Adolescent Bullying: Do Weight, Body Size, and Body Size Dissatisfaction Influence Victimization?

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ADOLESCENT BULLYING: DO WEIGHT, BODY SIZE, AND BODY SIZE DISSATISFACTION INFLUENCE VICTIMIZATION?

by

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ADOLESCENT BULLYING: DO WEIGHT, BODY SIZE, AND BODY SIZE DISSATISFACTION INFLUENCE VICTIMIZATION?

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The current study investigated how body mass index (BMI) z-score, peer context, and body size dissatisfaction influence bullying victimization in adolescents. Participants were 11-18 year-old patients at pediatrician’s offices in a mid-sized Midwestern city. Path analyses and percentile bootstrapping procedures were employed to investigate the research questions. A zero-inflated Poisson approach was used to examine whether there was an indirect effect between BMI z-score and bullying victimization through perceived difference from friends’ body size and body size dissatisfaction. An alternative model was investigated to determine whether BMI z-score indirectly affected body size dissatisfaction through perceived difference from friends’ body size and bullying victimization. Next, individual paths were tested to investigate moderation effects due to gender. Lastly, exploratory analyses were used to examine potential differential outcomes for adolescents who endorsed weight as a reason for being bullied and for adolescents who endorsed distress associated with their body size. Perceived difference from friends’ body size was not found to significantly predict bullying victimization, but the indirect effect between BMI z-score and bullying victimization through body size dissatisfaction was supported. Gender did not moderate the significant indirect relationship. Weight-based bullying victimization and body size distress were significantly associated with
negative weight-related outcomes. This study advances the extant research by utilizing objective height and weight measurements from medical records, by using the empirical definition of bullying victimization, and by considering the role of peers in predicting bullying victimization and weight-related outcomes. Study limitations are discussed along with research and clinical implications. Results demonstrate the need for research that focuses on weight-related consequences of deviating from friends’ body size for adolescents, who are vulnerable to the pressures of their social context and who are at heightened risk for body size dissatisfaction.
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CHAPTER I

INTRODUCTION

The acute and long-term repercussions of peer victimization are indisputable. Victimization in the form of bullying (i.e., bullying victimization) is characterized by the intent to harm, repetition, and inability to defend oneself (Olweus, 1993). A recent national study examining the prevalence of peer victimization found that approximately 28% of 12 to 18 year-olds were bullied during the 2010-2011 school year (Robers, Kemp, Truman, & Snyder, 2013). Bullying victimization occurs in a myriad of forms, including verbal, physical, relational, and cyber. Ultimately, all are detrimental. Youths can be involved in bullying as a perpetrator, victim, bully-victim, or bystander (Wang, Iannotti, & Nansel, 2009) and tend to adopt different roles over time (Bosworth, Espelage, & Simon, 1999; Espelage & Swearer, 2003). Victimization in particular has been correlated with internalizing pathology, including depression, anxiety, hopelessness, and poor self-esteem (Hawker & Boulton, 2000; O’Brennan, Bradshaw, & Sawyer, 2009; Reijntjes, Kamphuis, Prinzie, & Telch, 2010; Swearer et al., 2001). Robust predictors of peer victimization include physical differences and weakness (Frisen, Jonsson, & Persson, 2007; Olweus, 1993; Rigby, 2002; Swearer & Cary, 2003), which apply to youths with stigmatizing conditions, such as obesity.

Compared to their healthy weight peers, youths who are overweight or obese are at enormous risk for experiencing weight stigma and victimization (Puhl & Latner, 2007). Overweight is a term used to describe individuals who exceed a healthy weight standard after adjusting for height, while obesity is a medical condition characterized by “excess body fatness” (Flegal, Tabak, & Ogden, 2006, p. 757). A large number of children and
adolescents are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012). Youths with excess body fat often suffer from internalizing symptomatology that overlap with those associated with victimization, such as poor self-esteem and body size dissatisfaction (Brixval, Rayce, Rasmussen, Holstein, & Due, 2011; Fox & Farrow, 2009; Jones, 2004; Lawler & Nixon, 2011; Puhl & Latner, 2007; Ricciardelli & McCabe, 2001; Smolak, 2011; Wertheim, Paxton, & Blaney, 2009). Although the correlation between peer victimization and being overweight or obese is well-established, studies on this topic are limited by their failure to investigate the impact of the peer ecology, particularly friends, on this phenomenon.

Theoretical Framework

The social-ecological model and the tripartite influence model provide a framework for understanding the contextual factors that place youths at-risk for bullying victimization and body size dissatisfaction, respectively. The social-ecological model illustrates the contexts in which individuals develop (Bronfenbrenner, 1977; 1979). In conjunction with individual factors, nested systems (e.g., Microsystems, mesosystems, macrosystems) interact to cumulatively influence development. The social-ecological model delineates the risk and protective factors for bullying victimization as well (Espelage & Swearer, 2010; Hong & Espelage, 2012; Swearer & Espelage, 2011); for instance, exposure to aggression in the home predicts bullying perpetration (Bandura, 1978; Baldry, 2003), while having overprotective parents and unappealing physical attributes are risk factors for victimization (Rigby, 2002; Swearer & Cary, 2003). The peer group is a salient microsystem for victims of bullying since peers either buffer the harmful effects of victimization (Bearman, Presnell, Martinez, & Stice, 2006; Hodges,
Boivin, Vitaro, & Bukowski, 1999; Schmidt & Bagwell, 2007) or perpetuate the cycle by bullying their friends (Mishna, Wiener, & Pepler, 2008; Wei & Jonson-Reid, 2011). Overall, the risk factors for victimization in the social-ecological model interact with environmental risk factors for body size dissatisfaction.

The tripartite influence model (Thompson, Heinberg, Altabe, & Tanleff-Dunn, 1999) asserts that cultural influences such as the media, parents, and peers influence the development of body size dissatisfaction. Parents’ perpetration of weight-related teasing and criticism has been correlated with body size dissatisfaction (Eisenberg & Neumark-Sztainer, 2008; Neumark-Sztainer et al., 2010; Puhl, Peterson, & Luedicke, 2012); however, the media and peers may be more salient predictors of body size dissatisfaction than parents (Schroff & Thompson, 2006). Peers shape body size dissatisfaction through indirect (e.g., appearance-related conversations, exposure to dieting) and direct (e.g., victimization) processes (Jones, 2011).

Peers convey which body shapes and sizes are valued through their appearance “culture” (Jones, 2004; 2011; Paxton, Schutz, Wertheim, & Muir, 1999). Body size dissatisfaction often develops when youths are victimized for their weight. Compared to healthy weight youths, underweight, overweight, and obese youths commonly experience weight-based victimization and are less socially accepted by their peers (Puhl & Latner, 2007; Strauss & Pollack, 2003; Wang, Iannotti, & Luk, 2010; Zeller, Reiter-Purtill, Ramey, 2008). Multiple conceptual models exist that identify indirect processes that explain the relationship between peers’ influences and body size dissatisfaction (Hardit & Hannum, 2012; Lawler & Nixon, 2011; Shroff & Thompson, 2006; van den Berg, Thompson, Obremski-Brandon, & Coover, 2002). Due to this lack of consensus, future
research should continue to investigate the relative explanatory power of peer-related predictors of body size dissatisfaction and explore the role of comparison processes in predicting body size dissatisfaction (van den Berg et al., 2002).

Social comparison is a risk factor for body size dissatisfaction (Fisher, Dunn, & Thompson, 2002; Morrison, Kalin, & Morrison, 2004; Myers & Crowther, 2009) and a coping response to victimization (Taylor, Wood, & Lichtman, 1983; Visconti, Sechler, & Kochenderfer-Ladd, 2013). Social comparison theory posits that individuals are motivated to evaluate their abilities by comparing themselves to “reference others” (Festinger, 1954). Self-enhancement and group affiliation are assumed to drive social comparison (Festinger, 1954; Wood & Taylor, 1991). Prior studies on social comparison have investigated this construct separately for victimization and body size dissatisfaction; thus, the current study sought to assess the importance of social comparative processes as a correlate of both bullying victimization and body size dissatisfaction.

**Bullying Victimization, Weight, and Body Size Dissatisfaction**

The peer context plays a role in victimization, body size dissatisfaction, and social comparison. Differing from the normative body size of the peer group (i.e., an individual’s friends) may lead to body size dissatisfaction and victimization through a social comparison pathway. The only study to investigate deviation from peer physical appearance norms as a risk factor found that sixth grade, ethnically diverse girls who had higher BMIs than their peers experienced higher levels of maladjustment, lower self-worth, and higher frequency of peer victimization than those who were closer to the peer BMI norm (Lanza, Echols, & Graham, 2013). Moreover, Crosnoe and Muller (2004) found that overweight adolescents reported poor social and academic outcomes in
schools that were characterized by low BMI norms and high athletic ability. Although differing from the peer group is associated with maladjustment, especially for adolescents who weigh more than their peers, no studies have replicated these findings with bullying victimization as the primary outcome variable.

Cross-sectional research on weight, victimization, and body size dissatisfaction suggests that body size dissatisfaction is both a predictor and outcome of victimization. Body dissatisfaction is a component of body image that refers to the discrepancy between one’s perceived and ideal appearance (Franko & George, 2009). Body size dissatisfaction in particular occurs when youths desire to weigh more or less than they do currently. Multiple studies have found that body size dissatisfaction mediates the relationship between weight status and victimization (Brixval et al., 2011; Fox & Farrow, 2009; Frisen, Lunde, & Hwang, 2009; Giletta, Scholte, Engels, & Larsen, 2010). Also, body size dissatisfaction has been found to be a robust predictor of victimization (Brixval et al., 2011). Youths who have internalizing pathology tend to be vulnerable to being bullied (Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhoeick, 2006; Fox & Farrow, 2009; Olweus, 1993), indicating that feeling insecure about one’s appearance may signal weakness for bully perpetrators.

Additional research supports victimization as a predictor of body size dissatisfaction, especially following weight-based victimization that explicitly targets physical size (Jones, 2004; Jones & Crawford, 2006; Lawler & Nixon, 2011; Nelson, Jensen, & Steele, 2011). Overall, the evidence supports a cycle in which body size dissatisfaction predicts initial victimization, which subsequently results in worsened feelings about one’s appearance (Nelson et al., 2011; Storch et al., 2007). These findings
carry implications for overweight and obese youths who may experience low self-esteem, social difficulties (Daniels, 2006; Harriger & Thompson, 2012), and victimization (Brixval et al., 2011; Gray, Kahhan, & Janicke, 2009; Giletta et al., 2010; Puhl & Latner, 2007; Wang et al., 2010). A limitation of the literature on weight-based victimization and internalizing symptoms is the failure to consider variables relating to the peer context. Also, some investigations utilized a single, dichotomous item to assess victimization instead of a comprehensive measure (e.g., Lunde, Frisen, & Hwang, 2006). Future studies should strive to explain the relationship between body size dissatisfaction and bullying victimization using psychometrically sound assessments that adhere to the definition of bullying.

To date, the majority of the research has focused on weight and victimization exclusively and has overlooked the subset of youths who are victimized and bully others (i.e., bully-victims). Bully-victims tend to experience the worst psychopathology when compared to victims and bullies (Copeland, Wolke, Angold, & Costello, 2013; Juvonen & Graham, 2003; Kaltiala-Heino, Rimpela, Rantanen, & Rimpela, 2000; Swearer, Song, Cary, Eagle, & Mickelson, 2001). Also, longitudinal research suggests that youths who are chronically victimized may resort to reactive aggression to protect themselves (Camodeca, Goossens, Terwogt, & Schuengel, 2002; Goldbaum, Craig, Pepler, & Connolly, 2007). Although overweight and obese youths are more likely to be involved in bullying perpetration and victimization separately (Griffiths, Wolke, Page, Horwood, & the ALSPAC Study Team, 2006; Janssen, Craig, Boyce, & Pickett, 2004), no studies have examined the body size dissatisfaction of bully-victims. In the current study, it is
hypothesized that bully-victims will experience higher levels of body size dissatisfaction than other bully/victim subgroups.

Lastly, demographic variables such as gender and age impact an individual’s likelihood of experiencing body size dissatisfaction and victimization. Both boys and girls experience body size dissatisfaction (Ricciardelli & McCabe, 2001); however, girls almost universally strive to be thin and weigh less (Wertheim & Paxton, 2011) while boys strive to be muscular (Jones & Crawford, 2006; Tager, Good, & Morrison, 2006). In general, girls experience worse body image than boys since they are exposed to higher pressures to conform to the thin ideals communicated by society (Cash, 2011; Hardit & Hannum, 2012; Lawler & Nixon, 2011; Markey, 2010; Wertheim et al., 2009). Body size dissatisfaction peaks in adolescence and is more likely in youths who experience puberty at a different time than their peers (Ricciardelli & McCabe, 2011). Rates of bullying victimization also increase in adolescence during the transition into middle school (Long & Pellegrini, 2003; Pellegrini & Bartini, 2001; Pellegrini et al., 2010). Boys and girls tend to be bullied by their peers, although the form of victimization may differ for each gender (Crick & Bigbee, 1998; Felix & McMahon, 2007). Given that age and gender can interact to influence one’s risk of weight-based victimization, studies are warranted that examine body size dissatisfaction, weight, and bullying victimization with a combined sample of boys and girls.

The Current Study

The purpose of this dissertation study was to test whether BMI z-score indirectly affected bullying victimization through perceived difference from friends’ body size and body size dissatisfaction. A separate hypothesis that BMI z-score influences body size
dissatisfaction indirectly through bullying victimization was also tested due to evidence supporting peer victimization as a predictor of body dissatisfaction and internalizing problems (Nelson et al., 2011; Storch et al., 2007). BMI z-score was used as a measure of weight adjusted for height, sex, and age since it is routinely used to screen for overweight and obesity in youths (Barlow, 2007; Flegal & Ogden, 2011). This study sought to address limitations that characterize the extant research in this area. For instance, BMI values and percentiles were obtained from medical records for the current study instead of obtaining self-reports of height and weight. Also, the current study builds upon the existing literature by investigating bullying victimization instead of weight-related teasing or criticism.

Data for the current study were obtained as part of an ongoing study investigating bullying/victimization and health issues. Participants included 374 patients between the ages of 11 and 18 years-old who had appointments scheduled at pediatrician’s offices in a mid-sized Midwestern city. This age range is consistent with the World Health Organization (2014) definition of adolescence, which encompasses ages 10-19 years-old, and coincides with entry to middle school since rates of bullying/victimization increase at this time (Long & Pellegrini, 2003; Pellegrini & Bartini, 2001). Patients and their parents were approached about the study after they checked in for their scheduled appointment for a routine physical examination, sick visit, or vaccination. Three options for participation were presented, including completing the paper-and-pencil measures in the office, completing the paper-and-pencil measures at home and returning them via mail, or completing electronic surveys via the Qualtrics survey software program. Signs advertising the study were posted within the offices in case a patient expressed interest in
participating when a research assistant was unavailable. Medical record reviews were conducted to obtain accurate BMI values and percentiles, which were later converted to BMI z-scores. Results from this study will increase pediatricians’ awareness of bullying/victimization and may encourage them to initiate conversations with their patients about this topic. Furthermore, participants who completed the paper-and-pencil surveys received a tangible item (i.e., gum, rubber bracelet, or free song download) and all participants were entered in a drawing to win a free Apple iPad 2, Walmart gift card for $150.00, or Beats Solo HD Headphones, depending on the phase of data collection.

The following chapter describes the empirical research on bullying victimization and how it relates to weight and body size dissatisfaction. First, the literature on the social ecological model, tripartite influence model, and social comparison theory is explored to establish a supporting framework for the variables of interest. Next, each construct (i.e., overweight and obesity, body size dissatisfaction, and bullying victimization) is described along with a discussion of their predictors, outcomes, and gender and developmental considerations. Specific research questions and hypotheses conclude the chapter. An important direction for future studies is to ascertain the social context variables and mechanisms of change that predict the development of body size dissatisfaction and other negative outcomes for youths who deviate from the healthy weight norm (Crosnoe & Muller, 2004; Jones, 2004; Paxton et al., 1999).

The current study expands the research in this area by investigating the role of perceived difference from friends’ body size (in conjunction with body size dissatisfaction) on intensity of bullying victimization. Given research supporting a recursive cycle between body size dissatisfaction and victimization (e.g., Nelson et al.,
2011), the indirect effect of bullying victimization on the relationship between BMI z-score and body size dissatisfaction was investigated. Due to gender differences in levels of body dissatisfaction (Lawler & Nixon, 2011; Wertheim et al., 2009), conditional process analyses were conducted to determine whether the indirect effects differed for girls and boys. Lastly, exploratory analyses were used to investigate potential differential outcomes for youths who endorsed weight-based bullying victimization and to examine the impact of body size distress on related outcomes.
CHAPTER II
LITERATURE REVIEW

Although multiple theories exist on victimization, three are particularly relevant in understanding the relationship between victimization and body dissatisfaction, which is a subset of body image. The first of these theories is Urie Bronfenbrenner’s (1977, 1979) social-ecological model, which exemplifies the idea that individuals exist within multiple, nested contexts that influence their development. The term “ecological” refers both to the environment and the exchanges between individuals and their environment. The social-ecological model establishes a broad foundation for more discrete social processes such as victimization and the development of body size dissatisfaction. In relation to body image formation, two theories are relevant. The tripartite influence model (Thompson et al., 1999) asserts that the media, parents, and peers influence the formation of body image and the social comparison theory (Festinger, 1954) explains how humans possess an inherent drive for self-evaluation by comparing themselves to others. Social comparison has been established as a response to victimization and a predictor of body dissatisfaction.

The idea that victimization is not a “within child” problem is becoming increasingly accepted; thus, recent investigations of the social-ecological model have sought to identify the contextual factors that predict bullying/victimization (Espelage & Swearer, 2010; Hong & Espelage, 2012; Swearer & Espelage, 2011). The same influences such as peers, family members, and society, along with social comparison processes, result in stigma against obese individuals and body dissatisfaction (Mueller, Pearson, Muller, Frank, & Turner, 2010; Myers & Crowther, 2009). The peer context is
thought to exert a larger role in shaping body image than more distal influences such as the media or parents (Kostanski & Gullone, 2007; Myers & Crowther, 2009). Efforts to decipher the complex relationships and causal factors relating to victimization, obesity, and body image must begin with a thorough examination of each theory.

**Social-Ecological Model**

Research that focuses exclusively on individual factors fails to acknowledge external variables that shape one’s probability of being victimized. Bronfenbrenner (1977; 1979) reinforced the idea that individuals are shaped by multiple sources. Through his social-ecological theory of human development, Bronfenbrenner asserts that humans are constantly interacting with and being influenced by their environment. In other words, there is a reciprocal interaction between individuals and their proximate contexts.

The broader ecological context consists of embedded systems, including the microsystems, mesosystems, exosystems, macrosystems, and chronosystems (Bronfenbrenner, 1977). The microsystem consists of systems that directly influence the child (e.g., school, peers, family environments), while the latter systems are concerned with peripheral influences such as connections between outside contexts and cultural and societal norms. These contexts affect youths differently depending on their relative proximity to them (Bronfenbrenner, 1977); however, their effects are cumulative and shifts in one system can result in changes to another.

Given the recognized severity of bullying/victimization, research has relied upon the social-ecological model to provide a more holistic perspective of peer victimization (Espelage & Swearer, 2010; Hong & Espelage, 2012; Swearer & Espelage, 2011; Swearer, Espelage, Vaillancourt, & Hymel, 2010). These studies have identified
explanatory factors that encourage victimization and perpetration separately, such as individual traits and psychopathology (Nansel et al., 2001; Swearer et al., 2001), peer influences (Swearer, Espelage, & Napolitano, 2009), school climate (Espelage & Swearer, 2010), and family and community variables (Bowes et al., 2009; Coie & Dodge, 1998; Espelage, Bosworth, & Simon, 2000; Olweus, 1994). Although the social-ecological model provides a framework for understanding peer victimization, two other theories are distinctively relevant to explaining the development of body image.

**Tripartite Influence Model of Body Image**

The tripartite influence model (Thompson et al., 1999) focuses on the specific systems that influence body image and body dissatisfaction. The tripartite influence model cites three sources of influence for body image: cultural influences, parental and/or family influences, and peer influences, each of which affect body image both directly and indirectly (Thompson et al., 1999). Family and peers can influence attitudes and behaviors regarding one’s weight directly via teasing and victimization. Simultaneously, the broader social environment promotes victimization and unhealthy attitudes about weight by conveying messages about appearance expectations and valued physical attributes (Cash, 2011; Eisenberg & Neumark-Sztainer, 2008). Studies examining the relative strength of each of the aforementioned factors (Shroff & Thompson, 2006; Thompson et al., 1999; van den Berg et al., 2002) have produced mixed results.

First, the media conveys societal standards that may predispose an individual to being bullied. Cultural influences have also been found to predict body size dissatisfaction and eating disturbance (Shroff & Thompson, 2006; van den Berg et al., 2002) above and beyond individual factors such as BMI (Hardit & Hannum, 2012). The
media communicates these expectations through ubiquitous images depicted in magazines, on television, and on the Internet. Toys (e.g., Barbie, action figures) serve as major representations of appearance (Jones, 2011; Smolak, 2011) and contribute to consequences such as body dissatisfaction due to the unrealistic nature of these models (Tiggemann, 2011). Internalization of media ideals has been found to mediate the relationship between cultural influences and body dissatisfaction (Menzel et al., 2011; Tiggemann, 2011); thus, an individual may still experience positive body image if he or she does not hold oneself accountable to conform to negative media influences.

In addition to the media, parents and peers impact how youths feel about their bodies (Michael et al., 2014; Wertheim et al., 2009). Parental nurturance is related to physical self-worth (Michael et al., 2014) and parents’ criticism has been correlated with body dissatisfaction (Eisenberg & Neumark-Sztainer, 2008; Neumark-Sztainer et al., 2010; Puhl et al., 2012). Puhl and colleagues (2012) found that approximately 37% of adolescents reported experiencing weight-based victimization and endorsed their parents as the primary perpetrators. Lack of parental social support has been shown to predict body size dissatisfaction more robustly than a lack of peer support (Bearman et al., 2006). Parents may play a larger role than peers in shaping body image prior to adolescence; for instance, the results of one study found that the media and peers more strongly influenced body image during adolescence than parents (Shroff & Thompson, 2006). So, parents may have a greater influence on development in childhood while peers’ influence increases significantly during adolescence.

The peer ecology and “appearance culture” shape body size dissatisfaction (Eisenberg & Neumark-Sztainer, 2008; Jones, 2004; Paxton et al., 1999; Rayner,
Schniering, Rapee, Taylor, & Hutchinson, 2013) because peers define and convey standards for appearance (Jones, 2011; Thompson & Stice, 2001; Wertheim et al., 1997). The social context is unforgiving for overweight and obese youths as they are subject to weight stigma and are less socially accepted by their peers than healthy weight youths (Puhl & Latner, 2007; Strauss & Pollack, 2003; Zeller et al., 2008). Influences such as the internalization of appearance ideals and social comparison function as key mediators to explain the relationship between the peer context and body size dissatisfaction (Dohnt & Tiggemann, 2006; Jones, 2004; Lawler & Nixon, 2011; Myers & Crowther, 2009; Shroff & Thompson, 2006; Thompson et al., 1999; van den Berg et al., 2002).

