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# Assessment, Referral, and Self Perception in Binge Eating and Obesity Among Adults

Mary Solberg  
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# Walden University

COLLEGE OF SOCIAL AND BEHAVIORAL SCIENCES

This is to certify that the doctoral dissertation by

Mary Solberg

has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
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Walden University  
2012

Abstract

Assessment, Referral, and Self Perception in Binge Eating and Obesity Among Adults

by

Mary Solberg

MSW, University of North Dakota, 1999

BSW, Minot States University, 1997

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

November 2012

## Abstract

In the past 30 years, binge eating and obesity has increased among all age groups due to lifestyle, environment, social, and biological reasons. To change eating habits, individuals may have to collaborate with others beyond the medical professional. Societal impacts of binge eating and obesity include increases in insurance rates, medical costs, and increased early-age mortality. The purposes of this study were to assess how individuals are referred to other professionals if they self-identify as binge eaters or obese and to understand personal awareness individuals had of binge eating and obesity. Cognitive behavioral theory was used as the theoretical foundation. A quantitative, non experimental design was used with a nonrandom convenience sampling of residents in a northern US state aged 18 years and older. 166 participants completed a demographic questionnaire and the Eating Attitudes Test (EAT-26). Chi square analyses indicated a significant relationship between individuals who were obese and the lack of referral to another professional beyond the primary care physician. Individuals over identified with binge eating based on elevated EAT-26 scores, and under identified with obesity based on identifying with lower BMI categories than those set by the American Medical Association. Implications for positive social change include an increased awareness of binge eating and obesity, which can result in reduced medical costs and healthier lifestyles. Prevention and intervention programs can be developed to educate children, parents, and communities about lifestyle choices.



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## Dedication

I dedicate this research to individuals who want to learn more about binge eating and obesity, so individuals no longer have to feel blamed for being unsuccessful or being unable to control a learned habit. There are many layers to which we culturally and socially learn eating habits. Health and happiness is a balance that needs to be found individually. Body images and weight ranges do not define one's health. Even though we may think we know what binge eating and obesity is and what contributes to it, there is much more to be learned. I also dedicate this research to those who took the time to participate in this study and to share their personal experiences, so that others can benefit and learn, and future research done. This is an individual and social issue in which we can regain control.



## Acknowledgments

I wish to thank Dr. Andrea Miller for being very supportive in getting me this far in my journey. You have been very kind, extremely prompt with anything put before yourself, motivational, and willing to help out anytime you could. In addition, you have been a wonderful instructor. In addition, I would also like to thank Dr. Gerald Fuller. You too have allowed me to get this far. You have been extremely helpful with suggestions on statistics and research, as well as being prompt. I am unsure how I was able to get two very prompt people on one committee who work well together. Both of you have been able to help me reach my goal and for this I have been most fortunate. To Dr. Denise Horton who filled in very nicely in the end and helped me get through the last leg of the journey, I thank you for your time, patience, ideas and great support.

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Last but not least, to my family who supported me going through years of school, with staying up late and giving me space to complete my dissertation – I am grateful. To my grandchildren who spent time with me while reading or on at the computer, rearranging my papers and desk, and exploring all the things that can be done with paper. To my dog and cat who stayed up to keep my feet warm and kept me company.

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## Chapter 1: Introduction to the Study

### **Introduction**

Binge eating and obesity both contribute to eating disorders by way of over indulgence. A number of researchers have highlighted reasons for the increase in evidence of eating disorders (Bonci, Bonci, Granger, & Johnson, 2008; Christensen & Brooks, 2006; Davis & Davis, 2008; Diaz, Mainous, & Pope, 2007; Epstein, Leddy, Temple, & Faith, 2007; Grieve, Wann, Henson, & Ford, 2006; Goldman, 2007; Harrington, Crowther, Henrickson, & Mickelson, 2006; Harrington, 2008; Harris, 2008; Kondo & Sokol, 2006; MacDonald, 2008; Masheb & Grilo, 2006; Menard, 2007; O'Connor, Jones, Conner, McMillan, & Ferguson, 2008; Panzer, 2006; Paxton, Eisenberg, & Sztainer, 2006; Petrie, Greenleaf, Reel, & Carter, 2008; Phelan, Wing, Dibello, Raynor, Nedeau, & Peng, 2008; Polivy & Herman, 2002; Powell, Calvin, & Calvin, 2007; Puhl & Latner, 2007; Rozin, 2005; Stice, Presnell, Shaw, & Rohde, 2005; Stice, Shaw, & Marti, 2006; Thomas, Moseley, Stallings, Nichols-English, & Wagner, 2008; Tomiyama & Mann, 2008). One reason binge eating and obesity has increased may be that individuals expend much less energy finding food (Polivy & Herman, 2002). Furthermore, binge eating occurs for diverse reasons as it relates to an individual's lifestyle, environment, social values, or biological makeup (Panzer, 2006). VanStrien and Polivy (2007) reported that of those who lose weight, the majority are unable to keep it off long-term, 5 years or more. Some public and mental health official's approaches to binge eating and weight loss do not address why the success rate is so low and if other methods beyond diet or exercise are needed.

It takes a diverse group of professionals to help an individual manage an eating disorder due to the complexity of issues involved (Bonci et al., 2008). Expand on this. What kind of professionals are needed? What kinds of issues need to be monitored, specifically? Explain and include evidence to support your assertions. The cycle of binge eating and obesity will continue if the eating disorder is not looked at from different angles, with diverse professionals, and using various approaches (Panzer, 2006). Referrals to other professionals can not only help the primary care physician manage the individual's health, but help the individual learn to make permanent lifestyle choices.

Discrepancies can be found across multiple cultures in the United States with definitions of binge eating, obesity, and finding a healthy weight range. Disagreements about definitions of characteristics of a binge and obesity are prevalent in the literature on cultural values and standards as they relate to body image (Goldman, 2007). Cross culturally, there does not appear to be a standard size or image that is accepted or preferred (Grieve et al., 2006; Murray, 2008; Thomas et al., 2008). Weight and body mass index (BMI) are used as an assessment of weight, which have been set and condoned by the American Medical Association instead of society (Murray, 2008). Rather than asking people of all cultures to conform to predetermined guidelines or definitions, fitting into numerical categories, following the AMA's recommendations, or seeking treatment from only a few approved choices, more diverse treatment approaches need to be provided so everyone has an increased chance at being healthy (Herman, VanStrien, & Polivy, 2008; Panzer, 2006).



U.S. society lacks adequate information on how to avoid binge eating and obesity. Methods used thus far do not seem to be working for the majority of people (Herman et al., 2008; Mann et al., 2007; MacDonald, 2008; Powell et al., 2007; Stice et al., 2006). Binge eating and obesity are associated with various health conditions, affecting more children than ever before (Panzer, 2006). Society as a whole is affected by binge eating and obesity because the cost of binge eating and obesity drive up health care costs associated with poor health (Murray, 2008). If people in the United States continue on the path of binge eating and obesity, life expectancies are anticipated to be shortened (Armon, Shirom, Berliner, Shapira, & Melamed, 2008). A more culturally inclusive effort needs to be made in defining what constitutes binge eating and obesity (Murray, 2008). A further review on these topics will be discussed in depth in Chapter 2.

### **Problem Statement**

The goal of this study was to determine the ability of individuals to identify if they engaged in binge eating and self-identify if they were obese. Binge eating can be difficult to define as can the amount or quantity of food, as this is open to personal interpretation (Goldman, 2007; O'Connor et al., 2008). As such, there are gaps in knowledge of the quantity consumed, culturally agreed upon standards of binge eating, along with the frequency and length of time spent eating (Goldman, 2007). Some cultures do not agree with the American Medical Association's defined obesity categories due to cultural values (Bonci et al., 2008; Murray, 2008; Thomas et al., 2008). Additionally, primary care physicians may be unaware of how and in what ways other professionals can help with binge eating and obesity (Kundert, 2008). Autonomy allows an individual

the choice to conform or not to eating and weight standards of his/her own, or other cultures (Ahern & Hetherington, 2006; Kundert, 2008; Polivy & Herman, 2002).

Through education and guidance of diverse professionals, while collaborating with primary care physicians, individuals can learn to make informed decisions as they relate to their eating habits.

In this study, I sought to find out whether individuals are being referred to other professionals outside their primary care physician. Changing eating habits and weight can be more complex than what an individual may believe and includes more than engaging in routine follow-up visits and education with a primary care physician (Epstein et al., 2007; Panzer, 2006; Powell et al., 2007; Williams, Goodie, & Motsinger, 2007). It is important to understand how individuals deal with stress and which emotional triggers lead to hunger. Public and mental health officials must also understand cultural values and environmental cues that lead to food choices, understand how the media contributes to social learning, and understand how conveniences can become a hindrance (Epstein et al., 2007; O'Connor et al., 2008; Puhl & Latner, 2007). In addition, primary care physicians tend to be unaware of who to refer individuals to for support, motivation, or professional help (Jenkins, 2007; Panzer, 2006; Puhl & Latner, 2007; Williams et al., 2007). Both binge eating and obesity can stand alone or contribute to disordered eating (Stice et al., 2005). It is just as important to discover if primary care physicians routinely inquire about individuals eating habits (Bonci et al., 2008; Kondo & Sokol, 2006; Petrie et al., 2008). If someone engages in cyclical eating or binge eating, yet maintains a healthy weight or appearance, the individual is still at risk for health problems as well as

disordered eating (Goldman, 2007; MacDonald, 2008; Petrie et al., 2008). Individuals with eating disorders are not easily identified. Therefore, I was concerned with whether primary care physicians are inquiring about binge eating and obesity, or making appropriate referrals when necessary, or managing the problems associated with binge eating and obesity themselves.

### **Nature of the Study**

In this study, I employed a quantitative design, allowing statistics to be used to describe individual and group differences (Gravetter & Wallnau, 2004). A qualitative approach was considered and declined. Qualitative data collection is time consuming and cannot represent the large population that is required for adequate effect size. Furthermore, fewer people would be selected due to numerous personal responses (Gravetter & Wallnau, 2004). A nonexperimental design was chosen to test for real-life experiences at one point in time. Individuals were not assigned to any group prior to data collection (Mitchell & Jolley, 2004). An experimental study was not selected as groups were not being randomly placed in either of two groups (Mitchell & Jolley, 2004).

### **Purpose of Study**

The purpose of this quantitative study was to compare binge eating and eating-related behaviors between individuals referred to professionals beyond primary care physicians for assistance and those not referred. In addition, I examined if eating-related behaviors differed between those who self-identified as binge eaters and those who did not. Finally, I examined if BMI categories differed between those who self-identified as being obese and those who did not. By recognizing areas in which primary care

physicians can help individuals become successful with their eating habits, collaboration with other professionals should occur. I sought to understand possible reasons for the rise in binge eating rates for the purpose of decreasing the rates so individuals can live healthier and longer lives.

### **Research Questions and Hypotheses**

This study was designed to answer the following specific research questions. Null and alternative hypotheses are also provided. Chapter 3 will provide a further discussion of the study.

1. Do individuals who are referred to professionals beyond their PCP for eating related issues differ from those who are not referred in binge eating behaviors?

$H_01$ : There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

$H_11$ : There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

2. Are there differences in BMI level between those who were referred to other professionals for eating related issues and those not referred to other professionals for eating related issues?

*H<sub>0</sub>2*: There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

*H<sub>1</sub>2*: There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

3. Are there differences in eating related behaviors between those who self-identify as binge eaters compared to those who do not self-identify as binge eaters?

*H<sub>0</sub>3*: There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

*H<sub>1</sub>3*: There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

4. Are there differences in BMI categories between those who self-identify as being obese and those who do not self-identify as being obese?

*H<sub>0</sub>4*. There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self

identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

*H<sub>14</sub>*. There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

### **Theoretical Framework**

Cognitive behavioral therapy (CBT) is a combination of both cognitive therapy and behavioral therapy (Corey, 2005). Names associated with this combination of approaches are Ellis, Beck, and Meichenbaum (Corey, 2005). CBT is diverse in that the therapist and individual work collaboratively together. If distress is endured by the individual, CBT theorists suggest it may be due to disturbances in cognition (Corey, 2005). The therapist and individual work together to identify the cognitive event that needs to be addressed. The individual and therapist work together to change the thought pattern associated with the target thought. Once the desired thought is changed, it elicits a change in behavior to be addressed (Corey, 2005). The focus of changing eating habits or losing weight should not be based solely on weight, but rather on giving individuals ideas and options on making permanent lifestyle changes (Schwarzer & Luszczynska, 2008). Maladaptive behaviors result in binge eating due to overexposure to food, discrimination, and victimization the patient may have endured.

CBT is time limited and not long-term therapy. Therapists who use CBT provide education so skills learned can be used over a life time to problem solve (Corey, 2005). A

close working relationship with the therapist is important so trust and rapport can be established, problem solving and solutions discussed, so issues are resolved. During CBT, individuals with eating disorders give up control over their eating habits and replace them with healthy ones (Cooper, Fairburn, & Hawker, 2003; Panzer, 2006). This approach can help change problematic cognitions, behaviors, and emotions (Corey, 2005). CBT can be used among clinical and nonclinical populations, applied individually or in groups, and can be individualized to fit the person's needs (Jenkins, 2007; Panzer, 2006). Individuals do not have to go back to the beginning of the problem when eating habits became uncontrolled; rather, they can begin where they presently are at in regards to their current eating habits or weight (Panzer, 2006). CBT can be used effectively in the health care setting because it is evidence-based through charting progress, forming goals, or developing new skills (Goldman, 2007; Panzer, 2006).

There is a high completion rate of treatment when using CBT, in addition to a reduction in binge eating behaviors (Wilson, Grilo, & Vitousek, 2007). Masheb and Grilo (2007) suggested that CBT serves as a first-step towards the reduction of binge eating with evidence-based treatment. The CBT model can be used to help individuals not only recognize but treat chaotic eating habits associated with binge eating.

### **Operational Definitions**

The following are terms that will be used in this study:

*American Medical Association (AMA)*: The AMA (2003) promotes public health and best medical practice and specialties. The AMA also helps to advance technology and physicians interests, as well as established ideal body weight ranges and measuring

body mass. The AMA publishes the *Journal of American Medical Association (JAMA)*, which is a journal established for the medical profession (AMA, 2003).

*Anorexia nervosa (AN)*: The *DSM-IV-TR* (2007) defined AN as the refusal of an individual to maintain a minimal body weight and having an intense fear of gaining weight. A guideline to help determine AN is if the individual weighs less than 85% of his/her normed weight, based on age and height (*DSM-IV-TR*, 2007). The *DSM-IV-TR* stated that there are other guidelines and features associated with this disorder to qualify as having AN. The Western culture saw an increase in AN in the 1960s where upper class women avoided eating and began to starve themselves (Polivy & Herman, 2002).

*Binge eating*: The *DSM-IV-TR* (2007) stated that binge eating is associated with the excessive consumption of food due to hunger being unsatiated. Binges include eating uncontrollably, eating too quickly, eating in private, or feeling embarrassed or disgusted with personal eating habits (*DSM-IV-TR*, 2007). Stunkard characterized binge eating according to the time, quantity, and lack of control individuals exhibited (as cited in Ochner & Geliebter, 2007). Ochner and Geliebter (2007) stated that binge eating is when people consume more food than they would normally eat and feel like they lack control over eating. Polivy and Herman (2002) reported that binge eating entails time eating rapidly, eating in the absence of hunger, eating alone, feeling guilty, and feeling disgusted after the binge. Kondo and Sokol (2006) indicated that binge eating differs from other eating disorders in that there are no episodes of purging, excessively exercising, or avoiding food. Binge eating makes up the majority of cases of eating disorders (Ochner & Geliebter, 2007).



*Binge eating disorder (BED):* A binge eating disorder is when the craving for food is not satiated even after having eaten (Goldman, 2007). Some binge eaters will go to great lengths to order or obtain large quantities of food and then eat in seclusion because of the embarrassment of gorging (Goldman, 2007). With BED the episodes reoccur (Masheb & Grilo, 2006). It is unknown how many people are even aware that excessively eating beyond their own comfort is known as binge eating (Goldman, 2007).

*Body mass index (BMI):* The BMI is a method used to measure excess weight and to monitor progress of weight loss/gain (Panzer, 2006). The BMI is a measure of body weight in relation to height (AMA, 2003). To calculate the BMI, the individual's weight pounds is multiplied by 703 and divided by the individual's height (BMI = weight x 703 ÷ inches). The AMA (2003) has established obesity categories for individuals with a BMI of < 18.5 as underweight, the BMI range from 18.5 to 24.9 is considered normal, the overweight range is considered 25.0 to 29.9, obesity 30.0 to 34.9, very obese 35.0-39.9, and extremely obese  $\geq 40$ .

*Bulimia nervosa (BN):* The DSM-IV-TR (2007) reported that the essential feature of BN involves inappropriate compensatory expulsion of food after excessively consuming food, in an effort to prevent weight gain. This eating disorder may be followed by AN, where typically young women alternate between starving and binge eating (Polivy & Herman, 2002).

*Cognitive behavioral therapy (CBT):* CBT includes both changing or reprocessing cognition to rethink through decision-making and applying self-help techniques to change learned behaviors, replacing old habits with new ones (Goldman 2007; Menard, 2007).

*Eating disorder not otherwise specific (EDNOS):* The *DSM-IV-TR* (2007)

indicated that the category or diagnoses EDNOS is used when eating criteria does not fully fit the other eating disorders and includes inappropriate compensatory behaviors or the over consumption of food. Binge eating is noted in the *DSM-IV-TR* under Eating Disorder Not Otherwise Specified ([EDNOS];Ochner & Geliebter, 2007).

*Individual:* Since the medical profession refers to their consumers as patients, and other professions may refer to their consumers as client, the word *individual* will be used to refer to both.

*Obesity:* Obesity is medically defined as having a BMI of 30 or greater (Center for Disease Control and Prevention [CDC], 2007b). Some contributors to obesity may include genetics, metabolic rate, increase in food consumption, psychologically feeding emotions, or triggers brought on by the individual's environment (Rozin, 2005). When energy consumed exceeds that of which is expended, it is contributes to fat (Epstein et al., 2007). There is an increased risk for obesity when the onset of fat occurs at a young age, if binge eating is occurring, and if the BMI is rapidly increasing (Panzer, 2006).

*Primary care professional (PCP):* When referring to the individual's primary source of medical care, the initials PCP will be used due to the diversity of the medical health field profession and the various titles held.

### **Assumptions and Limitations**

The first assumption is that individuals would respond to survey items in an honest manner. It is assumed the EAT-26 survey will effectively measure binge eating and BMI will measure obesity. Another assumption is individuals who are embarrassed

about their weight or eating habits may avoid sharing information with their PCP (MacDonald, 2008), so a referral to another professional is not considered. It is further assumed that due to health care costs, individuals may not necessarily follow through when a referral to another professional is made.

### **Bounds**

Since this was a time limited study, the actual applying of techniques cannot be taught and learned over a short amount of time, especially for those who have overeaten for years. Additionally, follow-up would take much longer than time allowed by this study. It also would not be fair to the participants to offer a small sample of techniques and not completely finish working with them. Participants were pooled from North Dakota and were not representative of other parts of the country due to specific demographics in North Dakota and the rural nature of the state, which will be discussed further in Chapter 3.

### **Limitations**

I excluded individuals under the age of 18 or anyone who was institutionalized. North Dakota is not a culturally diversified state so some cultural groups were not equally represented based on national averages. The primary focus of the study was not on the eating disorders of AN or BN, rather on binge eating and obesity. Because binge eating can be difficult to define and quantify among all groups of people, self-reports of personal perceptions and experiences had to be relied upon regarding food intake, creating a possible bias. Since the snowball effect was used in trying to reach volunteers,

individuals who did not have the access to a computer may not have had an equal chance at participating.

