A Multidimensional Study of The Correlation Between Perfectionism, Self-Efficacy, Distress Tolerance and Binge Eating

Debra A. Migliore\textsuperscript{1*} and Daria B. Napierkowski\textsuperscript{2*}

\textsuperscript{1}Associate Professor, Harriet Rothkopf Heilbrunn School of Nursing, Long Island University, 1 University Plaza, Brooklyn, NY, 11201

\textsuperscript{2}Associate Professor, Department of Nursing, William Paterson University, 300 Pompton Road, Wayne, NJ 07470

Abstract

Objective

To explore relationships between perfectionism (P), eating self-efficacy (ESE), and distress tolerance (DT) and binge eating (BE), and the degree to which these three variables predict BE.

Method

A cross-sectional correlation designs. Women who screened positive for binge eating responded to online survey questions to measure binge eating, perfectionism, distress tolerance and eating self-efficacy.

Results

Relationships between BE and: P [self-oriented perfectionism and socially prescribed perfectionism], and ESE were supported. ESE resulted as the predictor of BE.

Conclusion

Eating Self-efficacy was found as a predictor of binge eating. Eating self-efficacy involves one’s confidence in their ability to maintain healthy eating behaviors. Therefore, strategies aimed at improving clients’ confidence in their ability to assume healthy eating behaviors and avoid binge eating will be the most successful.

Keywords: Binge eating; Obesity; Eating self-efficacy; Perfectionism; Distress tolerance.

Introduction

Overweight and obesity are of primary concern. The health risks resulting from overweight and obesity are well documented in the literature. The health conditions associated with obesity include cardiovascular disease, diabetes, stroke, and some types of cancer. In addition to being associated with a lower quality of life, the Center for Disease Control\cite{1} credits obesity as being associated with cardiovascular disease which is the leading cause of death nationally.

Seventy percent of all adults over 20 years of age were reported to be overweight by the National Health and Nutrition Examination Survey (NHANES) conducted during 2013 to 2014. Among those classified as overweight, 37.7\% were obese.\cite{2} This NHANES study represents the most recent study that included overweight prevalence statistics as well as obesity. More recent prevalence statistics show a slight increase in obesity: 39.8\% of adults over age 20 who were reported obese during the years 2015 and 2016.\cite{1} A body mass index (BMI) of greater than or equal to 25 is considered overweight, while a BMI of greater than or equal to 30.0 is considered obese.\cite{3}

Overweight and obesity occur when the number of calories consumed exceeds the number of calories used by the body.\cite{4} An over-evaluation of weight, shape and eating\cite{5} as well as associations with perfectionism\cite{6} have been well documented as the core psychopathology of all eating disorders including binge eating. This shared psychopathology was first identified in the seminal work of Fairburn, Cooper and Shafran\cite{7} who further posited that dietary restraint which includes an all or none approach to overeating interacts with other factors to help perpetuate the eating disorder. Binge eating is the most common eating disorder\cite{8} Binge eaters do not practice the compensatory acts used by those with bulimia nervosa, and so will become overweight or obese if the bingeing continues. Although binge eating is understood to be a major health risk, its predictors require further exploration. Kessler et al (2016) have reported that there is still more to be studied about what leads to binge
The purpose of this study was to explore relationships between the variables of perfectionism, distress tolerance and eating self-efficacy with binge eating. The seminal definitions for these variables are stated below.

Perfectionism (P) is theoretically defined in the seminal work of Hewitt, Flett, Turnbull-Donovan & Mikail[9] as an individual holding and pursuing excessively high and unrealistic standards, focusing on and overemphasizing one’s own failures, evaluating oneself in a very self-critical way, and possessing an all or none dichotomous thinking pattern in which total success or total failure are comprehended as the only possible choices. Perfectionism is basically dichotomous all or none thinking where healthy eating is not good enough, but perfect eating is imperative.

Distress tolerance (DT) was theoretically defined in the seminal work of Linehan[10] as an individual’s ability to tolerate negative emotional states. Therefore, a person with low tolerance for distress will be more prone to binge eat.

Eating Self-efficacy (ESE) was theoretically defined in the seminal work of Glynn and Ruderman[11] as an individual’s belief in his or her ability to engage in healthy eating behaviors that result in or maintain a healthy weight.