Predictors of body dissatisfaction include internalizing the desire to meet the ideal standard for appearance (Tiggemann, 2011) and social comparison processes. The extent to which youths are appearance-oriented and identify with the peer appearance culture determines levels of body dissatisfaction (Jones, 2011); thus, individuals are relatively protected from body dissatisfaction unless they adopt the values of thinness (or muscularity) and actively compare themselves to others who have achieved the ideal standard for appearance. Internalization of appearance ideals has not always been found to significantly predict body dissatisfaction (e.g., Bearman et al., 2006), indicating that alternative explanations may exist for body size dissatisfaction, such as social comparison (Festinger, 1954). Social comparison is a potential underlying mechanism that causes the media, parents, and peers to affect unhealthy weight-control behaviors and negative attitudes about one’s appearance (van den Berg et al., 2002).

**Social Comparison Theory**
The social comparison theory (Festinger, 1954; Myers & Crowther, 2009) captures one process described within the tripartite influence model and explains how individuals respond to victimization. Festinger (1954) describes how humans possess an inherent motivation to evaluate their own opinions and abilities through comparison with other people. When the desired objective standard is not present to measure our performance people in one’s surroundings serve as that comparison (Festinger, 1954). Social comparison often results in a desire to conform to the qualities, behaviors, or values of those that have served as a comparison target (Festinger, 1954; Mueller et al., 2010). In relation, Festinger (1954) states, “...the drive for self-evaluation is a force acting on persons to belong to groups, to associate with others” (p. 135). Self-enhancement is the primary goal driving social comparison (Wood & Taylor, 1991), which is important for victimized individuals who may be motivated to boost their sense of self-worth.

Seminal research on stress and social comparison indicates that victimization prompts individuals to engage in social comparison (Taylor, Buunk, & Aspinwall, 1990; Taylor et al., 1983). Specifically, social comparison influences coping responses to victimization and attributions about why one was victimized (Brendgen et al., 2013; Taylor et al., 1983). Downward comparisons, such as “it could be worse” or “at least I am not getting bullied as badly as that person” can mitigate the negative effects of victimization (Brendgen et al., 2013; Taylor et al., 1983). Although social comparison can serve a self-enhancing function (Festinger, 1954) for victimized youths, it is also correlated with negative psychological outcomes.
Multiple studies have identified social comparison as a predictor of body dissatisfaction (Morrison et al., 2004; Muir, Wertheim, & Paxton, 1999; Myers & Crowther, 2009; van den Berg & Thompson, 2007; Wheeler & Miyake, 1992).

Individuals who evaluate their appearance by referring to others may experience body dissatisfaction if they feel they do not meet the appearance standards of the group (Jones, 2011; van den Berg & Thompson, 2007). Jones (2004) found support for social comparison as a mediator for the relationship between appearance conversations and body dissatisfaction for girls, but not boys, in a longitudinal study of adolescents in the 7th and 10th grades. Overall, these findings suggest that social comparison is related to both victimization and body dissatisfaction.

The social-ecological model, tripartite influence model, and social comparison theories describe etiological factors that explain the correlation between victimization and body dissatisfaction. Youths who are overweight or obese are at-risk for body size dissatisfaction and peer victimization (Puhl & Latner, 2007). Peers also shape body dissatisfaction and perpetrate weight-based victimization. The complex interaction among weight, body size dissatisfaction, and the peer context determines one’s involvement in victimization. The remainder of this chapter will review each of these constructs and describe how they influence one another, while identifying the focus of this dissertation study.

**Overweight and Obesity**

**Definitions.** The National Institutes of Health (NIH, 2012) defines ‘overweight’ as an unhealthy amount of weight disproportional to height. The term ‘obesity’ refers to “...excess body fatness” (Flegal et al., 2006, p. 757). There is a lack of consensus on
whether overweight and obesity are mutually exclusive or overlapping terms, as individuals who are overweight may not necessarily have excess body fat (Flegal & Ogden, 2011). This study examines the construct of weight (as measured by BMI) on a continuum, but the terms overweight and obese are used to refer to groups of individuals who are at increased clinical risk due to their weight. In accordance with the Centers for Disease Control and Prevention (2014) cutoffs, overweight and obese individuals are discussed as distinct groups with the recognition that those classified as obese are at highest risk.

The medical field has defined objective cutoffs for different weight statuses that are based on BMI, which is calculated by the following formula: (Weight in Pounds/Height in inches) x 703 (CDC, 2014; Kuczmarski et al., 2000). Due to difficulties measuring body fat precisely, body weight is often used as a measure of overweight and obesity (Ogden & Flegal, 2010). Furthermore, BMI is a measure of body weight adjusted for height, sex, and age (Barlow, 2007; Flegal & Ogden, 2011) that has been validated as an accurate indicator of body fat for youths ages 2-19 years-old and is considered to be superior to other measures (Mei et al., 2002). Percentile scores are used to determine youths’ level of risk for obesity due to age differences and weight fluctuations during development (Dietz & Robinson, 1998; Ogden & Flegal, 2010). Youths are assigned a weight status category based on the percentile range from where their BMI lies on the growth chart. These categories include underweight (less than the 5th percentile), healthy weight (5th percentile to less than the 85th percentile), overweight (85th percentile to less than the 95th percentile), and obese (equal to or greater than the 95th percentile).
Prevalence. One third of the nation’s youths are overweight or obese and approximately 17% of obese individuals are between 2 and 19 years-old (Ogden et al., 2012). Obesity is referred to as an epidemic (Daniels, 2006; Strauss & Pollack, 2001) and national health trends indicate that obesity rates have tripled over the last 30 years for children and adolescents (Flegal et al., 2006; Ogden et al., 2012). Prevalence of obesity in boys tends to be higher than that of girls (Ogden et al., 2012), and African American, Hispanic, and Native American youths are at a disproportionately higher risk for obesity compared to their Caucasian peers (Crawford, Story, Wang, Ritchie, & Sabry, 2001; Ogden et al., 2012; Strauss & Pollack, 2001). Also, rates vary according to socioeconomic status with lower income households experiencing the highest levels of obesity; however, this finding did not hold across ethnic groups (Ogden, Lamb, Carroll, & Flegal, 2010; Ogden et al., 2012).

Predictors of overweight and obesity. While the social-ecological model provides a framework for understanding the phenomena of victimization and body dissatisfaction, it is also appropriate for conceptualizing risk factors for excess weight. A systems-oriented, multilevel framework has been proposed that outlines the influences of child behaviors, caregivers, peers, and community variables on weight maintenance (Huang, Drewnoski, Kumanyika, & Glass, 2009). Individual and environmental factors are known to cause unhealthy weight gain (see NIH, 2012 for a review).

The origins of overweight and obesity are multifaceted and risk factors often accumulate across systems. On the exosystem level, societal and cultural influences such as the marketing of unhealthy foods (Institute of Medicine, 2005), emphasis on exclusive competitive sports participation, and views of being overweight or obese as normal are to
blame for weight gain. Individuals who are biologically at-risk (e.g., due to family history) may gain weight when they encounter environmental influences that encourage consumption of sweets and sugar-filled beverages, and readily available electronics that limit physical activity. Youths who are overweight or obese may face relational obstacles that exacerbate their condition and interfere with weight loss efforts.

**Consequences of overweight and obesity.** Obesity in particular has been linked to numerous chronic and often irreversible medical conditions (Daniels, 2006; Harriger & Thompson, 2012) and with difficulties in the relational, academic, and psychosocial domains (Browne, 2012; Puhl & Luedicke, 2012). In general, the quality of life for obese youths tends to be poor (Hebebrand & Herpertz-Dahlmann, 2008). Specifically, obesity has been linked to severe and persistent low self-esteem, depression, disordered eating, body dissatisfaction, and social difficulties (Daniels, 2006; Harriger & Thompson, 2012; Puhl & Latner, 2007; Smolak & Thompson, 2009). The internalizing symptomatology that is correlated with obesity and weight stigma has also been found to predict social consequences such as peer victimization (Goldbaum et al., 2007; Perry, Hodges, & Egan, 2001).

**Weight stigma.** Also referred to as “weightism,” weight stigma results from the societal expectations that promote a thin ideal. Puhl and Latner (2007) describe weight stigma as the negative attitudes or beliefs targeting overweight individuals that are demonstrated in the form of stereotypes, bias, prejudice, and victimization against this subgroup. As was discussed earlier with Bronfenbrenner’s (1977, 1979) social-ecological model, societal and cultural norms play a role in shaping an individual’s psychological wellbeing. The macrosystem is relevant for youths who are obese because obesity often is
often a risk factor for stigma (Davison & Birch, 2004; Gray et al., 2009; Puhl & Latner, 2007).

Weight stigma has been demonstrated in youths as young as 3 years-old (Cramer & Steinwert, 1998) where preschoolers assigned negative adjectives (e.g., mean, stupid, lazy) to a “chubby” target in a story. These findings complement results in which youths rated drawings of skinny individuals most favorably (Kraig & Keel, 2001). The tendency for children to assign negative traits to their overweight and obese peers has been replicated with adolescents (e.g., Puhl, Luedicke, & Heuer, 2011) and with peer nomination procedures (Zeller et al., 2008); for instance, adolescents reportedly perceived obese individuals to be lazy, unattractive, lacking self-control, and weak (Puhl et al., 2011). Overall, the stigma against overweight and obese individuals exists early in life and becomes ingrained as these messages are reinforced over time (Cramer & Steinwert, 1998; Puhl & Latner, 2007).

In accordance with the tripartite influence model (Thompson et al., 1999), peers are culprits of communicating weight stigma. Being at the receiving-end of this stigma increases body dissatisfaction and is damaging to youths’ social relationships (Puhl & Latner, 2007). Strauss and Pollack (2003) mapped the social networks of overweight and healthy weight adolescents between the ages of 13 and 18 years-old using peer nomination procedures. They found that overweight adolescents had less strongly connected friendship ties and received fewer friendship nominations than their healthy weight peers. Overweight and obese youths tend to be more socially isolated than their healthy weight peers (Curtis, 2008; Strauss & Pollack, 2003; Zeller et al., 2008). These findings are consistent with the tendency for youths to receive lower ratings on positive
social dimensions of popularity and prosocial behavior (Vannatta, Gartstein, Zeller, & Noll, 2009); however, likeability may be more important than popularity in protecting against negative weight-related cognitions (Rancourt & Prinstein, 2010). In conjunction with body dissatisfaction (Puhl & Latner, 2007) the social marginalization that results from weight stigma may lead to overt victimization (Gray et al., 2009) especially since social rejection is highly correlated with victimization (Boulton & Smith, 1994; Hodges & Perry, 1999; Knack, Tsar, Vaillancourt, Hymel & McDougall, 2012).

**Summary.** Overweight is defined as excess weight disproportional to height while obesity is defined as the excess of body fat. BMI has been established as a commonly used measure of weight (adjusted for height, sex, and age) and excess body fat with BMI percentile cutoffs used to categorize an individual as underweight, healthy weight, overweight, or obese. These categories are therefore distinct according to BMI cutoffs, but the constructs of overweight and obese can overlap according to their aforementioned definitions (Flegal & Ogden, 2011). Youths with excess weight are more likely to have excess body fat. Overweight and obese youths are at-risk for stigma and are more likely than healthy weight youths to be ostracized and victimized by their peers, which is concerning given the high prevalence of overweight and obesity. The social dimension to weight (Crosnoe, 2007) warrants future research that examines the direct and indirect pathways linking weight, body size dissatisfaction, and peer victimization.

**Body Size Dissatisfaction**

**Definition.** The term body size dissatisfaction falls under the general construct of body dissatisfaction, which in turn is a component of body image. Body image is defined as “a person’s own impression of his or her body” (Brixval et al., 2011, p. 216) and
relates to one’s global self-esteem (Ricciardelli & McCabe, 2001). Body image is aligned with one’s own body composition and is a reflection of societal pressures, proximal social values, and body-related experiences. Also, body image is a broad concept that encompasses cognitive, behavioral, and affective dimensions (Thompson et al., 1999). As body image is a subjective appraisal of one’s physical appearance, it can fluctuate (Smolak & Thompson, 2009: Thompson et al., 1999).

A specific component of body image is body size dissatisfaction, which is defined by the discrepancy between one’s current perception of their size and his or her ideal body size (Franko & George, 2009). Body size dissatisfaction refers to an individual’s subjective evaluation of his or her body and the feelings associated with it. It is a continuous trait that varies in severity from mild discontent (i.e., fleeting thoughts that he/she is thinner) to severe distress about one’s body that can lead to emotional and behavior problems (Wertheim et al., 2009). Therefore, the level of body size dissatisfaction increases proportionally as the perceived discrepancy increases. Body size dissatisfaction is positively correlated with peer victimization (Eisenberg & Neumark-Sztainer, 2008; Jones, 2004; Jones & Crawford, 2005; Kostanski & Gullone, 2007; Lunde et al., 2006).

**Predictors of body size dissatisfaction.** BMI directly predicts low self-esteem and body size dissatisfaction (Brixval et al., 2011; Jones, 2004; Lawler & Nixon, 2011; Ricciardelli & McCabe, 2001; Smolak, 2011) and has even been considered the most crucial predictor of body dissatisfaction for youths (Smolak, 2011). Candy and Fee (1998a) used correlations to investigate the relationship between BMI and scores on the Kids Eating Disorders Survey (KEDS) Body Image Silhouettes (Childress, Jarrell, &
Brewerton, 1993). They found significant positive correlations between BMI and body dissatisfaction for their sample of preadolescent girls. Therefore, the awareness of excess weight as an undesirable trait may be sufficient to cause body dissatisfaction in youths with higher BMIs. Evidence supporting only a modest relationship between weight and body dissatisfaction (Hebebrand & Herpertz-Dahlmann, 2008) highlights the need to investigate indirect processes instead of only focusing on physical measurements of weight.

According to the social-ecological and tripartite influence models (Thompson et al., 1999), the peer context shapes body dissatisfaction (Jones, 2004; Jones & Crawford, 2005; Lawler & Nixon, 2011; Paxton et al., 1999). Peers influence body dissatisfaction directly through victimization and indirectly by establishing appearance norms. Crosnoe and Muller (2004) hypothesized that a school context that was stigmatizing toward adolescents with excess body weight would serve as a risk factor for negative social and academic outcomes and found support for their hypotheses. Specifically, overweight adolescents reported lower academic achievement in environments that valued high athletic participation and had low normative BMI. In general, a lack of positive peer support appears to predict body dissatisfaction (Bearman et al., 2006), which may be more likely in social contexts that communicate that acceptance is contingence on attractiveness. In contrast, body satisfaction may be higher in contexts characterized by supportive prosocial interaction and unconditional acceptance.

A negative peer context communicates appearance expectations and impacts body size dissatisfaction. Appearance conversations have been found to predict longitudinal changes in body dissatisfaction to a greater extent than initial levels of body
dissatisfaction (Jones, 2004). The robust influence of peers is further supported by research indicating that individuals in the same peer networks have similar levels of body dissatisfaction (Badaly, 2013; Dohnt & Tiggemann, 2006; Paxton et al., 1999; Rayner et al., 2012) and body mass (Badaly, 2013; de la Haye, Robins, Mohr, & Wilson, 2011; Valente, Fujimoto, Chou, & Spruijt-Metz, 2009). Although similar levels of body dissatisfaction have been found among adolescents (Badaly, 2013; Rayner et al., 2012), limited research has investigated the consequences of differing from the normative context for adolescents who are at-risk for body size dissatisfaction.

The physical characteristics of people in the immediate context influence body dissatisfaction (Mueller et al., 2010; Paxton et al., 1999) and appearance is a risk factor for peer victimization (Rigby, 2002; Swearer & Cary, 2003). Also, individuals are motivated to notice and compare themselves to others through social comparison (Festinger, 1954), which is predictive of body dissatisfaction in adolescents (Carey, Donaghue, & Broderick, 2014; Krayer, Ingledew, & Iphofen, 2008; Morrison et al., 2004; Myers & Crowther, 2009; Smolak, 2009; Smolak, 2011; van den Berg & Thompson, 2007; Wheeler & Miyake, 1992). Peers serve as excellent comparison targets for youths because they are regarded as important informants for appearance values and standards (Mueller et al., 2010; Thompson & Stice, 2001; Wertheim, Paxton, Schutz, & Muir, 1997). Engaging in social comparison may lead to problems for adolescents who differ physically from the status quo; for instance, deviation from peer BMI norms has been found to be associated with maladjustment and low self-worth for an ethnically diverse sample of sixth grade girls (Lanza et al., 2013). Although evidence suggests poor
outcomes for adolescents who deviate from the BMI norms, future studies should include potential covariates that influence body size dissatisfaction, such as age and gender.

**Developmental considerations.** Body image is established in early childhood and is particularly salient during adolescence as awareness and internalization of sociocultural appearance ideals increase (Dohnt & Tiggemann, 2006; Smolak, 2004, 2011). The link between social comparison and body dissatisfaction may be stronger during childhood and adolescence than adulthood since youths spend most of their time with peers and do not yet have protective messages ingrained (Myers & Crowther, 2009). Developmental deviance perspectives and the “off-time hypothesis” explain how the timing of puberty plays a larger role in determining body dissatisfaction than puberty itself (Ricciardelli & McCabe, 2011); for instance, youths who experience puberty later or earlier than their peers are at-risk for experiencing social, behavioral, and emotional problems (Ricciardelli & McCabe, 2011) and are at increased risk of victimization (Faris & Felmlee, 2014).

**Gender differences.** Boys and girls both experience poor body image (Ricciardelli & McCabe, 2001; Ricciardelli, McCabe, Mussap, & Holt, 2009). Gender differences for body image, however, do not appear to surface until pre-adolescence (Ricciardelli & McCabe, 2001). In general, girls face higher pressure to conform to a certain physical ideal and are susceptible to worse body image than boys (Bearman et al., 2006; Cash, 2011; Hardit & Hannum, 2012; Lawler & Nixon, 2011; Markey, 2010; Wertheim et al., 2009). Research suggests that girls’ body dissatisfaction either remains stable or increases over time (Bearman et al., 2006; Jones, 2004; Ricciardelli & McCabe, 2001; Wertheim & Paxton, 2011). Most agree that girls move farther away from the thin ideal and become less satisfied with their bodies as they mature and gain weight during
puberty (Bearman et al., 2006; Wertheim et al., 2009). Girls also receive a higher exposure to appearance-related conversations and discussion of strategies to improve appearance than boys (Jones, 2004; Lawler & Nixon, 2011; Thompson et al., 2007) and enter the “appearance culture” earlier than boys (Jones, 2004).

Jones and Crawford (2006) investigated group differences for body dissatisfaction based on gender, BMI, and peer appearance culture variables (e.g., peer appearance comparison). Analyses revealed that body dissatisfaction increased with increased weight status for girls, but overweight boys’ dissatisfaction was only significantly greater than the low-average weight group. The differential influence of BMI on body dissatisfaction for girls and boys was further supported by Lawler and Nixon (2011) who found a significant interaction effect for gender and BMI. Being underweight or overweight in boys predicted a desire for a larger or smaller body size, respectively, while girls universally desired a smaller body size. Although a linear effect has been supported for girls’ BMI and body dissatisfaction, in that increases in BMI lead to correspondingly higher levels of body dissatisfaction, curvilinear effects have been found for boys (Jones & Crawford, 2006).

Men experience body image in the face of the muscularity ideal to a greater extent than women (Fisher et al., 2002; Hildebrandt, Shiovitz, Alfan, & Greir, 2008; Jones & Crawford, 2006; Tager et al., 2006). Although many obese boys aspire to be thin, a separate group of boys reports a desire to gain weight and muscle (Bearman et al., 2006; Jones & Crawford, 2005; Ricciardelli et al., 2009). As a result, boys tend to become more satisfied with their bodies with age since they become bigger or more muscular in accordance with the ideal male physique (Bearman et al., 2006; Jones, 2004). Given that
limited research exists that focuses on predictors of body size dissatisfaction for boys, additional research is needed that examines the relationship of weight and body size dissatisfaction using samples that include boys as well as girls.

Findings support “universalistic” comparisons on body evaluation, as both genders engage in social comparison (Fisher et al., 2002; Morrison et al., 2004). The relationship between social comparison and body dissatisfaction may be stronger for girls than boys (Myers & Crowther, 2009), however, and girls may experience higher body dissatisfaction than boys as a result of these comparisons. Despite the increased susceptibility of girls to compare themselves to others and experience poor body image, the targets of these comparisons may simply be different for boys, who compare themselves to muscular boys, and girls who compare themselves to thin girls. Fisher and colleagues (2002) identified two organization processes: weight/non-weight versus muscle/non-muscle. Their results indicated that women focused on weight-related body parts (e.g., thighs, buttocks) while men attended more closely to muscle-related body parts (e.g., upper arms). These studies lend support for the importance of investigating the peer context (specifically, perceived differences in body size) in studies of body size dissatisfaction, but it is unknown whether the same social comparison processes apply to victimized adolescents and whether weight discrepancies impact body size dissatisfaction and bullying victimization. The current study seeks to examine these relationships using a sample of both boys and girls. It is hypothesized that perceiving oneself to be different from the normative weight of their peer group will predict body size dissatisfaction.

**Summary.** Body dissatisfaction is a subset of body image and is defined by the discrepancy between a person’s perceived and ideal body. Boys experience body
dissatisfaction when they perceive themselves to deviate from the musculosity ideal, while girls are more concerned with meeting the thin ideal. In the context of overweight and obesity, body size dissatisfaction is concerned with weight and shape. In conjunction with individual factors such as weight, BMI, and gender, the social-ecological and tripartite influence models inform risk factors for body size satisfaction. The peer appearance context communicates standards about appearance and peers serve as social comparison targets, which increase body size dissatisfaction if upward comparisons are made. Social rejection and victimization place overweight adolescents at-risk for body dissatisfaction (Jones, 2004). Social comparison has been explored as a predictor of body dissatisfaction, but many of these studies used adult samples. Also, limited research has examined whether pure differences in weight from proximal peers predict victimization through body size dissatisfaction.

**Bullying Victimization**

**Definition.** A preliminary step to ending bullying victimization is reaching consensus on the behaviors that constitute bullying. Currently, no universal operational definition exists for bullying (Espelage & Swearer, 2003; Swearer et al., 2010), but it is typically characterized by three facets: intent to harm, an imbalance of power in which the victim is less powerful than the perpetrator, and repetition in that the victimization occurs more than once (American Psychological Association, 2013; Olweus, 1993; Nansel et al., 2001). A classic definition of bullying states, “A person is being bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more persons” (Olweus, 1991, p. 413). Evidence suggests that explicit measurement of differential power and repetition is necessary to separate victims of
bullying from victims of generalized peer aggression (Ybarra, Espelage, & Mitchell, 2014). A more recent definition proposed by the Centers for Disease Control take into account the possibility that a single act of aggression may be considered bullying if this behavior meets the other criteria and is likely to re-occur. Also, it acknowledges that the power imbalance may be real or perceived. This definition is:

Bullying is any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated. Bullying may inflict harm or distress on the targeted youth including physical, psychological, social, or educational harm (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014).