### **Significance of Study**

The results of this study may be used to help fill the gap in the literature related to characteristics of binge eaters, including a variety of sizes, shapes, and weights. Everyone has their own eating style, food preferences, and desire for a particular body image (Davis & Davis, 2008). Paxton et al. (2006) stated that some cultures may have an intended muscle mass, weight goal, or body image. The number of episodes of binge eating in a day, week, month, or year may or may not be important to some cultural groups during times of celebration, religious gatherings, or community events (Polivy & Herman, 2002). Inconsistent definitions may qualify a person as a binger if he/she ate five to six small meals a day, splurged on special occasions, or socialized with others for an hour or two during meals (Polivy & Herman, 2002). Defining how long a binge lasts is also difficult to define, as some individuals may nibble on food throughout the day while others may binge eat a few times throughout the day. When this occurs, it is difficult to determine if one binged occurred or several binges.

Researchers who have studied binge eating and obesity have revealed that it is important for public and mental health officials to use a collaborative approach in treating binge eating and obesity (Diaz et al., 2007; Panzer, 2006). Jenkins (2007) and Murray (2008) questioned if PCPs have an awareness of how other professionals can help. Panzer (2006) discussed the use of collaboration to secure funding from lawmakers to establish prevention and intervention programs so there is more available knowledge on eating

habits, as well as working with diverse cultural groups of people. Powell et al. (2007) discussed the importance of collaboration to help individuals work through lifestyle changes, in addition to individual counseling. Tomiyama and Mann (2008) stated that intervention and treatment should include health outcomes as well as what the individual wishes are, working together with diverse health professionals. Diaz et al. (2007) reported that culturally appropriate measures should be used to help motivate individuals or groups of people to make changes, when the individual does not fit the community norms. Acknowledgement of personal perspective of a healthy body image, PCPs must be educated on topics and preferences of the individuals they service.

Professionals may use the results of this study to understand how individuals do or do not self-identify themselves as obese in a consistent manner with BMI categories. This study can also increase an understanding if individuals self-identify as binge eating in a consistent manner with the EAT-26. The medical profession established and defined the weight ranges and BMI for all of society, without the input of others (Murray, 2008). Some people may choose foods high in fat, but not overeat (Stice et al., 2005). People can binge eat on healthy foods just as they can on high-calorie dense foods (Polivy & Herman, 2002). The quantity of food consumed may not necessarily be a good measure for someone who binge eats, as some people may have faster metabolisms (Petrie et al., 2008). Some individuals who binge eat may be more physically active and burn all or more calories than they take in, yet are still binge eaters.

PCP's perceptions/biases can influence treatment recommendations. For example, an overweight person may be labeled a binge eater while those of average or lower than

average weight are not. Furthermore, health of a binge eater (whether overweight or not), and engaged in cyclical eating manner can still be at risk for health problems.

PCP's detect and manage 5 million people each year with eating disorders (Kondo & Sokol, 2006). There are health concerns for anyone who binge eats or is obese and the size of an individual can be deceiving.

### **Social Change Implications**

This study may lead to positive social change by helping PCPs have a better understanding of what binge eating and obesity are, along with the possibility that one condition may not necessarily be related to the other. In addition, findings from this study can aid in the development of possible treatments designed for each condition separately.

Another problem with the definition of binge eating is that what one person feels is a large quantity of food, another may not. Kundert (2008) reported that although binge eating is criteria for AN or BN, researchers are indecisive on what constitutes a binge and cultural, personal, and professional interpretations vary greatly. By recognizing inconsistencies to which individuals are subjected to across cultures regarding binge eating, as well as allowing for desired appearance, then diagnosing individuals on an inconsistent basis does nothing to help anyone. Findings from this study may validate how people self-identify with their BMI and obesity category, which was set by the AMA.

Other positive social change that can come from this study is the way in which binge eating and obesity is viewed from others' perspectives, which may lead to more groups of people are being helped. There is a greater chance for the younger generation

who are obese to have some form of disability, lingering health problems, experience mental health problems, become socially stigmatized, and be discriminated against as they age (Panzer, 2006). The causes of binge eating and obesity are multifaceted, some of which are due to lifestyle choices, environmental awareness, social outlet, and biological makeup. These concepts should be shared with the public. The healthier that U.S. society becomes, the longer individuals can be expected to live, which can drive down health care costs (Murray, 2008). Early detection and awareness is important with eating disorders (Kondo & Sokol, 2006). Panzer (2006) stated that until overeating and obesity is addressed publically, adverse medical conditions will continue to surface. Labeling someone with an eating disorder does nothing to change unhealthy eating. Treatments that are culturally sensitive and collaborative in nature are needed to improve the health of individuals. This study can enhance social change by helping individuals understand the implications of their eating habits, the consequences of their choices, and ability to make informed decisions on their treatment.

### **Transition Statement and Summary**

The topics of binge eating and obesity were discussed and as well as the importance of using a collaborative approach in the treatment of these eating disorders. A discussion in Chapter 2 will provide an explanation of the contributors to learned eating behaviors and why it benefits everyone to become more knowledgeable about binge eating and obesity. The importance of allowing individuals autonomy of how they want to look, yet provide with information on how their decisions impact their health, will also be discussed. In addition, increasing health care costs will also discussed in

relation to eating habits. Chapter 3 will provide the methodological portion of the study, instruments to be used, and data analysis to be completed. In Chapter 4, I will discuss the results of the study. Lastly, a discussion regarding the findings of this study will be reported in Chapter 5.



## Chapter 2: Literature Review

### **Introduction**

Binge eating and obesity are cognitive and behavioral health problems. The purpose of this chapter is to explore what binge eating and obesity is, what contributes to binge eating and obesity, why people are not successful at controlling their eating habits or weight, and how working collaboratively with other professionals is important.

### **Organization of Review**

The organization of the review will begin with the etiological factors such as chosen lifestyles, the environment, and socialization, as well as the impact genetics have on binge eating and obesity. How binge eating and obesity impact health will be discussed, along with approaches used to address and confront binge eating and obesity. A discussion will follow on the importance of using a collaborative approach to treating binge eating and obesity with experienced medical professionals. In this chapter, I will demonstrate the need to understand more about eating habits associated with internal and external cultural factors and why research is needed to understand the phenomena of binge eating and obesity, so other professionals may contribute to the pool of resources. Strategies will be discussed that are deemed effective at controlling binge eating and obesity.

### **Strategy of Literature Review**

The literature that defined binge eating, obesity, collaborating with other professionals, and CBT was searched using scholarly journal articles and primary authored books. In searching for journal articles, the EBSCO databases used were

PsycArticles, Academic Premier, Mental Measurements Yearbook, and Health Source.

The literature chosen covers the last 10 years. A few research articles regarding the testing instrument used in this study dates back further, in which the original authors discussed their research instrument. No more recent information about the research instruments was available. The terms used in the search included *binge eating, body image, body mass index, cognitive behavioral therapy, collaborating and diet, cultural eating, cultural image, diet, eating, eating disorder, eating habits, exercise, health, medical association, social eating, social diet, societal cost, and weight.*

### **Literature Content**

In the literature review, I will focus on binge eating and obesity in relation to how difficult eating habits are defined, understood, and agreed upon cross-culturally. There are other professionals who have the ability to understand and assist with binge eating and weight management. However, I did not examine the eating related disorders of AN or BN, diagnosing of pathology, nor implementing any treatment as these are considered out of the scope of this research. The impact that genetics and environment have on binge eating and obesity will be discussed.

### **Binge Eating**

In order to identify the problem of binge eating, there has to be an understanding of what it is and how it impacts individuals. Binge eating is the most common eating disorder in the United States, even with the combination AN or BN (Goldman, 2007). Panzer (2006) reported that binge eating is the most unrecognized eating disorder. Binge eating is the newest diagnosis among eating disorders (Kondo & Sokol, 2006). Some

people may not exhibit all of the symptoms of a BED, such as being embarrassed to eat out publicly, gorging, or hiding food (Goldman, 2007). Others may have one binge episode a week, a month, or a few months out of a year (Goldman, 2007; Masheb & Grilo, 2006).

Creating an awareness of binge eating can be a difficult task due to the volume of people involved, differences in cultural values, the wide age range, the amount consumed, or even the time span in which an individual eats. Binge eating occurs among all ethnic, gender, age, and socioeconomic groups (Kondo & Sokol, 2006). Binge eating is a difficult topic for people of all cultures to fully understand and agree upon when there are many perceptions, ideas, values, or traditions of what the ideal body image should look like (Goldman, 2007; Panzer, 2006; Petrie et al., 2008; Polivy & Herman, 2002). Both genders equally report that binge eating is due to emotional triggers; however, women tend to eat when they are lonely (Masheb & Grilo, 2006). Binge eating is reappearing with people of all ages for many reasons (Polivy & Herman, 2002). Individuals of all age groups are gaining weight, particularly among the pediatric population (Panzer, 2006). Genetics is one of the contributors to obesity (Kondo & Sokol, 2006; Murray, 2008; Ochner & Geliebter, 2007; Panzer, 2006; Rozin, 2005), as well as parenting styles, learned social behaviors, or personality traits (Panzer, 2006; Polivy & Herman, 2002).

Emotional, physical, and mental health often contribute to triggers associated with binge eating (Thomas et al., 2008; Williams et al., 2007). Food is a common coping mechanism because it can aid in the escape of a conscious experience (Goldman, 2007).

Bingeing is an emotional experience that may help people deal with their feelings of anger, happiness, boredom, stress, and loneliness (Goldman, 2007).

Applying pathology to eating habits would be difficult. In addition to being an act of survival, eating has a different meaning to different people. If binge eating found its way back in the *DSM-V*, it would affect 5 million men and women (Goldman, 2007). This number would increase by three times if it included those who were mini binge eaters, which are people who binge eat in moderation (Goldman, 2007). Apply eating habits to each individual on an equal basis is nearly impossible. The frequency of binges does not matter (Goldman, 2007). One episode of binge eating is considered a binge (Goldman, 2007). After a binge, individuals feel bad about their decision and start the cycle all over again (Goldman, 2007). This is a behavior individuals are ashamed of and feel they are not only letting themselves down but others as well (Goldman, 2007). Binge eating can lead to obesity due to having a lack of personal awareness of the triggers that cause hunger (Epstein et al., 2007; Masheb & Grilo, 2006; Menard, 2007; O'Connor et al., 2008; Puhl & Latner, 2007).

Binge eaters come in all shapes and sizes. The quantity of food consumed can vary from one person to the next. For example, athletes such as body builders, professional sports figures, Sumo wrestlers, or Olympians may consume thousands of calories a day to build up their endurance and stamina and engage in continuous or cyclical eating (Petrie et al., 2008). Health problems can occur with binge eaters whether or not someone is overweight, just as can athletes who engage in cyclical eating (Bonci et al., 2008; Petrie et al. 2008). Professional athletes could be classified as binge eaters even

if they burn off the calories they consume, if they are not over weight, are attaining a desired body image, or eat in private, according to the Diagnostic Statistical Manual (DSM) guidelines (Bonci et al., 2008). People can binge eat on healthy food just as they can on high-calorie dense foods (Polivy & Herman, 2002). While binge eating is a problem U.S. society, obesity also contributes to what? equally.

### **Obesity**

Obesity can impact how individuals feel about themselves. Obesity is defined as exceeding a medically defined weight range based on social norms (Goldman, 2007). Obesity is when the energy consumed exceeds the energy being expended, no matter the type of food (Epstein et al., 2007). Genetics, metabolic rate, and increased food consumption contribute to obesity (Rozin, 2005). Obesity is on the rise worldwide and has increased (Mann et al., 2007). Obesity rates in the United States have increased by 75% in the past 14 years (Powell et al., 2007). In 2005-2006 alone, there were over 72 million individuals in the United States who were obese (CDC, 2007a). This averages to over 33% for men and 35% for women (CDC, 2007a). Obesity in the United States for adults over the age of 20 is 34% (CDC, 2007a). People ages 40-59 had the highest prevalence of obesity (CDC, 2007a). In this age bracket, men accounted for 40% while women accounted for 28% (CDC, 2007a). With regards to ethnicity, obesity is highest among minority cultures (CDC, 2007a). Panzer (2006) reported that pediatric obesity has been on the rise and that some researchers have claimed it has become a global epidemic. Excess weight has been accumulating more among the pediatric population than ever before (Harris, 2008; Panzer, 2006; Puhl & Latner, 2007).

There are positive connotations associated with obesity if the individual is winning at a sport, even where their body mass is valued. Negative connotations occur when the person is losing at a sport, or is perceived as letting themselves go because they are not as good as they once were (Bonci et al., 2008; Goldman, 2007). Obesity can hinder weight loss due to the embarrassment of seeking help from their PCP (Puhl & Latner, 2007). Binge eating can lead to obesity however, not all binge eaters are obese (Goldman, 2007).

### **Measurement of Weight**

The medical profession has established guidelines to determine a healthy body weight or body size. An individual's weight can be measured using BMI or a scale (Tomiya & Mann, 2008). Each measurement has its drawbacks. When people lose fat, it may not show up on the scale because muscle weighs more than fat (Herman et al., 2008). Individuals with a higher BMI can be defined as overweight yet are physically fit due to their muscle mass or bone structure, which is not taken into consideration using the BMI method (Murray, 2008). A pregnant woman who gained no personal weight could be considered to have a higher BMI if the additional pounds of the fetus are not accounted for (Tomiya & Mann, 2008). The BMI is calculated from the client's height and weight to determine an individual's body mass (CDC, 2007b).

According to the AMA (2003), the BMI categories, according to an individual's weight and height, are listed as the following: underweight (BMI < 18.5), normal (BMI 18.5 – 24.9), overweight (BMI 25.0 – 29.9), obese (BMI 30.0 – 34.9), very obese (35.0 – 39.9) and extremely obese ( $\geq 40$ ). When broken down in terms of BMI and obesity, one in

three U.S. adults have a BMI of 30 (Powell et al., 2007). Those with a BMI of 25 or greater have risen to 56% in the past 8 years (Powell et al., 2007). It is estimated that 65% of the U.S. population have a BMI of 25 or greater (Phelan et al., 2008).

### **Prevalence**

Society may pay closer attention to eating habits once binge eating and obesity are realized in terms of age, the number of people affected, cost in health, and difficulty in changing long-term behaviors. In the past 3 decades, more children than ever have been defined as being obese (Stice et al., 2006). Preschoolers were overweight between 8% - 13%, while children and adolescents accounted for 13% - 22%: all ages are affected by obesity (Powell et al., 2007). Binge eating and obesity among children and adults, affects one in 10 children while it affects one in four adults (MacDonald, 2008). It is estimated that if no changes are made by 2050, nine out of 10 adults, and two-thirds of children will be overweight (MacDonald, 2008). Over 65% of people in the United States are overweight, with 30.5% being obese (Diaz et al., 2007).

Health problems associated with binge eating and obesity can have short-term and long-term consequences. Panzer (2006) reported that there is a greater chance for the younger generation to have some form of disability as they age, have lingering health problems, experience mental health problems, and be socially stigmatized. They may also be discriminated against if their weight is not better controlled. Children are just as likely to have the same medical conditions as adults who are overweight (Stice et al., 2006). If individuals do not change behaviors needed to sustain a healthy weight, they will continue to harm themselves with further weight cycling (MacDonald, 2008).

Changing eating habits can become complex with a combination of binge eating and obesity that has occurred over time. Binge eaters who are obese are more resistant to weight loss (Ochner & Geliebter, 2007). One in three obese people may binge eat, while one out of every five people meet the binge eating criteria (Ochner & Geliebter, 2007). Herman et al. (2008) found that of people who lost weight, 20% were able to maintain their goal-weight long-term. Powell et al. (2007) found a parallel result in that children were just as likely as adults to have symptoms of binge eating, such as eating in seclusion or overeating. Children who are overweight or obese are also likely to binge eat (Ochner & Geliebter, 2007). Eating habits and weight control are learned behaviors.

## **Contributors**

### **Lifestyle**

In the United States, lifestyle and choices are learned from the family and those within social circles. Due to the increase in obesity over the past 10 years, this suggests that lifestyle and environment are contributors to obesity when compared to genetics alone (Powell et al., 2007). For example, if public parks and swimming pools are mainly frequented by physically fit people, it is less likely that overweight people will feel comfortable or want to participate these related activities (Bonci et al., 2008). Health club membership may also be more accessible to some groups of people than others, based on distance, finance, club norms, hours available, or types of members enrolled (Thomas et al., 2008). Learned behavior comes from choices that are made in and within the community (Bonci et al., 2008; Harrington, 2008; Harris, 2008). Individuals make choices based on accessibility, convenience, community values, or identification with



others (Panzer, 2006). Individuals also socialize with people whose values, religion, interest, or status are the most similar, which affects lifestyle choices (Diaz et al., 2007).

**Sedentary lifestyle.** Additional contributing factors to over eating and obesity include the lack of physical activity, sedentary lifestyles, and consumption of convenience foods. Technology has been one of the culprits that have lead individuals to participate in more sedentary activities (Panzer, 2006). The less a person has to do manually, the fewer calories that are burned. People in the United States have remote controls to turn on/off the television, lights, garage door, air conditioner, ceiling fan, music, or to start a car. Furthermore, technological advances have reduced the need to move as computers provide quick access to information, and both cell phones and cordless phones can be carried so people do not need to get up. Panzer (2006) reported that bills can be paid on-line, reducing the need to walk to the mailbox. Other contributors to sedentary lifestyles are using items of convenience such as a microwave, air conditioner, dishwasher, water dispenser, remote vacuum cleaner, garbage disposal, ice cube maker, or electronics with a remote (Rozin, 2005). Adopting a sedentary lifestyle increases the risk of obesity (Diaz et al., 2007). For example, if a remote control for electronic media were lost, it is possible that more time would be spent looking for the lost item than if the electronic media had been turned on manually. People in the United States tend to buy items that save them time, money, and physical energy (Rozin, 2005).

Advances in technology are also impacting children. Children are spending more time filling their days with video games, watching television, being on the computer,

listening to music, or watching music videos (Harrington, 2008; Panzer, 2006). Children are burning off fewer calories (Harrington, 2008).

The mass consumption of convenience foods has added to the U.S. problem of binge eating and obesity. People no longer have to expend energy to prepare healthy meals, reducing the need to expend energy (Rozin, 2005). Foods are packaged for convenience, and can be taken and consumed in just about any place (Epstein et al., 2007). Fruits, vegetables, lettuce, and meats come already peeled, sliced, and cut for convenience (Epstein et al, 2007). Goldman (2007) found that binge eaters chose foods that were the most accessible, easiest, and quickest to make.

**Learned behavior.** Eating habits, personal experiences, and eating styles associated with food are learned over a lifetime. Eating habits are learned from families, the media, an individual's environment, and culture (Thomas et al., 2008). Portions and serving sizes can vary among individuals, families, across cultures, or with the type of food consumed (Panzer, 2006; Thomas et al., 2008). Goldman (2007) found that people learn eating patterns of where, how often, how much, when, with whom, and why they eat from those people who spend time together and celebrate.

Cultural values and etiquette help shape eating choices and decisions from how to prepare food to whether food should be thrown, declining someone's invitation to eat in the absence of hunger, continuing to eat when full, or accepting second helpings when full (Epstein et al., 2007; Thomas et al., 2008). Panzer (2006) reported that eating habits associated with an event are learned and the quantity or limit on the amount to eat may or may not be consciously present during the event. Some cultural expectations may require

food intake even in the absence of hunger or with having nutritional knowledge, but being unable to put it into practice (Menard, 2007; Panzer, 2006).

Eating habits or food cravings can be tied to certain activities, locations, events, times, or seasons. Food is often expected as part of celebrations, at social gatherings, or in community forums due to cultural norms (Davis & Davis, 2008; Menard, 2007; Rozin, 2005). It could be shocking to some not to have a certain food available at a movie theater, sporting event, religious gathering, during a particular holiday, at a community event, or family celebration (Davis & Davis, 2008; Menard, 2007; Rozin, 2005).

