

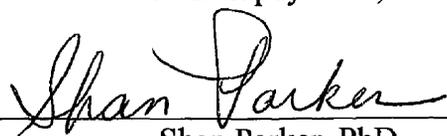
The Influence of Bullying on Unhealthy Weight Control Practices  
Among Overweight Adolescents

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## DEDICATION

I would like to dedicate this thesis to my daughter, Peyton Raeghan. She has been the light of my life and has kept me motivated while studying Health Education.

To Jonathan who has been my inspiration and has always stood by me.

To my parents who have always believed in me.

And, to my brothers, who always have my back.

I love you all.

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## GLOSSARY OF TERMS

- **Anorexia Nervosa** – An eating disorder that makes people lose more weight than is considered healthy for their age and height (Austin, Nelson, Birkett, Calzo & Everett, 2013).
- **Binge Eating** – An episode of overeating in which a person loses, or has a feeling of losing, control (Austin et al, 2013).
- **Body Mass Index (BMI)** – A calculation for human fat based on an individual’s weight and height.
- **Bulimia Nervosa** – An eating disorder in which a person has regular episodes of overeating, potentially losing control, and then uses different methods – such as vomiting or abusing laxatives – to prevent weight gain (Austin et al, 2013).
- **Bullying** – Any unwanted, aggressive behavior that involves a real or a perceived threat and usually involves a power imbalance. Most often the behavior is repeated over time (Rittakerttu, Rimpela, Rantanen & Rimpela, 2000).
- **Bully-victim** – Children and adolescents involved in bullying in both the roles of a bully and a victim (Rittakerttu et al., 2000).
- **Childhood Trauma Questionnaire (CTQ)** – A self-reported record that provides a concise and trustworthy assessment for histories of abuse and neglect (Rittakerttu et al., 2000).
- **DSM-IV-TR** – Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (Rittakerttu et al., 2000).
- **Eating disorder not otherwise specified (EDNOS)** – A category of eating disorders that do not meet the criteria for anorexia or bulimia nervosa (Austin et al, 2013).
- **Fasting** – Restricting dietary intake in order to lose weight or to keep from gaining weight (Austin et al, 2013).
- **Purging** – Self-induced vomiting and/or use of laxatives (Austin et al, 2013).
- **Unhealthy weight control practices** – The habit of fasting, purging, or taking diet pills/powders/liquids in order to lose weight or to keep from gaining weight.

## ABSTRACT

**Background:** Overweight and obesity rates continue to rise in the United States, specifically among adolescents. While there are many programs aimed at teaching today's youth about maintaining a healthy weight, no programs exist that specifically address risk factors for anorexia nervosa and/or bulimia nervosa among overweight or obese adolescents. Rather, these programs primarily focus on individuals who are underweight, or below a normal weight range. Another highly prevalent issue impacting U.S. adolescents involves bullying. Bullying has been linked with a number of negative health outcomes, including low self-esteem, poor psychological health and judgment. **Methodology:** The purpose of this research study was to examine the relationship between bullying and unhealthy weight control practices among overweight and obese adolescents. This secondary data analysis was conducted using the 2011 Youth Risk Behavior Surveillance System (YRBS), which represents on-going research by U.S. Centers of Disease Control and Prevention (CDC). The 2011 YRBS questionnaire was administered to a nationally representative high school students living throughout the United States.

**Results:** A statistically significant association ( $p < .001$ ) was found between being bullied and the practice of unhealthy weight controlling behaviors by means of fasting, purging, or using diet pills/powders/liquids among a sample of overweight/obese adolescents, when controlling for age, race/ethnicity and gender. **Conclusion:** Insight gained from this study may assist health education practitioners develop effective weight loss methods, while also addressing unhealthy weight controlling practices, specifically aimed at overweight and obese adolescents.

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## CHAPTER I: INTRODUCTION

For the purpose of this study, the terms adolescence and teenagers are used interchangeably. This study's primary focus was aimed at examining the relationship between overweight and obese adolescents who were bullied to investigate if they practiced unhealthy weight control habits to (1) lose weight or (2) keep from gaining weight. With adolescent obesity rates persistently on the rise, these individuals are at an increased risk of peer victimization and have become easy targets for bullies because they are viewed as different and undesirable (Robinson, 2006). Bullying among adolescents can lead to low self-esteem, body dissatisfaction, poor psychosocial adjustment and depression for the victim (Anxiety Disorders, 2012). As such, low self-esteem, body dissatisfaction, poor psychosocial adjustment and depression are major risk factors for developing eating disorders that can cause permanent harm to an individual's internal body (NIMH, 2013). Furthermore, individuals who practice unsafe weight control behaviors can quickly develop harmful eating disorders that can cause a multitude of other problems, both medical and psychological, resulting in a poor quality of life and high medical bills (Psych Central, 2004).

Overweight and obesity rates have consistently increased over the past several decades, resulting in a prevalence of nearly 17% of adolescents who are overweight (Wand & Beydoun, 2007). A recent study found that overweight and obese adolescents were significantly more likely to report poorer general health, more illness symptoms, depression, lower self-esteem and less social functioning than teens within the normal BMI range (Swallen, K.C., Reither, E.N., Haas, S.A., & Meier, A.M., 2007). Among people of all ages, overweight and obesity has also been associated with high blood pressure, diabetes, and organ failure, among other chronic health conditions (Wand & Beydoun, 2007).

Overweight and obese adolescents are at greater odds of victimization and bullying than their normal-weight peers because their weight can set them apart, and therefore, make them easy bully-victims (Janssen, Craig, Boyce & Pickett, 2004). In a nationally representative sample (n = 7,182), Wang, Iannotti, & Nansel (2009) found that 53.6% of teens were bullied verbally, 51.4% were bullied socially, 20.8% were bullied physically and 13.6% were bullied electronically on more than one occurrence over the past two months. Often times, bullied teens resort to drastic changes in their lifestyle, including skipping meals or restricting dietary intake, in order to fit in with their peers at school (Anxiety Disorders, 2012). Resorting to unhealthy weight control practices to lose weight or to keep from gaining weight can quickly lead to eating disorders, such as anorexia nervosa or bulimia nervosa (Education, 2013).

An eating disorder is a mental health illness that results in serious instabilities to a person's daily food regime and nutrition. Individuals who suffer from eating disorders can eat extremely small quantities of food, if anything at all, or over-exaggerate portion sizes and over-indulge in food (NIMH, 2011). The National Institute of Mental Health (NIMH) (2013) has determined that the most common eating disorders in the United States are anorexia nervosa (anorexia) and bulimia nervosa (bulimia). In both cases of anorexia and bulimia, it is common for individuals to excessively exercise, fast, purge (self-induced vomiting and/or utilization of laxatives), or use diet pills to control weight.

The health consequences associated with eating disorders is a grave concern for health-related fields across the United States. Adolescents who practice unhealthy weight control, by restricting their diet or purging, are at a serious risk for developing eating disorders that can affect their health for the rest of their lives. Examples of serious health risks include damage to internal organs and body systems (Steinglass & Walsh, 2006). In addition, eating disorders can

potentially cost an individual substantially in terms of medical and/or psychological treatment and treatment-related expenses. Although anorexia and bulimia are far more serious in individuals with lower BMI values because they have less weight to lose and can damage their internal body at a quicker rate (Steinglass & Walsh, 2006), it is equally important to address these issues in those who are overweight or obese. Unhealthy dietary control practices are extremely habit-forming and can cause serious damage to the psychosomatic and physical body (Steinglass & Walsh, 2006). Thus, regardless of a person's starting weight, it is unhealthy to attempt to shed pounds in these harmful manners.