Thus, all instances of bullying fit under the umbrella of aggression, but youths can be aggressive without bullying (Hunter, Boyle, & Warden, 2007). Furthermore, bullying tends to be proactive in that perpetrators actively target their victims in a “systematic abuse of power” (Boulton & Smith, 1994; Rigby, 2002; Sutton, Smith, & Swettenham, 1999). That is, victims struggle to defend themselves in some way or perceive such powerlessness. Weakness can either be based on perceptions of inferiority or reality (Gladden et al., 2014; Nansel et al., 2001), but ultimately results in abuse of power (Naylor, Cowie, Cossin, de Bettencourt, & Lemme, 2006). Examples of weakness include smaller size, having fewer friends, or having a disability. Finally, what constitutes repetition may differ based on the form of bullying. For instance, repetition for cyberbullying may involve the repeated exchange of images or insulting messages, or releasing one message to a large number of youths. To improve the definition of bullying,
researchers continue to investigate how frequently victimization must occur for it to be considered “repeated,” whether imbalance of power can be inferred subjectively, and whether intention must include consideration of the negative consequences (Smith, 2004). The fact that there are various forms of bullying further complicates the task of defining bullying victimization.

Types of bullying victimization. The different types of victimization encompass observable and non-observable behaviors and typically co-occur (Swearer et al., 2009). Peer victimization can result from indirect or direct forms of aggression (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992) and includes physical, verbal, relational, and cyber (i.e., electronic) forms. Physical victimization consists of punching, kicking, or other aggressive behaviors that can result in bodily harm. Verbal victimization includes name-calling, threatening, and teasing, while relational victimization is destructive to social relationships and includes behaviors that serve to isolate the victim (Bjorkqvist et al., 1992; Crick & Grotpeter, 1995; Nansel et al., 2001). Cyberbullying is defined as “willful and repeated harm inflicted through the medium of electronic text” (Patchin & Hinduja, 2006, p. 152). Examples of cyberbullying include bullying via cellular phones, online messaging, social media sites, and gaming devices, although personal computers and cellular phones are typically used vehicles of cyberbullying (Hinduja & Patchin, 2008). Thus, cyberbullying adheres to the general definition of bullying but is accomplished using electronic forms of contact (Patchin & Hinduja, 2006; Smith & Slonje, 2010). Perhaps due to the sense of anonymity for those involved (Hinduja & Patchin, 2008), estimates of cyberbullying victimization have been found to be as high as 30% (Patchin & Hinduja, 2006).
Prevalence and participant roles. The World Health Organization (2012) found that in the United States, 13% of 11-year-old girls and 15% of 11-year-old boys reported being bullied at least twice in the previous two months, compared to 7% and 6% for 15 year-old girls and boys. These rates are slightly lower than rates found by the National Center for Education Statistics’ *Indicators of School Crime and Safety Report: 2012* that found that approximately 28% of adolescents ages 12-18 were victimized in 2011 (Robers et al., 2013). Similarly, a recent study of bullying in children and adolescents ages 6-17 found that 25% of the sample reported being bullied in person (Ybarra, boyd, Korchmaros, & Oppenheim, 2012).

Prevalence rates vary depending on which type of victimization is being examined. When a broad definition of peer victimization (as opposed to adhering strictly to the definition of bullying victimization) was provided to a sample of children and adolescents ages 6 to 17, 20% reported experiencing emotional victimization and 22% reported being physically assaulted in the past year (Turner, Finkelhor, Hamby, Shattuck, & Ormrod, 2011). Prevalence rates produced by the *2012 Indicators of School Crime and Safety Report* demonstrated that 18% of the sample experienced verbal victimization, 8% physical victimization, 9% cyber victimization, 18% rumor-spreading, and 6% were excluded from activities (Robers et al., 2013). Also, in a large-scale study of adolescents in the sixth through tenth grades, the following rates of bullying victimization were reported to occur at least one time in the previous two months: 53.6% verbal, 20.8% physical, 13.6% electronic, and 51.4% social (Wang et al., 2009).

Multiple factors may account for the variability in reported prevalence of victimization. Different definitions and assessment instruments are often used when
examining victimization, producing potentially biased prevalence rates (Cornell & Cole, 2012; Swearer, Siebecker, Johnsen-Frerichs, & Wang, 2010). Additionally, these rates differ based on group factors such as gender, special education status (Blake, Lund, Zhou, Kwok, & Benz, 2012; WHO, 2012), and bully/victim role.

Five different roles in the bully/victim continuum have been identified: perpetrator, victim, bully-victim, bystander, or uninvolved (Wang et al., 2009). Perpetrators are youths who only bully others. Victims are only at the receiving end of bullying and do not aggress against others. Bully-victims are involved both as a bully and a victim, have been defined as “reactive victims” (Olweus, 1993), and tend to experience the worst psychological outcomes (Nansel et al., 2001; Juvonen & Graham, 2003; Swearer et al., 2001). Bystanders are youths who witness bullying but are not aggressors or victims. Uninvolved youths report that they are not involved in any of these roles. Youths are not fixed in each role; instead, the complex, dynamic interactions that characterize involvement in bullying/victimization are more accurately captured through a bully/victim continuum (Espelage & Swearer, 2003). Youths tend to move between roles (Bosworth et al., 1999; Espelage & Swearer, 2003) and their involvement in bullying perpetration and victimization is generally instable (Ryoo, Wang, & Swearer, 2015), which may contribute to variability in prevalence rates.

**Predictors of bullying perpetration.** Ecological factors at the family and peer levels contribute to bullying perpetration. Exposure to and modeling of aggression in the home environment (e.g., witnessing domestic violence) often lead to perpetration (Bandura, 1978; Baldry, 2003). Other variables such as corporal punishment (e.g., spanking), exposure to messages from adults that condone violence, poor attachment with
parents, and reports of neighborhood safety concerns have also been found to be associated with perpetration (Espelage et al., 2000; Hong & Espelage, 2012).

Peer factors also reinforce aggression and bullying perpetration. One of the clearest examples of the impact on the peer environment on bullying is the contagion effect, alternatively referred to as “deviancy training,” which takes place when aggressive peers influence each other to become more aggressive and adopt novel aggressive methods (Dishion, Spracklen, Andrews, & Patterson, 1996; Dishion & Tipsord, 2011). Peers may influence aggressive behavior to a greater extent than parents or other environmental sources; for instance, peers’ aggressive conflict resolution strategies better predicted those of other youths’ when compared to parents’ or those communicated on television (Wilson, Parry, Nettelbeck, & Bell, 2003). But it is crucial to note that the ecological factors that predict perpetration differ from those than predict victimization.

**Predictors of bullying victimization.** Distinct risk factors at the individual, family, and peer levels predict an individual’s likelihood of being victimized. First, social acceptance is correlated with attractive appearance (Jones, 2011; Jones & Crawford, 2006; Vannatta et al., 2009) and youths are often victimized for their physical attributes (Rigby, 2002; Swearer & Cary, 2003). Youths who are perceived as different from their peers are at the highest risk for being bullied (www.stopbullying.gov). In one study, approximately 40% of adolescents who were surveyed perceived difference in appearance to be the main reason for why they were bullied during their school years (Frisesen et al., 2007). Similarly, peer-valued observable characteristics, such as physical attractiveness and athletic ability, tend to protect already rejected adolescents from peer victimization (Knack et al., 2012).
Youths who are perceived as weak tend to be victimized regardless of whether they have noticeable physical deformities or personality characteristics that communicate weakness (Olweus, 1993). In one sample of adolescents, victimization was found to be unrelated to social maladjustment, suggesting that reasons for victimization may shift to more salient physical appearance traits in adolescence (Scholte, Engels, Overbeek, de Kamp, & Haselager, 2007). Evidence indicates that children and adolescents with disabilities are at-risk for being bullied (Blake et al., 2012; Rose, 2011; Swearer et al., 2010; Swearer, Wang, Maag, Siebecker, & Frerichs, 2012). Given the propensity for youths who are different and weak to be bullied places logically makes youths with medical conditions (e.g., obesity) vulnerable to peer victimization, especially when their condition produces observable peculiarities (Storch et al., 2007).

**Consequences of bullying victimization.** The argument that bullying victimization results in poor psychological outcomes is unequivocal. Youths who are involved in bullying are at higher risk for having a concurrent psychiatric disorder (Kumpulainen, Räsänen, & Puura, 2001) such as depression and anxiety (O’Brennan et al., 2009; Roland, 2002; Swearer et al., 2001). Being victimized in childhood is also related to developing a psychiatric disorder in adulthood (e.g., panic disorder), even after controlling for other hardships and childhood diagnoses (Copeland et al., 2013). Victimization negatively impacts academic achievement (Thijs & Verkuyten, 2008) and increases the likelihood of absenteeism (Slee, 1994) as well. Contrary to popular belief, victims with high social standing (i.e., more friendship nominations) may experience worse psychological consequences than victims with lower social standing since they have more to lose than those who are already socially marginalized (Faris & Felmlee,
In conjunction with the psychological and academic problems that result from victimization, bullying victimization negatively impacts physical health.

Health difficulties and psychosomatic symptoms have both been found to be more common in individuals who are involved in bullying than those who are not (Srabstein, McCarter, Shao, & Huang, 2006; Van Cleave & Davis, 2006). Consequently, it is not surprising that victimization is correlated with increased somatization and physical illness. At a neurological level, victimization has been found to be associated with changes in cortisol (a hormone released when the body is under stress) secretion levels (Vaillancourt, Duku, Decatanzaro, Macmillan, Muir, & Schmidt, 2008) and increases in CRP, a protein associated with systemic inflammation and chronic illness (Copeland et al., 2014). Furthermore, victimization may cause physical issues and somatic symptoms (Fekkes et al., 2006; Rigby, 1999). To expand on this evidence, future research should explore the long-term repercussions of bullying victimization for adolescents of varying weight status.

**Bullying victimization and social comparison.** An important response to peer victimization is social comparison, which involves making downward, upward, or horizontal comparisons about why one was targeted (Kochenderfer-Ladd & Visconti, 2011). Stress from victimization often evokes downward comparisons, which are made when the person chooses a target he or she perceives to be inferior (Festinger, 1954; Taylor et al., 1990), particularly if the victims believe they have no control over their plight and that their circumstances are unchangeable (Wills, 1991). Downward comparisons for victims are protective in that they often lead to increased self-esteem and positive adjustment (Taylor et al., 1990).
Although victims typically make downward, self-affirming comparisons to cope with stress, they may still engage in upward comparisons with superior comparison targets; for instance, individuals who report being victimized because they think they are less physically attractive than their perpetrators are making an upward comparison. Evaluations of appearance often involve upward instead of downward comparisons (Wheeler & Miyake, 1992), which is consistent with evidence indicating that the majority of comparisons are upward (Wood & Taylor, 1991). Original affect may predict the directionality of the comparison since one study found that participants who endorsed negative affect were more likely to make upward comparisons and those who had a more positive affect were more likely to compare downward (Wheeler & Miyake, 1992). Therefore, victims of bullying (Swearer et al., 2001) and overweight individuals (Daniels, 2006) may be more likely to experience internalizing symptoms and make upward comparisons that perpetuate their negative circumstances.

Social comparison also influences coping responses to victimization. Brendgen and colleagues (2013) found that children who perceived their friends to experience similar levels of victimization as themselves reported feeling less depressed than those who did not experience a sense of “shared misery.” The authors speculated that perceiving others to be worse off reduces self-blaming attributions about why the victimization occurred. In contrast to the positive impact of downward comparisons on coping for victims of bullying, upward comparisons tend to have the opposite, more harmful effect. In one study, upward comparisons such as regarding oneself as “uncool” were related to higher levels of help-seeking from teachers, indicating that victims who make these comparisons may experience more distress than those who make other types
of comparisons (Visconti et al., 2013). These findings suggest that overweight and obese adolescents who adopt self-blaming attributions for why they were victimized may be at-risk for poor psychosocial outcomes such as body dissatisfaction.

Individuals who are victimized may look to similar others to make comparisons since doing so with those who are too divergent from themselves increases the likelihood that inaccurate evaluations will be made (Festinger, 1954). Because youths and their friends tend to be similar to one another (Berndt, 1982; Hartup, 1996; McPherson, Smith-Lovin, & Cook, 2001), friends are commonly referred to as comparison targets (Brendgen et al., 2013; Wheeler & Miyake, 1992). Upward social comparison among close friends may be avoided, however, since this type of comparison is painful and potentially threatening to friendships (Wheeler & Miyake, 1992). Given that being the target of bullying impacts social comparison, one must first consider how development and gender shape victimization experiences.

**Developmental considerations.** Levels of victimization and bullying change across the lifespan. Victimization has been found to occur less frequently in elementary school compared to secondary school (Coie & Dodge, 1998). Bullying rates tend to increase in early adolescence and decrease in high school (Finkelhor, Ormrod, & Turner, 2009; Nansel et al., 2001; Olweus, 1994; Pellegrini & Bartini, 2001). Bullying ebbs and flows based on environmental conditions; for instance, bullying rates increase during the transition from elementary to middle school as youths attempt to establish their position in a new social context (Long & Pellegrini, 2003; Pellegrini & Bartini, 2001; Pellegrini & Long, 2002; Pellegrini et al., 2010). Once a power imbalance is established, however, bullying levels and the need to jockey for dominance decrease (Pellegrini, 2002).
Acceptance of victimization becomes more selective as youths mature (Dodge, Coie, Pettit, & Price, 1990) and the popularity of bully perpetrators decreases over time (Olweus, 1994). In preschool and early elementary school, bullying manifests primarily as overt, physical aggression (Coie & Dodge, 1998; Vlachou, Andreou, Botsoglou, & Didaskalou, 2011). Verbal and relational forms of victimization increase in secondary school while physical and direct forms of victimization decrease (Craig & Pepler, 2003; Rivers & Smith, 1994). As youths acquire more advanced cognitive and verbal skills, they gain the ability to victimize others in more sophisticated ways (Tremblay, 2000; Vlachou et al., 2011). Also, victimization becomes more person-oriented, hostile, and covert as youths become aware of the ramifications for bullying and realize this behavior is punishable (Coie & Dodge, 1998).

Few studies have investigated the stability of bully/victim behavior longitudinally (Hanish & Guerra, 2004; Lester, Cross, Shaw, & Dooley, 2012; Strohmeier, Wagner, Spiel, & von Eye, 2010) and those that have focused on a short period of time (Kochenderfer-Ladd & Troop-Gordon, 2010). Many youths are able to escape the bullying dynamic later in life, but a subset of bully perpetrators engages in career deviance and serious antisocial behavior (Aluede, Adeleke, Omoike, & Afen-Akpaida, 2008; Coie & Dodge, 1998; Craig & Pepler, 2003; Farrington & Ttofi, 2011; Finkelhor et al., 2009; Kim, Catalano, Haggerty, & Abbott, 2011; Pepler, Jiang, Craig, & Connolly, 2008; Tremblay, 2000). The stability of bully perpetrators’ aggression (Smokowski & Kopasz, 2005) is consistent with the finding that bully perpetrators are more likely to be diagnosed with antisocial personality disorder (Copeland et al., 2013).
Victimization appears to follow its own unique developmental path. Rates of victimization do not necessarily correlate directly with increased rates of bullying perpetration during the transition to secondary school. In contrast, victimization tends to decrease over time (Pellegrini & Bartini, 2000; Pellegrini & Long, 2002; Strohmeier et al., 2010) and is less stable than bullying perpetration (Camodeca et al., 2002; Schafer, Korn, Brodbeck, Wolke, & Schulz, 2005). Schafer and colleagues (2005) followed a sample of youths in primary and secondary school over the course of six years and found that being a victim in primary school did not predict being a victim in secondary school. The authors speculated that more structured social hierarchies characterize secondary school, while primary school contexts allow ample opportunities to “escape” being victimized since these hierarchies have yet to be established. In contrast, another study found that victimization among early adolescents is highly stable, even during the transition from elementary to secondary school (Paul & Cillessen, 2003). Approximately half of childhood victims have been found to become “stable” victims over time (Scholte, Engels, Overbeek, de Kemp, & Haselager, 2007), but other factors such as the type of victimization and school grade may influence this trend; for instance, results of one study found that social victimization rates increased from 7th to 9th grade, but decreased in 10th grade (Rosen, Beron, & Underwood, 2013).

Youths tend to move in and out of bully/victim roles (Espelage & Swearer, 2003; Williford, Brisson, Bender, Jenson, & Forrest-Bank, 2011) and “social combat is not unilateral aggression” (Faris & Felmlee, 2014). Correspondingly, victimization has been found to be associated with reactive aggression, which characterizes bully-victims, and the co-occurrence of victimization and aggression (Bradshaw, Waasdorp, & O’Brennan,
Co-occurring aggression is most common in stable victims who regularly have aggression modeled for them by their perpetrators and may be highly motivated to defend themselves (Camodeca et al., 2002; Goldbaum et al., 2007). In contrast, other evidence suggests few passive victims become aggressive victims (Hanish & Guerra, 2004). Because experiencing extended periods of victimization may predispose youths to adopting aggressive behaviors, and evidence points to the stability of aggressive victimization (Pellegrini & Bartini, 2000), bully-victims should be included in examinations of weight-based victimization and body dissatisfaction. Even though overweight status tends to predict bullying perpetration as well as victimization (Janssen et al., 2004), no studies to date have focused on bully-victims’ body dissatisfaction in comparison to that of victims or bully perpetrators. In the current study, it is hypothesized that victims and bully-victims will report higher levels of body dissatisfaction than bully perpetrators and uninvolved youths.

**Gender differences.** Studies examining victimization and gender indicate that both boys are girls are victimized (Crick & Bigbee, 1998; Felix & McMahon, 2007). Boys tend to be victimized more often than girls (Nansel et al., 2001) and exhibit aggression and bullying perpetration more often than girls (Coie & Dodge, 1998; Nansel et al., 2001; Espelage, Holt, & Henkel, 2003; Olweus, 1993; Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996). In contrast, girls pursue warm, supportive relationships to a greater extent than boys as girls are shaped to behave prosocially and to take on nurturing roles (Salmivalli et al., 1996). Also, girls spend more time supporting victims of bullying (O’Connell, Pepler, & Craig, 1999) and express more negative attitudes toward bullying than boys (Gini, 2006). Other studies indicate no gender
differences for victimization (O’Brennan et al., 2009) or found even higher rates of victimization for girls than boys (Faris & Felmlee, 2014). Overall, evidence indicates that a more accurate explanation is that boys and girls are both victimized, but experience different forms of victimization (Crick & Bigbee, 1998; Felix & McMahon, 2007).

Generally, boys are more likely to experience direct, overt forms of victimization (Crick & Grotzter, 1996; Olweus, 1993), while girls are more likely to experience indirect victimization (Bjorkqvist et al., 1992; Crick & Grotzter, 1995; Faris & Felmlee, 2014; Olweus, 1993; Rivers & Smith, 1994; Underwood & Rosen, 2011). That is, girls may be targets of rumor spreading, exclusion, and other relational methods, which are consistent with girls’ adeptness at navigating social situations. One investigation of boys’ and girls’ friendship groups replicated these findings (Crick & Nelson, 2002), but other studies yielded no gender differences for relational victimization (Crick & Grotzter, 1996; Espelage et al., 2003). Although a gender dichotomy that girls are relationally victimized to a great extent than boys is overly simplified (Swearer, 2008), it may be that girls’ friendship circles may be at higher risk for victimization than boys’. For instance, girls’ friendships, though highly cohesive, are also vulnerable to instability and higher levels of conflict than boys’ (Besag, 2006). It follows that victimization may be more prevalent in overweight girls’ friendship groups than in overweight boys’ friendship groups.

**Summary.** Bullying is a subset of aggression that is characterized by an imbalance of power, intent to harm, and repetition. Many youths are victimized throughout their school years. Risk factors for victimization include physical differences as well as qualities of psychological weakness. Victimization is strongly related to
negative psychological and physical outcomes. Also, victims may engage in social comparisons that serve to increase the efficacy of coping or cause further psychological detriment. Victimization is particularly prevalent in early adolescence, during transition times, and occurs among friends. Further research is needed to examine the interaction of physical risk factors and weight-related outcomes with adolescents who may be vulnerable to weight-based victimization. Therefore, one aim of the current study is to examine differences in levels of body size dissatisfaction between victims, perpetrators, bully-victims, and uninvolved adolescents.

**Weight-Based Victimization**

**Definition.** Prior studies examining weight-based victimization have focused on constructs such as “weight-based criticism” or “weight-based teasing” (e.g., Nelson et al., 2011). Teasing itself has been defined as “an intentional provocation accompanied by playful off-record markers that together comment on something relevant to the target” (Keltner, Capps, Kring, Young, & Heery, 2001, p. 234). Weight-based teasing refers to when individuals are specifically targeted for their physical size (Libbey, Story, Neumark-Sztainer, & Boutelle, 2008). It is commonly regarded as innocuous and socially acceptable (Jones, 2011). A common example of weight-based teasing is calling a student a name (e.g., “fatso”) for being obese. Limited research has focused specifically on bullying of adolescents who differ from the average weight status of their peer group. Therefore, weight-based bullying must be differentiated from weight-based teasing since bullying is characterized by intent to harm and a power differential—two criteria that are not captured in the weight-based teasing literature.
In contrast to exclusively teasing about one’s weight, weight-based victimization by bullying encompasses multiple types (e.g., physical, verbal, relational). Overweight and obese youths tend to experience verbal forms of victimization more than any other form (Wang et al., 2010). In general, youths tend to be particularly sensitive to weight-based victimization and may find this to be the most hurtful and least humorous form of teasing, even when it is delivered in an innocuous manner (Hayden-Wade et al., 2005; Jones, 2011). Consequently, research is warranted that examines adolescents’ experiences with weight-based victimization in particular since its impact may be more closely aligned with the severity of bullying.

**Prevalence.** Being overweight or obese is one of the primary reasons for why youths are victimized at school (Puhl et al., 2011). Youths who are obese tend to be victimized at a rate that is 2-3 times that of their average sized peers (Hayden-Wade et al., 2005). In a sample of youths ages 6-7 years-old, 36% of obese boys reported physical victimization by their peers, while 34% were victims of overt bullying (Browne, 2012). Another study found that 19.8% of “very overweight” girls were teased one or more times per week compared to 11.4% of “very overweight” boys (Neumark-Sztainer et al., 2002). These estimates of teasing may not reflect estimates of weight-based victimization that fit the definition of bullying.

**Predictors of weight-based victimization.** The literature on weight status and victimization suggests that BMI as well as body size dissatisfaction lead to victimization. An individual’s weight status is highly predictive of bullying involvement in general (Browne, 2012), as weight can either be viewed as a source of power or vulnerability. Overweight adolescents are substantially more likely to be involved in bullying either as
a victim or perpetrator than their normal-weight or underweight peers (Bauman, 2008; Janssen et al., 2004; Pearce, Boergers, & Prinstein, 2002). Janssen and colleagues (2004) investigated the interaction between weight status (determined by BMI percentile) and involvement in different types of bullying in 11- to 16-year olds and found that compared to healthy weight peers, overweight and obese youth were more likely to be both victims and perpetrators of verbal, physical, and relational bullying.