Family eating styles are also important. Learned family dynamics can contribute to eating disorders due to parenting styles, psychopathology within the home, lack of education on nutrition, abuse, family and cultural values, socioeconomic status, or the value placed on leisure activities (Panzer, 2006; Polivy & Herman, 2002). Other contributors to learned behavior of binge eating or obesity include break up of families, not eating meals together, or having limited social support (MacDonald, 2008).

### **Environment**

Changes in environments can contribute to binge eating and obesity. Children may behave or eat differently at home than in school, just as adults can when they are at home, work, or engaged in leisure activities (Epstein et al., 2007; Harris, 2008; Puhl & Latner, 2007). One environment may be more stressful than another, so overeating may be more prevalent in some settings than others (Davis & Davis, 2008; Ochner & Geliebter, 2007). Certain foods may be consumed in one environment over another and portion sizes differ (Harrington, 2008; Panzer, 2006; Powell et al., 2007).

Factors that can guide eating habits are the accessibility and convenience of foods, the costs associated with the item, and personal preferences (Panzer, 2006). Some environments are more toxic and stressful than others, which may limit personal choices due to the distance to travel or time constraints, when at home or work (Goldman, 2007; Panzer, 2006). School students have access to vending machines, which contain soda drinks and calorie dense foods, offering more popular choices than alternative healthy ones (Panzer, 2006). During sporting events the typical high-sugar high-fat snacks are sold such as hot dogs, popcorn, chips, candy, and soda (Panzer, 2006), over healthy foods.

**Food choices.** There is an abundant supply of food choices that are made daily. These choices can contribute to binge eating and obesity. From the foods available, decisions are made about how to eat the food, the quantity to purchase, how to cook it, and how long it takes to prepare (Epstein et al., 2007; Rozin, 2005). Snacks that come in a variety of flavors, are prepackaged and are ready to eat, tend to be high in fat and calories (Epstein et al., 2007). Healthy snacks that require time to prepare are those that are consumed less often (Epstein et al., 2007).

Consuming food with too much variety can contribute to binge eating and obesity (Epstein et al., 2007). Epstein et al. (2007), reported when people consumed foods with many flavors they tended to eat more than those who ate similar foods with fewer flavors, and also ate more when people were served a four course meal over a single course meal. People with a higher BMI tended to eat foods high in sugar, snacked between meals, had a higher carbohydrate intake, consumed entrée dinners, and used a variety of condiments

(Epstein et al., 2007). Individuals who were the most successful at losing weight and maintaining the loss were those who consumed foods with less variety of high-fat foods, oils, sugars, low-fat breads, and vegetables (Epstein et al., 2007). When a wide variety of foods were consumed some of these foods evoked a stimulus and caused greater cravings than people whose diet is more limited with flavors and variety (Epstein et al., 2007). Eating new flavorful foods elicited a strong motivation to eat and obtain more food (Epstein et al., 2007). Foods with a variety of flavors tended to be high-calorie dense snacks (Epstein et al., 2007).

**Toxic environment.** Personal choices can become limited due to interferences in the environment, which cause a toxic environment. Goldman (2007) reported that a toxic environment was one in which individuals become accustomed to living a sedentary lifestyle, consume quick and easily accessible foods, choose high calorie foods, and choose foods with larger portions. Panzer (2006) reported that a toxic environment was one in which people are excluded or inconvenienced due to limited availability of choices, such as accessibility to a variety of grocery stores, certain foods, leisure activities, or types of transportation. In high poverty areas, fresh meats and fresh foods cost more (Thomas et al., 2008). Although cheaper foods were prepackaged, convenient and less costly, they contain more fat, were higher in sugar, and were more readily available (Epstein et al., 2007; Panzer, 2006; Schwarzer & Luszczynska, 2008). Fast food restaurants were more likely to be found in impoverished neighborhoods (Panzer, 2006).

If public transportation was required, less money was spent on fresh foods (Epstein et al., 2007; Thomas et al., 2008). The items that were the easiest to pack,

lightest to carry, and less likely to spoil were chosen over healthier foods when using public transportation (Epstein et al., 2007). Epstein et al. (2007) found that individual's who had access to one or two modes of transportation were limited by time availability and quantity to purchase. Safety was of concern in some neighborhoods, so consumers considered the time limits associated with the purchase fresh foods and meats (Panzer, 2006).

**Minority and multiculturalism.** Not all cultural groups agreed on the definition of binge eating and obesity. Cultural values and ideals have varied over time (MacDonald, 2008). Historically, overweight body images were a sign of health and wealth (Marsh, Hau, Sung, & Yu, 2007). When there was an abundance of food, thinness was valued and vice versa (Polivy & Herman, 2002). Binge eating and obesity have been a multicultural issue worldwide and have occurred for diverse reasons (Diaz et al., 2007). Additionally, culture influenced eating behaviors by the way in which foods were selected, cooked, or celebrated (Thomas et al., 2008). Finally immigrants to the U.S. found themselves with limited job opportunities, were less likely to practice health care, and made choices available to them rather than selecting high cost, healthier foods (Diaz et al., 2007; Harrington, 2008).

Historically, ethnicity in the U.S. has attributed to binge eating because of discrimination, minority status, oppression, devaluation, denial of ethnicity, helplessness, fear, or trauma. There was a lack of knowledge about eating disorders as it related to ethnicity (Harrington et al., 2006). A culturally accepted body weight did not necessarily mean it was the healthiest (Thomas et al., 2008).

Individual weight goals can vary not only from the medical profession, but from other professionals as well. Obesity by the medical definition did not account for multicultural desired weight ranges (Panzer, 2006). People had their own idea of what physical attractiveness was, what their ideal body weight should be, and what they wanted their body to look like (Marsh et al., 2007; Panzer, 2006). Cross culturally, groups or individuals set their own norms (Kundert, 2008; Panzer, 2006).

Not all individuals within a cultural group value a certain body type or weight, in addition to varying across diverse cultures. Even though culture can contribute to eating disorders, this may not apply to everyone within that group (Polivy & Herman, 2002). Polivy and Herman (2002) found that some cultures valued thinness, others may value happiness over appearance, or healthy appearance over appearing famished, while some cultures may not experience any pressure to be thin (Polivy & Herman, 2002; Thomas et al., 2008). It would not be unusual for some cultural groups to portray heavier woman on their billboards, as an idol, than in other cultures (Ahern & Hetherington, 2006). Individuals from the U.S. valued thinness because of the negativity associated with being overweight (MacDonald, 2008). For example, of the U.S. population it was estimated that Latinos make up 73.4% of the overweight population, while only 34.4% were considered obese (Diaz et al., 2007). The Latino adolescent rate of obesity was on the rise (Diaz et al., 2007). Harrington (2008) found that Latino boys had higher rates of increased weight, while Latino females had the second highest group of all pediatric children. Due to the increase in weight, Latino children were reported to be in poorer physical shape, in part due to poverty (Harrington, 2008). Harrington (2008) further found that being an

overweight Latino child indicated health for the child and wealth for the family.

According to Diaz et al. (2007), it is possible that Latinos may be less concerned than Caucasians about being overweight (Diaz et al., 2007).

Even though lack of finances may contribute to obesity, so too can being wealthy. In China, obesity was somewhat rare but has been on the rise (Marsh et al., 2007). Historically, larger women in China were perceived as more desirable and attractive (Marsh et al., 2007). Compared to the Latino's in Harrington's (2008) study, children in China who were overweight had been perceived as being healthy (Marsh et al., 2007). Having an overweight child was reflective of the parents love for their child, higher socioeconomic status, and general urbanicity (Marsh et al., 2007). Though the prevalence of obesity in China was still low compared to other countries, the trend is showing up in terms of social and medical costs (Marsh et al., 2007).

Some cultural groups may strive for a certain body image and will not give into social pressure to be a different size. Over eating among African American women for example, was associated with having a preference towards a larger body size (Thomas et al., 2008). African American women reported they were happy being a larger size, were satisfied with their weight, and disagreed with the normed weight range (Thomas et al., 2008). Thomas et al. (2008) found that African American women were perceived as being more attractive with having a larger body size.

Food consumption was common among many cultures when celebrating happy events, acknowledging accomplishments, meeting personal milestones, or when engaging with others (Menard, 2007). Consuming food or drink brought people closer together at



social events, it can furthered communication when talking to friends or meeting strangers, and enhanced the sharing of personal experiences (Menard, 2007). Socially, individuals talked about their eating experiences such as the method in which they cook a certain food, what experiences they had eating food, how they may have cooked a favorite food item, what types of ethnic foods they may have tried, sharing recipes, suggesting certain foods, and talking about trying new foods and flavors (Menard, 2007). Food was identified as the focus at community and social gatherings, as well as family and religious events (Menard, 2007). Sharing food and conversation in a kitchen symbolized hospitality, openness to the guest and representation of family, a sense of community involvement and sharing, and a commitment the host has towards their guest (Menard, 2007).

### **Social**

Social environments further contribute to binge eating and obesity by the way in which the media portrayed a desired image and the manner in which it was accepted or endorsed. Social environments guided the manner in which individuals applied value to things (Puhl & Latner, 2007). The body image was to be the same or different from that of one's own culture, environment, or family values (Panzer, 2006). Families who do not practice, encourage, or reinforce their appearance tend to have a poorer self-image as well as being overweight (Kondo & Sokol, 2006; Paxton et al., 2006). Such images gave the impression that if one eats certain foods, he or she can look a particular way, or possess a certain image (Grieve et al., 2006; MacDonald, 2008; Panzer, 2006; Polivy & Herman, 2002). Individuals may felt the need to conform to certain standards, such as

over eating or consuming certain foods, in order to attain a certain body shape (Grieve et al., 2006).

**Media.** The media is powerful in the United States. Several authors (Ahern & Hetherington, 2006; Panzer, 2006) found that media can targeted any audience with the use of television, newspapers, magazines, billboards, commercials, radio, sports figures, or famous people. The media promoted an image of how women and men wanted to look like (Panzer, 2006), what beauty was, what the perfect boyd image looked like, what foods to consume, or products to purchase to attain that desired image (Grieve et al., 2006; Petrie eat al., 2008; MacDonald, 2008). For example, individuals are left with an image if they consumed a certain product that they should look like the model on the billboard, poster or magazine, or be as strong as the athlete (Ahern & Hetherington, 2006; Grieve et al., 2006; Petrie et al., 2008) on the box of cereal, juice bottle, or television commercial. Generally, however, images portrayed were less than truthful and do not tell the whole story (Grieve et al., 2006).

When a certain body image seemed within reach but was unattainable, personal failure sets in. The media portrays beauty and positive value towards those with a thin body (Petrie et al., 2008). Craighead (2006) wrote that women were more likely to be preoccupied with body images portrayed by the media and with having a perfect body image than men, which was eventually reported to lead to significant health problems and eating disorders. With repeated exposure, women have accepted the ideal body image of ultra thinness even though most women were unable to achieve that weight, let alone maintain it (Craighead, 2006). Adolescent girls stopped eating in hopes of looking like a

role model, or fitting into an unrealistic size (Polivy & Herman, 2002). The media left women with a perception of ultra thinness, which falls between the extreme low-end of the average weight and higher-end of being underweight, which was bordering on an unhealthy weight and having AN (Craighead, 2006). Only a few pounds separated ultra thinness from AN (Craighead, 2006).

Social pressure towards body image can come from the media. The media portrayed the perfect man as being masculine, slender, having “six-pack abs,” powerful, healthy, and fit (Petrie et al., 2008). Males have become more dissatisfied with their bodies than ever before (Petrie et al., 2008). Under and normal weight males wanted to be bigger, while heavier males wanted to be lighter (Grieve et al., 2006).

**Body image.** There is no uniform beauty image or body image upon which everyone can agree. Furthermore, beauty is open to personal interpretation. Theories of body dissatisfaction suggested the etiology was multifaceted in that body size, culture, and society emphasized a certain body type as being ideal (Thomas et al., 2008). When individuals were discontent with their body shape they adapted their eating habits, which often leads to the development of eating disorders (Grieve et al., 2006). Individual’s feelings and self-esteem were denigrated when they did not match the perfect image (Panzer, 2006).

**Sports.** There is no one perfect body image that is acceptable in all sports. Athletes attempting to build muscle, endurance, and stamina were faced with trying to figure out how to fuel their body with the right kinds of foods, the quantity, and frequency (Bonci et al., 2008). Some sports professionals had an image to live up to and

needed to have lean muscle mass; others may need a large body mass. Some had to be quick, another obese, another light weight, or in various combinations (Petrie et al., 2008). Even after training, the athlete may have been ineligible to compete if he or she was over or under weight, did not meet certain criteria, or was judged not to be strong enough (Petrie et al., 2008; Puhl & Latner, 2007). Athletes were pressured by their peers, coaches, teammates, and fans to improve their performance or become the best (Petrie et al., 2008). Each athlete knows what they must attain in order to stay competitive (Schwarzer & Luszczynska, 2008). Social pressure to become better or best is constant (Petrie et al., 2008). For example, it is possible that male athletes may experience anxiety, depression, body dissatisfaction, low self-esteem, use substances, or work out excessively to deal with the stress (Petrie et al., 2008).

The media is also able to target images for athletes. Athletes have been scrutinized on their appearance and their performance when they do not meet certain criteria (Petrie et al., 2008). They were at a disadvantage in that they also had an image to live up to (Petrie et al., 2008). Eating disorders have become more prevalent among athletes because they had to meet weight limits, increase their endurance and stamina, were peer pressured to be their best, and then judged on their performance (Petrie et al., 2008). Athletes were expected to improve their performance as well (Petrie et al., 2008).

To obtain a desired body image professional athletes may work on restrained eating. As such, they may spend more time focusing on their food intake than the average person. Some athletes watch every bite by keeping track of their food intake to the point they lost focus of their sport and more on their diet (Petrie et al., 2008).

Most sports are seasonal. Certain sports require athletes to train several months out of the year creating habits of cyclical eating (Petrie et al., 2008). Additionally, when an athlete was underweight he or she was expected to eat more food for weeks or months at a time (Epstein et al., 2007).

Consumption of larger quantities of food was not always perceived as binge eating nor eating out of control (Petrie et al., 2008). Because males felt they needed to be larger to fit the societal perception of what it is to be a man, they justified their eating patterns (Petrie et al., 2008). When the athlete gained weight they may resort to more drastic measures of skipping meals, using laxatives, vomiting, dehydration occurs, use steroids, or other medication (Petrie et al., 2008).

Professionals should be aware of eating disorders among athletes and ask questions. Eating disorders common among athletes were anorexia, bulimia, binge eating, weight control behaviors, obsession, body image and subclinical eating disorders (Bonci et al., 2008). Males think eating disorders are for females and justify their behaviors as being different (Goldman, 2007; Petrie et al., 2008). Research found that sports figures, body builders, Olympians, or wrestlers who ate more than the average person would not as likely be labeled as binge eaters, even though large quantities of food were consumed (Bonci et al., 2008; Petrie et al., 2008). When overeating was done for a cause, such as with sports, eating habits were seldom discussed with their PCP (Epstein et al, 2007; Petrie et al, 2008). Since males were not associated with binge eating, professionals do not look for the symptoms unless they were self-reported (Petrie et al., 2008). Athletes

may resort to eating foods at a certain time as well as exercising as a way to bulk up or lose weight faster (Epstein et al., 2007).

Obesity carries negative connotations and neither age nor gender is exempt. Social pressure to be thin is different for all people (Paxton et al., 2006; Polivy & Herman, 2002). Both media and peer pressure have been used to degrade students who were overweight (Polivy & Herman, 2002). Paxton et al. (2006) found that children who were overweight had fewer friends. Body dissatisfaction occurred among children when they were teased for being overweight (Polivy & Herman, 2002). When children were teased in school or were overweight, they tended to develop an eating disorder (Polivy & Herman, 2002). Overweight children have endured teasing, name calling, physically contacted, exclusion or tormented from peers (Puhl & Latner, 2007). Puhl and Latner (2007) found when a child felt devalued it became linked to his or her social identity. Furthermore, when individuals were not able to attain a certain weight they had lower self-esteem (Polivy & Herman, 2002).

Paxton et al. (2006) discovered that girls who were trim were more popular than heavier girls. The positive image for boys was just the opposite. Boys did not want to be small or thin because it was a social sign of weakness (Paxton et al., 2006). These types of images drove people to eating disorders from bulimia, to binge eating, to obesity (Polivy & Herman, 2002).

Society praises and idolizes the perfect body and devalues those without such a body (Polivy & Herman, 2002). Women were more likely to engage in weight loss, while men were more likely to engage in weight gain behaviors (Grieve et al., 2006). Societal

values for men were masculinity and for women femininity (Petrie et al., 2008). Masculine meant the individual was someone who is tough and physically fit (Petrie et al., 2008). Males are not to admit pain or mental suffering as it is a sign of weakness (Petrie et al., 2008), and were more likely to overeat because of the social value placed on them. However, men were less likely to have an eating disorder (Ahern & Hetherington, 2006). Larger body mass was valued if the person was a professional sports figure or known to be a winner; however, large body mass was not valued if they were known to be a loser (Grieve et al., 2006). The more obese the person, the higher the risk for negative consequences (Panzer, 2006).

**Socioeconomics.** Obesity can limit economic resources. For those with larger body sizes, if individuals were unable to fit within a defined work area, had to stand for longer periods of time, or had to lift heavy objects, than vocational opportunities can be limited or denied (Thomas et al., 2008). Employers may have preconceived ideas about the health and work performance of obese people, which may lead to discrimination (Hebl & Turchin, 2005). Some stereotype traits associated with obesity were laziness, lack of discipline, or unhappiness (Hebl & Turchin, 2005). Discrimination may have occurred when excess weight hinders the ability for someone to move around or was unable to enjoy leisure activities (Thomas et al., 2008). Overweight individuals can get fatigued easily which may limit leisure or vocational options (Thomas et al., 2008).

Healthier lifestyle opportunities can be limited when individuals have a lower socioeconomic status. Having fewer resources added to increased stress (Harrington, 2008). Additionally, assessing health clubs when public transportation was used can be

limited due to safety issues, availability of transportation, and the time it took to get to get back home (Thomas et al., 2008). Thomas et al. (2008) reported that women reported not engaging in physical activities because of the limited active wear sizes available, the unattractiveness of what was available, and wanting to look good during and throughout the work out.

### **Biological**

Binge eating and obesity can be caused by personal, familial, environmental and biological reasons. Biologically, when the brain does not feel like hunger has been satiated a chemical imbalance of the brain may exist due to low serotonin levels, resulting from limited carbohydrate intake (Goldman, 2007). When the brain does not receive a signal from the body that it is full, cravings continues (Goldman, 2007). The hungrier a person is, the faster he or she eat (Goldman, 2007). Faster eating requires more food to feel full (Goldman, 2007). Overeating can result from medical conditions, reinforcement patterns, stress management, and how individuals tend to navigate through life (Epstein et al., 2007).

**Gender.** Social pressure to be thin can be caused by society values. Women tended to see themselves heavier than what they were and resorted to losing weight in unhealthy ways (Grieve, et al., 2006). Males were just as likely to feel pressured to have an ideal body image by having a muscular image (Grieve et al., 2006). When men saw themselves as being underweight they may tried gaining weight in unhealthy ways (Grieve et al., 2006). The appearance and value of thinness was a distorted reality that individuals try to pursue (Polivy & Herman, 2002). If more professionals assessed males



eating habits it is possible that binge eating may be much higher than was originally thought (Petrie et al., 2008).

Eating disorders are often associated with women, although males are just vulnerable (Petrie et al., 2008). During stressful times women tend to choose fast food or high-fat high-sugar food (O'Connor et al., 2008). Fluctuations in hormones and emotions associated with premenstrual syndrome can contribute to binge eating (Goldman, 2007). Premenstrual syndrome can cause intense cravings for certain foods (Christensen & Brooks, 2006).