Determining whether bullying influences adolescents to begin practicing unhealthy weight control is important because understanding this relationship will help to enable professionals in the field of public health and to address the issues of unhealthy weight control practices among this group of individuals. Public health educators can therefore provide preventative care to overweight and obese adolescents who are bullied. This study will examine the relationship between bullying and unhealthy dietary control behaviors among overweight and obese adolescents in the United States, as unhealthy weight control could be an indicator of future eating disorders. Specifically, this study will investigate whether overweight/obese teenagers who are bullied resort to unhealthy weight control practices in order to lose weight or to keep from gaining weight.

## CHAPTER II: LITERATURE REVIEW

In many societies, adolescence is narrowly defined as puberty and the cycle of physical changes culminating in reproductive maturity (Csikszentmihalyi, 2013). However, the World Health Organization defines an adolescent as any person between ages 10 and 19 (WHO, 2013). For the purposes of this research study, the term adolescent refers to any individual between the ages of 12 and 19, so to coincide with the WHO definition.

### *Overweight and Obesity*

Over the past several decades the number of individuals who are overweight and/or obese has continued to rise. For all persons age 0-18 years of age, overweight is defined as being between the 85<sup>th</sup> and 95<sup>th</sup> percentiles ( $85 \leq \text{overweight} < 95$ ) on the standard growth chart. In contrast, obesity among people 0-18 years old is defined as being equal to or above the 95<sup>th</sup> percentile (obesity  $\geq 95$ ) on the standard growth chart (Eaton, Kann, Kinchen, Shanklin, Flint, Hawkins, Harris & Lowry, 2012). According to several researchers, an estimated 17.1% of U.S. children and adolescents are overweight (Lowery, 2011; Ogden, Carroll, Curtin, McDowell, Tabak & Flegal, 2006). Indeed, Lowery (2011) suggests that childhood obesity rates have tripled since 1980, reporting that 33% of U.S. children between the ages of 2 to 19 years old are obese.

Public health concern regarding overweight and obesity stems from its association to the early onset of diseases such as diabetes, heart disease, high blood pressure, high cholesterol levels, asthma, arthritis, and poor health status (Mokdad, Ford, Bowman, Dietz, Vinicor, Bales & Marks, 2003). Adolescents who are overweight or obese have an 80% chance of becoming an obese adult (AACAP, 2011). Obesity, and the above-mentioned co-morbidities, is the result of an estimated 300,000 deaths to US citizens each year (Allison, Fontaine, Manson, Stevens, &

Vanitallie, 1999). Furthermore, Andreyeva, Sturm & Ringel (2004) found that those individuals who are obese pay 25-50% more in health care expenses when compared to those people of normal weight. Additionally, the lifestyle chosen by these overweight and obese adults will affect the lives of their children. Children and teens with one obese adult have a 50% chance of becoming an obese adult, and an 80% chance of becoming an obese adult when raised by two obese adults (AACAP, 2011).

### ***Bullying***

In addition to the increasing rate of overweight and obesity, bullying has also become a major concern regarding adolescent health within the United States. Bullying is defined as projecting any unwanted, aggressive behavior that involves a real or a perceived threat, and usually involves a power imbalance. Typically, the behavior is repeated over time and can happen in many different areas of a person's life including in or around the home, at school, via internet or phone texting, and in the workplace (CDC, 2012). Bullying among adolescents can also occur in different forms. Physical bullying can involve name-calling, hitting, kicking, poking or pushing; relational bullying can involve the telling of lies, spreading rumors, or withdrawing friendships; and cyber (or electronic) bullying can involve any form of aggression via cell phone, internet, email, social media, etc. (CDC, 2012).

“Children who are bullied about their weight, especially in their preteen years, are highly susceptible to developing negative self-image, and poor body dissatisfaction, which can last into adulthood,” (Anxiety Disorders, 2010). Due to their size and their general low self-esteem, overweight and obese teenagers are more likely to be the victims of bullying than their normal-weight peers (Janssen, Craig, Boyce, & Pickett, 2004). Bullying has been found to be a risk factor for developing unhealthy weight control behaviors among teenagers (Striegel-Moore,

Dohm, Pike, Wilfley & Fairburn, 2002).

### ***Unhealthy Weight Control Practices***

Many of the recent studies regarding unhealthy eating habits among overweight or obese adolescents focus on binge-eating disorders, which are defined as the condition in which an individual over-eats and/or over-indulges at regular intervals resulting in higher BMI averages (Bruce, & Wilfley, 1996; Fairburn, Doll, Welch, Hay, Davies, & O'Connor 1998; Decaluwe & Braet, 2003; Austin, Ziyadeh, Forman, Prokop, Keliher, & Jacobs, 2008). As such, no published studies to date were found that focus on malnourishment and the effects of restricting dietary intake, purging, and the use of diet pills and supplements among overweight and obese adolescents. Nonetheless, approximately 33% of all girls nationwide between the ages of 14-18 years use unsafe and risky weight-controlling practices, indicating that eating disorders have become the third most chronic illness among teenage girls (Education, 2012). In contrast, only 11% of boys reported severe symptoms of disordered eating and weight control (Austin et al., 2008).

Many times, adolescents will use unhealthy weight control practices to either hide their emotions or use it as a means to control the situation (Piko, Keresztes, & Pluhar, 2006). Additionally, some might feel that if they are being targeted because of their weight, then restricting their diet will enable them to lose, or keep from gaining, weight (Robinson, 2006). The practice of intentionally restricting food intake over long periods of time can cause poor growth, delayed sexual development, endocrine failure, as well as cognitive function impairment (CDC, 1996). Initially, these consequences may be less severe for overweight or obese individuals because their body can be sustained with their extra amount of body fat. However, prolonged unhealthy weight control practices can result in a lack of nutrients and vitamins

which, in turn, can erode healthy bones and muscles (Shaw, 2013). Additionally, over time, as these practices become habitual, severe damage to the internal body system and organs occur (Steinglass & Walsh, 2006). Restricting dietary intake and purging to lose weight, or to prevent one's self from gaining weight, becomes addictive and the damage can be irresistible (ANAD, 2013). Furthermore, individuals engaged in such behaviors may not be able to stop these practices without medical help and attention (Steinglass & Walsh, 2006).

### *Anorexia Nervosa*

The American Psychiatric Association and the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition Text Revision (DSM-IV-TR) defines the diagnosis of anorexia nervosa as: a person who refuses to maintain a body weight at or above the normal weight for their specific age and height; intense fear of gaining weight even though the individual may be underweight; denial of the current low body weight; and the absence of at least three menstrual cycles in females (APA, 2012). Risk factors for anorexia nervosa include a family history of anorexia, obesity, eating and weight concerns, depression and a history of exposure to adverse events and circumstances (Fairburn, Cooper, Doll & Welch, 1999).

Individuals between the ages of 12 and 25 comprise nearly 95% of all those with an eating disorder, making anorexia the third most chronic illness among adolescents (ANAD, 2013). In regards to sex, females significantly outnumber males in relation to anorexia nervosa. Only 10-15% of all people diagnosed with anorexia are male (ANAD, 2013). In a study conducted by Croll, Neumark-Sztainer, Story & Ireland (2002), Hispanic and American Indian adolescents reported the highest prevalence of unhealthy weight controlling behaviors and anorexia.