Acquiring social power or status is a common reason for bullying and aggression (Gini, 2006; Pellegrini, 2002; Pellegrini et al., 2010; Pellegrini & Bartini, 2001; Salmivalli et al., 1996; Vaillancourt & Hymel, 2006). Youths who bully often target peers based on how easily they will be able to obtain these resources (Salmivalli, 2010; Swearer & Doll, 2001); thus, an overweight person’s physical size may facilitate attempts to exercise dominance over others through bullying. Overweight or obese youths who harbor feelings of inadequacy about their bodies may try to compensate by acting aggressively or may engage in reactive aggressive in response to being victimized themselves (Wysocki & Whitney, 1965; Janssen et al., 2004).

Youths who are underweight or have excess body weight (e.g., due to obesity) are at-risk for victimization. A survey of adolescents in the 9th through 12th grades indicated that those who were underweight and obese reported the highest rates of victimization through bullying (Bauman, 2008). Underweight status is an important predictor of being bullied for boys in particular (Jones & Crawford, 2006; Neumark-Sztainer et al., 2002; Wang et al., 2010), which is consistent with Olweus’s (1993) descriptions of male victims as submissive and physically weak. Wang and colleagues (2010) found that underweight boys were more likely to be victims of physical bullying than those who
were healthy weight because boys who deviate from the male culture that emphasizes muscularity and masculinity are at-risk for body dissatisfaction (Ricciardelli et al., 2009; Tager et al., 2006).

Overwhelming empirical support supports the relationship between obesity in particular and peer victimization (Brixval et al., 2011; Gray et al., 2009; Giletta et al., 2010; Griffiths et al., 2006; Hayden-Wade et al., 2005; Lumeng et al., 2010; Neumark-Sztainer et al., 2002; Pearce et al., 2002; Puhl & Latner, 2007; Wang et al., 2010). It appears that possessing such an observable, stigmatizing trait elicits negative reactions during adolescence (Crosnoe, 2007). The victimization of overweight and obese adolescents may be viewed as attempts to provide corrective feedback to those who are not adhering to society’s standards for acceptable appearance. Correspondingly, one’s risk for victimization and marginalization rises as BMI increases (Griffiths et al., 2006; Puhl & Latner, 2007).

The relationship between one’s weight and victimization is unlikely to be explained exclusively by societal pressures to marginalize those who do not adhere to the thin or muscularity ‘ideal’ because healthy weight adolescents have been shown to be targets for weight-based victimization even after losing weight (Puhl & Luedicke, 2012). Internalizing factors such as body size dissatisfaction mediate the relationship between weight status and being a victim of bullying (Brixval et al., 2011; Fox & Farrow, 2009; Frisen et al., 2009; Giletta et al., 2010; Puhl & Leudike, 2012). It may be that peers communicate this vulnerability to others when they do not exert confidence and physical self-esteem. Fox and Farrow (2009) showed that global self-esteem, physical appearance self-esteem, and body dissatisfaction mediated the relationships between overweight
status and being a victim of verbal bullying, as well a physical bullying for adolescents. Self-perception of physical appearance was also found to mediate the relationship between victimization and negative outcomes such as depression and changes in BMI (Adams & Bukowski, 2008). And body dissatisfaction was found to be an explanatory factor for the relationship between weight and bullying victimization yielded in a Danish sample of adolescents ages 11 to 15 (Brixval et al., 2011).

In general, the psychosocial vulnerabilities that overweight and obese adolescents experience appear to serve as a more important predictor of victimization than weight itself. Unfortunately, many of these studies have focused exclusively on weight as a predictor of bullying victimization instead of including potential mediators (e.g., body size dissatisfaction, peer predictors) in the analyses.

**Weight-based victimization and the peer ecology.** Ultimately, peers shape the environment that condones or protects against bullying for overweight and obese adolescents. Evidence suggests that peers and friends play an instrumental role in either protecting adolescents who are bullied due to their weight or exacerbating the victimization cycle. Friendships have developmental benefits since individuals who have friends are more likely to become more socially competent, more confident, and less lonely later in life (Hartup, 1996). Youths who have friends and are accepted by their peers are also less likely to be isolated, and thus are also less prone to being bullied (Hong & Espelage, 2012; Olweus, 1993). Adequate social support can protect youths from the deleterious outcomes associated with victimization (Bearman et al., 2006; Hodges et al., 1999; Salmivalli, 2010)- a finding that has been replicated with a sample of obese youths between the ages of 8 and 17 years-old (Lim et al., 2011). Specifically, Lim
and colleagues (2011) found that girls who were victimized and were satisfied with their social support reported fewer depressive symptoms than those who reported insufficient social support. This subset of literature holds important implications for adolescents who are overweight or maintain a different weight status than their friends since they may be likely to be bullied.

Despite this evidence indicating the protective role of peers, they also play a crucial role in the development and maintenance of victimization (Gini, 2006; Long & Pellegrini, 2003; O’Connell et al., 1999; Rodkin & Hodges, 2003; Salmivalli, 2010; Salmivalli, Huttunen, & Lagerspetz, 1997). The influence of adolescents’ peers increases over time as they make attempts to assert their independence, while the influence of their parents decreases over time (Berndt, 1982; Furman & Buhrmester, 1992); thus, peers take on a powerful role in condoning or condemning peer victimization (Espelage et al., 2000; O’Connell et al., 1999; Pepler & Craig, 1995). The context appears to impact adolescents’ perceptions of victimization as well; for instance, peer preference for bully perpetrators was found to be lower in classrooms with lower levels of bullying, but higher in classrooms with higher levels of bullying (Sentse, Scholte, Salmivalli, & Voeten, 2007).

Recent evidence indicates that victimization is also prevalent among friends (Mishna et al., 2008; Wei & Jonson-Reid, 2011) and that adolescents who have high social network centrality (i.e., social status) are at increased risk for victimization (Faris & Felmlee, 2014). In one of the few studies investigating this topic, rates of being bullied by one’s friends were found to be comparable to those by distal peers (Mishna et al., 2008). In another, approximately 25% to 30% of bullying episodes were found to occur
within a friendship context (Wei & Jonson-Reid, 2011). These estimates are disturbing since those who are victimized by their friends often experience internalizing and externalizing problems (Crick & Nelson, 2002). Wei and Jonson-Reid (2011) argue that investigators must examine sources of power in adolescent friendships given that popularity is associated with ideal appearance. High status may be equated with a muscular body for boys and a thin body for girls (Jones, 2011). The pressure to adhere to the standards dictated by peers is supported by evidence linking popularity to negative weight-related cognitions (i.e., thoughts and concerns about body shape) and body dissatisfaction (Rancourt & Prinstein, 2010). Peers function to reinforce social norms, such as the thin ideal that is spread by the media (Thompson et al., 2007). A direct, extreme form of this social reinforcement may manifest as victimization toward overweight adolescents who struggle to maintain an ideal physique (Curtis, 2008).

Victimization has been investigated within a broader peer context, but less attention has been paid to its occurrence within one’s own friendship group (Crick & Nelson, 2002). Research in this area is needed given that friends are frequent perpetrators of weight-based victimization (Jones, 2011).

When friendships are first developing, individuals with similar traits tend to gravitate together and then reciprocally influence one another to become even more similar (Berndt, 1982; Cohen, 1977; Kandel, 1978). Differing from the weight or appearance norm of the friendship group may predict whether friends are prosocial or prone to victimization. To date only one study has examined the effect of discrepancies between one’s own body size and that of his/her peers on social status and victimization. Lanza and colleagues (2013) found that being different (specifically, bigger) than the
peer group norm was associated with adjustment difficulties and lower social status, which complements findings that physical discrepancies are associated with social rejection (Sentse et al., 2007). Therefore, individuals who differ from their friends’ average BMI may be at-risk for bullying victimization since physical difference is an independent risk factor for victimization (Frisen et al., 2007). Being physically different from one’s friendship group may also heighten one’s tendency to make unhealthy social comparisons, resulting in body dissatisfaction and increased risk for victimization as well. Although the association between deviation from peer body size and maladjustment has been found for adolescents who deviate in a positive (i.e., more overweight) direction from their peers, additional research must examine relevant mediating and moderating variables (Lanza et al., 2013) and whether this relationship also holds true for adolescents who are smaller than their peers. Given that no empirical investigations have explored these relationships in the context of bullying, research is needed to determine whether two key variables (perceived differences between one’s own body size and that of his or her peers and body size dissatisfaction) indirectly affect the relationship between BMI and bullying victimization.

**Consequences of weight-based victimization.** Experiencing weight-based victimization leads to additional problems both physically and psychologically including disordered eating, reductions in physical activity, and isolative, sedentary behaviors that cause victims to gain weight (Adams & Bukowski, 2008; Eisenberg & Neumark-Sztainer, 2008; Hayden-Wade et al., 2005; Neumark-Sztainer et al., 2002; Puhl & Leudicke, 2012; Storch et al., 2007). Victimized adolescents have been shown to develop higher BMIs and be at greater risk for obesity in young adulthood (Mamun, O’Callaghan,
Williams, & Najman, 2013). In conjunction with maladaptive coping behaviors that follow weight-based victimization, adolescents who are victimized for their weight often report negative internalizing symptoms, such as depression, anger, and low self-esteem (Eisenberg, Neumark-Sztainer, & Story, 2003; Puhl & Luedicke, 2012). Studies indicate that internalizing symptoms (e.g., depression, physical self-concept) mediated the relationship between victimization and subsequent increases in body mass (Adams & Bukowski, 2008; Storch et al., 2007). Based on these results, poor mood and self-concept that typically result from victimization lead to decreased motivation to engage in behaviors that reduce the risk for overweight and obesity.

Being victimized because of one’s weight leads to similar problems in the relational, academic, health, and psychological domains as other more general forms of victimization (Browne, 2012; Eisenberg & Neumark-Sztainer, 2008; Puhl & Luedicke, 2012) including anger, depression, and anxiety (Puhl & Luedicke, 2012; Storch et al., 2007). For example, reported victimization in a sample of 12 year-old obese adolescents predicted changes in depression four years later (Adams & Bukowski, 2008). Harboring negative self-perceptions about one’s appearance is a likely effect of being bullied for adolescents who are underweight, overweight, or obese.

Cross-sectional and longitudinal studies indicate that victimization in the form of appearance-related teasing and weight criticism negatively affects body size satisfaction (Jones, 2004; Jones & Crawford, 2006; Kostanski & Gullone, 2007; Lawler & Nixon, 2011; Nelson et al., 2011). Individuals often interpret negative feedback they receive about their appearance as truth and internalize it. Above and beyond weight, a direct link appears to exist between victimization and body size dissatisfaction for boys and girls.
Eisenberg & Neumark-Sztainer, 2008; Jones, 2004; Jones & Crawford, 2005; Kostanski & Gullone, 2007; Lunde et al., 2006). Nelson et al. (2011) found that weight-based criticism by one’s peers predicted body size dissatisfaction even after controlling for BMI percentile in fifth and sixth graders. This effect was strongest when the victimization targeted an individual’s weight, which is consistent with the finding that being bullied explains more of the variance in negative psychological outcomes than body size alone (Browne, 2012).

Another subset of research indicates that weight mediates the relationship between victimization and body dissatisfaction, in that the impact of victimization on body size dissatisfaction has been found to be worse for overweight and obese youths and underweight boys than their healthy weight peers. The internalizing symptoms that follow victimization may exacerbate future victimization for targets of weight-based bullying (Kostanski & Gullone, 2007). The majority of the literature on victimization and body dissatisfaction has focused on teasing and weight-related criticism instead of on behaviors that adhere to the definition of bullying victimization. To date, no studies have tested the complex relationships among weight, body size dissatisfaction, and bullying victimization with an adolescent sample.

A cycle may exist between one’s weight and victimization because the risk of being targeted is perpetuated when the negative outcomes of the initial victimization develop (Nelson et al., 2011; Storch et al., 2007). Overweight and obese youths are already at risk for depression (Janicke et al., 2007) and other internalizing symptoms that may predispose them to victimization. Research only supports a modest relationship between obesity and depressive symptoms, but more conclusive evidence suggests that
overweight and obese children and adolescents experience body size dissatisfaction (Puhl & Latner, 2007; Ricciardelli & McCabe, 2001).

**Developmental considerations.** Adolescence is an ideal time to examine weight-related victimization because adolescence is characterized by social turmoil and mobility that fuels social dominance (Pellegrini & Long, 2002). Weight-based victimization can begin in early childhood, prior to school entry, and generally peaks during the school years (Browne, 2012). In adolescence, the influence of peers increases while the influence of adults’ decreases (Berndt, 1982; Furman & Buhrmester, 1992). During puberty, adolescents are more attuned to changing appearances, including body shapes and sizes (Janssen et al., 2004). Thus, adolescence brings about a “perfect storm” for victimization due to the chaotic transition to secondary school and physical changes that result from reaching physical maturity.

**Gender differences.** Despite the consensus that girls experience worse body image than boys, research examining gender differences and weight-based victimization yields mixed results. At least one study indicates that girls and boys are equally likely to experience appearance criticism from their peers (Lawler & Nixon, 2011). Similar to literature for victimization in general, results of studies focusing on gender differences for weight-based victimization show that obese adolescent girls tend to be relationally victimized, while obese boys are usually victims of overt (e.g., physical) forms of aggression (Gray et al., 2009; Pearce et al., 2002).

Even though aggression is normative in boys’ relationships (Bjorkqvist et al., 1992; O’Connell et al., 1999), girls may be more susceptible than boys to weight-based teasing and the resulting negative effects (Neumark-Sztainer et al., 2002; Pearce et al.,
Yu Rueger, Malecki, and Demaray (2011) investigated the differential effects of victimization for girls and boys. Their results supported a cessation effect for boys, in that the negative effects of victimization discontinued once they were no longer targeted, but symptoms of depression and low self-esteem persisted for girls, even after the victimization stopped. Overall, maladjustment and internalizing difficulties such as body size dissatisfaction may be more likely for girls who experience weight-based victimization, even if they are not currently being victimized.

The tendency for boys to be less seriously impacted by weight-based victimization may be explained by the use of weight as a form of power. It seems that pre-adolescent obese boys tend to be involved in perpetration and victimization, while obese girls are predominantly victimized (Griffiths et al., 2006). Despite the linear relationship between BMI and victimization for girls, boys at both extremes of the weight continuum are at risk for being victimized. Overweight boys report less frequent victimization compared to healthy weight or obese youths (Pearce et al., 2002), but very underweight youths are often physically weaker than their tormentors; thus, being underweight conveys vulnerability and exacerbates victimization (Bauman, 2008; Olweus, 1993). Overall, a similar pathway may exist for boys as girls, in that differing from the physical norm may predict body size dissatisfaction, which will subsequently predict bullying victimization.

Continuing research is needed that examines the underlying attributes of individuals who experience weight-based victimization (Browne, 2012), especially since the majority of studies have focused on weight-based victimization in the context of teasing and criticism instead of adhering to the definition of bullying victimization.
Additionally, at least one longitudinal study has failed to find peer victimization to be a significant predictor or consequence of weight-related cognitions or behaviors (Rancourt & Prinstein, 2010), indicating that mediating variables are worthy of further exploration. Given that current research has relied upon subjective self-reports of height and weight or school-based samples when investigating bullying involvement of overweight youths, objective measurements, such as BMI calculations retrieved from medical records, are needed in future investigations of bullying for this population.

**Summary.** Weight-based victimization occurs when an individual is targeted specifically for his or her weight. Weight-based bullying is commonly verbal (Puhl et al., 2012), but the term encompasses a range of behaviors that are consistent with general types of bullying. BMI and body size dissatisfaction have been found to be significant predictors of weight-based victimization. Also, a reciprocal relationship exists between body dissatisfaction and weight-based victimization, in that internalizing symptoms predict victimization and are further exacerbated. Evidence suggests that girls are more likely to experience body size dissatisfaction and are more negatively impacted by victimization than boys. In accordance with the tripartite influence model and social comparison theory, it is crucial to consider the peer ecology as well; for instance, differing from peer group weight status or BMI norms is likely to predict weight-based victimization. The current study will use path analysis to examine whether body size dissatisfaction and differing from friends’ normative weight predict bullying victimization. It will also advance the research on the relationship between victimization and body dissatisfaction by testing an alternative model in which BMI z-score predicts body size dissatisfaction through perceived difference from friends’ body size and
bullying victimization. The following sections will describe issues regarding the assessment of the main constructs (body mass index, body size dissatisfaction, and bullying victimization) and present the research questions for the dissertation study.

**Assessment of Constructs**

**Body mass index (BMI).** BMI is a widely used indicator of body fat that has been validated for use with children and adolescents between the ages of 2 and 19 years-old (Mei et al., 2002). A limitation of BMI is that it is not a direct measure of fatness; it does not distinguish true excess body fat from muscularity or high BMI values that are not associated with health risks (Barlow, 2007). BMI measurements are correlated with levels of body fat, predictive of overweight and obesity in adulthood, and are recommended to screen for body excess fat in routine pediatric practice (Barlow, 2007). Due to the established validity of BMI as a gauge of weight based on height, it was used as an indirect assessment of weight in this study.

**Body size dissatisfaction.** Aside from questionnaires, figural stimuli that depict a range of individuals of varying sizes are the most commonly used assessment of body dissatisfaction (Gardner & Brown, 2010; Yanover & Thompson, 2009). The literature on the psychometric properties of figure rating scales yields contradictory findings. Methodological limitations for the use of these measures include unrealistic representations of the human body, reliance on intact perceptual abilities, and subjective judgments that result in inaccurate estimates of body size (Cafri, van den Berg, & Brannick, 2010; Gardner, 2011; Gardner & Brown, 2010). Additionally, most figure rating scales have been developed for women, do not address muscularity concerns, and/or do not accurately represent the physical features of children and adolescents.
(Yanover & Thompson, 2009). Finally, restricted range is a limitation of figural measures, which may inflate test-retest reliability values (Gardner & Brown, 2010).

Despite these methodological concerns, advantages of using figural ratings include ease of administration and ability to manipulate one physical dimension, such as body size, at a time (Menzel, Krawczyk, & Thompson, 2011). Body image silhouettes are less time consuming and cumbersome than sophisticated computerized software programs or distortion mirrors that are also used to measure body dissatisfaction (Gardner & Brown, 2010). Gardner and Brown (2010) recommend using sparse silhouettes with limited detail and figures that represent changing body sizes for adolescents instead of adapting measures of adult figures (Gardner & Brown, 2010).

**Bullying victimization.** Self-report surveys and questionnaires are most frequently used to assess bullying/victimization (Cornell & Bandyopadhyay, 2010; Espelage & Swearer, 2003; Furlong, Sharkey, Felix, Tanigawa, & Greif Green, 2010; Swearer, Siebecker, Johnsen-Frerichs, & Wang, 2010). A great deal of variability exists across assessment methodologies (Swearer et al., 2010), however, as studies use different informants and inconsistent cutoff points to classify participants as victims (Solberg & Olweus, 2003; Swearer et al., 2010). Also, the use of self-report measures with youths who are highly vulnerable to weight-based victimization must be approached cautiously since significant discrepancies have been found between self-reports and peer reports of their victimization (Giletta et al., 2010). While overweight and obese adolescents may have a heightened awareness of their appearance and overestimate instances of mistreatment by their peers (Giletta et al., 2010), perpetrators of weight-based bullying may underestimate the negative effects of victimization and tacitly approve of these
behaviors (Puhl, Luedicke, & Heuer, 2012). In conjunction with problems such as susceptibility to exaggerated reports of bullying involvement and shared method variance, survey measures do not always operationalize bullying in a way that is consistent with the three components in the conceptual definition (Cornell & Bandyopadhyay, 2010; Tremblay, 2000) so including a definition of bullying on surveys at all is debatable (Espelage & Swearer, 2003; Solberg & Olweus, 2003; Swearer et al., 2010). Although these problems and inconsistencies lead to questions about reliably identifying victims of bullying, limited research exists to support the reliability and validity of bullying/victimization measures (Cornell & Cole, 2012; Furlong et al., 2010; Swearer et al., 2010).

A standardized, well-established measure of peer victimization has yet to be developed (Card & Hodges, 2008), but evidence supports the use of anonymous self-report measures that provide a definition of bullying and use carefully delineated cutoff points to assign participants to bully/victim roles. Most studies support the explicit use of the term ‘bullying’ and inclusion of a clear definition on self-report measures to reduce ambiguity and increase validity (Cornell & Bandyopadhyay, 2010; Solberg & Olweus, 2003; Ybarra et al., 2012). This practice is crucial since youths often do not fully grasp the complexity of bullying (Cornell & Cole, 2012) and may utilize a definition that differs from researchers’ (Vaillancourt et al., 2008). For instance, Vaillancourt and colleagues (2008) found that omitting a definition of bullying yielded higher self-reported victimization rates compared to when they provided the operational definition.

Furthermore, self-report survey methods allow researchers to gather a breadth of information that surpasses what could be realistically obtained from other assessments,
and acquire information about covert instances of peer victimization that are unlikely to be fully captured by direct observations (Crothers & Levinson, 2004). Self-reports allow researchers to easily assessment different types of victimization (e.g., physical, verbal) and determine the existence of a power imbalance (Furlong et al., 2010). Finally, self-report surveys are an ideal method for obtaining multiple perspectives regarding incidents of bullying/victimization. Self-report measures glean information about the perspectives of victims of bullying in particular since they tend to be highly aware of, and negatively impacted by, the bullying they experience (Card & Hodges, 2008).

**Research Questions and Hypotheses:**

Based on a review of theory and the empirical research, the current study was designed to examine the following research questions and hypotheses:

1. Are there group differences on levels of body size dissatisfaction for victims, bully-victims, perpetrators, and uninvolved adolescents?

   Hypothesis 1: It is hypothesized that victims and bully-victims will report significantly higher levels of body size dissatisfaction than perpetrators and uninvolved adolescents, with bully-victims having the highest levels of body size dissatisfaction.

2. Is there a significant relationship between adolescents’ estimates of body size as measured by the KEDS and their BMI z-scores?

   Hypothesis 2: It is hypothesized that a significant correlation will exist between perceived current body size, ideal body size, and BMI z-scores.
3. Is there a significant indirect effect from BMI z-score to bullying victimization through perceived difference from friends’ body size and body size dissatisfaction (see Figure 1)?

   Hypothesis 3: It is hypothesized that BMI z-score will indirectly affect bullying victimization through both perceived difference from friends’ body size and body size dissatisfaction.

4. Or is there a significant indirect effect from BMI z-score to body size dissatisfaction through perceived difference from friends’ body size and bullying victimization?

   Hypothesis 4: It is hypothesized that the model in Research Question 3 that includes bullying victimization as an outcome variable (see Figure 1) will fit better than the model with body size dissatisfaction as the outcome variable (see Figure 2).

5. Do the indirect effects in Research Questions 3 and 4 differ for boys and girls?

   Hypothesis 5: It is hypothesized that the indirect effects will be moderated by gender.

6. Are there group differences between adolescents who identified they were bullied due to their weight (i.e., responded, “I am fat” to the question, “Why do you think you were bullied?”) and those who were not?

   Hypothesis 6: It is hypothesized that the models that include gender as a moderator will fit better for adolescents who reported experiencing weight-based victimization than those who did not.
7. From an exploratory standpoint, do significant associations exist between body size distress and bullying victimization, specifically, endorsement of weight-based victimization and bullying victimization frequency?