**Positive reinforcement.** Not only is food needed to survive, it also brings individuals pleasant memories, and is easy to obtain. Food became a social outlet for all occasions just as it had become a source of comfort (Rozin, 2005); and was used as a positive reinforcer (Jenkins, 2007; Panzer, 2006). Dining out or eating socially, further reinforces eating as a pleasurable activity (Epstein et al., 2007). Food was frequently used as a reward, was associated with something positive, had value, and offered many choices (Epstein et al., 2007). It was something that takes away hunger and the cost was within reach (Epstein et al., 2007).

Individuals the U.S. in have been trained to expect certain foods when attending specific events. For example, movie theaters were associated with consuming popcorn and baseball games with hot dogs, soda or beer. The smell of these foods caused cravings in the absence of hunger (Epstein et al., 2007). Triggers developed when there was an association between food and a certain activity, even with the time in which we eat (Epstein et al., 2007). Yet these same foods may not trigger such a strong craving when

the individual goes shopping or when he or she is actually hungry (Epstein et al., 2007). If individuals want to increase their activity level, then a reinforcer can help with this process but it should not be food (Epstein et al. 2007). Individuals should allow their body a chance to tell them when nutrients are needed to replenish the body, rather than letting social cues control eating habits (Epstein et al., 2007). An awareness of personal triggers was found to be needed in order to learn how to change eating habits (Epstein et al., 2007). These were some of the reasons why it was difficult for people to change their eating patterns when they were at certain events, locations, or hungry at certain times of the day (Epstein et al., 2007).

**Stress and emotional eating.** The perception of stress and an individual's ability to deal with problems affects eating habits and the types of foods chosen (Harrington et al., 2006). Stress can be described as daily events or minor hassles (O'Connor et al., 2008), and was something that can occur in almost every environment (Harrington et al., 2006). Hassles can produce feelings of negativity in which goals may be more difficult to reach (O'Connor et al., 2008). Stress alone can have an impact on our health (O'Connor et al., 2008).

Stress can impact food cravings and stir up emotions that need to be soothed. One study found that stress can lead to cravings for particular foods as well as overeating (O'Connor et al., 2008). Dieting can cause more stress than obesity itself because of the restrictions and limits in place (Mann et al., 2007). Even restrained eaters can experience overeating (O'Connor et al., 2008). Daily stressors can be recorded so they become recognized and other choices made than relying on food (O'Connor et al., 2008). When

there is a lack of awareness, some people tended to make themselves feel better by eating comfort food (O'Connor et al., 2008).

**Emotional eating.** Eating can bring comfort quickly when soothing emotions. Emotional eaters consumed food when they became anxious or emotionally charged and tended to have a preference for foods high in sugar (O'Connor et al., 2008). Emotional eating not only helped individuals to cope, but served to also mask what they are feeling (Thomas et al., 2008). Individuals have learned to cope with their emotions with the use of food, because it can quickly change an emotional state from despair to hope, though it may be temporary (Menard, 2007). Inadequate coping styles or not identifying the source of stress can lead to eating behaviors because of learned maladaptive coping (Harrington et al., 2006).

The need to obtain food can be brought on by mental health conditions. When individuals experienced depression they reported turning to food, especially sweets (Christensen & Brooks, 2006). Obsessive compulsive disorder and seasonal affective disorder were other pathologies that can lead to certain food cravings (Christensen & Brooks, 2006). This is not to say that people who binge eat had a disorder (Christensen & Brooks, 2006), rather binge eaters can be mentally healthy and happy, experiencing little stress, no pathology, and no comorbid health conditions (Menard, 2007).

Stress is a powerful emotion that can cause cravings of certain foods and the amount desired. It can soothe stress and alter moods. Stress can contribute to hunger at the sound, sight, or smell of certain foods, and induce the urge to snack more during stressful times (O'Connor et al., 2008). MacDonald (2008) stated that stress and

emotional eating can manage both positive and negative moods. Individuals have reported when they binge eat that it helped to escape their troubles and mentally helped them feel better short-term (Goldman, 2007).

Situational stress also contributes to a person's eating habits. For example, some individuals with a history of sexual abuse develop eating disorders, due to the trauma they experienced (Harrington et al., 2006). When sexual assault victims felt they had no self-control, lacked coping skills, and felt inadequate, they turned to binge eating (Panzer, 2006). When emotions were attached to binge eating there was a stronger prevalence for misuse of food (MacDonald, 2008). People have learned to medicate themselves with food to avoid unpleasant thoughts (Goldman, 2007). Out of escape, emotional eating was born (Goldman, 2007).

Stress can come from many sources which in turn can lead to emotional eating, just as emotional eating can become stressful if it is not self-controlled. It is important to find the source of stress and identify the emotion that is being fed so personal habits can be changed. If the source of stress and emotions are not identified than triggers will continue to control eating habits. The longer the problem is ignored the more difficult old eating habits will be to change.

**Personality traits.** Binge eaters are difficult to identify unless questions are asked or information is shared. Personality traits played a part in the development of eating habits such as perfection, impulsivity, temperament, compulsions, obsessions, or self-criticizing with food (Paxton et al., 2006). Binge eating was often over looked by the medical profession because patients typically did not disclose bingeing to their PCP, nor

did the PCP always ask (Jenkins, 2007). To identify a binge eater one has to understand them first (Jenkins, 2007). Compulsive eaters tended to be addicted to food (Jenkins, 2007). They may get up at night when everyone is sleeping to eat in privacy, hide food, binge uncontrollably, or steal food (Jenkins, 2007). A compulsive eater not only fools others but fools him or her self (Jenkins, 2007). Compulsive eaters will not be truthful about their intake, may blame others, or deny their habits (Jenkins, 2007). People with compulsive personality traits may use food as a way to numb their feelings (Harrington et al., 2006; Jenkins, 2007). Food is obtained and consumed until feelings have been numbed or the person comforted, reinforcing bingeing causes the person to binge eat more frequently (Jenkins, 2007).

### **Impact on Health**

Having a personal awareness of how binge eating and obesity impacts the body and mind is a step individuals should take in the understanding of their eating habits. The rate of obesity is rising so quickly that the life expectancy trends are probably going to reverse themselves (Armon et al., 2008). Twenty other countries have a longer life expectancy than people in U.S. (Rozin, 2005). Japan has the highest expectancy life of 75 years while the U.S. is the lowest at 69.3 years (Rozin, 2005). Health risks, physical conditions, psychological disorders, or preoccupation with body size and image can occur as a result of binge eating or obesity (Grieve et al., 2006).

### **Health Risks**

The medical profession is justly concerned with binge eating and obesity. Medical complications that can occur from binge eating or obesity include cardiovascular,

dermatology, endocrine, gastrointestinal, gynecologic, musculoskeletal, and neurological disorders, along with others too numerous to mention (Kondo & Sokol, 2006). Obese patients are at an increased risk for high blood pressure, Type 2 diabetes, heart disease, stroke, diseased gallbladder, arthritis, sleep apnea, respiratory problems, and some forms of cancer (Goldman, 2007; Panzer, 2006; Thomas et al., 2008). When individuals were physically fatigued, emotionally burned out, and exposed to chronic stress at home and work, they are exposing themselves to heart disease and diabetes (Armon et al., 2008). Abdominal obesity and emotional burnout were related to heart disease which is a very serious condition (Armon et al., 2008). Consumption of foods that are calorie dense increase the risk of heart disease and cancer (O'Connor et al., 2008).

Risk factors for eating disorders include: family history of eating disorders, valuing thinness, having prior unsuccessful weight loss attempts, history of sexual abuse, family discord, poor body image, psychological condition, preoccupation with food, fasting, ritualistic mealtime behaviors, excessive exercising, diverse purging behaviors, withdrawal from family and leisure activities, or confusion about gender identity (Armon, 2008; Goldman, 2007; Harris, 2008; Kondo & Sokol, 2006; O'Connor et al., 2008; Panzer, 2006; Thomas et al., 2008). Binge eaters do not have to be overweight, but the majority of individuals in weight reduction programs tend to be obese (Kondo & Sokol, 2006). Children whose parents are obese were at an increased risk for being overweight (Stice et al., 2006). Risks that increase the onset of obesity are weight control through bingeing, purging, using laxatives, or counting calories that promotes these behaviors (Stice et al., 2005).

## **Comorbidity**

Binge eating and obesity are correlated with mental health conditions such as major depression, oppositional defiant disorder, BN or can be exacerbated by dysthymia, social anxiety, and obsessive-compulsive disorder (Bonci et al., 2008; Kondo & Sokol, 2006; Ochtner & Geliebter, 2007; Panzer, 2006). While commonly used and understood as truth by some, these disorders do not take into account the family dynamics, the role the child has within the family system, or any dysfunction within the network or environment (Panzer, 2006). Obesity can cause low self-esteem, can affect an individual's appearance, decrease self-control, reduce activity level (Thomas et al., 2008), self-confidence, result in psychosocial discrimination, and reduce peer acceptance (Murray, 2008; Panzer, 2006; Puhl & Latner, 2007; Thomas et al., 2008). Depressive symptoms can lead to the onset of obesity due to the cravings for high-fat high-sugar foods, that, as previously noted, tend to regulate mood (Stice et al., 2005). When individuals had comorbid health problems the excess weight exacerbates pre-existing conditions, shortens one's life, and increase the risk of mortality (Thomas et al., 2008).

## **Impact on Society**

It is suggested by 2010, pediatric obesity will increase 50% in the United States alone (Puhl & Latner, 2007). Health related costs of obesity per year is \$100 billion dollars, which affects 70 million people in the U.S. (Stice et al., 2006). Such trends will have long-term personal and social consequences (Puhl & Latner, 2007).

**Children in the U.S.**

In the past 3 decades, increases in weight or obesity have been on the rise (Stice et al., 2006). At this rate, parents will likely outlive their children (Puhl & Latner, 2007). Overweight children are often the target of their peer's aggression, suffer from low self-esteem and are shunned by their peers (Puhl & Latner, 2007). If parents teach their children how to eat healthy, make good food choices, and engage in physical activities regularly, children may not have to change or learn eating habits in the future. Pediatric obesity hinders a child's chance to grow emotionally, socially, and academically (Puhl & Latner, 2007).

As children develop socially, they are prevented from participating in school sports, social events, or forming peer relationships due to being overweight (Puhl & Latner, 2007). The scars that come from pediatric obesity can be life long (Puhl & Latner, 2007).

**Insurance**

In 2004, Medicare changed the way it paid medical practitioners due to the drastic increase in obesity rates. Obesity was once described in their manual as not being an illness, so Medicare excluded related services (Mann et al., 2007). Coverage now includes the treatment of obesity and related health conditions (Mann et al., 2007). Mann et al. (2007) reported that obesity is not classified as a disease and state that the Centers for Medicare and Medicaid Services, illness and disease, have different coverage rules. When someone is diagnosed as having an illness, such as obesity, the standards for effective treatment have to be proven to be significant in order for insurance to pay



(Mann et al., 2007). Providers who can help binge eaters and obese individuals lose weight became eligible to receive reimbursement for their services by using treatment approaches that have been shown to produce clinically significant results (Powell et al., 2007).

### **Reasons to Change**

Some contributors to binge eating and obesity are sedentary lifestyles, toxic environments, social environments and the body's biological makeup. Using a collaborative approach with other professionals can help motivate the individual towards weight loss success (Williams et al., 2007). Obtaining and understanding the patients background is very important in treatment, as is their medical history (MacDonald, 2008).

### **Medical Profession**

To correct the problem of binge eating and obesity we have to figure out what is not working. The medical professional has to understand that eating habits are difficult to change and go beyond diet and exercise (Williams et al., 2007). Some examples according to Polivy and Herman (2002) were that not all cultures agree with what a binge is or are to identify eating disorders in a uniform way. Binge eating can be difficult to identify based on what a normal portion is supposed to look like, and whose norm is being used (Polivy & Herman, 2002). Polivy and Herman (2002) reported that there were variations in how cultures valued certain body images and weight, so therefore, there was no culturally agreed upon standard or definition of obesity. Furthermore, Murray (2008) reported that society was expected to live by the standards the medical association

condoned and set as healthy guidelines. MacDonald (2008) stated that some PCP's may not make referrals to other professionals because of their own insecurity with binge eating or obesity.

To help build rapport and establish open communication, the PCP should understand that there is shame and embarrassment associated with binge eating and obesity. Thomas et al. (2008) report the PCP should inquire about the individuals' beliefs towards obesity, knowledge about their health, weight loss, and eating habits. Thomas et al. also reported that Caucasian women preferred to receive support from others who were obese, knew what they were going through, and felt PCP's were insensitive to weight loss and the effort it takes to lose weight. In order for overeating to decline PCP's have to be educated and refer individuals to other appropriate professionals (Jenkins, 2007).

Collaboration with other professionals is important with binge eaters and those who are over weight (Diaz et al., 2007; Panzer, 2006), as research is somewhat limited in this area. Relapse is high, so follow up and maintenance is just as important as the change process (Panzer, 2006). Without psychological, cognitive restructuring, behavioral management, or psychopharmacological treatment it is unlikely that individuals can overcome uncontrolled binge eating, which goes beyond the medical profession (Ochner & Geliebter, 2007).

The medical profession has power and authority to voice concern or serve as society's health police, but is unable to socially generalize and apply their ideals to all groups of people (Murray, 2008). Obesity guidelines were set and condoned by the

medical association rather than the larger society (Murray, 2008). The medical definition did not account for obesity based on multicultural differences, nor was there an agreed upon norm as it related to body image or weight (Panzer, 2006).

Obesity comes at a personal cost. According to Murray (2008), an individuals' anxiety increased when they did not fit the normative medical standards. Individuals felt blamed for their weight and were seen as not willing to fit in, even though other factors may have contributed to their obesity (Murray, 2008). When individuals feel like a failure, they turn towards more evasive measures of medicine and surgery as an alternative to weight loss (Murray, 2008). These procedures may not be long-term solutions for the individual's actual problem, but can carry with it side effects and health risks, including death (Powell et al., 2007). This shifts the responsibility away from the individuals, even though the individuals are responsible for their weight loss and maintaining their weight (Murray, 2008). Obesity is an epidemic and one in which individuals have to learn to master of their own body (Murray, 2008).

### **Numbers**

The health industry is a science in which an individual's body chemistry can be measured and checked for changes. The medical field can focus on and use exact numbers which can lead to identifying pathology, monitoring an individual's health, diagnosing and treating conditions, as well as saving lives (Murray, 2008). Medical science is obsessed with numbers so that people's health can be optimized, thus weight ranges were established (Murray, 2008). The medical association set up and established body weight ranges that are applied to all groups of people (Murray, 2008). Numbers,

however, are not always indicative of an individual's health or happiness (Herman et al., 2008; Tomiyama & Mann, 2008).

Controversy arose when using the BMI and weight ranges to gauge an individual's health because these measures do not take into consideration individuals with a larger muscle mass, those who are misproportioned, those who are in good physical condition, those who may be pregnant, people with larger body frames, or someone who may be overactive and underweight (Grieve et al., 2006; Herman et al., 2008; Petrie et al., 2008; Thomas et al., 2008). Individuals falling into these categories may be healthier than someone who falls within the normal BMI or weight range (Grieve et al., 2006). Weight gain and loss is not an exact science, rather it is a complex and multifaceted field of study in human behavior (Paxton et al., 2006; Petrie et al., 2008).

### **Pathology**

Primary care providers detect and manage 5 million people yearly with eating disorders (Kondo & Sokol, 2006). Early detection and intervention was found to be more important with eating disorders (Kondo & Sokol, 2006; Panzer, 2006). The more engrained behaviors became the more difficult they were to change (Kondo & Sokol, 2006). Applying pathology to an individual in order for insurance to pay for services did not help to change an individual's eating habits nor make lifestyle changes (Kundert, 2008; Mann et al., 2007); rather pathology can make individuals feel worse about themselves leading them to resort to more invasive surgical procedures or medication (Murray, 2008).

### **Collaboration with Professionals**

There are internal and external factors that contribute to binge eating and obesity. Early detection of eating disorders can be done using psychological, medical, or other professional assessments (Kondo & Sokol, 2006). There is no consensus on how best to diagnose binge eating or obesity (Panzer, 2006), due to the many variables previously discussed. Collaboration is needed between professionals in the treatment of binge eating and obesity (Panzer, 2006). It does not help the individual much if their medical condition is monitored while other problematic areas are not (Panzer, 2006).

When individuals have been diagnosed with an eating disorder, their health, psychosocial and clinical factors should be assessed. For a collaborative approach to work, the setting should be accessible with diverse professionals available, and located where the individual can have access to medical care if needed (Panzer, 2006). In order for binge eating and obesity to decline, professionals should begin working collaboratively together for the good of the individual (Jenkins, 2007). With binge eating and obesity, an interdisciplinary approach should be taken due to a multitude of reasons that may have contributed to overeating. It is important that diverse professionals work with the PCP's collaboratively so the individual can regain their health back while learning healthy lifestyle changes (Tomiyama & Mann, 2008).

It is hard to change a habit when one is unaware of it, to avoid a trigger without understanding it, to reduce an emotion that does not seem to have a cause, or to perceive hunger without needing to eat. Intervention and treatment should match that of the individual's abilities, wishes, and desires (Panzer, 2006). Obesity is due in part to having

a lack of knowledge and individuals left to fend for him or her self, when no one takes the time to sit down with them to address their needs of how and where to begin (Panzer, 2006).

For social change to occur there has to be an active inclusion of other professionals, education of the public, access and availability of prevention and treatment programs, awareness by policy makers of the impact that binge eating and obesity has on society. With a collaborate approach, professionals can help implement policy change and secure funding from law makers for prevention and intervention programs (Panzer, 2006). Having good health could mean longevity, happiness, inclusion, and agility (Panzer, 2006). Cognitive behavioral approaches can be used by diverse professionals in helping individuals change the way they think, eat, behave, and can be used for weight control.

### **Change using Cognitive Behavioral Theory**

CBT has been shown to produce significant results in reducing overeating. The CBT is an approach that can help change the way in which individuals think and behave towards making food choices. This approach was considered the gold standard in the treatment of binge eating because it not only helped to identify and restructure faulty thinking, but also focuses on changing eating behaviors (Jenkins, 2007; Powell et al., 2007). CBT helped break the cycle of bingeing through weight reduction where food is eaten in moderation and not restricted (Ochner & Geliebter, 2007).

Goldman (2007) wrote that the CBT approach is helpful with obesity in that the individual's distorted view of their shape and weight could be changed, it helps to

decrease symptoms and pathology. This approach helps individuals change learned behaviors, diet, self image, and attitude towards themselves (Goldman, 2007). Not only was changing behaviors important, but distorted thinking was corrected as well through implementing CBT (Menard, 2007). The CBT was found to focus on changing specific behaviors, emotions, increase coping, and can be applied a wider range of families (Goldman, 2007; Jenkins, 2007; Kitzmann & Beech, 2006; Menard, 2007; Ochner & Geliebter, 2007; Panzer, 2006).

In CBT, many diverse techniques such as education, recognizing stress, identifying emotions, understanding nutrition and exercise, learning self-regulation and self monitoring skills, and identifying personal triggers can be employed (Goldman, 2007). CBT can be done individually or in a group. This therapy can help challenge irrational thoughts of needing to be perfect, to please everyone, and to be in control, among others (Goldman, 2007; Menard, 2007). Controlling eating habits is hard work, which will pay off through self-regulation and self-monitoring (Goldman, 2007). Individuals who experience negative thoughts do well with CBT because it helps to change the thought process towards food, as well as change behavior (Menard, 2007).

Understanding the triggers that influence food cravings is important in order to change learned behavior. A reinforcer, such as food, can act as a stimulus which causes a behavioral reaction (Epstein et al., 2007). Consider the following example, when the word “lemon” or “chocolate” is mentioned, either can illicit a food craving or behavioral reaction. The strength of the stimulus can affect or support the strength of the reinforcer (Epstein et al., 2007; O’Connor et al., 2008; Panzer, 2006; Puhl & Latner, 2007).

Interventions aimed at changing lifestyles are not only cost effective but are one of the first steps used in treatment (Powell et al., 2007). Interventions may include a change in diet, change in eating patterns, exercise, and education (Powell et al., 2007).