Anorexia is associated with a number of health complications, including: bone weakening, decline in white blood cells (which leads to high risk of infection), low potassium levels in blood (which can cause dangerous heart rhythms), severe lack of fluids, lack of essential vitamins and minerals to maintain healthy function and fight off infection, seizures, thyroid gland problems, and tooth decay (Zieve, Blackman, Slon & Wang, 2013). These conditions can lead to poorer health outcomes, lower quality of life, and substantial medical expenses.

### ***Bulimia Nervosa***

Similar to anorexia nervosa, bulimia involves the practices of restricting dietary intake. The main difference between anorexia and bulimia, however, is that bulimic individuals are characterized as engaging in purging and/or the misuse of laxatives, diuretics, and enemas to reduce weight. The act of purging is usually performed once an individual engages in the action of binge eating (also referred to as binging). According to the American Psychiatric Association and the DSM-IV-TR, an episode of binge eating is associated with 3 (or more) of the following criteria: 1) eating much more rapidly than the average consumption rate; 2) eating until feeling uncomfortably full; 3) eating large amounts of food when not feeling physically hungry; 4) eating alone because of feeling ashamed by how much one is eating; 5) feeling repulsed with oneself, depressed, or very shameful after overeating; and 6) marked distress regarding binge eating is present, or binge eating occurs (on average) at least twice a week for a period of 6 months or longer (APA, 2012).

The risk of bulimia is not equal among men and women. Studies show that bulimia cases, for all ages, among females are ten times more common than bulimia cases that occur in males (Garfinkel, Goering, Spegg, Goldbloom, Kennedy, Kaplan & Woodside, 1995). Although there

are not definitive statistics for bulimia among high school students, ANAD (2013) reports that 25% of college-aged women engage in bingeing and purging as a weight-management technique, also indicating that they began their practices at an earlier age. There is not enough research to support that certain races/ethnicities are more likely to be diagnosed with bulimia. However, in one study, 27% of (n = 13,454) American Indian and Alaska Native adolescents in 7<sup>th</sup>-12<sup>th</sup> grade, higher than the national average, reported that they had self-induced vomited to attempt to lose weight (Story, Hauck, Broussard, White, Resnick & Blum, 1994).

Collective research indicates that risk factors for bulimia are similar to the risk factors for anorexia. Bulimia nervosa risk factors include: a family history of mental disorders, obesity, negative self-worth, low self-esteem, depression and a traumatic exposure to lifetime events (Fairburn et al., 1998). Additionally, the \$3.8 billion paid in medical and mental health expenditures is partially due to bulimia nervosa (Psych Central, 2004). As previously mentioned, this number is related to general doctor visits, psychiatrist and counseling, dietician, treatment centers, medical bills, medications, insurance premiums, and loss of work just to name a few (ANAD, 2013; Mayo Clinic, 2011).

Anorexia and bulimia nervosa are related to medical disorders such as osteoporosis, gastrointestinal problems, cardiovascular complications, and endocrine system failure. Additional complications of eating disorders include esophagitis, gastric rupture, and impairment of digestive functioning (Austin et al., 2008). Moreover, compared with the general population, people with anorexia or bulimia nervosa are at an increased risk of suicide due to feelings of negative self worth and emotional trauma (Austin et al., 2008).

## *Summary*

The overall medical and mental health expenditures to United States businesses in 2001 for all eating disorders collectively total more than \$3.8 billion (Psych Central, 2004). These costs can include, but may not be limited to: general doctor visits, psychiatrist and counseling, dietician, treatment centers, medical bills, medications, insurance premiums, and loss of work (ANAD, 2013; Mayo Clinic, 2011).

Collectively, research has shown evidence that external factors, such as bullying, plays an important role in the development of eating disorders. It is believed that these psychosocial factors lead to unhealthy eating behaviors as a way for individuals to control a part of their life they have authority over (Garfinkel et al., 1995; Kaltiala-Heino, Rimpela, Rantanen & Rimpela, 2000; Taylor, Bryson, Doyle, Luce, Cuning, Abascal, Rockwell, Field, Striegel-Moore, Winzelberg & Wilfey, 2006). Research has revealed that adults who have been diagnosed with eating disorders often report that their condition started with external problems in their childhood. For example, when using a modified 21-item version of the Childhood Trauma Questionnaire (CTQ), Fosse & Holen (2006) found that women who met the criteria for bulimia had significantly higher scores on reports of bullying, compared to those who were not bullied by peers during their childhood ( $p < 0.001$ ). Additionally, individuals who were teased were more likely to report low self-esteem, and therefore, face increased risk for developing an eating disorder during adolescence.

It is important to address the issue of obesity among the adolescent population so they can be aware of their lifestyle choices and the options they have for a healthy weight loss, as opposed to an unhealthy weight loss practices that could have serious medical and psychological health consequences and financial costs over one's life time.

### ***Research Rationale***

There is evidence to suggest that some overweight adolescents do practice unsafe weight control by means of taking diet pills, laxatives, diuretics, or vomiting (Story, et al., 1994; Neumark-Sztainer, Story, Hannan, Perry & Irving, 2002). However, of the available research, focus on the source of unhealthy weight control practices among overweight and obese adolescents is lacking. It is important to explore this gap in the literature so that researchers and health educators working in the field of public health know how to address unsafe weight loss methods in among overweight and obese adolescents in practical situations and to prevent their associated medical conditions from occurring.

As previously identified, risk factors for both anorexia and bulimia include low self-esteem, depression and exposure to adverse or traumatic events (Fairburn et al., 1998; Fairburn et al., 1999). Likewise, bullying has been associated with feelings of low self-worth and depression (Striegel-Moore et al., 2006). Thus, it is hypothesized that overweight and obese adolescents who are a victim of bullying will be at increased risk for engaging in unhealthy weight control practices. In the current study, the relationship between bullying and unhealthy weight control habits will be examined.

## CHAPTER III: METHODOLOGY

### *Conceptual Model*

The diagram depicting the conceptual model, seen in Appendix A, graphically illustrates the hypothesized relationship between being a victim of bullying and engaging in unhealthy weight control practices, when controlling for age, race/ethnicity and gender.

### *Study Design*

The proposed research questions were evaluated using secondary data analysis of the Youth Risk Behavior Surveillance System (YRBS). The institution review board (IRB) at the University of Michigan-Flint declared it exempt from further IRB approval due to the use of existing, de-identified data. The IRB exemption letter can be seen in Appendix B. Data from the 2011 YRBS was analyzed since this is the most current data available from the Centers of Disease Control and Prevention (CDC). This questionnaire is used by the Center of Disease Control and Prevention (CDC) to determine (1) the prevalence of health-risk behaviors among high school students across the United States, (2) assess whether these behaviors change over time, and (3) examine the co-occurrence of health-risk behaviors. The questionnaire, as well as the data collected, are publically available on the website for the CDC (2004).