Hypothesis 7: It is hypothesized that body size distress will be positively correlated with higher levels of bullying victimization and reports of weight-based victimization (as opposed to being bullied for other reasons).
CHAPTER III

METHODS

Participants

Participants for this study were adolescents who participated in a larger cross-sectional study investigating bullying/victimization and health issues, which was approved by the University of Nebraska-Lincoln Institutional Review Board (IRB #11846; Appendix A). All research assistants completed Collaborative Institutional Training Initiative (CITI) training. Participants were recruited from two pediatrician’s offices in a mid-sized Midwestern city. One office had a total of 16 practicing doctors and physician’s assistants, while the second office has four locations with a range of 4 and 7 providers for each office; participants were recruited from all four locations. Patients at these locations range in age from infancy to young adulthood; however, only participants ages 11-18 were invited to participate. This age range was targeted in order to be consistent with the World Health Organization’s (2014) definition of adolescence, which encompasses the ages 10 to 19, and to coincide with the typical age that youths enter middle school, a time when bullying rates tend to increase. Patients who had appointments scheduled for routine physical examinations, sick visits, or vaccinations were invited to participate in the study one time. Patients were invited to participate regardless of their weight status as this study did not focus on overweight or underweight adolescents exclusively. An additional inclusionary criterion was that participants spoke English as their primary language. More than one adolescent in each family was permitted to participate if parents/guardians provided consent for each child. During the data collection period, 374 participants completed the study across the pediatrician’s
offices. Private Health Information (PHI) Authorizations (Appendix B) were provided for all except four participants (1.07% of the total sample).

Only patients with active parental consent (Appendix C) and who assented (Appendix D) were allowed to participate in the study. In order to address potential concerns related to the investigators’ access to PHI, precautions were taken to maintain participants’ anonymity and protection by ensuring secure storage of medical record information that adheres to Health Insurance Portability and Accountability Act (HIPAA) regulations. All participants were provided with the option of being entered in a raffle drawing to win a free Apple iPad 2, $150.00 gift card to Walmart, or one pair of Beats Solo HD Headphones. Entry into the specific drawing was determined by the timing of participation: all participants who participated prior to December 1, 2013 were entered in the drawing to win the iPad 2 ($n = 293$), all who participated between December 2, 2013 and June 1, 2014 were entered to win the gift card ($n = 35$), and all who participated after June 1, 2014 were entered to win the headphones ($n = 47$).

**Instrumentation**

**Demographic variables.** Demographic variables include birth date, age, gender, grade, ethnicity, country of origin, language spoken at home, and typical grades at school. Demographic information was gathered through self-report, with the exception of birth date, which was obtained during the medical record review using the electronic medical systems at the pediatrician’s offices. All participants completed demographics items that are included at the end of the Bully Survey-Student Version (Swearer, 2001).

**BMI z-score.** Patients’ height and weight are measured at each routine medical visit. Their height, weight, BMI, and BMI percentile were obtained from existing medical
records contingent on authorization for the release of private health information. To review the medical records, the investigator or research assistant met with a nurse at the pediatrician’s offices to obtain height, weight, and BMI information, which was then transferred to the data collection form (Appendix E). One of the pediatrician’s offices did not have BMI percentile already calculated within the medical record; these missing values were calculated with the formula body mass/height$^2$ (kg/m$^2$) and with the CDC growth curve charts (CDC, 2014), which were then used to convert all BMI values and percentiles to BMI z-scores. BMI z-score was used as a continuous measure in the current study instead of categorizing participants as underweight (less than the 5th percentile), healthy weight (5th percentile to less than the 85th percentile), overweight (85th percentile to less than the 95th percentile), or obese (equal to or greater than the 95th percentile; Ogden & Flegal, 2010) to account for gender and age variations and because cutoff scores do not precisely identify youths at clinical risk from those who are not (Barlow, 2007). BMI z-score was also used to obtain a more sensitive, albeit indirect, measure of weight because the majority of the sample was within the healthy weight range.

**Body size dissatisfaction.** For the current study, the Body Image Silhouettes (BIS) that are a component of the Kids’ Eating Disorder Survey (KEDS; Childress et al., 1993) were used as a measure of body dissatisfaction (Appendix F). The KEDS is a commonly used measure of body size dissatisfaction (Yanover & Thompson, 2009) that addresses limitations involved with using figural stimuli (e.g., limited availability of figures designed specifically for children and adolescents, unrealistic representations of the human body). The KEDS was originally designed to assess eating disorder pathology
in preadolescents (Childress et al., 1993). It is used in this study for a wider age range of adolescents due to the paucity of available figural rating scales that have been validated for use with children and adolescents.

On the body image silhouettes, participants were provided with eight figural images for each gender that are placed on a spectrum ranging in size from underweight to overweight. This number is consistent with research demonstrating that the optimal number of figures is five or more (Ambrosi-Randic, Pokrajac-Bulian, & Taksic, 2005). To administer the KEDS electronically, the figures were presented twice in immediate succession. The first time the figures were presented, participants were asked to choose a figure that represented their current body size (“click on the drawing that most looks like you”). Secondly, they were asked to choose a figure that represents their ideal body size (“click on the drawing you would most like to look like”). For the paper-and-pencil measure, participants indicated their perceived and ideal rating on the same paper form. The numerical difference between the perceived and ideal figures yields a continuous measure of body dissatisfaction, with larger differences representing higher levels of body dissatisfaction. Positive scores indicate a desire to be thinner, while negative scores indicate a desire to be larger. For the current study, procedures utilized by Rancourt and Prinstein (2010) were followed to calculate the absolute values of the discrepancy scores. This approach yields a measure of body size dissatisfaction that is consistent and comparable across genders and allows for more accurate exploration of gender as a moderator.

The KEDS Body Image Silhouettes have been validated for use with adolescents (Candy & Fee, 1998a; Childress et al., 1993) and adhere to the recommendation that five
or more figures be used in figural rating scales measuring body dissatisfaction (Ambrosi-Randic et al., 2005). The KEDS BIS was found to have test-retest reliability of .77 for perceived body size, .74 for ideal body size, and .82 for body dissatisfaction in one study (Candy & Fee, 1998a) and .83 for body dissatisfaction in a second study (Childress et al., 1993). These values are consistent with Gardner and Brown’s (2010) recommendation that figural rating scales meet or exceed Carmines’ (1990) criteria of .80 for test-retest reliability. Also, the total KEDS has adequate internal consistency ($\alpha = .73$) for a sample of 5th through 8th graders; however, internal consistency was higher for adolescents than for 5th graders ($\alpha = .86$; Childress et al., 1993). The criterion validity of the KEDS has been established with a sample of preadolescent girls, in that their ratings of current perceived body size on the BIS measure were correlated with their actual BMI values (Candy & Fee, 1998a). Finally, the KEDS BIS has adequate convergent validity, in that discrepancy scores on the KEDS BIS were moderately correlated with scores of body dissatisfaction on the Eating Behaviors and Body Image Test (EBBIT; Candy & Fee, 1998a; Candy & Fee, 1998b). Other studies have found significant, positive correlations between figural rating scales and standard survey measures of body dissatisfaction (Swami et al., 2012; Veron-Guidry & Williamson, 1996). In this study, the internal consistency for the KEDS items relating to current body size, ideal body size, and body size dissatisfaction was .71.

**Body size distress.** The level of distress associated with perceptions of body size was measured to obtain a more complete picture of body size dissatisfaction. A commonly used method to assess distress is the Subjective Units of Discomfort Scale (SUDS), which measures the subjective intensity or distress currently experienced by an
individual (Wolpe, 1990). Heinberg and Thompson (1992) used the SUDS to assess body size dissatisfaction in their young adult sample, with the value 1 representing no distress with one’s body size and 100 representing extreme distress. This procedure was modified for the current study. Specifically, participants who endorsed a body size that differed from their current, perceived body size were prompted to rate the extent to which this bothered them. Level of distress was evaluated with one item: “If you underlined a figure that is different than the figure you circled, rate how bothered you are by your body size.” Participants were then asked to circle the number that corresponds with this level of distress on a scale from 0 (“I am not at all bothered”) to 10 (“I am extremely bothered”). A 0-10 scale was used in place of a 1-100 scale for simplification and to ensure that the item was developmentally appropriate for this younger sample.

**Perceived difference from friends’ body size.** To determine the degree to which participants perceive they differ in size from their friends, a version of the KEDS body image silhouettes was modified for use in this study (Appendix G). Specifically, participants were asked to “choose the drawing that looks like most of your friends” to obtain the discrepancy between one’s current size and the normative size of one’s friends in his/her general peer group. If participants circled a figure from both gender groups, the figure they circled that corresponded with their own gender was used for the analyses. The difference score was calculated by subtracting the numerical figure indicated on the BIS friends’ version to that of the BIS self-version where participants will indicate their current perceived body size. Based on this calculation, difference scores can range in value from -7.0 to 7.0.
Bullying victimization. The current study assessed bullying victimization with the BYS-S (Swearer, 2001; Appendix H). The BYS-S contains 41 items and consists of four parts. Part A asks participants to report on their experiences being victimized, Part B asks participants to report on their experiences witnessing bullying, and Part C asks participants to report on their experiences bullying others. Participants complete the Bullying Attitudinal Scale (BAS) in Part D, which is a five-point Likert scale that assesses overall attitudes toward bullying. Studies utilizing office referral data support the concurrent validity of the BYS-S in that youths who indicated that they were victims of bullying had fewer office referrals than those who reported that they had perpetrated bullying (Swearer et al., 2010; Swearer & Cary, 2003).

A definition of bullying and examples of bullying are provided on the front page of the survey and repeated at the beginning of each section. The definition provided is “Bullying happens when someone hurts or scares another person on purpose and the person being bullied has a hard time defending himself or herself. Usually, bullying happens over and over.” Specific examples of bullying are described, including punching, shoving, and other acts that hurt people physically, spreading bad rumors about people, keeping certain people out of a group, teasing people in a mean way, and getting certain people to “gang up” on others. Following the definition, each section of the survey begins with a dichotomous question relating to bullying involvement of that section (e.g., “Have you been bullied this school year?”) and three frequency options including “one or more times a month,” “one or more times a week,” and “one or more times a day.” Subsequent multiple-choice and open-ended questions investigate details of the bullying incidents, such as location, type of bullying, characteristics of perpetrators and victims, impact of
bullying, reasons for bullying, and the existence of a power imbalance. Participants are instructed to skip sections of the survey that do not apply to their experiences; for instance, if they indicate that they have not been bullied during the previous school year, they skip Part A and proceed to the next part of the survey.

For the current study, only items relating to participants’ experiences with victimization were used. Specifically, the Verbal and Physical Bullying Scale (VPBS; Swearer, 2001) in Part A of the survey was used. This scale consists of 11 items asking about specific ways participants have been bullied in the past school year. Four items assess physical bullying (e.g., “attacked me,” “pushed or shoved me”) and seven items assess verbal bullying (e.g., “called me names,” “said mean things behind my back”). Participants were asked to rate the frequency of victimization (i.e., “How often did you get bullied? Check how often these things happened”) for each behavior on a five-point Likert scale with anchors ranging from “never happened” (0) to “always happened” (4). A total score was calculated for victimization by summing numerical responses to these items, with higher scores indicating greater frequency of victimization. In previous research, the VPBS with a sample of high school boys yielded satisfactory internal consistency (α = .87; Swearer, Turner, Givens, Pollack, 2008). In the same study, a principal component factor analysis supported a two-factor solution for verbal and physical bullying (α = .85 and α = .79, respectively). The internal consistency of the VPBS for the current study was .85.

**Procedures**

The current study is part of a larger, ongoing study examining health correlates and bullying/victimization experiences. All procedures have been reviewed and approved
by the University of Nebraska - Lincoln IRB to ensure the safety of participants, appropriate consent/assent practices, and data collection procedures that adhere to HIPAA guidelines. For each data collection site, a letter of support was obtained (Appendix I). All research assistants and investigators completed Collaborative Institutional Training Initiative (CITI) training.

Data for this study were obtained via electronic or paper-and-pencil measures, depending upon participant preference. In addition to the surveys, medical record reviews were conducted by one of two investigators. All patients within the targeted age range who had an appointment scheduled in the clinics were invited to participate. Upon their arrival at the pediatrician’s office, an investigator or receptionist explained the purpose of the study, the voluntary nature of participation, the potential benefits, and options for participation. Specifically, participants could choose whether they preferred to (a) complete paper-and-pencil measures in the office while they were waiting to be seen by the doctor or before they left the office, (b) complete paper-and-pencil measures at home and mail the surveys back to the primary investigator, (c) complete the surveys electronically on their home computer, or (d) not participate in the study. Signs advertising the study were also posted in the offices’ waiting rooms.

If participants chose to complete the surveys electronically, the research assistant provided them with a recruitment letter that was created by the UNL investigators in collaboration with the medical staff (Appendix J). The letter briefly outlined the procedures and directed them to a survey link that was unique to each data collection site. Surveys were distributed via Qualtrics, a web-based survey software program. The participant’s parent initially accessed the website to complete the electronic consent form
for his or her adolescent’s participation, the PHI Authorization for medical record review, and the parent measures that were part of the larger study. Next, the parent received an electronic prompt to allow his or her adolescent to complete the remaining measures. At this point, the adolescent completed the youth assent and remaining measures, which were counterbalanced across participants.

Patients who chose to participate via paper-and-pencil measures were provided with pre-prepared packets. Packets included the parent consent form, PHI Authorization form, parent measures (for the larger study), youth assent form, and the youth measures. Participants completed the measures in the waiting room and in the exam room while waiting for the doctor, or at home. Research assistants were available to answer any questions. If patients did not have sufficient time to complete the measures in the office (or did not finish the measures they already started), they were permitted to mail the completed measures back to the primary investigator in a postage-paid envelope. For this option, consent and assent forms were completed at home with the other measures. An instruction sheet (Appendix K) was included with the packets as well. One follow up contact was conducted for participants whose packets had not been received two weeks after being provided a packet in the office.

The follow up contact was arranged when participants were given a packet. Specifically, the preferred method of communication for follow up (i.e., e-mail, phone call, or text message) was obtained from the potential participant (see Appendix L for the scripts for each of these follow up options). A contact information document was used to record participants’ e-mail addresses or phone numbers and match them to their names (Appendix M). This document was stored in a locked file in the secondary investigator's
office and was destroyed (i.e., shredded) immediately upon completion of data collection.

All participants who completed the paper-pencil measures were given a small tangible item in addition to being entered in the drawing. The tangible item was given directly to the patient (i.e., adolescent) while the patient/parent pair was still entered in the drawing for the Apple iPad 2, Walmart gift card, or Beats Solo HD Headphones. Equal opportunities for receiving a prize were provided in that participants could choose an item regardless of whether they finished the surveys in the office or request that they mail them back. Participants were given a choice between a free song download, a rubber bracelet that depicted an inspiration word (e.g., "Strength"), or one pack of sugarless gum. For the song download, an Amazon gift code for the value of one song ($1.29) was provided in the pediatrician’s office either when they returned completed surveys or requested an envelope to return (i.e., mail) the surveys.

In addition to survey data collection, medical record reviews were conducted separately to obtain participants’ date of birth, BMI, and BMI percentile. Medical record reviews were conducted at regular, two-week intervals throughout the data collection time span. Participants were asked to provide their names on the consent form, PHI Authorization, and youth assent in order to identify who had consented to medical record reviews. Once consenting participants had been identified, PHI Authorization forms were printed from the Qualtrics website or copied from paper forms to be provided to the pediatrician’s offices for their records. The primary investigator conducted the medical record reviews with the assistance of a nurse or medical professional at the pediatrician’s offices. Information obtained from records was then transferred to the aforementioned demographic forms. In order to ensure no identifying information was attached to the
participants’ responses or private health information, each participant was assigned a numerical code (i.e., ID). All survey measures and consent forms had unique codes that also served as a label on the demographic forms to match survey data to medical record information. Participants’ names were not placed on the demographic forms. Following medical record reviews, paper demographic forms and copies of the consent forms were stored in a secure filing cabinet in a locked office at the University of Nebraska-Lincoln. Paper surveys were stored separately from demographic forms and consent forms to ensure participants’ confidentiality. A flow chart summarizing these procedures is provided in Appendix N. Following data entry, inter-rater reliability was calculated for 25% of the sample’s surveys to assess the accuracy of data input. Percent agreement across the measures assessing the key variables of interest was 98.6%.
CHAPTER IV
RESULTS

Analytic Approach

Prior to completing analyses, SAS software (Version 9.3; SAS Institute, Inc., 2011) was used to calculate BMI percentiles and z-scores. Preliminary analyses were then completed using SPSS Version 20 (IBM Corporation, 2011). Specifically, independent-samples t-tests and one-way ANOVAs were conducted to determine whether key demographic variables (e.g., gender, ethnicity) predicted significant differences for BMI z-score and the three endogenous variables (i.e., body size dissatisfaction, perceived difference from friends’ body size, bullying victimization), and to determine whether significant differences existed in the dependent variables across pediatrician’s offices and data collection modalities. Additional ANOVAs and correlational analyses were then conducted to investigate the first two research questions. Research Questions 3 through 5 were addressed with modeling procedures to investigate the hypothesized indirect and moderating effects. Finally, exploratory analyses were conducted to investigate Research Questions 6 and 7.

Path analysis was employed in the current study due to its ability to test the hypothesized relationships among multiple constructs (Klem, 2008). Mplus version 7.2 (Muthén & Muthén, 1998-2014) was used to estimate the hypothesized recursive models. Decisions relating to model construction and the inclusion of potential mediating variables were based on theory and findings from existing studies investigating similar constructs. The full information maximum likelihood (FIML) method was used to account for missing data (Kline, 2011). FIML produces unbiased parameter estimates,
increases power, and is designed to handle data that are missing completely at random (Enders, 2010; Little, Jorgensen, Lang, & Moore, 2014; Wu & Jia, 2013).

Zero-inflated Poisson analyses were employed to include bullying victimization as a count variable in the model as many participants (69.9%) reported that they had never been bullied. This method is appropriate when there is an excess amount of zeros in the data, which result in positive skew in the data distribution. A zero-inflated Poisson approach is recommended in studies investigating school violence and bullying in particular due to the low frequency nature of these experiences (Huang & Cornell, 2012). Zero-inflated Poisson modeling involves estimating two models: a logistic regression model and a count model (Huang & Cornell, 2012; Muthén, 2014). Regarding victimization, the logistic model determines the factors that predict whether a participant belongs to a “no victimization” group versus a victimization group, while the count models predict the extent to which victimization occurred using all cases with at least one occurrence of victimization (Huang & Cornell, 2012).

Percentile bootstrapping procedures were used with 95% confidence intervals to determine significance for the hypothesized effects. Bootstrapping is a nonparametric procedure that involves repeatedly sampling the data set a large number of times and generating confidence intervals (Efron & Tibshirani, 1994). Multiple distributions are created with replacement from the original dataset to mimic the act of retrieving many samples from a population (Kline, 2011). Bootstrapping is superior to Baron and Kenny’s (1986) causal steps strategy to assess mediation since it does not assume normality, has higher statistical power, and allows one to test multiple indirect effects at the same time (Preacher & Hayes, 2004; Williams & MacKinnon, 2008). Consequently, it is possible to
test the influence of specific indirect effects while taking into account the presence of others within the model. Even though bias-corrected bootstrapping is often recommended for use when there are non-normal and missing data and has been found to have higher power than the percentile bootstrap (MacKinnon et al., 2004; Williams & MacKinnon, 2008), the percentile bootstrap has been found to suffer from elevated Type I error to a lesser extent than the bias-corrected and accelerated bias-corrected bootstrap methods (Fritz, Taylor, & MacKinnon, 2004). Similar to multiple regression, path analysis and maximum likelihood methods assume multivariate normality (Bollen, 1989); however, this assumption is rarely met for models that require normal distributions for both total and specific indirect effects (Preacher & Hayes, 2004; Preacher & Hayes, 2008). In the current study, the distribution for bullying victimization is positively skewed due to zero-inflation. Therefore, nonparametric bootstrapping procedures were also used since the data distribution did not meet the assumption of multivariate normality.

**Sample Characteristics**

The original total sample consisted of 448 participants. Seventy-four participants were subsequently removed from the database for the following reasons: missing all adolescent data \((n = 65, 14.5\% \text{ of the original sample})\), being younger or older than the targeted age range \((n = 6, 1.34\% \text{ of the original sample})\), or not being a patient at either pediatrician’s office \((n = 3, 0.67\% \text{ of the original sample})\). Following data cleaning, 374 participants were included in the final analyses. Frequencies and demographic characteristics for the participants in each office are provided in Table 1. The majority of the participants \((75.1\%)\) were patients at the larger pediatrician’s office, while \(24.9\%\) were patients at one of the four remaining locations. The gender distribution of the total
sample was approximately even with 48.9% male and 51.1% female participants $\chi^2(1, n = 374) = .17, p = .679$. The mean age was 13.53 years ($SD = 1.95$) and participants were between 10.99 and 18.39 years-old. Participants ranged from underweight to obese (BMI z-score range: -3.22-2.58). The majority of participants had recent height and weight measurements that were updated within the year prior to completion of the surveys ($n = 317, 84.8\%$). Most of the participants had a BMI percentile that corresponded with healthy weight (67.4\%), followed by overweight (14.7\%), obese (11.8\%), and underweight (2.9\%). The distribution of participants according to weight status and bully/victim status is provided in Figure 3. Close to half of participants (47.6\%) were healthy weight adolescents who reported being uninvolved in bullying. Reported body size dissatisfaction ranged from -3.0 to 3.0 and their perceived differences from friends’ body size ranged from 0 (i.e., no difference) to 6 (see Table 2). All underweight participants indicated a desire to stay the same or be larger in size, while all obese participants indicated a desire to remain the same or be smaller in size.

**Preliminary Analyses**

Descriptive statistics for the constructs of interest are provided in Table 3. Results of independent-samples t-tests indicated that there were no significant differences for girls and boys on absolute values for body size dissatisfaction $t(347) = .40, p = .687$, perceived difference from friends’ body size $t(357) = .47, p = .640$, and reported frequency of bullying victimization $t(369) = -.48, p = .632$. Participants did not differ across weight status categories for age $F(3, 359) = .03, p = .992$ or reported frequency of bullying victimization $F(3, 358) = 2.38, p = .069$. Girls ($M = .17, SD = .95$) had lower BMI z-scores than boys ($M = .48, SD = 1.15$), $t(341) = 2.84, p = .005$ and results of a
chi-square test of independence showed a significant relationship between weight status and gender, in that more adolescent boys than adolescent girls were in the overweight and obese categories $X^2 (3, n = 362) = 23.72, p < .001$. There were no significant differences on any of the outcome variables between ethnicity status groups (i.e., Caucasian versus minority), across pediatrician’s offices, or across methods in which participants completed the surveys. Significant differences were found across incentives (i.e., iPad, headphones, gift card) for body size dissatisfaction, $F(2, 346) = 3.52, p = .031$, perceived difference from friends’ body size, $F(2, 356) = 3.12, p = .045$, and frequency of bullying victimization, $F(2, 368) = 6.13, p = .002$.

