be friends with on a Social Networking Site (SNS) ignored my friend request.	1	2	3	4	5
2	…….removed me from his/her friend list on a SNS.	1	2	3	4	5
3	……made me feel bad by not listing me in his his/her "Top Friends" list on a SNS (Facebook).	1	2	3	4	5
4	……posted mean things about me on a public portion of a SNS	1	2	3	4	5
5	……posted pictures of me on a SNS that made me look bad.	1	2	3	4	5
6	……spread rumors about me or revealed secrets I had told them using public posts on a SNS	1	2	3	4	5
7	……..sent me a mean message on SNS	1	2	3	4	5
8	…….pretended to be me on a SNS and did things to make me look bad/damage my friendships	1	2	3	4	5
9	……..prevented me from joining a group on a SNS that I really wanted to be part of.	1	2	3	4	5
10	I found out that I was excluded from a party or social event over a SNS.	1	2	3	4	5
11	……..I was dating, broke up with me using a SNS.	1	2	3	4	5
12	……..made me jealous by "messing" (posting pictures together, writing messages on their Facebook wall etc) with my girlfriend/boyfriend on a SNS	1	2	3	4	5

Appendix 8.

Eating Attitudes Test-26 (EAT-26)

Please read each item carefully and circle the number to the right of the statement that best describes your **eating concerns and behaviors**.

Sr. No.	Eating Concerns & Behaviors	Never	Rarely	Sometimes	Often	Usually	Always
1	Am terrified about being overweight.	0	1	2	3	4	5
2	Avoid eating when I am hungry.	0	1	2	3	4	5
3	Find myself preoccupied with food.	0	1	2	3	4	5
4	Have gone on eating binges where I feel that I may not be able to stop.	0	1	2	3	4	5
5	Cut my food into small pieces.	0	1	2	3	4	5
6	Aware of the calorie content of foods that I eat.	0	1	2	3	4	5
7	Particularly avoid food with high carbohydrate content (i.e. bread, rice, potatoes etc.)	0	1	2	3	4	5
8	Feel that others would prefer if I ate more.	0	1	2	3	4	5
9	Vomit after I have eaten.	0	1	2	3	4	5
10	Feel extremely guilty after eating.	0	1	2	3	4	5
11	Am preoccupied with a desire to be thinner.	0	1	2	3	4	5
12	Think about burning up calories when I exercise.	0	1	2	3	4	5
13	Other people think that I am too thin.	0	1	2	3	4	5
14	Am preoccupied with the thought of having fat on my body.	0	1	2	3	4	5
15	Take longer than others to eat my meals.	0	1	2	3	4	5
16	Avoid foods with sugar in them.	0	1	2	3	4	5
17	Eat diet foods.	0	1	2	3	4	5
18	Feel that food controls my life.	0	1	2	3	4	5
19	Display self-control around food.	0	1	2	3	4	5
20	Feel that others pressure me to eat.	0	1	2	3	4	5
21	Give too much time and thought to food.	0	1	2	3	4	5
22	Feel uncomfortable after eating sweets.	0	1	2	3	4	5
23	Engage in dieting behavior.	0	1	2	3	4	5
24	Like my stomach to be empty.	0	1	2	3	4	5
25	Have the impulse to vomit after meals.	0	1	2	3	4	5
26	Enjoy trying new rich foods.	0	1	2	3	4	5

Appendix 9.

Brief Fear of Negative Evaluation (BFNE)

Read each of the following statements carefully and indicate **how characteristic it is of you** by ticking the appropriate column adjacent to each statement.

Sr. No.	Statement	Not at all	Slightly	Moderately	Very	Extremely
1	I worry about what other people will think of me even when I know it doesn't make any difference.	1	2	3	4	5
2	I am frequently afraid of other people noticing my shortcomings.	1	2	3	4	5
3	I am afraid that others will not approve of me.	1	2	3	4	5
4	I am afraid that other people will find fault with me.	1	2	3	4	5
5	When I am talking to someone, I worry about what they may be thinking about me.	1	2	3	4	5
6	I am usually worried about what kind of impression I make.	1	2	3	4	5
7	Sometimes I think I am too concerned with what other people think of me.	1	2	3	4	5
8	I often worry that I will say or do wrong things.	1	2	3	4	5

Appendix 10.