### *Sampling & Data Collection*

During odd years (i.e. every two years beginning in 1995) the national YRBS is conducted in schools across the country from February to May. State and local surveys may be done at or around the same time, however the data reported in this study reflects only information obtained from the national research database. The CDC conducts the national school-based survey under contract with Macro International. The CDC does oversee the operations of school selection. Rather, Macro International is responsible for gaining the

appropriate state-, district-, and school-level clearances to organize the survey in those schools. Specifically, Macro International 1) hires and trains data collectors to follow a common protocol to administer the questionnaires in the schools; 2) coordinates data collection; 3) weighs the data; and 4) prepares the data for analysis (CDC, 2004).

YRBS utilizes a three-stage cluster sample design in order to produce a nationally representative sample of U.S. students in grades 9-12. The target population includes all public and private high school students in the 50 states and the District of Columbia. U.S. territories are not included in the sampling frame. The sample size is designed to produce estimates that are accurate within  $\pm 5\%$  at 95% confidence. The following estimates meet this standard: sex, grade, race/ethnicity, grade by sex, race/ethnicity by sex, and overall estimates. The estimates for grade by race/ethnicity subgroups are accurate within  $\pm 10\%$  at 90% confidence.

The first-stage of the sampling cluster design includes the selection of primary sampling units (PSUs), which are comprised of large-sized counties or groups of smaller, adjacent counties. Those PSUs that are sizeable enough to be chosen are then divided into sub-PSU cities. In the second stage of the sampling design, both public and private schools are selected from their PSUs. In order to separately analyze data for African American and Hispanic students, the YRBS uses the following three strategies in order to achieve oversampling of these students: 1) larger sampling rates are used to select PSUs that are in high-black and high-Hispanic strata; 2) a modified measure of size is used that increases the probability of selecting schools that have a disproportionately high minority enrollment; and 3) two classes per grade, rather than one, are selected in high-minority schools (Department of Health and Human Services, 2004).

The third, and final stage, of sampling design entails randomly selecting one or two entire classes from each of the selected schools. Classes are considered homerooms or classes of a required discipline such as English or social studies. All classes have equal chance of being selected, and all students in sampled classes are eligible to participate in the study. The data collected is weighted, based on student sex, race/ethnicity, and school grade to adjust for student nonresponse and oversampling of black and Hispanic students. The weight estimates are representative of all 9<sup>th</sup>-12<sup>th</sup> grade students who are attending public and private schools in the United States. All students, and their parents, are informed that the survey is voluntary, and all data is coded to protect individual identities (CDC, 2004). Table 1 highlights 2011 YRBS response rates (CDC 2012).

The 2011 National YRBS assesses health risk behaviors among U.S. high school students. Topics covered in the survey include, but are not limited to: safety, violence-related behaviors, bullying, sad feelings and attempted suicide, tobacco use, drinking alcohol, marijuana use, other drugs use, sexual behavior, body weight, dietary intake, physical activity, and other health-related topics. All data collected in the 2011 YRBS is based upon self-report.

The YRBS attained complete surveys from 15,425 students nationwide. The participants include both male and female students in 9<sup>th</sup>-12<sup>th</sup> grade. However, for this study, only data from those individuals who are overweight or obese will be analyzed. Any participant of the 2011 YRBS who did not meet the criteria for being overweight or obese was excluded from the current analysis. As a result of this inclusion and exclusion criteria, this study will look at 4,216 individuals in grades 9<sup>th</sup>-12<sup>th</sup> ( $n = 4,216$ ) across the U.S. who have a BMI of equal to or greater than the 85<sup>th</sup> percentile on the standard growth chart. This sample is approximately 27% of the participants from the 2011 YRBS sample.

**Table 1. 2011 National YRBS Response Rate**

	<b>Selected Sample</b>	<b>Participants</b>	<b>Response Rate</b>
<b>Schools</b>	194	158	$(158/194) = 81\%$
<b>Students</b>	17,672	15,452	$(15,452/17,672) = 87\%$
<b>Overall Response Rate</b>			$(158/194) * (15,452/17,672) = 71\%$

### *Measures*

The data analyzed included demographics, such as age, sex, and race/ethnicity. It also looked at whether the participants were a victim of bullying and if they practiced any unsafe weight management. This information will help determine if these bullying and weight controlling practices are associated with one another and whether they are significant among the various races/ethnicities and sexes. The proposed study controlled for age, race/ethnicity and gender. BMI for all adolescents were attained from the answers to questions pertaining to the participants' age, height and weight, respectively and can be seen in Appendix D. BMI was operationalized utilizing the standard percentile growth chart for youth and teens. Those adolescents whose BMI is  $\geq 85^{\text{th}}$  and  $< 95^{\text{th}}$  percentile are considered overweight; BMI that is  $\geq 95^{\text{th}}$  are considered obese.

The main predictor variable of interest is being a victim of bullying. The dependent variable is using unhealthy weight control practices (i.e. restricting dietary intake, or fasting, purging, and using diet pills, powders, and/or liquids).

Two questions were used to assess bullying. Participants were asked if they have been bullied (1) on school property within the last 12 months, or (2) ever been electronically bullied. If a participant answered "Yes" to either, or both, of these two questions, they are considered a victim of bullying.

Three questions were used to construct an indicator of unhealthy weight control practices to lose weight or keep from gaining weight. Participants were asked if (1) went without eating for 24 hours or more, (2) have taken any diet pills, powders or liquids without a doctor's advice, or (3) vomited and/or taken laxatives. If a participant did answer "Yes" to at least one of these three questions, they are considered to have practiced unhealthy weight control behaviors.

### *Analytic Plan*

All data was analyzed in IBM SPSS Statistics 20 software. Univariate statistics was used to determine the frequencies and distribution of dichotomous and categorical variables, which include: sex, age, race/ethnicity, being a victim of bullying, restricted eating, using diet pills, powders or liquids, purging and/or use of laxatives. Additionally, univariate statistics in the form of means and standard deviations for continuous variables such as BMI, were conducted to determine if there is a significance difference among certain groups of adolescents that might be more likely to engage in these behaviors. For this study, frequency statistics were analyzed to study the distribution of demographic characteristics of the study sample (age, gender, and race/ethnicity).

In addition to univariate statistics, bivariate analysis of the data were conducted to determine if there is an association between the study variables. The analyses were conducted to answer two questions, "What is the probability that the relationship exists?" and "If it does exist, how strong is the relationship?" Chi-square tests of significance was used to test for the association and strength of the relationship between being a victim of bullying (both at school and electronically) and unhealthy weight control practices (fasting, use of diet pills/powders/liquids, and purging). Specifically, the Chi-square ( $X^2$ ) test of significance was used to determine whether there is a significant relationship between being a victim of bullying

and unhealthy weight control behaviors in one of the following six ways: (1) Victim of bullying at school vs. Fasting to lose weight; (2) Victim of bullying online vs. Fasting to lose weight; (3) Victim of bullying at school vs. Taking diet pills/powders/liquids; (4) Victim of bullying online vs. Taking diet pills/powders/liquids; (5) Victim of bullying at school vs. Purging to lose weight; and (6) Victim of bullying online vs. Purging to lose weight.

Following this analysis, binary logistic regression was conducted to determine if there was a statistical association between being a victim of bullying and unhealthy weight control behaviors when controlling for age, gender, and race/ethnicity. This final set of analyses determined the relationship between the predictor variable (bullying) and the dependent variable (unhealthy weight control practices). These tests of statistical significance are displayed in Table 2 below.