**Research Question 1**

The aim of the first research question was to determine whether significant differences existed across bully/victim groups (i.e., victim, perpetrator, bully-victim, uninvolved) on body size dissatisfaction, as measured by the KEDS. Assumptions of normal distribution of the data and homogeneity of variance were both violated according to the Shapiro-Wilk test and the Levene test of homogeneity of variances, which was significant $(6.71), p < .001$. Therefore, a Kruskal-Wallis Test was conducted. Results of this non-parametric test showed that a significant difference in body size dissatisfaction did not exist across bully/victim status groups $\chi^2(3) = 7.33, p = .062$.

**Research Question 2**

The second aim of the study was to determine whether adolescents’ BMI z-scores were significantly related to their estimations of their current body size on the KEDS. Variable distributions were first examined to determine whether the assumption of normality was met. The distribution scatterplots and Shapiro-Wilk tests indicated that this
assumption was violated. Given the non-normal nature of the data, Spearman’s rho correlations were conducted to test the hypotheses that significant, positive relationships existed between BMI z-scores and self-reported current body size, ideal body size, and body size dissatisfaction. Results supported these hypotheses, in that BMI z-scores from participants’ medical records were significantly related to their perceptions of current body size ($\rho = .71, p < .001$), ideal body size ($\rho = .40, p < .001$), and body size dissatisfaction ($\rho = .21, p < .001$) on the KEDS. These results provide support for the validity of the KEDS as an accurate measure of adolescents’ perceptions of current and ideal body size.

**Research Question 3**

To determine whether BMI z-score indirectly affected bullying victimization via perceived difference from friends’ body size and body size dissatisfaction, a multiple mediator model was tested (see Figure 1). A zero-inflated Poisson approach was employed to define bullying victimization as a count variable within the model. Bivariate correlations among the variables of interest are provided in Table 4, and missing data proportions are included in Table 5. Gender was included as a covariate in the model to eliminate its potential confounding effects (Hayes, 2013). Body size dissatisfaction, bullying victimization, and perceived difference from friends’ body size were regressed on gender to control for its effects. Per Preacher and Hayes’ (2008) recommendation, 1000 bootstrap samples were generated from the data to examine the specific parameters within the model. Confidence intervals (95%) were examined and effects were considered significant if they did not include zero (Hayes, 2013).
Model results (see Table 6) indicated that BMI z-score significantly and positively predicted body size dissatisfaction. A significant direct effect was also evident between body size dissatisfaction and bullying victimization. Given that the odds of being in the “no victimization” group are what is being modeled, coefficients that represent predictions for the count outcome are typically in an opposite direction than originally hypothesized (Huang & Cornell, 2012; Long, 1997). The negative path estimate between body size dissatisfaction and bullying victimization ($b = -.39$) indicates that for every unit increase in body size dissatisfaction, the log odds of being in the never victimized group decreases by .39. An exponentiated transformation of the ZIP parameters (see below) indicates that for every unit increase in body size dissatisfaction, victimization counts increase by a factor of .68. The remaining direct paths were not statistically significant.

Indirect bootstrapped paths are provided in Table 6. Percentile bootstrapping indicated that the indirect path from BMI z-score to bullying victimization through perceived difference from friends’ body size was not significant. In contrast, the path from BMI z-score to bullying victimization through body size dissatisfaction did not include zero, indicating a significant indirect effect.

**Research Question 4**

As discussed earlier, victimization is also considered to be a predictor of body size dissatisfaction. To fully explore the hypothesized relationships between the constructs of interest, the direction of the paths within the model for Research Question 3 was manipulated. A second model was tested to investigate the path from BMI z-score to body size dissatisfaction through bullying victimization (see Figure 4). Perceived
difference from friends’ body size was also included in the model to test this second 
indirect effect. Only dependent variables can be defined as count variables in path 
analysis; mediating variables cannot be included as count variables (Muthén, 2014; 
Muthén & Muthén, 1998-2012). Instead of defining it as a count variable, bullying 
victimization was transformed to a dichotomous variable to create two groups: 
adolescents who endorsed prior victimization and those who did not. A dichotomous 
variable was created for bullying victimization instead of including it as a continuous 
variable due to zero-inflation and the absence of clinically validated cutoffs for bullying 
victimization frequency on the BYS-S. Model results are provided in Table 7. Path 
estimates and bootstrapped confidence intervals indicated significant relationships 
between BMI z-score and body size dissatisfaction and between perceived difference 
from friends’ body size and body size dissatisfaction.

Model fit was then examined and the models in Research Questions 3 and 4 were 
compared. Count data are positively skewed and zero-inflated Poisson models have a log 
rate metric instead of a normal distribution (Muthén & Muthén, 1998-2012); thus, it is 
not possible to directly compare the earlier zero-inflated Poisson model to the model with 
the dichotomous victimization variable as a mediator. To enable model comparison, a log 
transformation was conducted to convert the parameters in the zero-inflated Poisson 
model to the original scale. This back-transformation was carried out using the 
procedures delineated by Huang and Cornell (2012). That is, the coefficients were 
exponentiated using the formula \( \exp(b) \) and this process was repeated for the alternative 
logistic regression model. These values are included in Tables 6 and 7. An examination
of the paths in the zero-inflated Poisson model demonstrated that coefficients were comparable in size and direction to the same paths in the alternative model.

Traditional goodness of fit indices were not generated by Mplus for either model. The Akaike Information Criterion (AIC) and Bayes Information Criterion (BIC) fit indices are commonly used for comparison of non-nested models, with smaller values indicating better fit (Byrne, 2012). The AIC and Sample-Size Adjusted BIC values for the ZIP model were 3327 and 3337, respectively, while they were 2041 and 2050 for the alternative model that included body size dissatisfaction as an endogenous variable. The lower AIC and BIC values in the second model indicated more parsimonious and better fit than the previous model that included bullying victimization as an endogenous variable.

Research Question 5

To investigate the impact of gender on the paths depicted in the model, a conditional process approach was employed using path analysis. Conditional process models allow one to investigate whether a mediated effect varies depending on the moderator variable (Hayes, 2013; Mackinnon, Fairchild, & Fritz, 2007; Preacher, Rucker, & Hayes, 2007). A common method to test moderation in path analysis involves including an interaction term in the model between the moderator and the variable upon which the moderating variable has an effect (Hayes, 2013). To evaluate the conceptual model depicted in Figure 4, Preacher and colleagues’ (2007) moderation macro for Mplus was used. Two interaction terms were included: BMI z-score x gender, and body size dissatisfaction x gender. Due to evidence indicating that the percentile bootstrap has nominal Type I error rates compared to other methods (Fritz et al., 2012; Williams &
percentile bootstrapping procedures (using 1000 bootstrapped samples) were conducted to investigate the hypothesis that gender moderates the entire indirect effect (i.e., both the $a$ and $b$ paths) in the relationship from BMI $z$-score to bullying victimization through body size dissatisfaction. Bullying victimization was defined as a count variable due to zero-inflation.

The resulting statistical model is depicted in Figure 1 and the unstandardized path coefficients, $p$ values, and percentile bootstrapped confidence intervals are provided in Table 8. The interaction between body size dissatisfaction and gender did not significantly predict bullying victimization and results failed to support the hypothesis that gender would moderate the indirect effect between BMI $z$-score and bullying victimization. The interaction between BMI $z$-score and gender significantly predicted body size dissatisfaction, indicating that gender moderated the relationship between BMI $z$-score and body size dissatisfaction.

**Research Question 6**

Further analyses were conducted to determine whether significant differences existed between adolescents who endorsed their weight as a reason for being bullied (i.e., endorsed, “I am fat” as a reason for being victimized) and those who did not. Out of all of the adolescents who endorsed being victimized, 24.8% ($n = 31$) endorsed being bullied due to being “fat” while 75.2% ($n = 94$) denied this as a reason for why they were bullied. Results of a chi-square test of independence indicated that there was no association between gender and reporting weight-based bullying victimization $\chi^2(1, n = 125) = .023, p = .879$. No significant differences were found between groups for frequency of bullying victimization $t(123) = 1.27, p = .207$. Adolescents who endorsed weight-based bullying
victimization \( (M = 1.30, SD = .72) \) had higher BMI z-scores than those who denied being bullied for this reason \( (M = .12, SD = 1.11) \), \( t(119) = 5.43, p < .001 \). Consistent with hypothesized results, adolescents who endorsed weight-based bullying victimization \( (M = 1.41, SD = 1.02) \) reported higher levels of body size dissatisfaction than those who did not \( (M = .63, SD = .88) \), \( t(114) = 3.99, p < .001 \).

**Research Question 7**

A small portion of the sample \( (n = 80) \) completed a single-item, Likert-scale measure of body size distress. Responses ranged from 0 (i.e., no distress relating to body size) to 9 on a scale from 0 to 10 \( (M = 2.28, SD = 2.64) \). Pearson product-moment correlations, Spearman’s correlations, and independent-samples t-tests were conducted to investigate the relationships between body size distress and the constructs of interest. No significant differences were found between boys \( (M = 1.94, SD = 2.30) \) and girls \( (M = 2.51, SD = 2.86) \) for body size distress \( t(78) = -.95, p = .345 \). Youth who endorsed weight-based bullying victimization \( (M = 3.73, SD = 3.06) \) reported higher levels of body size distress than those who did not \( (M = 2.00, SD = 2.19) \), \( t(39) = 2.11, p = .042 \). Body size distress was positively and significantly associated with BMI z-score \( (r = .38, p = .001) \) and frequency of bullying victimization \( (r = .22, p = .047) \). Spearman’s correlations were then conducted due to violated assumptions for the body size dissatisfaction and perceived difference from friends’ body size variables. Results demonstrated that body size distress was significantly correlated with levels of body size dissatisfaction \( (\rho = .74, p < .001) \) and perceived difference from friends’ body size \( (\rho = .37, p = .001) \).
CHAPTER V
DISCUSSION

This study investigated the influences of weight, perceived difference from friends’ body size, and body size dissatisfaction as risk factors for bullying victimization. In conjunction with supplementing the limited research on the peer factors that are related to body size dissatisfaction and bullying victimization (Crosnoe & Muller, 2004; Jones, 2004; Paxton et al., 1999), this study addressed potential methodological limitations and validity concerns that characterized previous studies on bullying/victimization and weight. Path analysis was employed due to its ability to simultaneously test competing explanatory models (Bollen, 1989; Ullman, 2007). Also, BMI values and percentiles were obtained from medical records in order to avoid potentially inaccurate reports of height and weight from either self-report or nurse-reports. Finally, results build upon the existing literature by identifying weight-related predictors of bullying victimization in particular, instead of distinct constructs, such as weight-related teasing, criticism, or peer victimization in general.

Multiple analyses were conducted to test the hypotheses. First, group difference analyses were conducted to determine whether levels of body size dissatisfaction differed across bully/victim roles and whether reported body size was associated with BMI z-scores. Next, the role of perceived difference from friends’ body size was investigated as a predictor of body size dissatisfaction and bullying victimization since a paucity of research has focused on deviations from friends’ body size body size as a risk factor for these constructs. Path analyses were conducted with percentile bootstrapping to investigate indirect effects and a zero-inflated Poisson approach was used to include
bullying victimization as a count variable. A second model was tested to investigate the competing hypothesis that bullying victimization explains the relationship between BMI z-score and body size dissatisfaction. This latter model yielded a better, more parsimonious fit compared to the ZIP model. In this section, results are discussed along with implications for research investigating risk factors for body size dissatisfaction, bullying victimization in general, and weight-based bullying victimization for adolescents. Study limitations, directions for future research, and clinical implications are discussed as well.

**Body Size Dissatisfaction across Bully/Victim Roles**

Due to evidence supporting the worst psychopathology for youth who endorse both bullying victimization and perpetration (Copeland et al., 2013; Nansel et al., 2001; O’Brennan et al., 2009; Swearer et al., 2001), it was first hypothesized that youth who identified as bully-victims would report the highest levels of body size dissatisfaction. Contrary to the original hypothesis, levels of body size dissatisfaction did not differ across bully/victim roles. Insufficient power may have prevented effects from reaching detectable levels, particularly since the bully and bully-victim groups were comprised of only 11 and 23 participants, respectively. Restricted range may have also contributed to this null result since participants’ body size dissatisfaction ranged from an absence of body size dissatisfaction to only mild levels of body size dissatisfaction.

Directionality of the association between body size dissatisfaction and bullying victimization was not explicitly investigated, but two possible explanations exist to support the relationship between body size dissatisfaction and bullying victimization. Consistent with prior studies, bullying victimization could lead to increased levels of
body size dissatisfaction, particularly when youth are bullied for their weight (Jones, 2004; Jones & Crawford, 2006; Lawler & Nixon, 2011; Nelson et al., 2011). Or, body size dissatisfaction could function as a risk factor for subsequent bullying victimization by communicating vulnerability to peers (Brixval et al., 2011; Fox & Farrow, 2009; Frisen et al., 2009; Giletta et al., 2010). In spite of the established relationship between bullying victimization and body size dissatisfaction, no known studies to date have investigated levels of body size dissatisfaction in victimized youth who also engage in bullying perpetration. Therefore, future research is needed that examines levels of weight-related internalizing symptoms in bully-victims compared to youth who endorse other bully/victim roles.

**Validity of Self-Reported Estimates of Body Size**

Secondly, it was hypothesized that adolescents’ reports of current and ideal body size would be related to BMI measurements. Results supported this hypothesis, in that adolescents’ estimates of their current body size, as measured by the KEDS Body Image Silhouettes, were related to their BMI z-scores. BMI z-scores were significantly associated with ratings for ideal body size on this measure as well. Although the evidence regarding the accuracy of youths’ self-reports of their height and weight is contradictory, results of the current study are consistent with findings indicating that self-reports of height and weight can be used to reliably estimate BMI values (Field, Aneja, & Rosner, 2007; Goodman, Hinden, & Khandelwal, 2000).

It is possible that the older adolescents in this sample were able to provide more accurate measurements than the younger adolescents since the accuracy of reported height and weight values has been found to be lower in younger samples (Fonseca et al.,
Weight status and level of body size satisfaction may predict accuracy of reporting. Overweight and obese adolescents tend to provide underestimates of their true weight (Field et al., 2007) and individuals who are dissatisfied with their bodies often intentionally misrepresent information about their appearance to their peers (Hildebrandt et al., 2008). The average weight of this sample was within the healthy range, indicating that the adolescents may have felt comfortable providing accurate estimates of their weight. Overall, results of the current study support the use of self-reports of height and weight with adolescents; however, future researchers should approach the use of self-report methods cautiously and should consider the increased probability of distorted estimations of body size for participants who deviate from a healthy weight.

The Role of Perceived Difference from Friends’ Body Size

The hypotheses that perceiving oneself to be different from the normative body size of one’s friendship group would predict bullying victimization and explain the relationship between BMI z-score and bullying victimization were not supported. This finding contrasted evidence suggesting that deviating from the physical norm is related to psychological maladjustment, peer victimization, and social rejection (Lanza et al., 2013; Sentse et al., 2007). Several reasons may explain why this variable was not related to bullying victimization. First, a lack of significant discrepancies between self and friend body size could have attenuated effects. Specifically, participants’ reported minimal differences from their friends’ body size ($M = .86$), which is consistent with research demonstrating a homophily effect for adolescent friendships, in that they seek out friendships with individuals of similar size as themselves and become even more similar with socialization (Badaly, 2013; de la Haye et al., 2011; Valente et al., 2009). Within-
group similarity has been supported for body image as well (Paxton et al., 1999). Given findings that youth are often bullied for their appearance or for being different (Swearer & Cary, 2003), similarities in body size may have protected youth from being bullied by their peers.

Measurement issues or inaccuracies in estimating friends’ body size could also have explained the lack of association between difference from friends’ body size and bullying victimization. In the current study, difference from friends’ body size was assessed with a single item and youth were asked to indicate the size of “most” of their friends. A review of participants’ responses on the modified version of the KEDS Body Image Silhouettes indicated that many reported being friends with youth of more than one body size and many endorsed friendships with both boys and girls. Ultimately, this measure was not designed to capture the complex, heterogeneous nature of the typical peer group. This outcome raises questions about who adolescents consider to be most influential amongst their friends, particularly in large cliques.

Furthermore, research investigating adolescents’ ability to precisely estimate weight-related outcomes in their peers has yielded conflicting results. A meta-analysis on peer similarity and weight-related outcomes found that subjective estimates of peer outcomes did not differ significantly from objective assessments of the same outcomes in adolescents (Badaly, 2013). Other evidence suggests that adolescents’ perceptions of peer weight norms are often distorted, particularly if they are overweight or underweight themselves (Perkins, Perkins, & Craig, 2014). Therefore, the accuracy of adolescents’ reports of their friends’ body size in the current study is unknown.
More complex peer processes beyond body size discrepancies could have predicted bullying victimization. Relevant contextual factors, such as the frequency of appearance conversations and quality of the peer relationships, were not assessed in the current study. Peers are commonly used as social referents for social comparison (Thompson & Stice, 2001; Wertheim et al., 1997) and similar peers tend to be the most powerful influences when these comparisons are made (Mueller et al., 2010). Although findings support the association between body comparisons and poor body image in adolescence (Carey et al., 2014), the actual extent to which youth compared themselves to their friends was not directly assessed. Thus, it is plausible that differing from the normative body size of one’s peer group did not increase the likelihood that youth engaged in social comparison. This could have been the case for the subset of victimized youth in particular since adolescent victims and bully-victims have been found to be less likely to perceive friendships as important (O’Brennan et al., 2009). Consequently, youth who were being victimized or were at-risk for being victimized may have already been socially marginalized and may not have perceived their existing friendship group to be a crucial source of influence in the first place. It is also important to note that this study did not take into account other potent ecological factors that may impact body size dissatisfaction and weight-based victimization, such as parental and media influences (Thompson et al., 1999).

Although discrepancies from peer body size could be considered a risk factor for bullying victimization, perceptions of being larger or smaller than one’s friends could indirectly predict bullying victimization through body size dissatisfaction. Body size dissatisfaction and body size distress were both found to be significantly associated with
perceived difference from friends’ body size, which complements findings demonstrating that social comparison predicts body size dissatisfaction (Myers & Crowther, 2009). Future research should explore alternative relationships among these variables using experimental designs that allow for exploration of causal relationships, as the directionality of these relationships may have been misspecified in the current study.

Just as the ecological model sheds light on risk factors for bullying victimization, a constellation of factors across the individual, relational, and contextual levels interact to influence body size dissatisfaction and other weight-related outcomes (Badaly, 2013). The current study was limited by its failure to assess potential protective factors that could have attenuated the negative impact of deviating from the peer norm. Being physically different from one’s friends does not exclude the possibility of positive peer support and acceptance as well, which protect youth from initial victimization and buffer the negative effects of being bullied (Bearman et al., 2006; Davidson & Demaray, 2007; Hodges et al., 1999). Also, the presence of social support has been found to moderate the association between peer victimization and depressive symptoms in a sample of adolescent, obese girls (Lim et al., 2011), indicating that the shielding nature of social support is generalizable to more than one weight status. Research that identifies the qualities of adolescents’ friendships that reduce feelings of body size dissatisfaction and likelihood of bullying victimization, even in the presence of being “odd man out,” is needed to develop effective, peer-based interventions for youth of various weight statuses.

**Bullying Victimization as a Predictor of Body Size Dissatisfaction**
The fourth research question involved testing an alternative model that included a dichotomous victimization variable as a predictor of body size dissatisfaction. This model yielded better model fit than the previously discussed zero-inflated Poisson model, which showed a significant direct effect from body size dissatisfaction to bullying victimization. Even though the second model demonstrated better fit based on AIC, the first model is ultimately more appropriate since it accounts for limitations introduced by use of a dichotomous variable, including inability to differentiate adolescents who reported being victimized at a low frequency than those who were bullied at a high frequency (Gardner, Mulvey, & Shaw, 1995). Given evidence that victimization that directly targets weight is associated with increased levels of body size dissatisfaction (Nelson et al., 2011), future research is needed to determine whether victimization in general exacerbates body size dissatisfaction or if this outcome only results from weight-related bullying victimization. Longitudinal research is also warranted to understand the causal order of variables in the relationship between bullying victimization and body size dissatisfaction.

There was not a significant direct effect between BMI z-score and bullying victimization in either model. This result contradicted findings implicating weight status as an independent risk factor for victimization and bullying involvement (Gray et al., 2009; Griffiths et al., 2006; Janssen et al., 2004; Pearce et al., 2002) and suggests that factors beyond appearance may protect adolescents from being victimized. The absence of a direct link between weight and bullying victimization is consistent with empirical evidence indicating that mediating factors, such as body size dissatisfaction, play a crucial role in explaining this association (Brixval et al., 2011; Fox & Farrow, 2009; Frisen et al., 2009; Giletta et al., 2010), including findings that even youth in the healthy
weight range experience weight-based victimization (Puhl & Luedicke, 2012). BMI z-score was positively associated with body size dissatisfaction and provided evidence for the indirect relationship between weight and bullying victimization through body size dissatisfaction. Therefore, being underweight or overweight may increase adolescents’ levels of body size dissatisfaction and their vulnerability to being bullied.

**Gender as a Potential Moderator**

The fifth research question was devoted to investigating gender differences for the significant effects and constructs of interest. First, boys’ BMI z-scores were significantly higher than girls’ BMI z-scores. This finding is consistent with national data indicating that rates of obesity in boys are higher than those of girls in youth samples (Ogden et al., 2012). Although BMI values are limited by their inability to tease apart muscularity from body fat and obesity (Ogden et al., 2010), BMI z-score is a sensitive indicator that accounts for age and gender variations in children and adolescents (CDC, 2014). BMI z-scores reflect the reference population, allow for direct comparisons regardless of age or gender, and are more sensitive than BMI percentiles (Wang & Chen, 2012). Despite these advantages, additional research is needed to identify whether moderating (e.g., demographic) variables interact with gender to explain its association with BMI z-score.

Conditional process analyses were conducted to determine whether gender moderated the indirect path from BMI z-score and bullying victimization through body size dissatisfaction. In contrast to the original hypothesis, gender did not moderate this indirect effect, but did moderate the direct path from BMI z-score to body size dissatisfaction. These results are commensurate with findings indicating that both boys and girls experience body size dissatisfaction (Ricciardelli & McCabe, 2001), bullying
victimization (Crick & Bigbee, 1998; Felix & McMahon, 2007), and peer criticism for physical appearance (Lawler & Nixon, 2011).

Research indicates that girls experience worse body image than boys (Bearman et al., 2006; Hardit & Hannum, 2012; Lawler & Nixon, 2011; Wertheim et al., 2009) and that a curvilinear relationship exists between BMI and body size dissatisfaction for boys (Jones & Crawford, 2006). Puhl and Luedicke (2012) argue that research is needed to further explore gender differences in risk factors for weight-based bullying victimization and the consequences of being victimized. Girls may be more susceptible than boys to social context pressures that influence them to conform to unrealistic appearance ideals (Lawler & Nixon, 2011). The specific physical factors that contributed to body size dissatisfaction were not examined separately for boys and girls in this study and analyses focused only on linear models. These factors may explain why significant gender differences did not emerge for the path between body size dissatisfaction and bullying victimization. Due to high rates of overweight and obesity in boys and girls, it is crucial to understand how the relationships among peer context factors, body size dissatisfaction, and bullying victimization vary according to gender.