Social Appearance Anxiety Scale (SAAS)

Read each of the following statements carefully and indicate **how characteristic it is of you** by ticking the appropriate number.

Sr. No.	Statements	Not at all	Slightly	Moderately	Very	Extremely
1	I feel comfortable with the way I appear to others.	0	1	2	3	4
2	I feel nervous when having my picture taken.	0	1	2	3	4
3	I get tense when it is obvious people are looking at me.	0	1	2	3	4
4	I am concerned people would not like me because of the way I look.	0	1	2	3	4
5	I worry that others talk about flaws in my appearance when I am not around.	0	1	2	3	4
6	I am concerned people will find me unappealing because of my appearance.	0	1	2	3	4
7	I am afraid that people find me unattractive.	0	1	2	3	4
8	I worry that my appearance will make life more difficult for me.	0	1	2	3	4
9	I am concerned that I have missed out on opportunities because of my appearance.	0	1	2	3	4
10	I get nervous when talking to people because of the way I look.	0	1	2	3	4
11	I feel anxious when other people say something about my appearance.	0	1	2	3	4
12	I am frequently afraid I would not meet others' standards of how I should look.	0	1	2	3	4
13	I worry people will judge the way I look negatively.	0	1	2	3	4
14	I am uncomfortable when I think others are noticing flaws in my appearance.	0	1	2	3	4
15	I worry that a romantic partner will/would leave me because of my appearance.	0	1	2	3	4
16	I am concerned that people think I am not good looking.	0	1	2	3	4

Appendix 11.

Body Esteem Satisfaction (BES) Scale

Indicate how often you agree with the following statements by circling the appropriate number beside each statement.

Sr. No.	Statements	Never	Rarely	Sometimes	Often	Always
1	I like how I look in pictures.	0	1	2	3	4
2	Other people consider me good looking.	0	1	2	3	4
3	I am proud of my body.	0	1	2	3	4
4	I am pre-occupied with trying to change my body weight.	0	1	2	3	4
5	I think my appearance will help me get a job.	0	1	2	3	4
6	I like what I see when I look in the mirror.	0	1	2	3	4
7	There are lots of things I would change about my looks if I could.	0	1	2	3	4
8	I am satisfied with my weight.	0	1	2	3	4
9	I wish I looked better.	0	1	2	3	4
10	I really like what I weigh.	0	1	2	3	4
11	I wish I looked like someone else.	0	1	2	3	4
12	People my own age like my looks.	0	1	2	3	4
13	My looks upset me.	0	1	2	3	4
14	I am as nice looking as most people.	0	1	2	3	4
15	I am pretty happy about the way I look.	0	1	2	3	4
16	I feel I weigh the right amount for my height.	0	1	2	3	4
17	I feel ashamed of how I look.	0	1	2	3	4
18	Weighing myself depresses me.	0	1	2	3	4
19	My weight makes me unhappy.	0	1	2	3	4
20	My looks help me to get dates.	0	1	2	3	4
21	I worry about the way I look.	0	1	2	3	4
22	I think I have good body.	0	1	2	3	4
23	I am looking as nice as I had like to be.	0	1	2	3	4

Appendix 12.

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following 17 statements apply to you by writing the appropriate number from the scale below in the box alongside each item.

1	2	3	4	5
Almost Never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Almost always (91-100%)

Sr. No	Statements	1	2	3	4	5
1	I pay attention to how I feel.					
2	I am attentive to my feelings.					
3	I care about what I am feeling.					
4	When I am upset, I acknowledge my emotions.					
5	When I am upset, I become angry with myself for feeling that way.					
6	When I am upset, I become embarrassed for feeling that way.					
7	When I am upset, I believe that my feelings are valid and important.					
8	When I am upset, I have difficulty focusing on other things.					
9	When I am upset, I can still get things done.					
10	When I am upset, I become irritated with myself for feeling that way.					
11	When I am upset, I have difficulty getting work done.					
12	When I am upset, I feel guilty for feeling that way.					
13	When I am upset, I have difficulty concentrating.					
14	When I am upset, I have difficulty thinking about anything else.					
15	When I am upset, I take time to figure out what I am really feeling.					
16	When I am upset, I feel ashamed for feeling that way.					
17	When I am upset, I feel like I am weak.					