**Table 2. Tests of Statistical Significance**

Tests of Statistical Significance	
Type of Test	Specific Variables
Chi-square ( $X^2$ )	<ul style="list-style-type: none"> <li>• Victim of bullying at school vs. Fasting to lose weight</li> <li>• Victim of bullying online vs. Fasting to lose weight</li> <li>• Victim of bullying at school vs. Taking diet pills/powders/liquids</li> <li>• Victim of bullying online vs. Taking diet pills/powders/liquids</li> <li>• Victim of bullying at school vs. Purging to lose weight</li> <li>• Victim of bullying online vs. Purging to lose weight</li> </ul>
Regression	<ul style="list-style-type: none"> <li>• Age</li> <li>• Gender</li> <li>• Race/ethnicity</li> <li>• Being a victim of bullying</li> </ul>

With these tests, the proposed study of unhealthy weight control in overweight and obese adolescents as a response to being bullied will be able to provide vital information to the public health field that can prevent the development of eating disorders. Expectantly, this study will

serve as a stepping-stone for future researchers to promote healthy and effective weight loss methods to specifically targeted groups of youth.

## CHAPTER IV: RESULTS

Among the overweight and obese high school students in the 2011 YRBS dataset, univariate statistics were used to generate a demographic profile of the study population. Results are reported in Table 3. In regards to age, seventeen, sixteen and fifteen year olds constituted the majority of the sample, composing 25.9% (n=1091), 25.0% (n=1052) and 23.7% (n=1000), respectively. The data for high school students age twelve and thirteen years old was removed from the analysis due to the fact that the sample size of these ages were too small ( $n < 30$ ) for analysis. In regards to gender, females (n = 1899) were outnumbered by males (n = 2317). The male population exceeds the female population by 10%. Additionally, when the population was broken down by the various races/ethnicities, the majority of the population was 36.2% White (n=1527) and 20.2% African American (n=853); whereas the minority of the populations represented are 2.4% American Indian/Alaska Native (n=99), 2.1% Asian (n=90) and 0.8% Native Hawaiian/other Pacific Islander (n=35).

**Table 3. Demographic Profile**

	Overweight and Obese High School Students n = 4216 n(%)
Age	
14 years	438(10.4)
15 years	1000(23.7)
16 years	1052(25.0)
17 years	1091(25.9)
18+ years	623(14.8)
Sex	
Male	2317(55.0)
Female	1899(45.0)
Race/Ethnicity	
American Indian/Alaska Native	99(2.4)
Asian	90(2.1)
Black or African American	853(20.2)
Native Hawaiian/other PI	35(0.8)
White	1527(36.2)
Hispanic/Latino	683(16.2)
Multiple - Hispanic	691(16.4)
Multiple - non-Hispanic	178(4.2)

Using the Chi-square test of statistical significance, a bivariate analysis was conducted among the population to see if there was a relationship between being bullied at school and unhealthy weight control practices within the past 30 days (Table 2). Given that the assumptions for this test hold true (the sample is random and is greater than 30 participants), the null hypothesis states that there is no association between being bullied at school and unhealthy weight control practices. As seen in Table 2, the p-values for each of the three unhealthy weight control practices are statistically significant. The individual dependent variables (fasting, taking diet pills/powders/liquids, and purging) each have a p-value of  $<.001$ . Therefore, this test indicates that the null hypothesis would not be reasonable and can be rejected. From these results, we obtain strong evidence to suggest that there is an association between unhealthy weight control practices among overweight and obese adolescents who are bullied at school and/or online.

**Table 4. Bivariate Analysis of Overweight and Obese Students Bullied at School**

	Overweight and Obese High School Students Bullied at School n = 4216 p-value
Fasted (go without eating) in past 30 days	p < .001
Took diet pills, powders or liquids in the past 30 days	p < .001
Vomited or took laxatives in the past 30 days	p < .001

A second bivariate analysis was conducted among the population to see if there was a relationship between being bullied online and unhealthy weight control practices within the past 30 days (Table 3). Using the same statistical assumptions, the null hypothesis states that there is no association between being bullied online and unhealthy weight control practices. Again, the

p-values for each of the three unhealthy weight control practices are statistically significant. The distinct dependent variables each have a p-value of  $p \leq .001$ . The null hypothesis would not be practical. Given these results, there is strong evidence to suggest that there is an association between unhealthy weight control practices among overweight and obese adolescents and being bullied online.

**Table 5. Bivariate Analysis of Overweight and Obese Students Bullied Online**

	Overweight and Obese High School Students Bullied Online n = 4216 p-value
Fasted (go without eating) in past 30 days	p < .001
Took diet pills, powders or liquids in the past 30 days	p < .001
Vomited or took laxatives in the past 30 days	p < .001

The final set of analyses conducted involved testing two models using binary logistic regression to determine if a significant relationship exists between the predicting variable (being a victim of bullying) and the dependent variable (practicing unsafe weight controlling behaviors), seen in Table 4. To perform these tests, dummy variables for age and race/ethnicity had to be created in order to analyze them individually. The referent group for age was composed of those respondents 18 years of age because they have been in school longer and, therefore, received more education regarding health and eating habits. The referent group for gender is males because studies have shown that they are less likely to be affected by social norms about weight, and therefore, less likely to engage in unhealthy weight control habits. Finally, the referent group for race/ethnicity is White due to the fact that they are the majority ethnic population.

For the final set of analyses, binary logistic regression was conducted where two models were tested. The first regression model is composed of known demographic factors associated with unhealthy weight control practices, including age, race, and sex. In the second regression model, being a victim of bullying was added to the regression analysis. Model 1 shows evidence that being 14 years old is negatively correlated ( $p \leq .05$ ) with unhealthy weight control practices, compared to respondents 18 years and older. However, being an overweight or obese female was significantly and positively associated ( $p \leq .001$ ) with unhealthy weight control practices, compared to males of the study sample. Additionally, among the various racial/ethnic groups listed in Table 4, being an overweight or obese American Indian/Alaskan Natives was positively associated ( $p \leq .05$ ) with unhealthy weight control practices when compared to overweight or obese White students.

When the factor of bullying, both at school and online, was added to Model 2 (in Table 4) a couple of differences were seen. Model 2 shows evidence that being 14 years old ( $p < .05$ ) and being 16 years ( $p < .05$ ) were both negatively correlated with unhealthy weight control habits compared to those participants 18 years and older who are overweight or obese. Being a female was still significantly and positively associated ( $p < .001$ ) with unhealthy weight control habits compared to those participants who are male who are overweight or obese. In regards to race/ethnicity, Model 2 demonstrates that being American Indian/Alaska Native ( $p < .05$ ) or being of Multiple Hispanic decent ( $p < .05$ ) was positively associated with unhealthy weight control practices when compared to those respondents who were White. The major finding of this analysis is that being bullied at school and being bullied online both have a significant positive association ( $p < .001$ ) with unhealthy weight control habits, compared to those overweight adolescents who did not experience bullying of any form.