The absence of a moderating effect of gender for the indirect path from BMI z-score to bullying victimization via body size dissatisfaction may have been obscured by this study’s utilization of absolute values of body size dissatisfaction. Use of an absolute value of body size dissatisfaction has been recommended due to its ability to universally assess body size dissatisfaction and allow for direct comparisons of body size dissatisfaction across boys and girls (Rancourt & Prinstein, 2010). Absolute values eliminate the ability to examine differential effects for wanting to be smaller or larger.
Future studies should conduct separate investigations of boys and girls to examine gender differences for perceived difference from friends’ body size, body size dissatisfaction, and weight-based bullying victimization. It is likely that the processes that are associated with a larger ideal body size (e.g., for boys who want to increase muscularity) differ from the phenomena that are related to the desire to be skinnier. Similarly, it may be that underweight boys are at higher risk of bullying victimization than underweight girls, particularly in adolescence when weight and muscle gain in boys is expected. Furthermore, it is possible that the use of a continuous measure of BMI masked gender differences that may have been significant if clinical cutoffs were used to classify participants according to weight status. It follows that future research should continue to examine whether the peer-related predictors of weight-based bullying victimization for girls in different weight categories are distinct from those for boys.

**Weight-Based Bullying Victimization and Body Size Distress**

The final aims of this study were to investigate correlates of weight-based bullying victimization and distress associated with one’s body size. The original hypothesis that adolescents who reported being bullied due to being overweight would have higher BMI z-scores than those who did not was supported. This result was consistent with research demonstrating that overweight youths report being victimized at significantly higher levels than their healthy weight peers (Hayden-Wade et al., 2005; Puhl et al., 2011). Although victimization rates for this study were comparable to national rates of bullying, only a small proportion of adolescents reported experiencing weight-based bullying victimization. This finding is likely a reflection of the characteristics of this specific sample, as the vast majority of participants had BMI values that were within
the healthy range. Only 2.9% participants were underweight and only 11.8% of the total sample was obese. Also, this finding corroborated the result that BMI z-score did not directly predict bullying victimization in the hypothesized path model.

Future research should continue to investigate emotional and behavioral outcomes of weight-based bullying victimization, in addition to the specific risk factors that predict this type of victimization in adolescence. This is particularly important since adolescents who are bullied due to their weight often experience victimization that is more prevalent, harsher, and more upsetting than those who are not bullied due to their appearance (Hayden-Wade et al., 2005). In the current study, BMI z-scores were higher for participants who endorsed weight-based bullying victimization than for those who did not. In contrast, weight did not significantly predict bullying victimization in general. Given this finding, future research should examine potential protective factors that allow overweight and obese adolescents to avoid being bullied due to their size.

Consistent with the original hypothesis, adolescents with higher levels of body size distress were at-risk for experiencing other negative weight-related outcomes to a greater extent than those who endorsed lower levels of body size distress. Only a small number of participants completed the item that assessed body size distress and thus were not included in the path models. Specifically, higher levels of body size distress were significantly associated with higher BMI z-scores, higher frequency of bullying victimization, higher levels of body size dissatisfaction, and greater perceived difference from friends’ body size. Also, higher levels of body size distress were reported by participants who stated they had been bullied due to being “fat” than those who did not.
These results expand the literature by assessing the often overlooked construct of body size distress in addition to body size dissatisfaction. Although the current self-ideal discrepancy is considered a valid measure of body size dissatisfaction (Gardner & Brown, 2010), many studies that use figural rating scales fail to account for the consequences of body size dissatisfaction and its impact on adolescents’ functioning. The cognitive appraisals that are associated with perceptions of current and ideal body size are not equivalent to affective responses and actual dissatisfaction (Cafri et al., 2010). In other words, measures that only target body size dissatisfaction fail to capture the pathological and potentially debilitating nature of this experience, which may be distinct from the simple desire to be smaller or larger. It is crucial for future studies to continue to tease apart how body size dissatisfaction affects adolescents’ functioning in the absence of distress, in comparison to adolescents who endorse both body size dissatisfaction and significant distress.

**Study Limitations**

This study’s contributions must be considered within the context of its limitations. Although results showed a significant indirect effect in the first path model, the cross-sectional nature of this study made it impossible to draw definitive conclusions about true mediating effects, directionality, or causal relationships among variables. Mediation is defined as a causal process, and significant associations do not provide information about which variables precede others in time (Hayes, 2013). Similarly, correctly specified models that assess indirect processes assume that the order of the variables has been defined in a sequential order and that no reciprocal relationships are present (MacKinnon et al., 2007). Given these considerations, researchers should strive to conduct
experimental or longitudinal studies to examine the relationships among internalizing symptoms, peer relationships, and weight-based bullying victimization. Future studies should investigate whether peer factors, such as difference from friends’ body size, exacerbate body size dissatisfaction, which then leads to increased frequency of bullying victimization.

Measurement considerations. Body size dissatisfaction and perceived difference from friends’ body size were both measured with a figural rating scale (i.e., body image silhouettes). Although figural rating scales are easy to administer and are often used to assess body size dissatisfaction (Menzel et al., 2011; Yanover & Thompson, 2009), they suffer from restricted range and inflated reliability (Gardner & Brown, 2010). Additional concerns include the tendency for the silhouettes to be unrealistic representations of human compositions, their failure to depict muscularity, and their lack of standardization using child and adolescent samples (Cafri et al., 2010; Gardner & Brown, 2010). Efforts were made to address these concerns in the current study; for instance, the KEDS Body Image Silhouettes consist of eight figures, which is higher than the recommended use of five or more figures (Ambrosi-Randic et al., 2005). Use of a higher number of figures may have increased the range of responses. Although the body image silhouettes used in the current study have been previously validated for use with adolescents (Candy & Fee, 1998a; Childress et al., 1993), this study’s sample spanned a larger age range of adolescents. As a result, results should be interpreted with caution and future research should incorporate continuous measures of body size dissatisfaction to address these limitations.
Similarly, perceived difference from friends’ body size was measured with a single item that was created with a modified version of the KEDS and has not been previously validated. The use of a single, subjective item may have contributed to violated assumptions and suppressed potential effects. Future research should use objective measures of difference from friends’ body size, similar to the methods used in Lanza and colleagues’ (2013) study. Results can be replicated by obtaining BMI estimates directly from the peer group and by calculating more precise difference scores. Peer-reports and peer nomination methods can also provide crucial information about social status for adolescents with different weight status (Lanza et al., 2013).

The primary dependent variable in the current study was bullying victimization, which was measured with a total victimization score that was calculated by summing items of verbal, physical, and relational forms of bullying. The literature on weight, body size dissatisfaction, and peers’ influence on bullying victimization would be enhanced by investigating different types of bullying victimization. The majority of weight-based victimization is believed to be verbal (Wang et al., 2010); however, the specific predictors and consequences of verbal, physical, relational, and cyber weight-based bullying victimization have yet to be investigated. Furthermore, frequency scores for bullying victimization were calculated based on participants’ reports. Although self-reports have the advantage of assessing covert forms of victimization (Crothers & Levinson, 2004), the use of survey methodology calls into question the accuracy of their reports and makes it impossible to discern whether they were based on the definition of bullying provided.
**Demographic considerations.** The participant sample consisted primarily of Caucasian adolescents who reside in a mid-sized, Midwestern city. Consequently, results of this study are not necessarily generalizable to individuals of different ages, ethnicities, or socioeconomic status. For instance, rates of obesity have been found to be higher in certain ethnic minority groups and in individuals who report lower household income (Crawford et al., 2001; Ogden et al., 2012) so these populations may be more susceptible to experiencing negative outcomes that are associated with overweight status and may be more likely to be negatively influenced by peers. In light of these considerations, research is warranted to determine whether results of this study apply to other diverse populations.

The ways in which peers and friends influence body size dissatisfaction and provide a context for weight-related bullying victimization likely depends on age as well. Although adolescence presents an ideal time to investigate weight-related constructs due to the comorbid risk for both body size dissatisfaction and bullying victimization, future studies should explore the association between body size dissatisfaction and weight-related bullying victimization in older and younger samples. Moreover, research that investigates the role of peers in predicting weight-based bullying victimization should consider peer demographic factors that may influence this relationship, such as gender and ethnicity.

This study’s sample of adolescents spanned from underweight to obese. As a result, analyses were not conducted exclusively with underweight and obese adolescents. Research indicates that adolescent girls who deviate from the peer group norm toward obesity status are susceptible to maladjustment and lower social status (Lanza et al., 2013). Also, overweight adolescents tend to emphasize weight within the peer context to
a higher extent than adolescents in other weight status groups (Jones & Crawford, 2006). The negative effects of bullying victimization and body size dissatisfaction may be more pronounced for adolescents who do not have a healthy weight status. As a result, future research is needed that examines peer relationships, body size dissatisfaction, and weight-related bullying victimization separately for underweight and overweight adolescents.

**Study Implications**

In spite of its limitations, this study contributes to the literature by examining the influences of weight, discrepancies from the peer body size norm, and body size dissatisfaction on bullying victimization in adolescents. Reported difference from friends’ body size did not emerge as a significant predictor of bullying victimization, indicating that other peer-related factors may play a role in this relationship, or that internalizing factors such as body size dissatisfaction serve as more powerful predictors. Many of this study’s findings offered additional support for those in previous studies that investigated similar constructs. Specifically, results provided additional evidence to support the indirect relationship between weight (as measured by BMI) and bullying victimization through body size dissatisfaction, and indicated that weight-based bullying victimization may be a unique experience from bullying victimization for other reasons. Furthermore, results supported the accuracy of adolescents’ estimations of their current body size, as BMI z-scores were significantly related to participants’ ratings on the KEDS. From a methodological perspective, BMI z-scores were obtained from precise height and weight measurements and analyses accounted for the zero-inflated nature of bullying victimization. Future research is warranted to examine difference from normative peer body size as a risk factor by utilizing objective assessments, incorporating diverse
populations, and exploring correlates of differing from peer body size that may cause it to be a risk factor.

Additionally, results from this study lend important contributions to the developmental literature on adolescents, who are at-risk for experiencing an array of negative weight-related and social outcomes. Weight stigma is pervasive and only increases with age (Puhl & Latner, 2007). Adolescents are faced with challenges that influence body size dissatisfaction and bullying victimization as they transition to middle school, when rates of bullying typically increase (Pellegrini et al., 2010). Moreover, the awkward experience of puberty often results in feelings of insecurity and physical differences that, when combined with social disarray, create an ideal context for bullying victimization. The “off-time hypothesis” posits that adolescents who experience puberty later or earlier than the majority of their peers are likely to encounter social and emotional challenges (Ricciardelli & McCabe, 2011). In the midst of these risk factors, adolescents begin to pull away from their parents and rely upon peers as their predominant sources of influence (Furman & Buhrmester, 1992). Taken together, these findings highlight the need for research focusing on adolescents as they navigate this turbulent stage of development.

Pediatric patients were recruited for multiple reasons. Primarily, obtaining a sample from pediatrician’s offices facilitates access to medical records. Documentation of medical information by health professionals is more objective and accurate than self-reports of height and weight. Although multiple studies have examined victimization, peer variables, and weight status (e.g., Lanza et al., 2013; Lawler & Nixon, 2011; van den Berg et al., 2002), the majority of the extant research includes self-reports of height and
weight or reports from school nurses. In light of these limitations and the paucity of studies that have utilized a pediatric sample, this study adds to the literature by utilizing data from pediatrician’s offices.

The current study also offers other methodological advantages that advance the current state of the literature. Path analysis allowed for the simultaneous investigation of multiple constructs (Bollen, 1989; Ullman, 2007) and bootstrapping accounted for violated assumptions and non-normal data distributions (Preacher & Hayes, 2004; Preacher & Hayes, 2008; Williams & MacKinnon, 2008). The use of the zero-inflated Poisson approach likely produced more accurate results than studies that relied upon more conventional methods (e.g., ordinary least squares regression).

From an applied perspective, conclusions drawn from the current study can inform future interventions for weight-based bullying victimization. Although a plethora of research has been devoted to understanding bullying victimization and interventions to curb victimization in general, weight-based bullying is rarely addressed in school anti-bullying efforts and only three states include weight in school anti-bullying laws (Puhl, 2014). The lack of attention devoted to reducing weight-based bullying may be explained by the presence of weight stigma (Puhl & Latner, 2007), which can condone bullying perpetration that targets overweight and obese adolescents. Results from the current study suggest that interventions should focus explicitly on weight-based bullying victimization and address strategies to reduce levels of body size dissatisfaction, which may place adolescents at increased risk for bullying victimization and maladaptive coping responses (e.g., disordered eating). The applied research in this domain should be carried out within
a developmental framework since the predictors of peer victimization during adolescence likely differ from those in childhood (Kochenderfer-Ladd & Troop-Gordon, 2010).

Results of this study speak to the importance of involving medical professionals in bullying prevention and intervention efforts. Consistent with the ecological approach to addressing bullying/victimization, school violence prevention initiatives have transcended the school setting to target medical settings. Pediatricians, school nurses, and other pediatric medical professionals play a vital role in promoting adolescents’ physical as well as mental health and are in a position to advocate for evidence-based interventions to reduce school violence (American Academy of Pediatrics, 2009; Cooper, Clements, & Holt, 2012). Adolescents who are involved in bullying have been found to visit the school nurse’s office with increased frequency (Vernberg, Nelson, Fonagy, & Twemlow, 2011) and may consider this location to be a “safe haven” from peer victimization. Therefore, medical professionals can support anti-bullying efforts by directly assessing their patients’ social functioning, monitoring patterns of involvement in bullying incidents, screening for weight-related physical and psychological predictors of victimization, and providing appropriate mental health referrals when indicated.

Conclusion

Bullying victimization and weight stigma are pervasive problems that are reinforced by peers, adults, and society at large (Gray et al., 2009; Rodkin & Hodges, 2003). The role that peers play in shaping body size dissatisfaction is not well understood (Hildebrandt et al., 2008) and studies often fail to consider peer variables that may increase adolescents’ risk of experiencing weight-based victimization. The current study addresses several understudied areas in this subset of literature by focusing on bullying
victimization (as opposed to similar constructs) and by investigating discrepancies between self and friends’ body size as a risk factor for body size dissatisfaction and bullying victimization. Results provide additional evidence for the indirect path between BMI z-score, body size dissatisfaction, and bullying victimization and support the validity of adolescents’ reports of their body size using figural rating scales. Weight-based bullying victimization and body size distress were related to other risk factors, such as elevated BMI z-scores and body size dissatisfaction. The current study addressed limitations of prior investigations by utilizing state-of-the-art methodologies, including bootstrapping and zero-inflated Poisson methods. Overall, this study sets the stage for future research that investigates peer influences of bullying victimization for adolescents, who are at-risk for experiencing the “perfect storm” of body size dissatisfaction and bullying victimization as they navigate the stressors of puberty and jockey for social status in secondary school.
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Table 1

Demographic Characteristics for the Total Sample and by Pediatrician’s Office

<table>
<thead>
<tr>
<th>Variable</th>
<th>Office 1</th>
<th>Office 2</th>
<th>Total Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 281, 75.1% )</td>
<td>( n = 93, 24.9% )</td>
<td>( N = 374 )</td>
</tr>
<tr>
<td></td>
<td>( M (SD) ) or ( n ) (%)</td>
<td>( M (SD) ) or ( n ) (%)</td>
<td>( M (SD) ) or ( n ) (%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>132 (47%)</td>
<td>51 (54.8%)</td>
<td>183 (48.9%)</td>
</tr>
<tr>
<td>Female</td>
<td>149 (53%)</td>
<td>42 (45.2%)</td>
<td>191 (51.1%)</td>
</tr>
<tr>
<td>Age</td>
<td>13.48 (1.91)</td>
<td>13.60 (2.05)</td>
<td>13.51 (1.95)</td>
</tr>
<tr>
<td>Method</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qualtrics</td>
<td>155 (55.2%)</td>
<td>38 (40.9%)</td>
<td>193 (51.6%)</td>
</tr>
<tr>
<td>Paper/pencil: Mail</td>
<td>93 (33.1%)</td>
<td>55 (59.1%)</td>
<td>148 (39.6%)</td>
</tr>
<tr>
<td>Paper/pencil: In office</td>
<td>33 (11.7%)</td>
<td>0 (0.0%)</td>
<td>33 (8.8%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>254 (90.4%)</td>
<td>75 (80.6%)</td>
<td>329 (88.0%)</td>
</tr>
<tr>
<td>African American</td>
<td>2 (0.7%)</td>
<td>3 (3.2%)</td>
<td>5 (1.3%)</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>5 (1.8%)</td>
<td>2 (2.2%)</td>
<td>7 (1.9%)</td>
</tr>
<tr>
<td>Native American</td>
<td>3 (1.1%)</td>
<td>3 (3.2%)</td>
<td>6 (1.6%)</td>
</tr>
<tr>
<td>Middle Eastern</td>
<td>1 (0.4%)</td>
<td>1 (1.1%)</td>
<td>2 (0.5%)</td>
</tr>
<tr>
<td>Asian</td>
<td>6 (2.1%)</td>
<td>0 (0.0%)</td>
<td>6 (1.6%)</td>
</tr>
<tr>
<td>Biracial</td>
<td>9 (3.2%)</td>
<td>8 (8.6%)</td>
<td>17 (4.5%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
<tr>
<td>Missing</td>
<td>1 (0.4%)</td>
<td>1 (1.1%)</td>
<td>2 (0.5%)</td>
</tr>
<tr>
<td>Bully/Victim Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bully</td>
<td>9 (3.2%)</td>
<td>2 (2.2%)</td>
<td>11 (2.9%)</td>
</tr>
<tr>
<td>Victim</td>
<td>63 (22.4%)</td>
<td>26 (28.0%)</td>
<td>89 (23.8%)</td>
</tr>
<tr>
<td>Bully-Victim</td>
<td>17 (6.0%)</td>
<td>6 (6.5%)</td>
<td>23 (6.1%)</td>
</tr>
<tr>
<td>Uninvolved</td>
<td>189 (67.3%)</td>
<td>58 (62.4%)</td>
<td>247 (66.0%)</td>
</tr>
<tr>
<td>Missing</td>
<td>3 (1.1%)</td>
<td>1 (1.1%)</td>
<td>4 (1.1%)</td>
</tr>
<tr>
<td>Weight Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>8 (2.8%)</td>
<td>3 (3.2%)</td>
<td>11 (2.9%)</td>
</tr>
<tr>
<td>Healthy</td>
<td>186 (66.2%)</td>
<td>66 (70.9%)</td>
<td>252 (67.4%)</td>
</tr>
<tr>
<td>Overweight</td>
<td>45 (16.0%)</td>
<td>10 (10.8%)</td>
<td>55 (14.7%)</td>
</tr>
<tr>
<td>Obese</td>
<td>30 (10.7%)</td>
<td>14 (15.1%)</td>
<td>44 (11.8%)</td>
</tr>
<tr>
<td>Missing</td>
<td>12 (4.3%)</td>
<td>0 (0.0%)</td>
<td>12 (3.2%)</td>
</tr>
</tbody>
</table>
Table 2

*Outcome Variables according to Weight Status Category*

<table>
<thead>
<tr>
<th>Weight Status</th>
<th>Body Size Dissatisfaction</th>
<th>Difference from Friends’ Body Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>Underweight</td>
<td>-2.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Healthy Weight</td>
<td>-3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Overweight</td>
<td>-1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Obese</td>
<td>0.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

*Note.* Negative values for body size dissatisfaction indicate a desire to be larger, while positive values indicate a desire to be smaller.
Table 3

*Descriptive Statistics for Main Study Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI z-score</td>
<td>362</td>
<td>-3.22</td>
<td>2.58</td>
<td>0.32</td>
<td>1.06</td>
</tr>
<tr>
<td>Difference from Friends’ Body Size</td>
<td>359</td>
<td>0.0</td>
<td>6.0</td>
<td>0.86</td>
<td>0.90</td>
</tr>
<tr>
<td>Body Size Dissatisfaction</td>
<td>350</td>
<td>-3.0</td>
<td>3.0</td>
<td>0.26</td>
<td>0.96</td>
</tr>
<tr>
<td>Bullying Victimization</td>
<td>371</td>
<td>0.0</td>
<td>41.0</td>
<td>4.69</td>
<td>8.11</td>
</tr>
</tbody>
</table>

*Note.* A negative value for body size dissatisfaction indicates a desire to be larger in size, while a positive value indicates a desire to be smaller.
Table 4

Correlations between the Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BMI z-score</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Difference from Friends’ Body Size</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Body Size Dissatisfaction</td>
<td>.18**</td>
<td>.51**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Bullying Victimization</td>
<td>.03</td>
<td>.23**</td>
<td>.28**</td>
<td></td>
</tr>
</tbody>
</table>

*Note. *p < .05, **p < .01, ***p < .001*
Table 5

Proportion of Data Present for Bullying Victimization

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Body Size Dissatisfaction</td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Difference from Friends’ Body Size</td>
<td>.93</td>
<td>.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Gender</td>
<td>.93</td>
<td>.96</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>4. BMI z-score</td>
<td>.93</td>
<td>.96</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Table 6

Direct and Indirect Effects in the Zero-Inflated Poisson Model

<table>
<thead>
<tr>
<th>Path</th>
<th>Unstandardized coefficient</th>
<th>SE</th>
<th>p</th>
<th>exp(b)</th>
<th>95% Bootstrapped CI</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (\rightarrow) BSD</td>
<td>0.01</td>
<td>0.09</td>
<td>.958</td>
<td>1.01</td>
<td>-0.17</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Gender (\rightarrow) Friend</td>
<td>-0.03</td>
<td>0.10</td>
<td>.758</td>
<td>0.97</td>
<td>-0.22</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>Gender (\rightarrow) Victimization</td>
<td>-0.09</td>
<td>0.23</td>
<td>.685</td>
<td>0.91</td>
<td>-0.53</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>BMI (\rightarrow) BSD</td>
<td>0.14</td>
<td>0.05</td>
<td>.008</td>
<td>1.15</td>
<td>0.04</td>
<td>0.24**</td>
<td></td>
</tr>
<tr>
<td>BMI (\rightarrow) Friend</td>
<td>0.04</td>
<td>0.06</td>
<td>.471</td>
<td>1.04</td>
<td>-0.09</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>BMI (\rightarrow) Victimization</td>
<td>-0.03</td>
<td>0.11</td>
<td>.754</td>
<td>0.97</td>
<td>-0.25</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Friend (\rightarrow) Victimization</td>
<td>-0.25</td>
<td>0.16</td>
<td>.111</td>
<td>0.78</td>
<td>-0.56</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>BSD (\rightarrow) Victimization</td>
<td>-0.39</td>
<td>0.18</td>
<td>.028</td>
<td>0.68</td>
<td>-0.76</td>
<td>-0.06*</td>
<td></td>
</tr>
<tr>
<td>BMI (\rightarrow) BSD (\rightarrow) Victimization</td>
<td>-0.05</td>
<td>0.03</td>
<td>.099</td>
<td>0.95</td>
<td>-0.13</td>
<td>-0.004*</td>
<td></td>
</tr>
<tr>
<td>BMI (\rightarrow) Friend (\rightarrow) Victimization</td>
<td>-0.01</td>
<td>0.02</td>
<td>.559</td>
<td>0.99</td>
<td>-0.05</td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

Note. BMI = body mass index z-score; BSD = body size dissatisfaction; Friend = perceived difference from friend body size; Victimization = bullying victimization; CI = confidence interval. Exponentiated coefficients are provided in the column labeled exp(b). Confidence intervals that exclude 0 are considered to be statistically significant. *p < .05, **p < .01, ***p < .001
Table 7