### **Prevention and Intervention**

CBT can also be used in the prevention and intervention of binge eating and obesity. Prevention and intervention should be promoted so people know what options they have to choose from and what type of foods to select (Panzer, 2006). Barriers to changing eating habits have been identified as lack of time, finances, family support, and medical support (Thomas et al., 2008). Behavioral changes occur with nutrition, increased activity, and the family's goals focused on the whole family (Panzer, 2006). With these changes comes the cognitive process of the way in which one looks at food, how one feels towards making the changes, and the social features associated with these learned these behaviors (Panzer, 2006).

It is unlikely that any one treatment approach could be used exclusively to one ethnicity, due to the variability and overlap of group identification (Panzer, 2006). The highest groups at risk were among those with lower socioeconomic status and minority status (Panzer, 2006). For these reasons, nutrition, activity, parental training, family psychopathology, parental education, skills training, and increased activity all have to be taken into consideration (Panzer, 2006).

CBT was used effectively in the assessment of individual and family eating habits, the knowledge used to control binge eating and obesity, with self-regulating techniques learned, and learning how to maintain learned eating habits. When individuals



seek CBT intervention for overeating there are many techniques available (Epstein et al., 2007; Powell et al., 2007; Tomiyama & Mann, 2008). Methods can be taught so they can be later self-managed (Bonci et al., 2008). For example, providing education to the athlete is important to prevent relapse and offering new ways of dealing with nutrition and training (Bonci et al., 2008). Goldman (2007) reported individuals who were unsuccessful dieting felt deprived and preoccupied themselves with food, which sabotaged their attempt at weight loss before it really got started. The foundation of programming should include psycho-education, nutrition, exercise, and cognitive-behavioral techniques (Panzer, 2006).

When individuals were allowed to make decisions and not feel deprived, they tended to take ownership in their progress and were motivated to excel (Menard, 2007). Binge eaters were unaware to the extent they learned to over medicate themselves with food and eating was a quick way to feel better (O'Connor et al., 2008). Phelan et al. (2008) reported that individuals who monitored their decisions, regulated their eating, and exercised regularly, reported these were critical changes they made to control their weight, which was done using CBT. Monitoring personal behaviors creates a self-awareness so if relapse occurred change can be made quickly (Menard, 2007; Phelan et al., 2008).

Intervention is the same for binge eating as it is with obesity. Obesity can contribute to suicidal ideation as well as increased attempts, than those of average weight (Puhl & Latner, 2007). Teasing and victimization were factors that led to suicidal

ideation and attempts by both girls and boys (Puhl & Latner, 2007). Eating habits are nondiscriminatory of an individual's age, gender, or culture.

A challenge to losing weight has been the associated strength of food in relation to reinforcement (Epstein et al., 2007). When an emotion was being fed it was best to explore the cause, and think through the effect (Goldman, 2007). Various relaxation techniques can help relieve stress as well as increase activity such as with yoga, pilates, or walking (Harris, 2008). Physically concentrating on something else has served as distractions such as: exercise, meditation, visual imagery, and deep breathing (Menard, 2007). It was important the individuals were active participants to help identify lifestyle patterns they could live with, as they were more apt to follow them than if they were told what they had to do (Menard, 2007).

Setting realistic goals for intervention is necessary so the individual can experience success frequently (Menard, 2007). The individual has to buy into the changes they make and not the professional (Menard, 2007). Individuals who experienced negative thoughts did well with CBT because it helped to change the negative thought process towards food, as well as changing behaviors (Menard, 2007). Weight was better controlled when the individual caught themselves falling into old habits such as during holidays, or at times when their eating increased (Phelan et al., 2008). Those who were least likely to gain weight were individuals who self-monitored their behaviors, weighed themselves and exercised regularly (Phelan et al., 2008). Individuals were not encouraged to weigh themselves frequently, because weight loss does not always show up numbers

(Herman et al., 2008). Professionals who maintained contact with the individual for at least 1 year had the most success with weight loss and maintenance (Panzer, 2006).

The CBT approach has shown significant results when the onset of obesity occurred rapidly than weight accumulated over time (Masheb & Grilo, 2007). Eating behaviors become more engrained when weight is put on over longer periods of time. The CBT was viewed as the best treatment approach with BED (Masheb & Grilo, 2007). Therapy could be done individually, in groups, family, parental classes, or in a classroom setting (Panzer, 2006). The frequency of visits, types of intervention, and skills training were also important (Panzer, 2006). Intervention should match the family's compatibility (Panzer, 2006). Interventions aimed at changing lifestyles can be cost effective and one of the first steps used in treatment (Powell et al., 2007). These interventions may include a change in diet, eating patterns, exercise, and education (Powell et al., 2007). Ochner and Geliebter (2007) reported that the treatment of individuals with a BED was not likely to get better if a psychological, behavioral, and/or medications were not used. Binge eaters do not have to be obese, and obese people do not have to be binge eaters, but there is an individual and societal cost for both without intervention.

### **Methods Literature Review**

The methods used in this study were used in other studies with different outcomes. CBT was the most widely used and well supported approach in the treatment of binge eating and obesity (Menard, 2007). The CBT approach was the treatment of choice for BN and binge eating and useful when working with families (Wilson et al., 2007). Interpersonal therapy (IPT) was also helpful, in addition to CBT, as it helped

individuals understand how others in their life enabled their eating problem. Ochner and Geliebter (2007) used the CBT approach in their study to help break the binge eating cycle and correct body size. Panzer (2006) chose the CBT approach in a study, where collaboration with other professionals was used in working with obese children and their families, in an effort to change nutrition and fitness at a social level, while promoting education and legislation in prevention programs. CBT techniques can be learned through reading self-help books, associated with binge eating and obesity (Masheb & Grilo, 2007). Kitzmann and Beech (2006) used family-based intervention in their study of pediatric obesity, combining family education and coping with CBT. Epstein et al. (2007) studied how food reinforcement can influence eating habits using behavioral techniques. O'Connor et al. (2008) studied the effects of stress and an increase in food consumption using multilevel modeling techniques. Wing et al. (2008) used self-regulation theory and studied weight loss success, finding that individuals who were able to self-monitor were less apt to regain lost weight. Diaz et al. (2007) found that Latino's had a difficult time adapting to the mainstream ideals of body weight and were motivated towards maintaining a healthy weight if they felt well, and if they were given reasonable, practical, and personalized information. In Menard's (2007) case study, CBT was used in correcting negative cognitions in conjunction with happy eaters in which family and culture are intertwined.

In treating eating disorders, sometimes there is comorbidity. Williams et al. (2007) used medication and CBT in the treatment of individuals with an eating disorder. Masheb and Grilo (2007) researched pediatric binge eating using CBT in conjunction

with medication management for rapid response treatment. Kondo and Sokol (2006) discussed the PCP's role in the identification and treatment of eating disorders among the pediatric population and young adults.

CBT can be used to work with different cultures, in changing eating habits and the way food is celebrated or valued (Menard, 2007). Interventions can be modified to fit the needs of most everyone, in that sometimes intervention can be aimed at cognitive restructuring, or with making behavioral changes (Menard, 2007). Binge eating and obesity can be approached in many ways to help individuals change their eating habits, as CBT offers flexibility and not require conformity.

There are a few testing instruments available for eating disorders. The EAT-26 is a widely used and standardized questionnaire that measure nutrition attitudes and concerns associated with eating disorders (Dunn et al., 2007). Athletic trainers use the EAT-26 to screen for early detection and prevention of eating disorders (Dunn et al., 2007). Dunn et al. (2007) showed that college athletes lacked nutritional knowledge.

### **Methods Outcome Review**

Many theories have been used in the treatment of eating disorders, among diverse age groups, and across cultures. Panzer (2006) reported that a family based treatment for pediatric obesity and that intervention research methodology should be focused on evaluation and treatment. Ochner and Geliebter (2007) recommended reading self-help books in the reduction of binge eating; however, if the individual was obese a referral to a mental health professional was suggested, as it could cause medical comorbidity. Few doctoral programs in psychology offer a program specific to eating disorders (Wilson et

al., 2007). Research in the treatment of binge eating and obesity can be primarily found at psychiatry and medical schools (Wilson et al., 2007). Diet and exercise were important with behavior modification programs to health can be improved, and reliance on medication reduced (Rivas-Vazquez, 2002).

In conjunction with research also comes testing instruments for binge eating and obesity. Humphreys et al. (2007) used the EAT-26 to assess symptoms of eating disorders using dieting, bulimia and oral control, while Dunn et al. (2007) used the survey for early detection of eating disorders. Obesity will be determined based on individual the BMI.

### **Summary and Transition Statement**

There are many reasons that contribute to binge eating and obesity. Unless bingeing and obesity is made public, awareness created, and knowledge shared, eating habits will not change (Panzer, 2006). There is a lack of agreement upon what binge eating and obesity is due to personal values and desired body image. Diverse approaches are needed in changing eating habits. There are comorbid conditions that contribute to eating habits and obesity. Creating a personal awareness about eating habits needs to be assessed by experienced professionals. Individuals should be allowed to make personal choices to how they approach treatment as long as they understand the impact that their decisions may have on their health. CBT can be used to help change thoughts and behaviors among diverse groups of people. Maintaining learned techniques and follow up are still required to prevent relapse. Since obesity rates continue to increase among

people of all ages, working collaboratively with other experienced professionals may reverse this trend.

The gap in literature is there are many definitions of binge eating, as well as what constitutes obesity. Perceptions of binge eating and obesity can vary across populations. There is a lack of knowledge among PCP's as to what other professionals' roles are in the treatment of binge eating and obesity. This study will add to the literature base defining binge eating and obesity by identifying participants' perceptions of their BMI and weight range category. Additionally, this study identified the referral rate for binge eaters and obese patients beyond the PCP. The purpose of this study is to understand possible reasons for the rise in binge eating rates and obesity, for the purpose of decreasing the rates so individuals can live healthier and longer lives. In Chapter 3 the research design and methodology to study the effects of individuals who are referred to others beyond their PCP as well as how individuals are able to self-identify with binge eating and obesity will be reported on.

## Chapter 3: Research Method

### **Introduction**

In this chapter, I review the purpose of this study followed by an explanation of the research design and analysis. The sample characteristics, size, and population presented were based on residents living in North Dakota. A discussion of the data collection process and analysis used follows. Finally, a description of the instrumentation is presented, followed by ethical considerations and participants' rights.

### **Research Design**

The design for this study was quantitative, as statistics can be used to identify significant individual or group differences. A nonexperimental design was chosen to allow for individual differences as they relate to binge eating and obesity. The dependent research variables were obesity and binge eating. For this study, obesity was measured using six BMI categories (i.e., underweight, normal weight, over weight, obese, very obese, extremely obese), while the EAT-26 scores were placed in one of two binge eating categories, those who scored below a 20 in one category of not having the potential of over eating and a score above 20 in another group who have the potential to over eat. The independent variables were whether individuals were referred to professionals beyond their PCP and how individuals self-identified with binge eating and obesity.

Individuals who binge ate or were obese may have limited information on how to change their eating habits and may need to seek information from sources outside their PCP. In order to change eating habits, individuals have to understand what binge eating



and obesity is. The problem of binge eating is multifaceted, so the collaborative approach should be more inclusive of this diversity.

Participants were not randomly selected nor randomly assigned to groups as this was not a true experimental study. Rather, participants were placed into one of two groups, based on their self-report of whether they received a referral beyond their PCP to another professional to address eating related issues or not. Groups were formed in this manner for Research Questions 1 and 2. Groups for Research Questions 3 and 4 were based on how individuals self-identified with binge eating and obesity, depending on whether they correctly placed themselves using the EAT-26 and BMI status categories. Specifically, individuals who scored below a 20 on the EAT-26 were placed in the nonbinge eating group while scores at 20 or above were placed in the binge eating group. For the BMI status categories, the individual's height and weight were calculated and placed into one of six BMI groups (ie., under weight, average weight, over weight, obese, very obese, extremely obese), as established by the AMA for Research Question 4.

### **Quantitative Versus Qualitative Measure**

Gathering information on binge eating and obesity would be difficult using a qualitative approach as it would require many individual responses, in which personal responses would be hard to categorize and make inferences from. Quantitative research was used for this study, as demographic information, BMI, and weight obtained fit into numerical categories, and the value of responses compared against one another. I also chose to statistically test for differences between groups, which can only be done by using statistical quantitative tests. Medical professionals, among other professionals, use

quantitative methods to obtain baselines, measure progress, and record maintenance of binge eating and weight (Murray, 2008). A demographic questionnaire and survey, plus height and weight, were quantified in this study.

## **Setting and Sample**

### **Population and Participant Characteristics**

Participants included North Dakota residents ages 18 and up who were not institutionalized. There were no exclusions to participation based on gender, ethnicity, socioeconomic status, or educational status. Data were collected from people within North Dakota, which is a rural state. Therefore, results of the study may not generalize to other populations outside of North Dakota.

In 2009, it was estimated there were 646,844 residents in North Dakota (U.S. Census, 2009). The obesity rate nationally for this state is 27.2% (CDC, 2011c). Caucasians made up 91.1% of the population, while nationally that number is 79.6% (U.S. Census, 2009). Native Americans are the largest minority group in North Dakota at 5.6%, while the national average is 1% (U.S. Census, 2009). The next largest minority group is Hispanic at 2.3%, while the national average is 15.8% (U.S. Census, 2009). Therefore, potential respondents were primarily Caucasian, Native American, or Hispanic, making up 99% of the population in North Dakota, which is not reflective of the U.S. population (U.S. Census, 2009). English is the primary language spoken in North Dakota (U.S. Census, 2009). In North Dakota, the poverty rate is 11.5% of the population, while nationally it is 13.2% (U.S. Census, 2009). The median household income in North Dakota is \$45,996, while nationally it is \$52,029 (U.S. Census, 2009).

Educationally, 83.9% of students graduated from high school, while nationally the rate is 80.4% (U.S. Census, 2009). Those with a 4-year-degree or beyond in North Dakota was 22%, while nationally it was 24.4% (U.S. Census, 2009).

### **Sample Method**

Nonrandom sampling included e-mail recruitment of volunteers wishing to participate in the study in both rural and urban areas. This type of sampling was of convenience and was used to obtain the greatest number of participants in the shortest amount of time. The sample may be biased in that participants were required to have access to a computer. All participants were provided with informed consent prior to participating in the study. Volunteers were informed that they could quit at any time. The research was approved by an Institutional Review Board for the study # 09-01-11-0015980. Participants were asked to fill out demographic and health information, along with completing the EAT-26 survey.

Request for participation occurred by contacting individuals who supervised large groups of people, or were close to administration of programs, in which there could be a large contact base. Having department supervisors or administration forwarding the survey via e-mail to their contacts or employees allowed more volunteers to participate in this study in the quickest amount of time all over North Dakota. It was expected that a snowball effect to access a greater number of participants would occur. Department supervisors in hospitals, human service centers, colleges, private and nonprofit providing agencies, state and county agencies, and helping professions were contacted, which allowed access to a variety of environments, culture, socioeconomic status, age, and level

of education across North Dakota. The background and health habits questionnaire can be found in Appendix A, EAT-26 survey in Appendix B, informed consent in Appendix C and letters of cooperation appear in Appendix D.

Participants living in North Dakota were recruited via e-mail with a link to SurveyMonkey. Volunteers were informed that this process should take 20 minutes or less to complete. Participants were given contact information if they had additional questions. Since individuals could choose whether they want to participate or not, this may not have represented an accurate stratification of the population. The purpose of the study was briefly discussed in Appendix C. If individuals chose not to participate they did not have to complete the survey and could simply close out of SurveyMonkey to end their involvement. No identifying information was asked at anytime nor was their signature required. Participants were given contact information so they can obtain the results of the general study when completed. By agreeing to provide information and filling out the survey, individuals indicated their willingness to volunteer. Participants could withdraw from the study at anytime. By agreeing to participate, they were willing to do so without compensation. Participants were not provided with any information prior to the study in relation to binge eating or obesity, to allow for unbiased personal responses in their natural setting.

### **Sample Size**

The number of targeted participants was based on North Dakota demographics. North Dakota's total population of all age groups is 646,844 (U.S. Census, 2009). This number was used to calculate the sample size needed using a 95% confidence level and

an alpha level of .5%, for a medium effect size of  $0.2 < d < 0.8$  (Gravetter & Wallnau, 2004). A scientific calculator using [www.surveysystem.com](http://www.surveysystem.com) suggested a sample size of 384 (Creative Research Systems, 2007). A sample size of 400 was sought to allow for incomplete surveys and to ensure a medium effect size. Volunteers were provided with a name and number to contact 6 months after the study to access a copy of the results at no cost.

## **Instrumentation and Measures**

### **Demographic Questionnaire**

A 12 question, descriptive, self-reporting demographic and health habits questionnaire was created to obtain personal information about the participant's age, gender, ethnicity, financial status, educational level, income, experience with their PCP, and perception of binge eating and obesity (see Appendix A). In several questions, I inquired about whether individuals saw their PCP regularly. Participants were asked about their eating habits, given information on medication or surgical procedures, or referred to another professional beyond their PCP. The questionnaire took less than 10 minutes to complete.

### **EAT-26**

The EAT-26 was developed by Garner and Garfinkel (1979) to assess for eating disorders based on symptoms and characteristics. This instrument was created primarily to see what role eating disorders have among other cultures, especially among women (Garner & Garfinkel, 1993). The EAT-26 is also used to detect undiagnosed cases of binge eating among populations who are at higher risk for an eating disorder (Garner,

Olmsted, Bohr, & Garfinkel, 1983). This instrument was developed as emotional eating may be contrary to what the numbers on the scale shows (Garner et al., 1983). The 26, self-reported items question dietary habits, preoccupation with food, and self-control. Three subscales of dieting, bulimia, and food preoccupation are assigned particular questions (Garner et al., 1983). Twenty six questions were asked with responses ranging from *always* to *never*. The higher the score, the greater the tendency or risk for an eating disorder (Dunn, Turner, & Denny, 2007; Garner et al., 1982). An EAT-26 score above a 20 indicated that additional screening may be required. This survey was not intended to convey a diagnosis and could only be done by a qualified professional (Garner et al., 1982). The EAT-26 was used in the areas of general, clinical, and sports psychology (Lane, Lane, & Matheson, 2004). This instrument could be administered to both clinical and nonclinical populations, individually or in groups (Humphreys et al., 2007).

The EAT-26 subscales “Dieting” and “Bulimia” demonstrate good (Cronbach’s  $\alpha = .84$ ) to excellent (Cronbach’s  $\alpha = .93$ ) internal consistency, with the subscale “Oral Control” showing moderate (Cronbach’s  $\alpha = .76$ ) internal consistency (Humphreys et al., 2007). Garner and Garfinkel reported that the EAT-26 had an alpha coefficient of .94 to show internal consistency (as cited in Lane et al., 2004). Lane et al. also reported a test-retest was not done by Garner and Garfinkel, however, one has been done for a children’s version and yielded a good reliability coefficient (Cronbach’s  $\alpha = .81$ ). In addition, Lane et al. further reported that another study had been done using student athletes with moderate (Cronbach’s  $\alpha = .79$ ) internal consistency (Lane et al., 2004).

The EAT-26 was administered online via SurveyMonkey. It took approximately 10 minutes to complete. Please see Appendix B for a copy of the survey.

### **BMI**

The BMI was used to measure obesity. The BMI was calculated using both height and weight. An individual's weight was divided in pounds, by their height in inches (AMA, 2003). This was divided again by height in inches and multiplied by 703 (AMA, 2003). Participants' BMI and weight were calculated following data export. Category ranges were not provided to the participant via SurveyMonkey or at anytime. Based on the AMA's (2003) definition, obesity was determined by the individual's BMI which is as follows: < 18.5 was considered underweight, the BMI range from 18.5 to 24.9 was considered normal, the overweight range was considered 25.0 to 29.9, obese was 30.0 to 34.9, very obese was 35.0 to 39.9, with extremely obese 40.0+.