**Table 6. Binary Logistic Regression Models**

	Model 1 B(SE)	Model 2 B(SE)
<b>Age</b>		
14 yrs	-.338(.169)*	-.433(.173)*
15 yrs	.004(.132)	-.110(.136)
16 yrs	-.219(.134)	-.284(.137)*
17 yrs	-.197(.132)	-.235(.135)
18+ yrs	---	---
<b>Sex</b>		
Male	---	---
Female	.840(.085)***	.719(.087)***
<b>Race/Ethnicity</b>		
American Indian/Alaska Native	.489(.242)*	.514(.250)*
Asian	.311(.296)	.368(.303)
Black or African American	-.100(.118)	.097(.122)
Native Hawaiian/other PI	.564(.439)	.717(.449)
White	---	---
Hispanic/Latino	.054(.125)	.178(.128)
Multiple - Hispanic	.194(.119)	.314(.123)*
Multiple - non-Hispanic	.133(.205)	.194(.209)
<b>Victim of Bullying</b>		
Bullied at school		.658(.108)***
Bullied online		.723(.115)***

## CHAPTER V: DISCUSSION

The purpose of this research was to examine the relationship between bullying and unsafe weight control behaviors among overweight and obese adolescents. In this study it was hypothesized that overweight and obese adolescents who experience bullying will be at an increased risk for practicing unhealthy weight control habits when compared to overweight adolescents who are not bullied. As expected, when examining the 2011 YRBS data from a nationally representative sample of U.S. 9<sup>th</sup>-12<sup>th</sup> grade students, a statistically significant association was found between overweight adolescents who are bullied at school or online and the practice of unhealthy weight controlling behaviors by means of fasting, purging, or using diet pills/powders/liquids. Likewise, a significant association was found among obese students, where being a victim of bullying was statistically associated with engaging in unsafe weight control habits. Overweight and obese victims of bullying, both at school and/or electronically, were more likely to engage in any of the unhealthy weight control practices than those overweight and obese participants who were not bullied.

It was predicted that the younger students would be more inclined to engage in unhealthy weight control measures, however, the findings did not support this assumption. Rather, results revealed that 14-year-olds compared to 18 and older students, who are overweight or obese and, regardless of bullying status, are less likely to engage in unhealthy weight controlling habits. Likewise, compared to 18 and older participants, when looking only at overweight and obese adolescents who are bullied, 16-year-olds are not likely to engage in fasting, purging, or taking diet pills/powders/liquids. Possibly, these results could be due to the fact that 18 and older individuals could have more privacy (being that they might have jobs, cars, or the ability to be away from monitoring parents) and more freedom in and around the home. Taking this into

consideration, they could have alone time to engage in those unhealthy weight control habits without alarming parents/guardians. Additionally, older adolescents are more likely to have their own money from personal jobs to purchase their own foods and/or diet supplements such as pills, powders and liquids.

Determining the age(s) at which most adolescents are likely to partake in unhealthy weight control practices is difficult to determine because therein lies a gap in the literature. The rates and statistics of adolescent (and even childhood) overweight and obesity is broken down by age groups (i.e. 10-19 year-olds, or 2-18 year-olds), not by individual years as was done in this study. Determining the vulnerability among the different ages warrants further research and investigation from public health educators. This would ensure that public health educators could pin point the best time and type of intervention among this age group of adolescents.

Upon examination of race/ethnicity, without taking bullying into consideration, the only ethnic group likely to engage in unhealthy weight control practices when compared to Whites was American Indians. However, once being a victim of bullying was added to the equation, both American Indian and persons of mixed-Hispanic ethnicities were more likely to engage in unhealthy dietary control practices than that of the White adolescents. When looking at the sample distribution, one can see that African Americans do consist of a large portion of the sample size; however, they are not represented among the groups of overweight and obese teens who practice unhealthy weight control behaviors. Social norms could be a factor among these results. For instance, in African American culture, it is more socially acceptable to have a higher body weight and an individual's self-esteem is not as low in regards to their BMI. As such, if an African American teenager was bullied, he/she could resort to other means of controlling their emotions that do not involve unhealthy weight control practices (Croll et al., 2002).

In regards to gender, girls are significantly more likely than boys to engage in these unsafe weight control practices, regardless if they are a victim of bullying or not. This study found that there was a statistically significant association to practicing unsafe weight control behaviors of any type (fasting, purging, or taking diet pills/powders/liquids) between the following four relationships: 1) being overweight and being bullied online, 2) being obese and being bullied online, 3) being overweight and being bullied at school, and 4) being obese and being bullied online. This could be due to the fact that girls are typically more emotional and tend to take things on a more personal matter than their male counterparts (Neumark-Sztainer et al., 2002).

As with all research and investigation, this cross-sectional study is not short of limitations. These limitations include the lack of known causality between being bullied and engaging in unsafe weight control practices, self-reported answers, reason for being bullied, means and length of being bullied, lack of family history and unknown socioeconomic status. First, the analysis of the data collected by the CDC was a one-time questionnaire given to high school students about many topics. This is problematic because there is no way to determine if being bullied caused those adolescents to engage in unsafe weight control behaviors, or if practicing those unsafe weight control behaviors caused them to be bullied.

Second, the data used in this study is based upon self-reported answers, and therefore may not be completely accurate. For example, it has been found that people tend to under-exaggerate their weight and over-exaggerate their height (Pappas, 2012). Consequently the calculations of the participants' BMI might not be fully accurate. This confounding bias could play a role in the results generated; had answers not been self-reported, the sample size of overweight and obese adolescents could yield a larger number of participants, therefore altering

numbers and results.

Third, although the students might have indicated that they were a victim of bullying, there is no certainty that they were bullied due to their weight. Further, due to the fact that this survey was administered to 15,452 participants, there is no way to follow up with these individuals to investigate whether their dietary habits have changed, or determine how long they engaged in unhealthy weight control behaviors. With an overall response rate of 71%, there is a large number (29%) of students selected that did not participate in the study. Their missing data could yield different data and/or results.

Fourth, this questionnaire administered to high school students did not provide detail about the means and length of bullying. It only addressed whether adolescents felt they had been bullied and whether it was a form of direct bullying or electronic bullying. Whether a person was teased occasionally, or emotionally tormented over a long period of time could lead to different results. With more qualitative information about time frames and types of bullying, researchers and health educators can go more in depth about the reasons overweight and obese adolescents who are bullied practice unhealthy weight control behaviors.

Fifth, there was no data on family history of obesity or mental health disorders, such as anorexia or bulimia nervosa. If this information were available, it could potentially change the findings that were established in this study. Without having this data, the participants' true risk might be underestimated. Adolescents with a family history might replicate behaviors from their role models and/or not comprehend social norms in the same way as other teens without a family history of anorexia or bulimia (Fairburn et al., 1999).

Finally, information on income level and socioeconomic status (SES) was not collected as part of the 2011 YRBS survey. Those individuals with lower SES and education levels are

more likely to have the means or knowledge of how being overweight can affect their health.

The relationship between SES and education is well established within the literature that both are significant predictors of being overweight (Sun Guo, Wu, Chumlea & Roche, 2002).

Despite several limitations to the current study, there are also several strengths to the current study that deserve mention. First and foremost, this is a nationally represented sample conducted by the Centers of Disease Control and Prevention. This study employed a random sample design that allowed for all ages (within high school), genders, and race/ethnicity to be represented, therefore establishing external validity. Additionally, the measures utilized in this study are well-established and have high reliability. Subsequently, the results and conclusions drawn from this analysis hold plausible causal relationships between being bullied and practicing unhealthy weight control practices that can be generalized with different populations across the country; thus, the tests conducted have high external validity.