Literature Review

Wang et al [5] conducted a study examining the relationship between the major symptoms of binge eating and determined an over evaluation of weight and shape to be central determinants of the disorder of binge eating. Olguin et al[12] reviewed studies related to binge eating disorder and medical conditions. It was found that binge eating is related to obesity, diabetes, hypertension, dyslipidemias, pain and sleeping disorders[13] These finding indicate that patients with risk disorders should receive comprehensive medical evaluations for binge eating.

Patients with binge eating are more likely to suffer from complications of obesity related disorders such as diabetes. A meta-analysis by Brownley, et al[13] discovered that cognitive behavioral therapy helped to reduce weight in patients who binge eat. Guided cognitive behavioral therapy was found to help patients sustain remission from binge eating with response during the first weeks of treatment.[14] Rapid response was identified as a 65% reduction in binge eating in the first 4 weeks of treatment. Emotional regulation strategies were found to significantly lower the likelihood of binge eating.[15] Strategies to regulate emotions were identified as very important foci in the treatment of binge eating.[15]

A longitudinal treatment study by Bodell, et al[16] found that increasing momentary distress tolerance results in lower binge eating tendencies in adults who binge eat. These findings suggest that therapies aimed at improving distress tolerance may be effective in improving eating disorder pathology.[16] Barbee and Timmerman [17] found a relationship between eating self-efficacy and a reduction in the number of calories ingested during binge eating. Treatment aimed at improving eating self-efficacy may be helpful in reducing binge eating behavior.[17]

Methods

Participants were female adult binge eaters, 18 years of age and older; who responded to an online survey. Participants were recruited using flyers, email, hospital newsletter, and a letter published in a professional magazine with a distribution of 1 million readers. Participants were recruited in multiple ways to ensure an adequate sample size of binge eaters. According to Cohen’s seminal work,[18] in a multiple regression correlation analysis with criterion alpha set at .05, having 3 predictors and assuming a medium effect size, 76 participants would be sufficient in order to reach a desired power of .80.

Participants met the following inclusion criteria: (1) females age 18 or older and (2) able to read and write English. Participants were excluded from the study if they (1) did not have access to a computer or (2) screened out for binge eating. Those that met inclusion criteria (N=126) were females, 18 years and older, who identified themselves as binge eaters through the online surveys. The sample was limited to females since perfectionistic thinking about one’s shape is a common issue with females beginning with adolescence.[19] Researchers have studied binge eating, [20] binge eating and obesity,[21] binge eating and overweight,[21] perfectionism and binge eating,[22] distress tolerance with binge eating,[1,6] and eating self-efficacy and binge eating[23] in samples of female participants. The sample was not intentionally limited to nurses, but due to the recruitment method, the sample was primarily nurses. Those who identified themselves as binge eating women and non-binge eating women did not vary significantly on the occupation of nursing.

Conceptual Model

Marlatt and Gordon’s Relapse Prevention Model[24] describes a mechanism in which high risk situations, coping resources, self-efficacy and the abstinence violation effect (AVE) are related to the addictive behavior, binge eating. AVE influences whether a short-term lapse of eating one cookie would result in a full-blown relapse into binge eating. Binge eating is associated with certain triggers[25] such as high-risk situations[24] represented by perfectionism in this study), coping resources [represented by distress tolerance], and (eating) self-efficacy.

Objectives

This study tested the following four hypotheses (See Figure 1). Perfectionism is directly related to binge eating in women who binge eat; Distress Tolerance is inversely related to binge eating in women who binge eat; Eating self-efficacy is inversely related to binge eating in women who binge eat. In addition to the 3 simple hypotheses, a multiple regression hypothesis was also tested: perfectionism, distress tolerance and eating self-efficacy predict...
A Multidimensional Study of The Correlation Between Perfectionism, Self-Efficacy, Distress Tolerance and Binge Eating

**Instruments**

Four different validated instruments were used to measure the variables explored in this study. The biographic questionnaire also captured the participant’s self-reported height and weight.