I entered data from the questionnaire and EAT-26 and calculated the results using SPSS software for statistical data. The data collected are stored in a locked safe. No identifying information was requested at anytime, so as to protect the volunteer's identity, although no identifying information was collected. Raw data will be made available to qualified researchers upon request.

### **Data Analysis**

1. Do individuals who are referred to professionals beyond their PCP for eating related issues differ from those who are not referred for binge eating behaviors?

$H_01$ : There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

$H_11$ : There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

2. Are there differences in BMI level between those who were referred to other professionals for eating related issues and those not referred to other professionals for eating related issues?

$H_02$ : There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

$H_12$ : There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

3. Are there differences in eating related behaviors between those who self-identify as binge eaters compared to those who do not self-identify as binge eaters?



*H<sub>03</sub>*: There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

*H<sub>13</sub>*: There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

4. Are there differences in BMI categories between those who self identify as being obese and those who do not self-identify as being obese?

*H<sub>04</sub>*. There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

*H<sub>14</sub>*. There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

The dependent variables were binge eating and obesity using EAT-26 scores and BMI scores, while the independent variables were whether individuals were referred or not beyond the PCP and how individuals self-identified. The data analysis included the use of Chi squared analysis for all research questions. A Chi squared analysis was used based on the cut-off scores in the EAT-26 and the six BMI categories defined by the AMA.

### **Ethical Considerations and Participant's Rights**

Due to the nature, time constraints, and sensitivity of the screening, participants were not informed of their EAT-26 scores nor BMI due to being unable to follow participants after the study. I did not take into consideration the participants' perceptions about their eating habits or about what they felt their ideal body weight range should be. Informed consent was presented online via SurveyMonkey and can be found in Appendix C. This consent included the limits of confidentiality; the voluntary nature of participation; handling and storage of records in a secure, locked location; anonymity of participants through collection of no identifying information; risks and benefits to participation in the study; and the potential that some questions may cause stress. Participants were informed how they can contact me or a member of Walden University to address any questions they may have had, in addition to how they could obtain information about the study 6 months from their participation.

### **Summary**

Researchers have shown that CBT has been successful at changing eating habits, but individual perceptions of binge eating and obesity have yet to be explored. In addition, personal experiences of working with a PCP were researched to see what further changes could be made in regards to helping individuals change their eating habits. Per the dissertation rubric, you should resynthesize the main ideas of the chapter. The reader should be able to read the summary by itself and know what the chapter was about. Restate main ideas here. Chapter 4 will include the overall data analysis, and the findings.

## Chapter 4: Results

### Introduction

The purpose of this study was to understand possible relationships between the rise in binge eating rates and obesity based on the results from this sample in North Dakota. Data were collected based on individual perceptions of binge eating and obesity and if eating-related behaviors differed between those who self-identified as binge eaters and those who did not. In addition, the study determined if BMI categories differed between those who self-identify as being obese and those who do not. Since the medical profession is an important part of health, and developed eating habits go beyond that of one profession, data were collected as to whether an individual was referred to anyone beyond their PCP and what information they were provided, if any.

In this chapter, I describe the purpose of the study and research questions and hypotheses. Next the adjustments to the data, followed by the results and statistical analysis are included. Then the assumptions and limitations of the study will be reviewed, followed by a summary.

### Research Questions and Hypotheses

1. Do individuals who are referred to professionals beyond their PCP for eating related issues differ from those who are not referred in binge eating behaviors?

$H_0$ 1. There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP

for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

*H<sub>1</sub>1*: There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

2. Are there differences in BMI level between those who were referred to other professionals for eating related issues and those not referred to other professionals for eating related issues?

*H<sub>0</sub>2*: There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

*H<sub>1</sub>2*: There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) for individuals who are referred to professionals beyond their PCP for eating related issues as compared to those who are not referred as reported in the demographic questionnaire.

3. Are there differences in eating related behaviors between those who self-identify as binge eaters compared to those who do not self-identify as binge eaters?

*H<sub>03</sub>*: There will not be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

*H<sub>13</sub>*: There will be a significant difference in binge eating category status, as measured by the EAT-26, for those who self-identify as engaging in binge eating behaviors, as measured by the demographic questionnaire, from those who do not.

4. Are there differences in BMI categories between those who self-identify as being obese and those who do not self-identify as being obese?

*H<sub>04</sub>*: There will not be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

*H<sub>14</sub>*: There will be a significant difference in BMI categories (underweight, normal, overweight, obese, very obese, extremely obese) between individuals who self identify as being obese and those who do not self identify as being obese based on the American Medical Association's categories.

The time frame of this study was based on collecting 400 participant surveys to obtain a medium effect size using 95% confidence level and an alpha level of .05%. The primary contacts of this study were asked to forward the survey onto their professional and personal contacts who reside in North Dakota. Participants were to be age 18 and over who were not institutionalized.

### **Adjustments to Data**

Data collection differed from the plan presented in Chapter 3. During the time of data collection, both the northern and south central parts of North Dakota were hit with record high flooding in June and July 2011 causing power outages, devastation, and disruption to over 10,000 households statewide in nine counties (Federal Emergency Management Agency [FEMA], 2011; North Dakota Study Group on Evaluation [NDSG], 2011). Several of the primary contacts were personally or professionally affected by the flood so they may have opted not to participate. Many lost their homes, relocated, rebuilt, or lived in temporary housing. Willingness and interest to participate may have been skewed by the decisions and tasks the participants had to make about their basic survival needs. In addition, many lost their basic amenities. Therefore, the time frame in which data were collected was over 6 months and responses sought did not reach 400.

Participation included 188 participants who began the survey with 13 dropping out; thus, there were 175 participants who completed the Background and Health Habits Questionnaire in Appendix A. With regard to completing the EAT-26 survey in Appendix B, another nine either did not complete the survey in its entirety, chose to drop out, or were unable to maintain electrical connections, leaving 166 participants who completed the study. This is a 42% response rate of the 400 desired, leaving 166 participants who completed this study in its entirety. This percentage is based on the anticipated 400 respondents that made up the necessary .05 confidence interval; however, the actual potential population of this study were all age 18 and over and from North Dakota. For the nine participants who did not answer all of the questions on the EAT-26

survey, a place holder of an “X” was inserted for the removal of their data. In removing the additional nine responses from the 175 participants who completed the background and health habits questionnaire, there was not much of a change in demographics. Therefore, 166 participants information will be used for descriptive statistics in Tables 1 through 10.

Next the height and weight provided by the participants on the demographics questionnaire were used to calculate BMI using the AMA’s formula ( $BMI = \text{weight} \times 703 \div \text{inches}$ ). The BMI was then placed in the established obesity categories.

### **Results**

The results for Tables 1 through 4 were taken from Appendix A - Health Habits Questionnaire. Participants included 21 (12.7%) males and 145 (87.3%) females. The total sample size that will be reported on is 166 for Tables 1 through 10. Table 1 shows the breakdown of ages for the participants between gender. As shown in Table 2, the majority of participants identified themselves as being Caucasian 156 (94%) followed by Native American 4 (2.4%). This limits the generalizability of the results to only Caucasian samples. As shown in Table 3, the majority of participants reported having a college education 146 (87.9%), with most reporting having completed more than 4 years of college 63 (38%). Even with the high education rates, Table 4 shows that 51 (30.7%) participants reported earning under \$50,000, and 103 (62%) participants reported earning less than \$75,000.

Table 1

*Participant Reported Ages/Gender Based on Total Percent*

<i>n</i> = 166	Female	%	Male	%
18-29	31	18.7%	5	3.0%
30-39	38	22.9%	4	2.4%
40-49	30	18.1%	5	3.0%
50-59	38	22.9%	7	4.2%
60-69	5	3.0%	0	.0%
70 +	3	1.8%	0	.0%
Total	145	87.3%	21	12.7%

Table 2

*Participant Reported Ethnicity Based on Total Percent*

<i>n</i> = 166	Total	%
Asian	1	.6%
African American	0	.0%
Caucasian	156	93.6%
Hispanic	2	1.2%
Native American	4	2.4%
Other	1	.6%
Multiple	2	1.2%

Table 3

*Participant Reported Education Based on Total Percent*

<i>n</i> = 166	Total	%
Did not complete high school	1	.6%
High School Diploma	16	9.6%
GED	3	1.8%
1 year of college	20	12.0%
2 years of college	15	9.0%
3 years of college	9	5.4%
4 years of college	39	23.5%
4 + years of college	63	38.0%



Table 4

*Participant Reported Income Based on Total Percent*

<i>n</i> = 166	Total	%
Under \$25,000	17	10.2%
Under \$50,000	51	30.7%
Under \$75,000	35	21.1%
Under \$100,00	32	19.3%
Over \$100,000	31	18.7%

**Disaggregated Data – Background and Health Habits Questionnaire**

Table 5 summarizes the ethnicity trend of this study in proportion to that of the larger population in North Dakota based on the 2009 U.S. Census. This is not a culturally diversified study so findings cannot be generalized to other ethnic groups.

Table 5

*Ethnicity Trend of External Variables*

<i>n</i> = 166	North Dakota Census 2009	Current Study
Caucasian	91.1%	94%
Native American	5.6%	2.4%
Hispanic	2.3%	1.2%

In the last seven questions of the background and health habits questionnaire in Appendix A, I inquired about participants' experience with their PCP, eating habits, and weight with responses broken down by age categories. Based on descriptive statistics, it appears that 134 (80.8%) individuals regularly saw their PCP once every 1 to 3 years as showed in Table 6. When individuals were asked if their PCP inquired about their eating habits, 110 (66.4%) said they were not asked. In asking if participants avoided seeing their PCP because of their eating habits, diet, or weight, 146 (88%) said they did not

avoid seeing their PCP. When individuals were asked if their PCP provided them with information on medication or surgery for weight loss, 148 (89.2%) indicated they had not received any information. Regarding whether participants were given an opportunity, received information, or were referred to another professional for eating habits, diet, weight, exercise, or physical condition, 139 (83.8%) said they did not. Regarding an individual's self-perception, over 111 (66.9%) of the participants did not feel they were obese and 123 (74.2%) did not feel they binge ate. Individuals from age 18 to 59 accounted for 158 (94.8%) responses, with age 60 and over consisting of 8 (4.8%) individuals.

Table 6

*Descriptive Statistics for Health Habits Questionnaire Based on Total Percent*

<i>n</i> = 166	Yes	%	No	%
Do you see your PCP regularly, once every 1-3 years?				
18-29	27	16.3%	9	5.4%
30-39	36	21.7%	6	3.6%
40-49	25	15.1%	10	6.0%
50-59	39	23.5%	6	3.6%
60-69	4	2.4%	1	.6%
70 +	3	1.8%	0	.0%
Does PCP inquire about their eating habits every 1-3 years?				
18-29	8	4.8%	28	16.9%
30-39	13	7.8%	29	17.5%
40-49	13	7.8%	22	13.3%
50-59	18	10.8%	27	16.3%
60-69	2	1.2%	3	1.8%
70 +	2	1.2%	1	.6%
Do you avoid seeing PCP due to eating habits, diet, weight, etc?				
18-29	1	.6%	35	21.1%
29-39	4	2.4%	38	22.9%
40-49	8	4.8%	27	16.3%
50-59	5	3.0%	40	24.1%
60-69	2	1.2%	3	1.8%
70 +	0	.0%	3	1.8%
Did PCP provide information on medication/surgery for weight loss?				
18-29	0	.0%	36	21.7%
30-39	5	3.0%	37	22.3%
40-49	5	3.0%	30	18.1%
50-59	5	3.0%	40	24.1%
60-69	2	1.2%	3	1.8%
70 +	1	.6%	2	1.2%
Did PCP provide opportunity or referral to another professional?				
18-29	1	.6%	35	21.1%
30-39	7	4.2%	35	21.1%
40-49	7	4.2%	28	16.9%
50-59	9	5.4%	36	21.7%
60-69	2	1.2%	3	1.8%
70 +	1	.6%	2	1.2%

*table continues*

Do you feel you are obese?					
18-29	4	2.4%	32	19.3%	
30-39	9	5.4%	33	19.9%	
40-49	15	9.0%	20	12.0%	
50-59	22	13.3%	23	13.9%	
60-69	2	1.2%	3	1.8%	
70 +	3	1.8%	0	.0%	

Do you feel you binge eat?					
18-29	7	4.2%	29	17.5%	
30-39	8	4.8%	34	20.5%	
40-49	10	6.0%	25	15.1%	
50-59	14	8.4%	31	18.7%	
60-69	2	1.2%	3	1.8%	
70 +	2	1.2%	1	.6%	

### **Export to SPSS**

Data from the health habits questionnaire from Appendix A were converted into one of the six BMI categories that was established by the AMA based on the individual's reported height and weight, then exported to SPSS Software, version 20.0. As stated above, there were 166 valid surveys collected with descriptive analysis provided, based on the demographic information, shown in Table 7. The majority of participants fell in the BMI categories of normal to obese, which consisted of 113 (67.8%) females compared to 19 (11.4%) males. The age groups with the largest percentage of individuals falling in the overweight to extremely obese categories were 39 (23.4%) 50 to 59 years old, then 24 (14.4%) 40 to 49 years old, 23 (13.8%) 30 to 39 years old, then 14 (8.4%) 18 to 29 years old, followed by 2 (1.2%) of 70 and over.

Table 7

*Descriptive/Categorical Statistics for Health Habits Questionnaire using BMI Based on Total Percent*

<i>n</i> = 166	Female		Male		Total											
		%		%		%										
<b>Gender:</b>																
Underweight	1	.6%	0	.0%	1	.6%										
Normal	53	31.9%	4	2.4%	57	34.3%										
Overweight	40	24.1%	11	6.6%	51	30.7%										
Obese	20	12.0%	4	2.4%	24	14.5%										
Very Obese	15	9.0%	0	.0%	15	9.0%										
Extremely Obese	16	9.6%	2	1.2%	18	10.8%										
<b>Ages:</b>																
	<u>18-29</u>	<u>%</u>	<u>30-39</u>	<u>%</u>	<u>40-49</u>	<u>%</u>	<u>50-59</u>	<u>%</u>	<u>60-69</u>	<u>%</u>	<u>70 +</u>	<u>%</u>				
Under wgh.	0	.0%	1	.6%	0	.0%	0	.0%	0	.0%	0	.0%				
Normal	22	13.3%	18	10.8%	11	6.6%	6	3.6%	0	.0%	0	.0%				
Over wgh.	10	6.0%	11	6.6%	7	4.2%	20	12.0%	3	1.8%	0	.0%				
Obese	3	1.8%	4	2.4%	6	3.6%	7	4.2%	2	1.2%	2	1.2%				
Very Obese	1	.6%	3	1.8%	6	3.6%	5	3.0%	0	.0%	0	.0%				
Ext.. Obese	0	.0%	5	3.0%	5	3.0%	7	4.2%	0	.0%	1	.6%				
<b>Education:</b>																
	<u>&lt;HS</u>	<u>%</u>	<u>HS</u>	<u>%</u>	<u>GED</u>	<u>%</u>	<u>1 yr</u>	<u>%</u>	<u>2 yr</u>	<u>%</u>	<u>3 yr</u>	<u>%</u>	<u>4 yr</u>	<u>%</u>	<u>4 yr +</u>	<u>%</u>
Under wgh.	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	0	.0%	1	.6%
Normal	0	.0%	3	1.8%	2	1.2%	9	5.4%	4	2.4%	1	.6%	17	10.2%	21	2.7%
Over wgh.	0	.0%	6	3.6%	0	.0%	3	1.8%	8	4.8%	4	2.4%	14	8.4%	16	9.6%
Obese	0	.0%	3	1.8%	1	.6%	2	1.2%	2	1.2%	2	1.2%	2	1.2%	12	7.2%
Very Obese	0	.0%	0	.0%	0	.0%	2	1.2%	1	.6%	0	.0%	4	2.4%	8	4.8%
Ext. Obese	1	.6%	4	2.4%	0	.0%	4	2.4%	0	.0%	2	1.2%	2	1.2%	5	3.0%
<b>Income:</b>																
	<u>&lt;\$25,000</u>	<u>%</u>	<u>&lt;\$50,000</u>	<u>%</u>	<u>&lt;\$75,000</u>	<u>%</u>	<u>&lt;\$100,000</u>	<u>%</u>	<u>&gt;\$100,000</u>	<u>%</u>						
Underweight	0	.0%	1	.6%	0	.0%	0	.0%	0	.0%						
Normal	8	5.6%	16	9.6%	12	7.2%	12	7.2%	9	5.4%						
Overweight	2	1.2%	15	9.0%	14	8.4%	11	6.6%	9	5.4%						
Obese	3	1.8%	6	3.6%	2	1.2%	4	2.4%	9	5.4%						
Very Obese	0	.0%	6	3.6%	6	3.6%	1	.6%	2	1.2%						
Ext. Obese	4	2.4%	7	4.2%	1	.6%	4	2.4%	2	1.2%						

The results of the last seven questions of the health habits questionnaire in Appendix A are listed in Table 8 and are based according to the individual's converted BMI category status and whether he or she was referred to another professional or not. From this point on, the data will not reflect the individual's perception of whether he or

she felt they he or she was obese, but rather placed within his or her actual BMI category according to AMA's obesity guidelines.

Participants indicated that 110 (66%) individuals reported that their PCP did not inquire about their eating habits. Of this number, 67 (40.2%) fell in the BMI categories from overweight or extremely obese. There were 139 (83.4%) individuals who reported they were not referred to another professional for their eating habits. Of this number, 84 (50.4%) fell in the BMI categories of overweight to extremely obese. When participants were asked if they avoided seeing their PCP, 146 (87.6%) indicated they did not. Of this number, 91 (54.6%) fell in the BMI categories of overweight to extremely obese.

Regarding those who had not received referral information for their eating habits, 148 (89.1%) reported not receiving information about medication or surgery for weight loss.

When participants were asked if they were obese, 111 (66.6%) said they did not consider themselves obese, and when asked if they binge ate, 123 (73.8%) said they did not.

Table 8

*Descriptive/Categorical Statistics for Health Habits Questionnaire Using BMI Based on Total Percent*

<i>n</i> = 166	Yes	%	No	%
Do you see a PCP regularly, once every 1-3 years?				
Underweight	1	.6%	0	.0%
Normal	45	27.1%	12	7.2%
Overweight	39	23.5%	12	7.2%
Obese	19	11.4%	5	3.0%
Very Obese	14	8.4%	1	.6%
Extremely Obese	16	9.6%	2	1.2%
Does PCP inquire about your eating habits during 1-3 year visit?				
Underweight	0	.0%	1	.6%
Normal	15	9.0%	42	25.3%
Overweight	14	8.4%	37	22.3%
Obese	11	6.6%	13	7.8%
Very obese	7	4.2%	8	4.8%
Extremely Obese	9	5.4%	9	5.4%
Do you avoid seeing PCP because of your eating habits, diet or weight?				
Underweight	0	.0%	1	.6%
Normal	3	1.8%	54	32.5%
Overweight	3	1.8%	48	28.9%
Obese	2	1.2%	22	13.3%
Very Obese	2	1.2%	13	7.8%
Extremely Obese	10	6.0%	8	4.8%
Did your PCP give you information on medication/surgery for weight loss?				
Underweight	0	.0%	1	.6%
Normal	0	.0%	57	34.3%
Overweight	6	3.6%	45	27.1%
Obese	2	1.2%	22	13.3%
Very Obese	2	1.2%	13	7.8%
Extremely Obese	8	4.8%	10	6.0%
Were you referred to another professional for your eating habits, diet, weight, exercise, or physical condition?				
Underweight	0	.0%	1	.6%
Normal	3	1.8%	54	32.5%
Overweight	5	3.0%	46	27.7%
Obese	6	3.6%	18	10.8%
Very Obese	5	3.0%	10	6.0%
Extremely Obese	8	4.8%	10	6.0%

*table continues*

Are you obese?					
Underweight	0	.0%	1	.6%	
Normal	0	.0%	57	34.3%	
Overweight	8	4.8%	43	25.9%	
Obese	17	10.2%	7	4.2%	
Very Obese	15	9.0%	0	.0%	
Extremely Obese	15	9.0%	3	1.8%	
Do you binge eat?					
Underweight	0	.0%	1	.6%	
Normal	11	6.6%	46	27.7%	
Overweight	11	6.6%	40	24.1%	
Obese	7	4.2%	17	10.2%	
Very Obese	5	3.0%	10	6.0%	
Extremely Obese	9	5.4%	9	5.4%	

The EAT-26 score (see Appendix B), was then calculated and converted into one of two categories in Table 9, along with demographic information taken from Appendix A. Responses that fell below 20 were placed in one category (low tendency to binge) while scores above 20 were placed in another category (high tendency to binge eat) (Garner et al., 1982). As stated in Chapter 3, 26 questions are asked with responses ranging from always to never. The higher the score the greater the tendency or risk for an eating disorder (Dunn et al., 2007; Garner et al., 1982).