## CONCLUSION

The information and results gathered from this data can be used along with health education theories to develop programs for overweight and obese adolescents who are victims of bullying. There is a substantial amount of material available about mental health disorders, such as anorexia and bulimia nervosa, as well as copious quantities of information available in regards to bullying that can be utilized to develop these programs. Theoretical models such as the Health Belief Model, Social Cognitive Model, and Trans-theoretical model are all useful applications of how to integrate this information into programs that already exist for adolescents and young adults. There are a multitude of healthy eating and weight loss programs for people of all ages across the country. However, new and innovative approaches to these existing programs that account for unhealthy and restrictive dietary practices among overweight and obese individuals may provide that catalyst needed to increase the successful of weight loss interventions.

Despite the limitations, findings of the present study support the hypothesis that overweight or obese adolescents who are bullied are positively associated with practicing unhealthy and unsafe weight control practices. From a public health view, the population and topic studied merits more attention and future research. Overweight and obesity continue to pose a major threat to the health of the nation. Similarly, the topic of bullying is becoming a popular health and quality of life topic in schools nation-wide. It is important to look at these subjects collectively to investigate ways to provide public health interventions or programs. These said programs should focus on healthy means and lifestyle changes that overweight and obese adolescents can make to lose weight in ways that will not harm their bodies. Interventions that utilize motivational interviewing as the core foundation can encourage teens and young adults how to be healthy and not let the effects of bullying lead to unhealthy lifestyles. Additionally,

physical activity programs that start at various levels of the intervention cycle, such as the trans-theoretical model of change, might encompass a vast array of adolescents, could have a lower attrition rate, and will focus more on becoming a strong individual, rather than just restricting dietary intake.

Information gained from this study may be useful in designing future longitudinal studies in which to investigate the positive relationships between overweight and obese adolescents who are bullied and unhealthy weight control behaviors identified in the current study. These longitudinal studies could provide a more in-depth examination of the relationships over time and attempt to distinguish causality between being bullied and practicing unsafe weight control behaviors. Additionally, this information could be useful to study and determine if bullying and unhealthy weight control practices are a part of the reason that many overweight and/or obese individuals have a difficult time losing weight and/or keeping excess weight off. Those individuals who resort to unhealthy ways of losing weight, such as unsafe weight control, fad diets, and yo-yo diets have a much higher chance of re-gaining weight once they stop their diet (Andreveva, Sturm, & Ringel, 2004).

Future research on the topic of bullying and unhealthy weight control practices among overweight and obese adolescents should focus on filling important gaps that remain in the literature such as: the for being bullied, reasons for practicing unhealthy weight control habits, how often, and the ages that participants started their unhealthy lifestyles. Information in these areas would enable public health educators to identify key points for intervention that may prevent adolescents from causing serious, long term medical and/or mental health problems for themselves.

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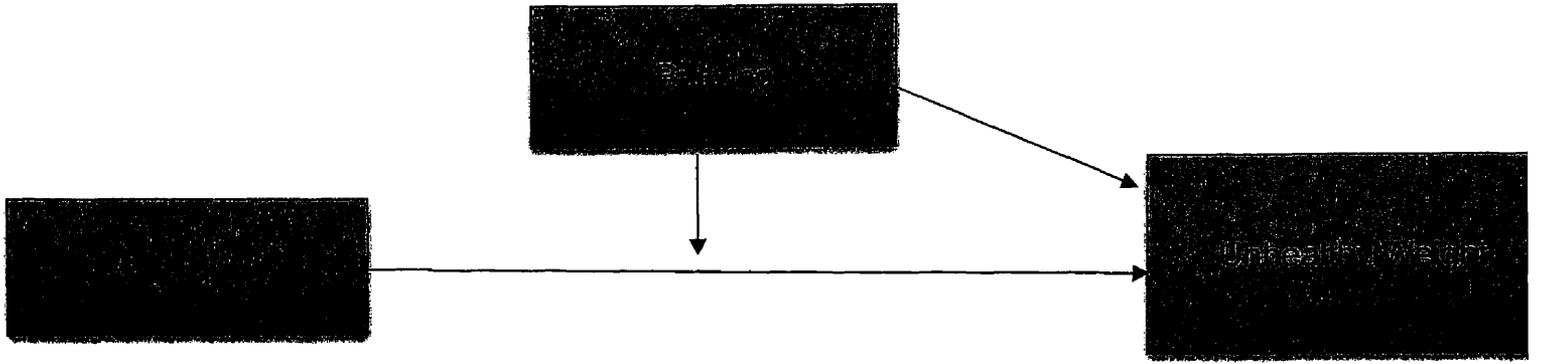
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Appendix A

CONCEPTUAL MODEL



## Appendix B



Flint Institutional Review Board • 530 French Hall, 303 E. Kearsley St, Flint, MI 48502 • phone (810) 762-3383 • fax (313) 593-0526 • [research@umflint.edu](mailto:research@umflint.edu)

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**To:** Ashley Cooper

**From:**

Marianne McGrath

**Cc:**

Shandowyn Parker  
 Ashley Cooper  
 Lisa Lapeyrouse

**Subject:** Notice of Exemption for [HUM00072600]

**SUBMISSION INFORMATION:**

Title: Unhealthy Weight Control in Overweight and Obese Adolescents as a Response to Being Bullied  
 Full Study Title (if applicable): Unhealthy Weight Control in Overweight and Obese Adolescents as a Response to Being Bullied

Study eResearch ID: [HUM00072600](#)

Date of this Notification from IRB: 2/25/2013

Date of IRB Exempt Determination: 2/25/2013

UM Federalwide Assurance: FWA00004969 expiring on 6/13/2014

OHRP IRB Registration Number(s): IRB00000248

**IRB EXEMPTION STATUS:**

The IRB Flint has reviewed the study referenced above and determined that, as currently described, it is exempt from ongoing IRB review, per the following federal exemption category:

**EXEMPTION #4 of the 45 CFR 46.101.(b):**

Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Note that the study is considered exempt as long as any changes to the use of human subjects (including their

data) remain within the scope of the exemption category above. Any proposed changes that may exceed the scope of this category, or the approval conditions of any other non-IRB reviewing committees, must be submitted as an amendment through eResearch.

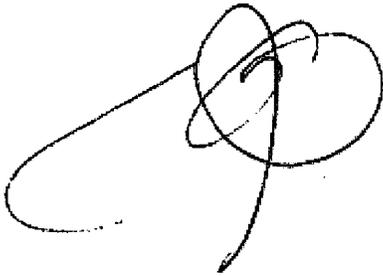
Although an exemption determination eliminates the need for ongoing IRB review and approval, you still have an obligation to understand and abide by generally accepted principles of responsible and ethical conduct of research. Examples of these principles can be found in the Belmont Report as well as in guidance from professional societies and scientific organizations.

**SUBMITTING AMENDMENTS VIA eRESEARCH:**

You can access the online forms for amendments in the eResearch workspace for this exempt study, referenced above.

**ACCESSING EXEMPT STUDIES IN eRESEARCH:**

Click the "Exempt and Not Regulated" tab in your eResearch home workspace to access this exempt study.

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the left.

**Marianne McGrath**  
Chair, IRB Flint

## Appendix C

### PEERRS CERTIFICATION



**THE UNIVERSITY OF MICHIGAN**  
**Program for the Education and Evaluation of Responsible Research and**  
**Scholarship (PEERRS)**  
 4840 FLEMING ADMINISTRATION BUILDING  
 583 THOMPSON STREET  
 ANN ARBOR, MICHIGAN 48109-1340  
 734 764-1185 FAX: 734 763-8085

### PEERRS Certification Record for Cooper, Ashley (ashcoope)

**Cooper, Ashley**  
**Uniqname or Friend Account: ashcoope**  
**UMID: 77910784**  
**Date: Nov 13, 2012**

The person named below has completed the indicated online modules in the University of Michigan's Responsible Conduct of Research training program, known as PEERRS (Program for Education and Evaluation in Responsible Research and Scholarship).