Eating Disorder Examination-Questionnaire 6.0. The original tool was developed as an interview in 1993 by Fairburn and Cooper and was named the Eating Disorder Examination (EDE) [28]. The EDE was updated and validated by Fairburn and Beglin and renamed the EDE-Q 6.0 in 2008. The EDE-Q 6.0 is a self-report version of the EDE that measures eating disorder pathology over the past 28 days across four dimensions: restraint, eating concern, shape concern and weight concern. Key behavioral features are also available as individual items which are answered as frequencies, and as number of episodes or days, depending on the question. The whole tool measured eating disorders while Q14 & 15 are the 2 items specific to binge eating. Question 14 measures binge eating in events, while question 15 measures binge eating days, as individual frequency scores. Subscale scores reflect severity of eating disorder pathology and are answered on a 7-point Likert scale, ranging from 0 to 6.

Multidimensional Perfectionism Scale. Hewitt and Flett originally developed the Multidimensional Perfectionism Scale (MPS) [9] in 1991. Perfectionism was measured by this Multidimensional Perfectionism Scale (Hewitt & Flett, 1991) a 45-item instrument that measures three dimensions of perfectionism: self-oriented (SOP), other-oriented (OOP) and socially-prescribed perfectionism (SPP). Each of the three subscales consists of 15 items. Participants respond to these items using a 1-7 Likert scale; selection of 1 signifies no agreement and selection of 7, strong disagreement.

Distress Tolerance Scale. Distress tolerance (DT) involves an individual’s ability to tolerate negative emotional states and is represented by an overall score on the Distress Tolerance Scale (DTS).[26] The DTS used to measure distress tolerance in this study was originally developed by Simons and Gaher[26] in 2005. The four subscales include tolerance (the individual’s perceived ability to tolerate distress), absorption (the degree to which an individual is consumed by negative emotions), appraisal (the individual’s subjective assessment of the distress as tolerable or intolerable), and regulation (the degree of urgency an individual feels to do something to alleviate the negative emotion). [26] A 5-point Likert scale was used to rate agreement to the items with the endpoints: strongly agree (5) and strongly disagree (1).

Eating self-efficacy was measured by the Weight Efficacy Lifestyle Questionnaire (WEL) which was originally developed by Clark, et al[27] and further validated in numerous studies. The WEL is a 20-item scale consisting of a total scale with five subscales: negative emotions, availability, social pressure, physical discomfort, and positive activities.
Approvals from the Institutional Review Board (IRB) of the affiliated university as well as from the Community Hospital IRB were obtained prior to data collection. An informed consent document was uploaded to the study website. Participants were only able to proceed to the study survey if they indicated having read the consent document and consented to participate in the research study. Logging was turned off so that neither the participant’s email address nor the IP address was captured. The anonymity that existed in this mode of data collection also protected the integrity of the data by decreasing participants’ inhibitions to answer accurately, honestly, and without reservation. Researchers identify the sensitive nature of binge eating which often occurs in secrecy.[30]

Data Analysis

A total of 820 individuals responded to the web site. A total of 433 respondents had agreed to consents, indicated they were female and completed their survey sessions. Those female respondents who answered “yes” to the screening question for binge eating totaled 139, while those answering “no” to the screening question numbered 293. The working sample eventually was further reduced by 13 (N = 126) for contradiction of the screening question. To be admitted into the website, respondents had to answer “yes” to the screening question, “Did you binge eat on average, once a week in the last month?” However, 13 respondents selected zero for the number of days that they engaged in binge eating in the last 28 days. These cases were deleted from analyses. The total number that was analyzed for comparative purposes of 419 comprised of 293 non-binge eating women, and 126 women who binge eat. One of the non-binge eating women entered an erroneous value for weight, and so was excluded from the analysis on BMI, reducing the analysis on BMI to 292 non-binge eating women compared with 126 binge eating women to an overall total number compared of 418.

Sixty-five and one tenth percent (of the Sample 65.1%) reported binge eating between 1 to 7 days (n = 82); 27.8% (n =35) reported binge eating for 8 to 20 days; and 7.1% (n = 12) reported binge eating for greater than 20 days.

Pearson’s product-moment correlations were used to examine the relationships between the dependent variable and the independent variables of perfectionism, distress tolerance and eating self-efficacy. Spearman’s Rho correlations were used to examine the relationships between the dependent variable and the categorical demographic variables. One-tailed correlation analyses were used for all variables based on hypothesized directional relationships with a significance level of .05.

Results

All four hypotheses were supported. The first three were simple correlations and were statistically significant. The fourth hypothesis supported eating self-efficacy as a predictor of binge eating.