Appendix 13.

Beck's Depression Inventory (BDI)

This scale consists of a number of sentences that describe different **feelings and emotions** which you may have felt for **the past week** including today. Read each item and then circle the appropriate answer.

1.

0 I do not feel sad.

1 I feel sad

2 I am sad all the time and I can't snap out of it.

3 I am so sad and unhappy that I can't stand it.

2.

0 I am not particularly discouraged about the future.

1 I feel discouraged about the future.

2 I feel I have nothing to look forward to.

3 I feel the future is hopeless and that things cannot improve.

3.

0 I do not feel like a failure.

1 I feel I have failed more than the average person.

2 As I look back on my life, all I can see is a lot of failures.

3 I feel I am a complete failure as a person.

4.

0 I get as much satisfaction out of things as I used to.

1 I don't enjoy things the way I used to.

2 I don't get real satisfaction out of anything anymore.

3 I am dissatisfied or bored with everything.

5.

0 I don't feel particularly guilty

1 I feel guilty a good part of the time.

2 I feel quite guilty most of the time.

3 I feel guilty all of the time.

6.

0 I don't feel disappointed in myself.

1 I am disappointed in myself.

2 I am disgusted with myself.

3 I hate myself.

7.

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

8.

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

9.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

10.

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

11.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

12.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

13.

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

4 I have no appetite at all anymore.

Appendix 14

Positive Affect and Negative Affect Scale (PANAS)

This scale consists of a number of words that describe different **feelings and emotions**. Read each item and then list the number from the scale below next to each word. Indicate to what extent you have felt this way in the **past few weeks.**

1	**2**	**3**	**4**	**5**
very slightly or not at all	a little	Moderately	quite a bit	extremely

_____ 1. Interested
_____ 2. Distressed
_____ 3. Excited
_____ 4. Upset
_____ 5. Strong
_____ 6. Guilty
_____ 7. Scared
_____ 8. Hostile
_____ 9. Enthusiastic
_____ 10. Proud
_____ 11. Irritable
_____ 12. Alert
_____ 13. Ashamed
_____ 14. Inspired
_____ 15. Nervous
_____ 16. Determined
_____ 17. Attentive
_____ 18. Jittery (nervous or unable to relax)
_____ 19. Active
_____ 20. Afraid

Appendix 15

Table: Master Correlation Table

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.

SA-Social Interaction Anxiety. EAT-Disordered eating. MC-Mother's care. MOP-Mother's denial of psychological autonomy. MAT- Mother's granting of behavioral freedom. FC-Father's care. FOP-Father's denial of psychological autonomy. FAT- Father's granting of behavioral freedom. Attri-Satisfaction with other's evaluation of one's body. Wt-Satisfaction with weight. App-Satisfaction with appearance. EA-Lack of emotional awareness. NA-Non-acceptance of emotions. Goals-Difficulties with goal-directed behavior. BFNE-Fear of negative evaluation. SAAS-Social appearance anxiety