PEERRS is a web-based foundational instruction and certification program for the members of the University of Michigan community engaged in or associated with research. Modules are offered on Foundations of Responsible Research Conduct; Research Administration; Conflict of Interest; Human Subjects Research; Animal Research; and Publications and Authorship. Each module consists of 20-30 web pages containing the core material, short case studies with questions, and pop-ups with additional information to provide greater depth and elaboration.

Certifications are obtained by passing a test associated with each module. The certifications are valid through the dates shown.

#### Active Certifications:

Module	Certified Through
Authorship, Publication and Peer Review	11-05-2015
Foundations of Good Research Practices Module & Certification Test	10-28-2015
Human Subjects Social & Behavioral Sciences Module & Certification Test	11-05-2015

#### Expired Certifications:

Module	Certified Through
No Certifications	

# 2011 National Youth Risk Behavior Survey

This survey is about health behavior. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to improve health education for young people like yourself.

**DO NOT** write your name on this survey. The answers you give will be kept private. No one will know what you write. Answer the questions based on what you really do.

Completing the survey is voluntary. Whether or not you answer the questions will not affect your grade in this class. If you are not comfortable answering a question, just leave it blank.

The questions that ask about your background will be used only to describe the types of students completing this survey. The information will not be used to find out your name. No names will ever be reported.

Make sure to read every question. Fill in the ovals completely. When you are finished, follow the instructions of the person giving you the survey.

Public reporting burden for this collection of information is estimated to average 45 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: CDC Reports Clearance Officer, 1600 Clifton Road, MS D-74, Atlanta, GA 30333, ATTN:PRA (0920-0493)

***Thank you very much for your help.***

**DIRECTIONS**

- Use a #2 pencil only.
- Make dark marks.
- Fill in a response like this:  A  B  C  D
- If you change your answer, erase your old answer completely.

1. How old are you?
  - A. 12 years old or younger
  - B. 13 years old
  - C. 14 years old
  - D. 15 years old
  - E. 16 years old
  - F. 17 years old
  - G. 18 years old or older
2. What is your sex?
  - A. Female
  - B. Male
3. In what grade are you?
  - A. 9th grade
  - B. 10th grade
  - C. 11th grade
  - D. 12th grade
  - E. Ungraded or other grade
4. Are you Hispanic or Latino?
  - A. Yes
  - B. No
5. What is your race? (Select one or more responses.)
  - A. American Indian or Alaska Native
  - B. Asian
  - C. Black or African American
  - D. Native Hawaiian or Other Pacific Islander
  - E. White

6. How tall are you without your shoes on?  
 Directions: Write your height in the shaded blank boxes. Fill in the matching oval below each number.

Example

Height	
Feet	Inches
5	7
<input type="radio"/> 3	<input type="radio"/> 0
<input type="radio"/> 4	<input type="radio"/> 1
<input type="radio"/> 6	<input type="radio"/> 2
<input type="radio"/> 7	<input type="radio"/> 3
<input type="radio"/> 8	<input type="radio"/> 4
<input type="radio"/> 9	<input type="radio"/> 5
<input type="radio"/> 10	<input type="radio"/> 6
<input type="radio"/> 11	<input type="radio"/> 7
<input type="radio"/> 12	<input type="radio"/> 8
<input type="radio"/> 13	<input type="radio"/> 9
<input type="radio"/> 14	<input type="radio"/> 10
<input type="radio"/> 15	<input type="radio"/> 11

Height	
Feet	Inches
<input type="radio"/> 3	<input type="radio"/> 0
<input type="radio"/> 4	<input type="radio"/> 1
<input type="radio"/> 5	<input type="radio"/> 2
<input type="radio"/> 6	<input type="radio"/> 3
<input type="radio"/> 7	<input type="radio"/> 4
<input type="radio"/> 8	<input type="radio"/> 5
<input type="radio"/> 9	<input type="radio"/> 6
<input type="radio"/> 10	<input type="radio"/> 7
<input type="radio"/> 11	<input type="radio"/> 8
<input type="radio"/> 12	<input type="radio"/> 9
<input type="radio"/> 13	<input type="radio"/> 10
<input type="radio"/> 14	<input type="radio"/> 11

7. How much do you weigh without your shoes on?  
 Directions: Write your weight in the shaded blank boxes. Fill in the matching oval below each number.

Example

Weight		
Pounds		
1	5	2
<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

Weight		
Pounds		
<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 1
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 2
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 3
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 4
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 5
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 6
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 7
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 8
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

22. During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?
- A. Yes
  - B. No
23. Have you ever been physically forced to have sexual intercourse when you did not want to?
- A. Yes
  - B. No

**The next 2 questions ask about bullying. Bullying is when 1 or more students tease, threaten, spread rumors about, hit, shove, or hurt another student over and over again. It is not bullying when 2 students of about the same strength or power argue or fight or tease each other in a friendly way.**

24. During the past 12 months, have you ever been bullied **on school property**?
- A. Yes
  - B. No
25. During the past 12 months, have you ever been **electronically** bullied? (Include being bullied through e-mail, chat rooms, instant messaging, Web sites, or texting.)
- A. Yes
  - B. No

**The next 5 questions ask about sad feelings and attempted suicide. Sometimes people feel so depressed about the future that they may consider attempting suicide, that is, taking some action to end their own life.**

26. During the past 12 months, did you ever feel so sad or hopeless almost every day for **two weeks or more in a row** that you stopped doing some usual activities?
- A. Yes
  - B. No
27. During the past 12 months, did you ever **seriously** consider attempting suicide?
- A. Yes
  - B. No
28. During the past 12 months, did you make a plan about how you would attempt suicide?
- A. Yes
  - B. No

69. The **last time** you had sexual intercourse, what **one** method did you or your partner use to **prevent pregnancy**? (Select only **one** response.)
- A. I have never had sexual intercourse
  - B. No method was used to prevent pregnancy
  - C. Birth control pills
  - D. Condoms
  - E. Depo-Provera (or any injectable birth control), Nuva Ring (or any birth control ring), Implanon (or any implant), or any IUD
  - F. Withdrawal
  - G. Some other method
  - H. Not sure

**The next 5 questions ask about body weight.**

70. How do **you** describe your weight?
- A. Very underweight
  - B. Slightly underweight
  - C. About the right weight
  - D. Slightly overweight
  - E. Very overweight
71. Which of the following are you trying to do about your weight?
- A. **Lose** weight
  - B. **Gain** weight
  - C. **Stay** the same weight
  - D. I am **not trying to do anything** about my weight
72. During the past 30 days, did you **go without eating for 24 hours or more** (also called fasting) to lose weight or to keep from gaining weight?
- A. Yes
  - B. No
73. During the past 30 days, did you **take any diet pills, powders, or liquids** without a doctor's advice to lose weight or to keep from gaining weight? (Do **not** include meal replacement products such as Slim Fast.)
- A. Yes
  - B. No
74. During the past 30 days, did you **vomit or take laxatives** to lose weight or to keep from gaining weight?
- A. Yes
  - B. No