Perfectionism, hypothesis one, was directly related to binge eating in women. As theorized, high self-oriented perfectionism (SOP; r =.16, p<.04), and socially prescribed perfectionism (SPP; r = .25, p <.01) are directly related to binge eating in women who binge eat. Tolerance, hypothesis two was inversely related to binge eating in women. A Pearson product-moment correlation coefficient was obtained by testing the hypothesized relationship between distress tolerance and binge eating. Statistically significant negative relationships were observed, which supported, as theorized, that distress tolerance is inversely related to the number of binge eating days (DTS; r = - .20, p < .05). Even though these correlations (.16, .25 and -.20) are significant (p <.05), they are very weak in terms of strength.

Eating self-efficacy, hypothesis three, is inversely related to binge eating in women. A Pearson product-moment correlation coefficient was obtained by testing the hypothesized relationship between eating self-efficacy and binge eating. Statistically significant negative relationships were observed, which supported, as theorized, that eating self-efficacy (WEL Tot; r = -.52, p <.000) would be inversely related to binge eating in women who binge eat.

Hypothesis four; perfectionism, distress tolerance and eating self-efficacy predict binge eating in women who binge eat. Since all three independent variables were each significantly correlated with binge eating, all three were included in the regression analysis. A multiple regression analysis was used to assess the degree to which perfectionism (SOP and SPP), distress tolerance (DTS) and eating self-efficacy (WEL) predicted binge eating. ESE emerged as a predictor in the regression model (Adjusted R² = .26, B = -.05, β = -.48, t = - 5.93, p < .000).

Discussion

This study supported that people who were perfectionistic, had lower DT, and had lower self-efficacy related to healthy eating are more likely to binge eat. The regression model revealed eating self-efficacy as a significant predictor of binge eating.

Obesity is a major health risk associated with many diseases and all-cause mortality[1] and since binge eating is the eating disorder most related to overweight and obesity, implications for treatment are related to understanding factors related to binge eating. In the current study, 81% of the sample of women who binge eat (n = 102) was either overweight or obese, as compared with 45.2% of non-binge eating women (n =150). Binge eaters were significantly more obese than non-binge eaters (t = -6.8, p < .000).

Prevalence statistics for women in the United States were 46.4% for obesity (BMI 30 or higher), and 82.9% for overweight and obesity (BMI of 25 or higher).[2] The general US population of women is more likely to be overweight or obese (82.9%) than non-binge eating women (45.2%) found in this sample, while binge eating women (81%) were more likely to be overweight or obese.

The difference between BMI of the non-binge eating and the
A Multidimensional Study of The Correlation Between Perfectionism, Self-Efficacy, Distress Tolerance and Binge Eating

Distress Tolerance and Binge Eating

Although one does not have to binge eat to become overweight or obese, binge eating is the one eating disorder that can contribute to obesity since there is an increase in calorie ingestion in the absence of any compensatory behaviors. Individuals who had stopped binge eating were found to have higher levels of weight loss than those who were unable to stop binge eating.[22,12] Since binge eating is the major eating disorder most associated with obesity,[31] recognizing that clients who binge eat will have the most successful results with a higher level of eating self-efficacy, strategies aimed at empowering clients with cognitive behavior therapy and healthy strategies that will help them gain more confidence in their ability to assume healthy eating behaviors thus abstaining from binge eating behaviors.[13] Hilbert, et al.[14] describes cognitive deficits that are related to binge eating. Bodell et al.[16] have found that treatments aimed at fostering emotional regulation was related to improvements in binge eating.

The data collection was limited to self-report online questionnaires. Individuals who elect to take part in an online study are those who have a computer and feel comfortable using it, and therefore not totally representative of the entire population of female women who binge eat. Future research should further explore binge eating in normal weight and slightly overweight women to prevent obesity.

This study found eating self-efficacy to be a significant predictor of binge eating therefore, revealing the importance of evaluating eating self-efficacy and binge eating in overweight and obese women.

References

23. Glasser D, Haaga D, Hannaiah L et al. Self-efficacy beliefs and eating behavior in adolescent girls at-risk for excess weight gain and binge
A Multidimensional Study of The Correlation Between Perfectionism, Self-Efficacy, Distress Tolerance and Binge Eating