Out of 166 participants, 153 (92.1%) participants binge eating score was <20, while 13 (7.8%) individuals scored >20, as shown in Table 9. Regarding age, 13 (7.8%) of the total responses were between the ages of 18 and 59. Educationally, 11 (6.6%) of the 13 individuals who scored >20 had at least a year of college or greater. Culturally, of the total responses, 11 (6.6%) were Caucasian with a binge eat score >20. Financially, 8 (4.8%) of the 13 individuals reported earning \$50,000 or less. As stated above, the higher the score the greater the tendency or risk to develop an eating disorder (Dunn et al., 2007; Garner et al., 1982). An EAT-26 score above a 20 may indicate that additional screening



may be required. This survey is not intended to convey a diagnosis and can only be done by a qualified professional.

Table 9

*Descriptive/Categorical Statistics for Calculated BMI Category Based on Total Percent of EAT-26 Scores*

<i>n</i> = 166	BMI EAT-26		BMI EAT-26		Total	%
	Score < 20	%	Score > 20	%		
Underweight	1	.6%	0	.0%	1	.6%
Normal	54	32.5%	3	1.8%	57	34.3%
Over weight	46	27.7%	5	3.0%	51	30.7%
Obese	22	13.3%	2	1.2%	24	14.5%
Very Obese	15	9.0%	0	.0%	15	9.0%
Extremely Obese	15	9.0%	3	1.8%	18	10.8%
<b>Gender</b>						
Female	133	80.1%	12	7.2%		
Male	20	12.0%	1	.6%		
<b>Age</b>						
18-29	31	18.7%	5	3.0%		
30-39	38	22.9%	4	2.4%		
40-49	34	20.5%	1	.6%		
50-59	42	25.3%	3	1.8%		
60-69	5	3.0%	0	.0%		
70 +	3	1.8%	0	.0%		
<b>Ethnicity</b>						
African Amer.	0	.0%	0	.0%		
Asian	0	.0%	1	.6%		
Caucasian	145	87.3%	11	6.6%		
Hispanic	2	1.2%	0	.0%		
Native Amer.	4	2.4%	0	.0%		
Other	1	.6%	0	.0%		
Multiple	1	.6%	1	.6%		
<b>Education</b>						
No high school	1	.6%	0	.0%		
High School	14	8.4%	2	1.2%		
GED	3	1.8%	0	.0%		
1 yr college	16	9.6%	4	2.4%		
2 yr college	13	7.8%	2	1.2%		
3 yr college	9	5.4%	0	.0%		
4 yr college	37	22.3%	2	1.2%		
4 + yr college	60	36.1%	3	1.8%		
<b>Income</b>						
Under \$25,000	14	8.4%	3	1.8%		
Under \$50,000	46	27.7%	5	3.0%		
Under \$75,000	34	20.5%	1	.6%		
Under \$100,000	29	17.5%	3	1.8%		
Over \$100,000	30	18.1%	1	.6%		

From this point on, data will not reflect the individual's perception of whether they feel they binge eat, but rather placed within one of two categories based on what their EAT-26 binge eat score was. Again, scores  $< 20$  suggest there is a lower propensity to develop an eating disorder and a score  $20 >$  may indicate a greater risk towards developing an eating disorder (Garner et al., 1982). According to the data in Table 10, 125 (75.3%) participants who saw their PCP regularly every 1 to 3 years had BMI scores  $< 20$ . When asked whether their PCP inquired about their eating habits, 110 (66.2%) indicated they were not asked. Regarding the 13 (7.8%) individuals who had scores  $> 20$ , 2 (1.2%) were asked by their PCP about their eating habits while 11 (6.6%) were not. Of these 13 individuals, 11 (6.6%) said they did not avoid seeing their PCP because of their eating habits, while 2 (1.2%) said they did. All 13 individuals with scores  $> 20$  said their PCP did not give them information on medication or surgery for weight loss. Of the same 13 (7.8%) individuals, 11 (6.6%) said they were not referred to another professional for their eating habits. When individuals were asked about their self-perception of binge eating, 123 (74.1%) reported they did not feel they binge ate, when in actuality 6 (3.6%) had scores  $> 20$ . In addition, 43 (25.9%) reported they felt they binge ate, but only 7 (4.2%) had scores  $> 20$ .

Table 10

*Descriptive and Categorical Statistics for EAT-26 and Health Habits Survey based on total percent*

<i>n</i> = 166	BMI EAT-26 Score < 20		BMI EAT-26 Score > 20	
		%		%
Do you see a PCP regularly, once every 1-3 years?				
Yes	125	75.3%	9	5.4%
No	28	16.9%	4	2.4%
Does PCP inquire about your eating habits during 1-3 year visit?				
Yes	54	32.5%	2	1.2%
No	99	59.6%	11	6.6%
Have you avoided seeing a PCP because of your eating habits, diet or weight?				
Yes	18	10.8%	2	1.2%
No	135	81.3%	11	6.6%
Did your PCP give you information on medication/surgery for weight loss?				
Yes	18	10.8%	0	.0%
No	135	81.3%	13	7.8%
Were you given an opportunity, or received information, to be referred to another professional for your eating habits, diet, weight, exercise, or physical condition?				
Yes	25	15.1%	2	1.2%
No	128	77.1%	11	6.6%
Are you obese?				
Yes	49	29.5%	6	3.6%
No	104	62.7%	7	4.2%
Do you binge eat?				
Yes	36	21.7%	7	4.2%
No	117	70.5%	6	3.6%

### Statistical Analysis

The chi square test of independence was used on all the research questions. The first and second hypotheses tested the differences between the dependent variables of binge eating and BMI categories with the independent variables of whether someone was

referred to a professional or not beyond the PCP for weight related concerns. The third and fourth hypotheses tested the differences between the dependent variable of binge eating and BMI categories and the independent variable of whether individuals thought they binge ate or were obese. The research design was quantitative and a nonexperimental design, as it allows for individual's experiences. The sample was non-random with volunteers obtained using convenience sampling.

For the first research question, the null hypothesis was accepted as there was no significant difference in binge eating behaviors in individuals who are referred to professionals beyond their PCP from those who are not referred. The dependent variable used was the binge EAT-26 scores and the independent variable was referral status to a professional beyond the PCP. A chi square analysis was used and resulted in  $X^2(1, N = 166) = .008, p = .929, \text{Cramer } V = .007$ . Of the 27 (16.2%) individuals who were given an opportunity, or received information to be referred to another professional for their eating habits, diet, weight, exercise or physical condition, only 2 (1.2%) had an EAT-26 score  $>20$ . This suggests that the majority of individuals who received referral information were less likely to develop an eating disorder or were more mindful of their eating habits, so appropriate referrals were made; and that 2 individuals from this group could be prone to develop an eating disorder and were not supplied with referral information. Also, of the 139 (83.4%) individuals who reported they were not given an opportunity, or received information to be referred to another professional for their eating habits, diet, weight, exercise, or physical condition, 128 (77.1%) individuals had EAT-26 scores  $<20$  and 11 (6.6%) individuals had EAT-26 score  $>20$ . This suggests the 128 (77.1%) individuals

who had not received referral information were less prone to develop and eating disorder and that a referral would not be necessary, and that 11 (6.6%) individuals who did not receive referral information could be prone to develop an eating disorder. A limitation to this study is that less than a forth of the sample were given a referral, which could limit results and that is why there was not a statistically significant difference found here.

For the second research question, the null hypothesis was rejected as there was a statistically significant difference in BMI category status for individuals who are referred to professionals beyond their PCP for obesity as compared to those who are not referred. The dependent variable was the BMI categories and the independent variable was referral status to a professional beyond the PCP. A chi square analysis was used and resulted in  $X^2(5, N = 166) = 21.87, p = .001$ , Cramer's  $V = .363$ . Of the 27 (16.3%) individuals who were given an opportunity, or received information to be referred to another professional for their eating habits, diet, weight, exercise, or physical condition, 24 (14.4%) fell within the categories of overweight to extremely obese. There were 84 (50.4%), of the total responses reported, who said they had not received referral information and fell within the categories of being overweight to extremely obese.

To further see where the differences lie between groups, the first two categories of underweight and normal weight were compared, followed by the overweight and obese categories, then the very obese and extremely obese categories were compared against those who were either referred or not referred to another professional. The chi square analysis for the first two BMI groups resulted in  $X^2(1, N = 58) = 46.62, p = < .001$ . It was statistically significant in that most individuals had not received referral information

beyond their PCP, between the BMI underweight and normal categories. For the second two BMI groups,  $\chi^2(1, N = 75) = 37.45, p = < .001$ . This again reflects statistical significance in that most individuals did not receive referral information beyond their PCP, between the BMI overweight and obese categories. For the last two BMI groups,  $\chi^2(1, N = 33) = 1.49, p = .22$ . The later BMI groups were not statistically significant in that the majority of those in the very obese and extremely obese categories reported they had received referral information from their PCP.

For the third research question, the null hypothesis was rejected as there was a statistically significant difference in EAT-26 scores who self-identify as binge eaters from those who do not self-identify as binge eaters. The dependent variable was EAT-26 scores and the independent variable was self-identification with binge eating. A chi square analysis was used and resulted in  $\chi^2(1, N = 166) = 5.74, p = .017$ , Cramer's  $V = .186$ . It was statistically significant in that the majority of individuals did not have elevated binge eating scores, in addition to their perception of not binge eating was correct. Of the 43 (25.8%) individuals who felt they binge ate, 7 (4.2%) had EAT-26 scores  $>20$ . Of the 123 (73.8%) individuals who felt they did not binge eat, 6 (3.6%) had EAT-26 scores  $>20$ .

For the fourth research question, the null hypothesis was rejected as there was a statistically significant difference in BMI category status between those who self-identify as being obese from those who do not. The dependent variable was BMI category status and the independent variable was self-identification with obesity  $\chi^2(5, N = 166) = 101.89, p < .001$ , Cramer's  $V = .783$ . Of the total sample, 55 (33%) individuals who felt

they were obese all were correct in that they fell within the categories of being overweight to extremely obese. However, of the total sample 111 (66.6%) individuals did not feel they were obese when 55 (33%) individuals fell within the categories from overweight to extremely obese.

To further assess where the differences lie in the total sample between the BMI categories and an individual's perception, a chi square analysis again was done between the underweight and normal weight, overweight and obese, very obese and extremely obese categories. Since the variable was constant in both the under weight and normal weight category ( $N = 58$ ) a chi square analysis could not be performed. There was no statistical significance difference between these two groups based on the fact that there were no individual responses in these categories, or perceived they were obese. The results between the overweight and obese categories resulted in  $\chi^2 (1, N = 75) = 8.33, p = .004$ . It was statistically significant that individual perceptions differed according to the AMA, in that participants under identified themselves according to the weight ranges and actually falling in the overweight to obese categories. The results between the very obese and extremely obese resulted in  $\chi^2 (1, N = 33) = 22.09, p < .001$ . There was a statistically significant difference between one's self perception of obesity and that of the AMA guidelines, in that individuals under identified themselves according to the weight ranges and actually falling in the very obese and extremely categories.

Some of the consistencies with data are that the demographic information appears to be fairly representative of North Dakota's population. Some of the inconsistent data is that at times only a small number of individuals represented a particular category, which



would be hard to determine if it was representative of the larger North Dakota population in addition to not much cultural diversity was identified in this study. In addition, significantly less data were collected than the desired amount. With regards to participation, every question had to be answered on the health habits questionnaire and EAT-26 survey to be included in this study, with 9 participants' data removed. More females may have a tendency to develop an eating disorder than males in this sample, however, consideration should be given to the fact that of the 166 participants, more females (87.43%) participated than males (12.57%).

Some possible alternative interpretations for the first research question is that most of the 27 (16.2%) individuals who were given an opportunity, or received information to be referred to another professional for their eating habits, diet, weight, exercise or physical condition may have inquired about changing their eating habits before it developed into binge eating. There is the possibility that the individual may have displayed some symptoms of disordered eating and wanted to learn other techniques to develop self control. There is the potential that the PCP had noted symptoms or that there was the potential for problematic eating based on the individual and knowing their background history so referral information was given. It was noted in Chapter 3 that one does not have to be obese to binge eat, nor binge eat to be obese (Panzer, 2006). Binge eating can entail eating large quantities of food but may not reflect on the scale due to binge/purging behavior, food avoidance after a binge, or burning calories through physical activity (Herman et al., 2008).

A possible alternative interpretation for the second research question regarding being referred or the lack of being referred when overweight may be that individuals who are over weight or obese like how they look, therefore, their PCP may know this and does not offer referral information (Marti, Stice, & Shaw, 2006). Another possibility is that individuals may or may not be aware of their BMI or of the BMI categories (Panzer, 2006), There is the possibility that the PCP may know the individual does not want to discuss their weight so this topic is avoided (Murray, 2008; Panzer, 2006). The PCP may be uncomfortable with their own weight or unable to identify with the individual, so may choose not to discuss obesity, or may not know what symptoms to look for and may only focus on females than males (Kundert, 2008; MacDonald, 2008; Petrie et al., 2008 ). Another possibility is that the individual may be physically fit and muscular, and the method of the BMI does not take this into consideration (Herman et al., 2008).

For the third research question, the EAT-26 survey is open to individual interpretation on the 26 questions asked, with responses being based on personal experiences, values, or perceptions of North Dakota's local cultures. This may be the reason why binge eating may have been over reported and only 13 (7.8%) individuals had an EAT-26 of >20. There is also the potential that during the time of this study there was a natural disaster going on in North Dakota in which thousands of people were affected directly or indirectly, and awareness of eating habits was not the focus but rather on survival (NDSG, 2011).

An alternative interpretation for question four is that people may have their own ideas of what obesity is and may like their body the way it is, thus was the reason obesity was under reported.

### **Summary**

In summary, there was no difference in binge eating scores from those individuals who were referred, from those who were not referred, to another professional. There was a significant difference in the level of obesity from those individuals who were referred, from those who were not referred to another professional due to under reporting. Individuals who felt they binge ate significantly differed from their actual binge eat score, due to over reporting. Individual's who felt they were obese, also significantly differed from their actual BMI category by under reporting. Chapter 5 summarizes the findings, make recommendations, discuss implications for social change, followed by the conclusion.

## Chapter 5: Conclusion

### **Introduction**

The purpose of this study was to explore binge eating and obesity between individuals who were referred to professionals beyond their PCP from those who were not referred, as well as how individuals identify with binge eating and obesity. The nature of the study was to describe individual and group differences using personal experiences. This study was conducted because binge eating and obesity continue to rise among all ages. I found that individuals who were referred to another PCP were less likely to develop an eating disorder while obese individuals tended to receive less referral information. Regarding self-perception, I found that binge eating was over reported and obesity under reported. In this chapter, I will describe the interpretation of findings, limitations of the study, and recommendations and implications for further study.

### **Interpretation of Findings**

In Chapter 4, the first null hypothesis for the first hypothesis was accepted because the results were not statistically significant, where the next three hypothesis were rejected due to the statistically significant results. In the first research question I found that there was no difference in binge eating behaviors between those who were referred to professionals beyond their PCP from those who were not referred. No literature was found using these exact variables so comparisons could not be sought. However, in comparing collaboration with binge eating Powell et al. (2007) found that using a collaborative approach with other health care professionals may help the individual become successful. Powell et al. also found that individuals should continue to receive

follow-up services after they have reached their goal every 4-6 weeks so individuals can be held accountable. Williams et al. (2007) reported that using a collaborative approach can also help motivate individuals toward weight loss success.

For the second research question, I found that there is a difference in BMI categories for individuals who are referred to professionals beyond their PCP for eating-related issues as compared to those who were not referred. Slightly over half of the individual's with BMI weight ranges overweight or greater had not received any referral information from their PCP. Though no literature has been found using these variables, in comparing collaboration and obesity, Panzer (2006) reported that individuals are left to fend for themselves if no one takes the time to address that obesity is due in part to having a lack of knowledge and that alliances need to be formed so a collaborative approach can be taken. Panzer also stated that obesity will continue if this issue is not addressed from diverse angles, with diverse professionals, using diverse approaches.

For the third research question, I found that there is a difference in binge eating scores from those who self-identified as engaging in binge eating behaviors from those who did not. Most individuals who felt they binge ate had EAT-26 scores  $< 20$ , which suggests they may not be prone to develop an eating disorder. Individuals felt they binge ate when their scores did not support this. No literature was found using these variables, so this is an extension of knowledge with binge eating. This could be suggestive of individuals not knowing what binge eating is so additional education is needed. Goldman (2007) reported that binge eating is the most under recognized disorder that society faces and many engage in.

In the fourth research question, I found that there is a difference in BMI categories with participants who self-identified as being obese and those whose weight was based on the AMA's categories. Individual perceptions of obesity was under reported in this study. Almost one-third of individuals were correct in identifying they were obese, slightly more than one-third were correct in identifying that they were not obese, and almost one-third felt they were not obese but fell within the AMA's overweight or obese BMI categories. No literature was found using these variables, so this is an extension of knowledge with obesity. Thomas et al. (2008) stated that in order to help patients, mental and medical health professionals have to understand their perceptions.

Individuals were able to provide whether they were referred to another professional for binge eating. According to study results, when the PCP refers individuals to another professional that there was less of a tendency to have elevated binge eating scores. This could be interpreted to mean that the individual was more mindful of binge eating after talking with their PCP or after having collaborated with the other professional. The EAT-26 survey was normed using 160 anorexic females and 140 female college students (Garner, Olmsted, Bohr, & Garfinkel (1982), which is not representative of North Dakota. Polivy and Herman (2002), along with Murray (2008), reported that creating an awareness of binge eating can regulate an individual's awareness of behavior and activity, which is needed to be successful to changing eating habits. When individuals were asked if they were given referral information regarding obesity, it could be interpreted to mean that individuals may not have wished to discuss

their weight with their PCP, the PCP was uncomfortable with their own weight, or the individual was happy with their weight or body image. MacDonald (2008) reported that in order for professionals to help their patients, they have to consider their own biases, personal issues, and experiences as they relate to eating, body image, and size as some may not be sensitive to the struggles of uncontrolled eating. Kundert (2008), Panzer (2006), Polivy and Herman (2002), Powell et al. (2007), and Puhl and Latner (2007) reported that there was a tendency for individuals to be overweight and obese due to an individual's lack of knowledge about obesity and nutrition.

The data collected from this study were not culturally diverse, even though data may represent the cultural make-up of North Dakota. Individuals who over identified with binge eating may have been due to individual, group, cultural, or social values. Kundert (2008) reported that binge eating can mean a lot of things to different people, that words are perceived inconsistently, and that collecting data across cultures can be difficult because binge eating and obesity are used differently by other professionals and the general public. Regarding obesity and individuals who under identify with the AMA's weight range guidelines, data could be interpreted that individuals may not be aware of their guidelines, may not agree with them, or may not care. MacDonald (2008), Panzer (2006), and Thomas et al. (2008) reported that individuals may have their own perceived standards of what is physically attractive or what their ideal body image or weight should be, and that there is no agreed upon norm.