	SA	EAT	BFNE	SAAS	BDI	Attri	Wt	App	RPV	PRO	OV	REP	OPV	MC	MFree	MAT	FC	Ffree	FAT	EA	NA	Goals
SA	1	.228**	.571**	.526**	.425**	-.265**	-.156**	.041	.354**	.148**	.081	.213**	.160**	-.290**	-.180**	.134**	-.196**	-.136**	.039	.225**	.299**	.178**
EAT	.228**	1	.317**	.392**	.293**	-.100*	-.209**	.109*	.160**	.010	.205**	.180**	.123*	-.145**	-.017	.065	-.082	-.048	.040	.972**	.122*	.102*
BFN	.571**	.317**	1	.576**	.432**	-.200**	-.154**	.042	.310**	.029	.125*	.201**	.100*	-.194**	- .142**	.101*	-.181**	-.134**	-.008	.319**	.358**	.276**
SA	.526**	.392**	.576**	1	.491**	-.291**	-.203**	.098*	.306**	.061	.277**	.262**	.231**	-.241**	-.108*	.143**	-.201**	-.083	.095	.384**	.358**	.161**
BDI	.425**	.293**	.432**	.491**	1	-.196**	-.129**	.025	.303**	.102*	.286**	.299**	.271**	-.294**	-.178**	.158**	-.292**	-.175**	.094	.303**	.328**	.273**
Attri	-.265**	-.100*	-.200**	-.291**	-.196**	1	.380**	.289**	-.121*	-.126*	.099*	.099*	.014	.075	.084	.037	.110*	.019	.166**	-.115*	-.017	-.099*
Wt.	-.156**	-.209**	-.154**	-.203**	-.129**	.380**	1	.314**	-.110*	.033	-.012	-.035	-.064	.068	.015	-.034	.137**	.098*	.026	-.224**	-.058	-.096
App	.041	.109*	.042	.098*	.025	.289**	.314**	1	.075	.018	.085	.100*	.051	-.007	.018	-.008	.021	.059	.034	.085	.122*	.000
RPV	.354**	.160**	.310**	.306**	.303**	-.121*	-.110*	.075	1	.191**	.299**	.452**	.357**	-.218**	-.137**	.110*	-.198**	-.113*	.106*	.150**	.252**	.082
PRO	.148**	.010	.029	.061	.102*	-.126*	.033	.018	.191**	1	.053	.146**	.157**	-.189**	-.191**	.040	-.123*	-.076	.016	-.001	.065	.011
OV	.081	.205**	.125*	.277**	.286**	.099*	-.012	.085	.299**	.053	1	.452**	.458**	-.271**	-.175**	.190**	-.273**	-.176**	.261**	.199**	.182**	.036
REP	.213**	.180**	.201**	.262**	.299**	.099*	-.035	.100*	.452**	.146**	.452**	1	.484**	-.229**	-.092	.076	-.146**	-.135**	.167**	.182**	.205**	.076
OP	.160**	.123*	.100*	.231**	.271**	.014	-.064	.051	.357**	.157**	.458**	.484**	1	-.246**	-.136**	.185**	-.206**	-.162**	.215**	.110*	.182**	.069
MC	-.290**	-.145**	-.194**	-.241**	-.294**	.075	.068	-.007	-.218**	-.189**	-.271**	-.229**	-.246**	1	.388**	-.264**	.604**	.394**	-.297**	-.120*	-.170**	-.056
Mfr	-.180**	-.017	-.142**	-.108*	-.178**	.084	.015	.018	-.137**	-.191**	-.175**	-.092	-.136**	.388**	1	-.302**	.296**	.489**	-.193**	-.005	-.019	-.063
MA	.134**	.065	.101*	.143**	.158**	.037	-.034	-.008	.110*	.040	.190**	.076	.185**	-.264**	-.302**	1	-.213**	-.220**	.476**	.058	.186**	.143**
FC	-.196**	-.082	-.181**	-.201**	-.292**	.110*	.137**	.021	-.198**	-.123*	-.273**	-.146**	-.206**	.604**	.296**	-.213**	1	.486**	-.166**	-.071	-.125*	-.062
Ffre	-.136**	-.048	-.134**	-.083	-.175**	.019	.098*	.059	-.113*	-.076	-.176**	-.135**	-.162**	.394**	.489**	-.220**	.486**	1	-.403**	-.039	-.128**	-.058
FAT	.039	.040	-.008	.095	.094	.166**	.026	.034	.106*	.016	.261**	.167**	.215**	-.297**	-.193**	.476**	-.166**	-.403**	1	.029	.232**	.068
EA	.225**	.972**	.319**	.384**	.303**	-.115*	-.224**	.085	.150**	-.001	.199**	.182**	.110*	-.120*	-.005	.058	-.071	-.039	.029	1	.104*	.124*
NA	.299**	.122*	.358**	.358**	.328**	-.017	-.058	.122*	.252**	.065	.182**	.205**	.182**	-.170**	-.019	.186**	-.125*	-.128**	.232**	.104*	1	.302**
Goal	.178**	.102*	.276**	.161**	.273**	-.099*	-.096	.000	.082	.011	.036	.076	.069	-.056	-.063	.143**	-.062	-.058	.068	.124*	.302**	1