CBT is an approach that allows individuals to express themselves or change behaviors cognitively or behaviorally (Panzer, 2006). This approach was chosen for the

framework as this study as it allowed for individual responses, self-perceptions, and life experiences. Data collection scales allowed individuals to share their personal awareness of binge eating from Appendix B, and about their eating habits from Appendix A. By using this approach, individuals were able to provide personal information about binge eating and obesity.

The CBT approach includes individual's self-perception towards binge eating and obesity, due to diverse eating habits. The foundation of programming should include psychoeducation, nutrition, exercise, and cognitive-behavioral techniques (Panzer, 2006). CBT can be used to help break the cycle of bingeing those who are obese and binge eat, because if the person is losing weight the bingeing is addressed (Ochner & Geliebter, 2007). Psychologists are equipped to work with patients using this approach because it can help to balance an individual's emotions and habits, while developing self-control so it can become permanent with maintaining weight (Panzer, 2006). Kitzmann and Beech (2006) reported that CBT is also way to manage weight loss.

### **Limitations of the Study**

One of the limitations of this study was that I excluded individuals under the age of 18 or anyone who was institutionalized. The targeted population were residents of North Dakota. The results of this study cannot be generalized to other states as Caucasians make up the vast majority of participants. National averages cannot be used as some cultural groups were not equally represented based on national averages and may not reflect individual experiences in other geographic locations. The primary focus of the study was on binge eating and obesity and not AN or BN. The number of participants



sought was 400; however, only 166 individuals completed the survey. This low response rate may have been due to record levels of flooding that took place during this study, so individuals may not have been able to participate in this study had they wanted to, as well as primary contacts being directly affected by the flood. In addition, participants were asked to provide self-reports of their height, weight, and eating habits. Such self-reports may have resulted in inaccurate representation of the individuals' actual experiences or behaviors. However, self reports were necessary to gain information about how they saw themselves. Gathering similar information from PCP's and others within the individual's social circles may have provided a more accurate picture of those behaviors and experiences. Another limitation was not having any direct contact with participants, and that height and weight provided by individuals was calculated to find their BMI. Consideration was not given to whether someone was physically fit and had more muscle mass, thus making them possibly weigh more, as muscle weighs more than fat. Another limitation was 108 individuals from this study fell in the overweight to extremely obese categories and statistical significance may have been obtained due having such a small group.

### **Recommendations for Actions**

It is recommended that the public be educated on what entails binge eating and obesity (Grieve et al., 2006; Kondo & Sokol, 2006; Panzer, 2006; Rozin, 2005; Stice et al., 2006; Thomas et al., 2008). Individuals have to not only know what binge eating and obesity is, but also be motivated to change their eating habits (Panzer, 2006). In addition, individuals have to become more knowledgeable about the impact that binge eating and

obesity has on them as it is impacting more children, decreases longevity, affects an individual's health, and increases insurance premiums. Medical and mental health professionals need to find intervention and treatment options that match the individual's wishes (Kondo & Sokol, 2006; Panzer, 2006). Even with these multifaceted differences, it is important to find common factors in which prevention and intervention can begin. It is recommended that the medical profession learn about the ways in which individuals develop unhealthy eating habits so appropriate referrals are made.

### **Recommendations for Future Research**

Even though more data can be gathered from this data set using variables from the demographic questionnaire and EAT-26 survey, it is much broader of a scope than was intended for this study with a limited time frame. Future researchers should address why only 27 individuals were given a referral by their PCP. Research could help find out what individual perceptions are of binge eating and obesity using a much larger and ethnically diverse population, so additional insight into eating habits and obesity can be gained (Kundert, 2008). It would be interesting to see how many individuals develop both binge eating habits and were obese, and what intervention showed to be the most beneficial over 5 years. If individuals were asked about their eating habits, diet, or weight routinely, it would be interesting if individuals would continue to return to their PCP, as the "don't ask, don't tell policy" about obesity seems to be accepted. Those who received referral information about binge eating and talked with their PCP appeared to have lower binge eating scores. It is further recommended that such studies regarding binge eating and obesity be replicated using larger, more diverse populations in other regions. Future

researchers could include qualitative studies in which individuals real life experiences could be shared regarding binge eating and obesity. In addition, research could be done to assess if there are differences between gender regarding binge eating, rates of obesity, and if one gender receives referral information more than the other gender. Longitudinal studies over time can help determine if collaborating with other professionals is beneficial in the reduction of binge eating and obesity. This type of information could be used by insurance companies who determine what types of treatment are reimburseable based on empirical research using rates of success, which in turn helps more individuals. Future research can also look at differences on how the AMA and other cultures view binge eating and obesity.

### **Implications for Social Change**

Medical professionals must focus on changing long-term eating habits, which can affect the whole family. Possessing knowledge in how to collaborate with other professionals may improve the health of the individual (Tomiyama & Mann, 2008). Eating habits can develop at any time in an individual's life due to many variables which may or may not lead to binge eating and/or obesity; however, such habits may not be shared with the PCP due to the limited time spent with the patient. It is suggested that the PCP's regularly inquire about individuals eating habits, in addition to the AMA consulting with other professionals regarding re-establishing weight guidelines as many cultures do not agree with what has been placed before them (MacDonald, 2008; Marsh et al., 2007; Panzer, 2008). If people do not feel good about themselves and feel like a failure in not being able to fit into the AMA established 10 or 15 pound categories,

individuals may decide to not control their eating habits or change their weight (Marsh et al., 2007; Thomas et al., 2008). Binge eating and obesity can differ in perception due to cultural and societal values and norms (Diaz et al., 2007; Goldman, 2007; Thomas et al., 2008), however, since this study was overwhelmingly Caucasian, it was not a culturally diverse study but reflective of North Dakota's population as noted in Table 5. It is important to define and establish guidelines regarding binge eating, weight ranges, and obesity categories, so the problem can be solved from a multicultural perspective including determining what the problem is with regards to the rise in binge eating and obesity (Murray, 2008; Panzer, 2006; Petrie et al., 2008).

For social change to occur, there has to be a more collaborative and active inclusion of other health care professionals all coming together for the common cause of living a healthier lifestyle. Good health care means longevity, happiness, inclusion, and agility. With a collaborative approach, other professionals can help to secure policy and funding from lawmakers for prevention and intervention programs in regards to binge eating and obesity. Due to the gaps in knowledge, lack of communication, time limits on office visits, lack of professionals collaborating with one another, insurance companies limit reimbursements, many individuals are not getting their full needs addressed with regards to changing their eating habits and maintaining weight reduction.

In designing programs, social learning should be addressed so individuals can learn how the media portrays false images, as covered in Chapter 2, but was not addressed in this study. Positive behaviors can be replaced by changing old habits such as how to make healthier food choices, being more mindful of what binge eating is, not

associating food with events, awareness of stimuli and how the 5 senses can impact cravings, or having a realistic body image to mention a few (Ahern & Hetherington, 2006; Grieve et al., 2006; MacDonald, 2008; Petrie et al., 2008; Polivy & Herman, 2002; Puhl & Latner, 2007). Empowering individuals to see through false, media enhanced, and perfected images can help individuals to create greater self-awareness and self-control so individuals can make healthier food choices, live up to their own expectations and become more mindful of others deception (Epstein et al., 2007).

Data from this study can be used to create awareness and to educate individuals, PCP's, and other professionals on what binge eating and obesity is and to develop prevention and intervention programs (Panzer, 2006). Such data can also be used in finding funding sources to show that binge eating and obesity is a problem, the rate in which individuals eating habits are affected, ages affected, gender, educational status, and/or rates of binge eating and obesity (Panzer, 2006). Prevention and intervention programs can be developed to educate children, parents, and communities in general about lifestyle choices and what has led to the rise in binge eating and obesity. Such programs have to also be aimed at the pediatric population (Puhl & Latner, 2007). Healthy choices should be promoted so people know what healthy foods are, how to cook the foods, what type of foods bring certain nutrients, what a portion size is based on, or what foods to avoid (Goldman, 2007). Socially, health care will continue to rise if eating habits are not better controlled. The healthier the individual the less costly it will be to society, which is why approaches to treatment should be more individualized for long term success.

## Conclusion

The purpose of this study was to assess whether binge eating and obesity were due in part to the lack of collaboration among professionals and the lack of awareness of what they mean. In this study, I found when referrals were made to other professionals, there was a lower tendency towards binge eating and obesity, based on the referrals that were made to other professionals. Puhl and Latner (2007) reported that obesity could hinder weight loss due to the embarrassment of seeking help from their PCP; however, I did not find evidence in this study to support this. Rather, the opposite was found in that individual's reported they were not embarrassed or avoided seeing their PCP. I also found that individuals under-reported their BMI and did not avoid going to their PCP even though they were not asked about their eating habits, diet, or weight. Collaborating with another professional or being referred to another provider does not necessarily indicate that an individual binge eats or is obese. Rather, through collaboration it can help an individual control eating habits by learning about diet, what foods to eat and to avoid, what types of exercise may benefit them the most, and that mental health may be a factor contributing to binge eating and obesity (Panzer, 2006). Collaboration can also help individual's learn how to alleviate stress in their life, or help change their eating habits (Tomiyaama & Mann, 2008).

Collaborating with other professionals can empower individuals to lead healthier lifestyles and learn new eating habits (Tomiyaama & Mann, 2008). Here is but a short list of professionals who can help: addiction counselor, aerobic instructor, athletic trainers, behaviorist, certified nurse specialist, clergy, counselor, dietician, fitness trainer, family

nurse practitioner, physical therapist, psychiatrist, psychologist, physiologist, school counselor, social worker, sports trainer, or teacher (Bonci et al., 2008; Kondo & Sokol, 2006; Panzer, 2006).

It is possible that the PCP may know their patients well and know which ones to ask about their eating habits and which ones not to ask. However, avoidance does nothing to help the patient. When individuals were aware of their eating habits, they tended to have lower binge eating scores and when individuals were not given information about their weight, they tended to under-report obesity. Binge eating and obesity affects society not only in increased health care costs but increasing insurance premiums as well (Puhl & Latner, 2007; Stice et al., 2006). The manner in which an individual impacts his or her body, his or her health, his or her family, his or her community, future generations, and society is a personal choice (Williams et al., 2007).

Regarding individual self-perception or lack of awareness of what binge eating and obesity is, I found that individuals tended to over report binge eating and under report obesity. According to Goldman (2007), binge eating is the most common unrecognized eating disorder in the United States. Goldman reported that binge eating can lead to obesity but that not all binge eaters have to be obese. Binge eaters can purge food as they can work off excess calories through physical activity, or avoid eating regularly. It is, therefore, not easy to identify a binge eater nor may a binge eater be aware of their habits when they are trying to meet a certain BMI, such with athletic training. Individuals who are physically fit may have a larger BMI as well. Most individuals in this study did not

indicate they were binge eaters; however, most of the participants fell in the overweight to extremely obese categories.



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## Appendix A: Background and Health Habits Questionnaire

Your Height: \_\_\_\_\_ ' \_\_\_\_\_ "

Your Weight: \_\_\_\_\_ LBS

Please check the answer which best describes you:

1. Age: \_\_\_\_\_ 18 to 29 \_\_\_\_\_ 30 to 39 \_\_\_\_\_ 40 to 49  
\_\_\_\_\_ 50 to 59 \_\_\_\_\_ 60 to 69 \_\_\_\_\_ 70 and over

2. Gender: \_\_\_\_\_ Male \_\_\_\_\_ Female

3. Ethnicity: \_\_\_\_\_ African American \_\_\_\_\_ Asian \_\_\_\_\_ Caucasian  
\_\_\_\_\_ Hispanic \_\_\_\_\_ Native American \_\_\_\_\_ Other \_\_\_\_\_ Multiple ethnicities

4. Education: (check highest grade completed)

\_\_\_\_\_ Did not complete high school \_\_\_\_\_ 2 years of college  
\_\_\_\_\_ High School Diploma \_\_\_\_\_ 3 years of college  
\_\_\_\_\_ GED \_\_\_\_\_ 4 years of college  
\_\_\_\_\_ 1 year college \_\_\_\_\_ more than 4 years of college

5. Income: (check last years income, if married combined income)

\_\_\_\_\_ under \$25,000 \_\_\_\_\_ under \$50,000 \_\_\_\_\_ under \$75,000  
\_\_\_\_\_ under \$100,000 \_\_\_\_\_ over \$100,000

6. Do you see a primary care physician (PCP) regularly, once every 1-3 years?

\_\_\_\_\_ Yes \_\_\_\_\_ No

7. Does your PCP ask you about your eating habits during your 1-3 year visit?

\_\_\_\_\_ Yes \_\_\_\_\_ No

8. Have you avoided seeing a PCP because of your eating habits, diet or weight?

\_\_\_\_\_ Yes \_\_\_\_\_ No

9. Did your PCP give you information on medication/surgical procedures to lose weight?

\_\_\_\_\_ Yes \_\_\_\_\_ No

10. Were you given an opportunity, or received information, to be referred to another professional for your eating habits, diet, weight, exercise, or physical condition?

\_\_\_\_\_ Yes \_\_\_\_\_ No

11. Are you obese? \_\_\_\_\_ Yes \_\_\_\_\_ No

12. Are you obese? \_\_\_\_\_ Yes \_\_\_\_\_ No

## Appendix B: Eating Attitudes Test (EAT-26)

This is a survey regarding eating attitudes and behaviors. It is not intended to provide any diagnosis. Please answer the questions as honestly as you can. Please darken the circle, or check a response, for each of the following statements as it best describes you:

A=Always U=Usually O=Often S=Sometimes R=Rarely N=Never

	A	U	O	S	R	N
1. I am terrified about being overweight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I avoid eating when I am hungry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I find myself preoccupied with food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I have gone on eating binges where I feel that I may not be able to stop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I cut my food into small pieces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am aware of the calorie content of foods that I eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I feel that others would prefer if I ate more	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I vomit after I have eaten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel extremely guilty after eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I am preoccupied with a desire to be thinner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I think about burning up calories when I exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Other people think that I am too thin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I am preoccupied with the thought of having fat on my body	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I take longer than others to eat my meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I avoid foods with sugar in them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I eat diet foods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I feel that food controls my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I display self-control around food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I feel that others pressure me to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I give too much time and thought to food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I feel uncomfortable after eating sweets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I engage in dieting behavior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I like my stomach to be empty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I enjoy trying new rich foods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Have the impulse to vomit after meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The EAT-26 has been reproduced with permission. Garner et al. (1982).

## Appendix C: Informed Consent

Eligible participants for this study have to be age 18 and over and not institutionalized. Participants are invited to partake in a research study of eating habits. If you are a willing participant please read this form and ask any questions before partaking in this study.

This study is being conducted by Mary Solberg, MSW, LCSW. I am a doctoral candidate with Walden University.

### **About the study:**

The purpose of this research is to discover North Dakotans perceptions of binge eating and obesity so that professional practitioners can learn ways in which to assist with eating habits. If you agree to join in on this study, you will be asked to fill out some background information, answer health questions to a survey and complete a questionnaire on eating habits. This will take approximately 20 minutes to complete. These assessments will help me to learn more about personal eating habits and decisions.

### **Voluntary nature of the study and compensation:**

There will be no compensation for participating in this study. If you decide to participate and change your mind, or feel uncomfortable participating in this study, you can freely withdraw at any time. However, once a participant has submitted the survey, data cannot be withdrawn due to anonymity of the study and having no way of knowing whose data to withdraw.

### **Procedures:**

If you are uncomfortable answering any questions, please close your browser and discontinue participation as only fully completed surveys can be used. All information collected from this study will be anonymous and no identifying information will be asked of you. Informed consent will be provided at the onset of the study. If you agree to provide consent, you can proceed by clicking on the provided survey link. There will be two questionnaires. The first is the Background and Health Habits Questionnaire which will ask you 12 questions and take about 5 minutes to complete. The second survey is the EAT-26, which will ask 26 questions about your eating habits. This survey should take about 15 minutes to complete. You will not receive any individual results from either of these surveys, rather the results will be calculated at a later date and presented in my dissertation. By answering and completing the questionnaires in its entirety, you are agreeing to participate in this study. It is possible that some questions may trigger or evoke some feelings or emotions. Do the best you can to answer all the questions.

### **Confidentiality:**

All data collected from this study will be kept private and locked in a secured cabinet. No personal or identifying information will be collected from this study, so cannot lead to the identification of any participant.

### **Risks and benefits of being in the study:**

There are minimal risks associated with participating in this study. Some questions may be sensitive in which you may choose to withdraw from the study that may seem too

personal to you, or cause you to be upset. The information you provide can help many professionals understand personal eating habits so better services can be provided in the future. If at anytime you experience stress you may stop participating in this study at anytime. If at anytime you feel uneasy or have questions about an eating disorder you can contact Dr. Stephen Wonderlich, Ph.D. in Fargo, ND at <http://www.nrifargo.com/> or by calling (701) 293-1335; or by contacting their nearest human service center [www.nd.gov/dhs/locations/regionalhsc](http://www.nd.gov/dhs/locations/regionalhsc); or Dr. David Garner's clinic at [http://rivercentre.org/about\\_eating\\_disorders.htm](http://rivercentre.org/about_eating_disorders.htm).

**Contacts and questions:**

Mary Solberg, MSW, LCSW, is the researcher in this study. She can be contacted at the following email address: [mary.solberg@waldenu.edu](mailto:mary.solberg@waldenu.edu). The advisor to this student is Dr. Andrea Miller. She may be contacted at the following email address: [andrea.miller@waldenu.edu](mailto:andrea.miller@waldenu.edu). If you have questions about your rights as a participant and want to ask my university a question you can contact Dr. Leilani Endicott with the Office of Research Integrity and Compliance at 1-800-925-3368, extension 1210. Walden University's approval number for this study is **09-01-11-0015980** and it expires on **August 31, 2012**. Six months after this research you can obtain a copy of this study at [mseatonandassociates@hotmail.com](mailto:mseatonandassociates@hotmail.com). Please keep/print a copy of the consent form for this contact information.

**Statement of consent:**

If you feel you have been provided with enough information to participate in this study described above, you may begin the survey.

## Appendix D: Letter of Cooperation

June 2, 2011

(participants name)

Dear

I give my permission to participate in your study entitled Binge Eating and Obesity: A Collaborative Approach. As part of this study, I agree to forward your email survey via SurveyMonkey to professionals (specified according to setting and professional, ie. providing agencies, employee's, counselors, staff, etc.) and other personal contacts who may be interested. Participants can then forward the survey onto others. Individuals' participation will be voluntary and at their own discretion. We/they reserve the right to withdraw from the study at any time if circumstances change.

I confirm that I am authorized to approve research in this setting (or to specified according to setting and professional).

I understand that the data collected will remain entirely confidential, that participants are not asked to disclose their identity, and that research may not be provided to anyone outside of the research team without permission from the Walden University IRB.

Sincerely,

## Curriculum Vitae

Mary Solberg

**Education:**

- Walden University, Minneapolis, MN 55401  
Doctorate of Philosophy  
2012 Dissertation Title: Binge Eating and Obesity: A Collaborative Affair
- University of North Dakota, Grand Forks, ND  
1999 Master of Social Work
- Minot State University, Minot, ND 58701  
1997 Bachelors of Social Work

**Experience:**

- 2009 – present Counselor  
Work with preschool and individuals of all ages  
Couple, group, family, individual counseling and crisis counseling  
Anger management and social emotional groups
- 2000 – 2011 Guardian  
Worked with developmentally disabled adults  
Worked with adults age 18 and over  
Individual and group meetings  
Attended and participated in the legal and state process
- 1997 – 2000 Community Home counselor  
Worked with individuals with a chronic mental illness  
Worked with adults age 18 and over  
Individual and group meetings  
Independent living skills/recreational leisure activity assessed and taught

**Licensure:**

North Dakota - Licensed Independent Clinical Social Worker

**Memberships:**

American Psychological Association #2340-9162  
National Association of Social Welfare  
PSI CHI lifetime member #614425, inducted 07/26/2008