Direct and Indirect Effects in the Model with Bullying Victimization as a Mediator

<table>
<thead>
<tr>
<th>Path</th>
<th>Unstandardized coefficient</th>
<th>SE</th>
<th>p</th>
<th>exp(b)</th>
<th>95% Bootstrapped CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Bound</td>
</tr>
<tr>
<td>Gender → BSD</td>
<td>0.04</td>
<td>0.07</td>
<td>.619</td>
<td>1.04</td>
<td>-0.12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.18</td>
</tr>
<tr>
<td>Gender → Friend</td>
<td>-0.03</td>
<td>0.10</td>
<td>.753</td>
<td>0.97</td>
<td>-0.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>Gender → Victimization</td>
<td>0.11</td>
<td>0.23</td>
<td>.637</td>
<td>1.12</td>
<td>-0.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.54</td>
</tr>
<tr>
<td>BMI → BSD</td>
<td>0.12</td>
<td>0.04</td>
<td>.006</td>
<td>1.13</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.20**</td>
</tr>
<tr>
<td>BMI → Friend</td>
<td>0.05</td>
<td>0.06</td>
<td>.440</td>
<td>1.05</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.16</td>
</tr>
<tr>
<td>BMI → Victimization</td>
<td>0.16</td>
<td>0.12</td>
<td>.167</td>
<td>1.17</td>
<td>-0.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.40</td>
</tr>
<tr>
<td>Friend → BSD</td>
<td>0.43</td>
<td>0.05</td>
<td>.001</td>
<td>1.54</td>
<td>0.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.52**</td>
</tr>
<tr>
<td>Victimization → BSD</td>
<td>0.17</td>
<td>0.09</td>
<td>.069</td>
<td>1.18</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>0.35</td>
</tr>
<tr>
<td>BMI → Victimization → BSD</td>
<td>0.03</td>
<td>0.03</td>
<td>.283</td>
<td>1.03</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.09</td>
</tr>
<tr>
<td>BMI → Friend → BSD</td>
<td>0.02</td>
<td>0.03</td>
<td>.445</td>
<td>1.02</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.07</td>
</tr>
</tbody>
</table>

Note. BMI = body mass index z-score; BSD = body size dissatisfaction; Friend = perceived difference from friend body size; Victimization = bullying victimization; CI = confidence interval. Exponentiated coefficients are provided in the column labeled exp(b). Confidence intervals that exclude 0 are considered to be statistically significant. *p < .05, **p < .01, ***p < .001
Table 8

*Direct and Indirect Effects in the Conditional Process Model*

<table>
<thead>
<tr>
<th>Path</th>
<th>Unstandardized Coefficient</th>
<th>SE</th>
<th>p</th>
<th>exp(b)</th>
<th>95% Bootstrapped CI</th>
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<td></td>
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<td>Lower Bound</td>
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<td><strong>BMI → BSD</strong></td>
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<td>0.05</td>
<td>.092</td>
<td>1.09</td>
<td>-0.01</td>
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<td><strong>BMI → Friend</strong></td>
<td>0.05</td>
<td>0.06</td>
<td>.452</td>
<td>1.05</td>
<td>-0.08</td>
</tr>
<tr>
<td><strong>BMI → Victimization</strong></td>
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<td>0.35</td>
<td>.903</td>
<td>1.04</td>
<td>-0.69</td>
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<tr>
<td><strong>Gender → BSD</strong></td>
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<td>0.03</td>
<td>&lt; .001</td>
<td>0.71</td>
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<td>0.10</td>
<td>.777</td>
<td>0.97</td>
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<td><strong>Gender → Victimization</strong></td>
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<td>0.32</td>
<td>.663</td>
<td>0.87</td>
<td>-0.83</td>
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<tr>
<td><strong>Friend → Victimization</strong></td>
<td>-0.24</td>
<td>0.16</td>
<td>.132</td>
<td>0.79</td>
<td>-0.57</td>
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<tr>
<td><strong>BSD → Victimization</strong></td>
<td>-0.52</td>
<td>0.56</td>
<td>.349</td>
<td>0.59</td>
<td>-1.71</td>
</tr>
<tr>
<td><strong>Gender x BMI → BSD</strong></td>
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<td>0.03</td>
<td>.024</td>
<td>0.93</td>
<td>-0.13</td>
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<tr>
<td><strong>Gender x BMI → Victimization</strong></td>
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<td>0.94</td>
<td>-0.54</td>
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<tr>
<td><strong>BSD → Victimization</strong></td>
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<td>0.34</td>
<td>.819</td>
<td>1.08</td>
<td>-0.57</td>
</tr>
</tbody>
</table>

*Note.* BMI = body mass index z-score; BSD = body size dissatisfaction; Friend = Perceived difference from friend body size; Victimization = bullying victimization; CI = confidence interval. Exponentiated coefficients are provided in the column labeled $exp(b)$. Confidence intervals that exclude 0 are considered to be statistically significant. *$p < .05$, **$p < .01$, ***$p < .001$
Figure 1. Zero-inflated Poisson model of the relationships between BMI z-score, body size dissatisfaction, perceived difference from friends’ body size (Difference from Friend Body Size), and bullying victimization. Coefficients are exponentiated. *p < .05, **p < .01, ***p < .001
Figure 2. Alternative model to explain the relationships between BMI z-score, body size dissatisfaction, perceived difference from friends’ body size (Difference from Friend Body Size), and bullying victimization. Coefficients are exponentiated. *p < .05, **p < .01, ***p < .001
Figure 3. Distribution of participants according to weight and bully/victim status
Figure 4. Conceptual conditional process model of the relationships between BMI z-score, body size dissatisfaction, perceived difference from friends’ body size (Difference from Friend Body Size), and bullying victimization.
Figure 5. Conditional process model of the relationships between BMI z-score, body size dissatisfaction, perceived difference from friends’ body size (Difference from Friend Body Size), and bullying victimization. Coefficients are exponentiated. *p < .05, **p < .01, ***p < .001
August 20, 2011

Susan Swearer Napolitano
Department of Educational Psychology
40 TEAC, UNL, 68588-0345

Paige Lembeck
Department of Educational Psychology
3522 McLaughlin Dr Lincoln, NE 68516-7744

IRB Number: 20110811846FB
Project ID: 11846
Project Title: Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

Dear Susan:

This letter is to officially notify you of the approval of your project by the Institutional Review Board (IRB) for the Protection of Human Subjects. It is the Board’s opinion that you have provided adequate safeguards for the rights and welfare of the participants in this study based on the information provided. Your proposal is in compliance with this institution’s Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Date of Full Board review: July 21, 2011

You are authorized to implement this study as of the Date of Final Approval: 08/20/2011. This approval is Valid Until: 07/20/2012.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
* Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
* Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
* Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research; 
* Any breach in confidentiality or compromise in data privacy related to the subject or others; or
* Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

For projects which continue beyond one year from the starting date, the IRB will request continuing review and update of the research project. Your study will be due for continuing review as indicated above. The investigator must also advise the Board when this study is finished or discontinued by completing the enclosed Protocol Final Report form and returning it to the Institutional Review Board.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

William Thomas, Ph.D.
Chair for the IRB
APPENDIX B

AUTHORIZATIONS FOR THE RELEASE AND USE OF PRIVATE HEALTH INFORMATION (PHI)

Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

By signing this document, you give permission for the release and use of your identifiable Private Health Information (PHI) for the research study described here:

This Authorization is for a study on the relationship between health issues (particularly, height and weight) and bullying. You and your child will be asked to complete several questionnaires, which will take you approximately twenty minutes. Specifically, you will complete one survey concerning your attitudes of bullying as well as your son or daughter’s experiences at school, and the other asking about your perceptions of your child’s current body size. Your child will be asked to complete questionnaires concerning his or her behaviors while at school, at home, in his or her neighborhood as well as questions about his or her emotional status. Also, your child will complete a brief measure asking about his or her body size perceptions, as well as his/her friends’. You and your child will complete the measures one time online or with paper surveys after your appointment. Medical record review will take place on a separate date (one time) by the investigators after the measures are completed.

Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow them to be matched to your child’s medical records, then every participant will be assigned a code number so he or she will not be able to be identified.

The PHI that will be released for this research includes the following:
- Date of birth
- Phone number
- Current medication(s) and dosage(s)
- Height and weight documentation (and calculated BMI)
- Prior and current medical and psychological diagnoses

<table>
<thead>
<tr>
<th>Person(s)/Organization(s) providing PHI</th>
<th>Person(s)/Organization(s) receiving PHI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lincoln Pediatric Group</td>
<td>Target Bullying Research Team</td>
</tr>
<tr>
<td></td>
<td>(University of Nebraska-Lincoln)</td>
</tr>
</tbody>
</table>

The Target Bullying Research team at the University of Nebraska-Lincoln agrees to protect your health information and will only share this information as described within this research Authorization form. The only reason that your information will be shared
with anyone other than the researchers without your permission is if required to do so by law, as directed in the HIPAA Privacy Rule.

The participant must read and initial the following statements:

________ I understand that my decision to release my PHI is voluntary and Lincoln Pediatric Group may not withhold treatment, payment, enrollment, and/or eligibility for benefits whether or not I sign this Authorization; however, I will not be included in the research study if PHI is not released.

________ I understand that I may change my mind and take back this Authorization at any time. PHI already released by Lincoln Pediatric Group to the University of Nebraska-Lincoln; however, cannot be taken back at that time. Any information already released under this Authorization may be used by the researcher.

To revoke this Authorization, please write to: Dr. Susan Swearer
40 Teachers College Hall
University of Nebraska - Lincoln
Lincoln, NE 68588-0345
sswearer@unlserve.unl.edu

This PHI Authorization will expire on or within the following timeframe: This authorization will expire one year from the date it was signed.

__________________________ ______________________________
Parent/Guardian Signature Date

___________________________
Printed Name of Participant
Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

By signing this document, you give permission for the release and use of your identifiable Private Health Information (PHI) for the research study described here:

This Authorization is for a study on the relationship between health issues (particularly, height and weight) and bullying. You and your child will be asked to complete several questionnaires, which will take you approximately twenty minutes. Specifically, you will complete one survey concerning your attitudes of bullying as well as your son or daughter’s experiences at school, and the other asking about your perceptions of your child’s current body size. Your child will be asked to complete questionnaires concerning his or her behaviors while at school, at home, in his or her neighborhood as well as questions about his or her emotional status. Also, your child will complete a brief measure asking about his or her body size perceptions, as well as his/her friends’. You and your child will complete the measures one time online or with paper surveys after your appointment. Medical record review will take place on a separate date (one time) by the investigators after the measures are completed.

Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow them to be matched to your child’s medical records, then every participant will be assigned a code number so he or she will not be able to be identified.

The PHI that will be released for this research includes the following:
- Date of birth
- Phone number
- Current medication(s) and dosage(s)
- Height and weight documentation (and calculated BMI)
- Prior and current medical and psychological diagnoses

Person(s)/Organization(s) providing PHI: Complete Children’s Health

Person(s)/Organization(s) receiving PHI: Target Bullying Research Team (University of Nebraska-Lincoln)

The Target Bullying Research team at the University of Nebraska-Lincoln agrees to protect your health information and will only share this information as described within this research Authorization form. The only reason that your information will be shared with anyone other than the researchers without your permission is if required to do so by law, as directed in the HIPAA Privacy Rule.

The participant must read and initial the following statements:
I understand that my decision to release my PHI is voluntary and Complete Children’s Health may not withhold treatment, payment, enrollment, and/or eligibility for benefits whether or not I sign this Authorization; however, I will not be included in this research study if PHI is not released.

I understand that I may change my mind and take back this Authorization at any time. PHI already released by Complete Children’s Health to the University of Nebraska-Lincoln; however, cannot be taken back at that time. Any information already released under this Authorization may be used by the researcher.

To revoke this Authorization, please write to: Dr. Susan Swearer
40 Teachers College Hall
University of Nebraska - Lincoln
Lincoln, NE 68588-0345
sswearer@unlserve.unl.edu

This PHI Authorization will expire on or within the following timeframe: This authorization will expire one year from the date it was signed.

Parent/Guardian Signature ________________ Date ________________

Printed Name of Participant ____________
APPENDIX C

PARENT/GUARDIAN CONSENT FORMS

Parent/Guardian Consent Form

Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

Dear Parent or Guardian:

You and your child are invited to participate in this research study. The following information is provided in order to help you make an informed decision whether or not you want to participate. You are being asked to complete this consent form because your child is less than 19 years of age. If you have any questions please do not hesitate to ask. The purpose of this study is to investigate the relationship between bullying/victimization and health correlates among school-aged students in the United States.

You and your son or daughter are eligible to participate in this study because your child has an appointment scheduled at Lincoln Pediatric Group (LPG). The research project will take place at your home, using your computer, accessing this link http://bit.ly/ya02Wx or in paper form at Lincoln Pediatric Group. If you wish, you and your child may complete the paper surveys at home and mail them back to the investigators.

This study will take approximately twenty minutes of you and your child’s time, and will be completed one time during 2013. You will be asked to complete two questionnaires, one concerning your attitudes of bullying as well as your son or daughter’s experiences at school, and the other asking about your perceptions of your child’s current body size. Your child will be asked to complete questionnaires concerning his or her behaviors while at school, at home, in his or her neighborhood as well as questions about his or her emotional status. Specifically, he or she will be asked questions about whether or not they or any student they know have been bullied. Also, your child will complete a brief measure asking about his or her body size perceptions, as well as his/her friends’. Finally, the university researchers will access your child’s medical records to look at date of birth, medication usage, height and weight documentation, and prior and current medical diagnoses. If you decide to complete the survey and data are missing, one of the investigators may contact you via phone to follow up and to see if the survey can be completed.

You and your child may experience mild discomfort when completing the questionnaires (for example, questions asking about any bullying your child may have personally experienced or questions asking about perceptions of his or her current body size). However, as a result of participating in this research, it is possible that you and your child’s awareness of bullying will increase.

Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow us to match them to your child’s medical records.

Parent/Guardian’s Initials__________
Your name, your child’s name and any identifying information will then be removed from your responses. Every participant will be assigned a code number so he or she will not be able to be identified by the researchers. The information obtained in this study may be published in scientific journals or presented at scientific meetings, but your child’s identity will be kept strictly confidential. Study records will be kept for five years on a password-protected website (i.e., Qualtrics), which will only be accessed by the Target Bullying research team.

If you choose to participate, you and your child (together) will be entered in a drawing to win a free Apple iPad (16GB), 2nd generation. The odds of winning are dependent on how many individuals ultimately participate in the study. Only one drawing (i.e., one chance to win) will take place. If you win, you will be notified on December 1, 2013 and the iPad2 will be awarded to both you and your child. If you decide to complete the paper surveys either at Lincoln Pediatric Group or at home (to be mailed back later), your child will also be able to choose a small item (e.g., bracelet, free song download, gum).

You and your child’s participation are completely voluntary. You are free to decide not to enroll yourself or your child in this study or to withdraw at any time without adversely affecting your child’s or your relationship with the investigators, the University of Nebraska-Lincoln, or Lincoln Pediatric Group. Your decision will not result in any loss of benefits to which your child is otherwise entitled.

You and your child’s rights as a research participant have been explained to you. If you decide to participate in this study, please sign this form and the remaining online forms. If you have any questions about this study or if you are interested in receiving a list of referrals for psychological services related to bullying, please contact Dr. Susan Swearer through the Child and Adolescent Therapy Clinic at (402) 472-1741. If you have any questions concerning your or your child’s rights as a research participant that have not been answered by the investigator, or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board (UNL IRB), telephone (402) 472-6965.

DOCUMENTATION OF INFORMED CONSENT

YOU ARE VOLUNTARILY MAKING A DECISION WHETHER OR NOT TO ALLOW YOU AND YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE DECIDED TO ALLOW YOU AND YOUR CHILD TO PARTICIPATE HAVING READ AND UNDERSTOOD THE INFORMATION PRESENTED.

____________________________________  ______________________
SIGNATURE OF PARENT/GUARDIAN            DATE

PRINT YOUR CHILD’S NAME

IDENTIFICATION OF PRIMARY INVESTIGATOR(S)  Office: 402-472-1741
Susan M. Swearer, Ph.D.  908-246-7881
Paige T. Lembeck, M.A.
Dear Parent or Guardian:

You and your child are invited to participate in this research study. The following information is provided in order to help you make an informed decision whether or not you want to participate. You are being asked to complete this consent form because your child is less than 19 years of age. If you have any questions please do not hesitate to ask. The purpose of this study is to investigate the relationship between bullying/victimization and health correlates among school-aged students in the United States.

You and your son or daughter are eligible to participate in this study because your child has an appointment scheduled at Lincoln Pediatric Group (LPG). The research project will take place at your home, using your computer, accessing this link http://bit.ly/ya02Wx or in paper form at Lincoln Pediatric Group. If you wish, you and your child may complete the paper surveys at home and mail them back to the investigators.

This study will take approximately twenty minutes of you and your child’s time, and will be completed one time during 2014. You will be asked to complete two questionnaires, one concerning your attitudes of bullying as well as your son or daughter’s experiences at school, and the other asking about your perceptions of your child’s current body size. Your child will be asked to complete questionnaires concerning his or her behaviors while at school, at home, in his or her neighborhood as well as questions about his or her emotional status. Specifically, he or she will be asked questions about whether or not they or any student they know have been bullied. Also, your child will complete a brief measure asking about his or her body size perceptions, as well as his/her friends’. Finally, the university researchers will access your child’s medical records to look at date of birth, medication usage, height and weight documentation, and prior and current medical diagnoses. If you decide to complete the survey and data are missing, one of the investigators may contact you via phone to follow up and to see if the survey can be completed.

You and your child may experience mild discomfort when completing the questionnaires (for example, questions asking about any bullying your child may have personally experienced or questions asking about perceptions of his or her current body size). However, as a result of participating in this research, it is possible that you and your child’s awareness of bullying will increase.

Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow us to match them to your child’s medical records. Your name, your child’s name and any identifying information will then be removed from your responses.

Parent/Guardian’s Initials__________
Every participant will be assigned a code number so he or she will not be able to be identified by the researchers. The information obtained in this study may be published in scientific journals or presented at scientific meetings, but your child’s identity will be kept strictly confidential. Study records will be kept for five years on a password-protected website (Qualtrics) or in a locked file cabinet in the investigators’ office if paper surveys are completed. Only the Target Bullying research team will have access to the data.

If you choose to participate, you and your child (together) will be entered in a drawing to win a $150.00 gift card to Walmart. The odds of winning are dependent on how many individuals ultimately participate in the study. Only one drawing (i.e., one chance to win) will take place. If you win, you will be notified on June 1, 2014 and the gift card will be awarded to both you and your child. If you decide to complete the paper surveys either at Lincoln Pediatric Group or at home (to be mailed back later), your child will also be able to choose a small item (e.g., bracelet, free song download, gum).

You and your child’s participation are completely voluntary. You are free to decide not to enroll yourself or your child in this study or to withdraw at any time without adversely affecting your child’s or your relationship with the investigators, the University of Nebraska-Lincoln, or Lincoln Pediatric Group. Your decision will not result in any loss of benefits to which your child is otherwise entitled.

You and your child’s rights as a research participant have been explained to you. If you decide to participate in this study, please sign this form and the remaining online forms. If you have any questions about this study or if you are interested in receiving a list of referrals for psychological services related to bullying, please contact Dr. Susan Swearer through the Child and Adolescent Therapy Clinic at (402) 472-1741. If you have any questions concerning your or your child’s rights as a research participant that have not been answered by the investigator, or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board (UNL IRB), telephone (402) 472-6965.

DOCUMENTATION OF INFORMED CONSENT

YOU ARE VOLUNTARILY MAKING A DECISION WHETHER OR NOT TO ALLOW YOU AND YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE DECIDED TO ALLOW YOU AND YOUR CHILD TO PARTICIPATE HAVING READ AND UNDERSTOOD THE INFORMATION PRESENTED. YOU MAY MAKE A COPY OF THIS FORM FOR YOUR RECORDS.

____________________________________  ____________
SIGNATURE OF PARENT/GUARDIAN         DATE

PRINT YOUR CHILD’S NAME

IDENTIFICATION OF PRIMARY INVESTIGATORS  Office: 402-472-1741
   Susan M. Swearer, Ph.D.  908-246-7881
   Paige T. Lembeck, M.A.
Parent/Guardian Consent Form

Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

Dear Parent or Guardian:

You and your child are invited to participate in this research study. The following information is provided in order to help you make an informed decision whether or not you want to participate. You are being asked to complete this consent form because your child is less than 19 years of age. If you have any questions please do not hesitate to ask. The purpose of this study is to investigate the relationship between bullying/victimization and health correlates among school-aged students in the United States.

You and your son or daughter are eligible to participate in this study because your child has an appointment scheduled at Lincoln Pediatric Group (LPG). The research project will take place at your home, using your computer, accessing this link [http://bit.ly/ya02Wx](http://bit.ly/ya02Wx) or in paper form at Lincoln Pediatric Group. If you wish, you and your child may complete the paper surveys at home and mail them back to the investigators.

This study will take approximately twenty minutes of you and your child’s time, and will be completed one time during 2014. You will be asked to complete two questionnaires, one concerning your attitudes of bullying as well as your son or daughter’s experiences at school, and the other asking about your perceptions of your child’s current body size. Your child will be asked to complete questionnaires concerning his or her behaviors while at school, at home, in his or her neighborhood as well as questions about his or her emotional status. Specifically, he or she will be asked questions about whether or not they or any student they know have been bullied. Also, your child will complete a brief measure asking about his or her body size perceptions, as well as his/her friends’. Finally, the university researchers will access your child’s medical records to look at date of birth, medication usage, height and weight documentation, and prior and current medical diagnoses. If you decide to complete the survey and data are missing, one of the investigators may contact you via phone to follow up and to see if the survey can be completed.

You and your child may experience mild discomfort when completing the questionnaires (for example, questions asking about any bullying your child may have personally experienced or questions asking about perceptions of his or her current body size). However, as a result of participating in this research, it is possible that you and your child’s awareness of bullying will increase.

Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow us to match them to your child’s medical records. Your name, your child’s name, and any identifying information will then be removed from your responses.

Parent/Guardian’s Initials

[170]
Every participant will be assigned a code number so he or she will not be able to be identified by
the researchers. The information obtained in this study may be published in scientific journals or
presented at scientific meetings, but your child’s identity will be kept strictly confidential. Study
records will be kept for five years on a password-protected website (Qualtrics) or in a locked file
cabinet in the investigators’ office if paper surveys are completed. Only the Target Bullying
research team will have access to the data. If you choose to participate, you and your child
(together) will be entered in a drawing to win one pair of Beats Solo HD Headphones. The odds
of winning are dependent on how many individuals ultimately participate in the study. Only one
drawing (i.e., one chance to win) will take place. If you win, you will be notified on December 1,
2014 and the headphones will be awarded to both you and your child. If you decide to complete
the paper surveys either at Lincoln Pediatric Group or at home (to be mailed back later), your
child will also be able to choose a small item (e.g., bracelet, free song download, gum).

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____________________________________  __________________
DATE

PRINT YOUR CHILD’S NAME

IDENTIFICATION OF PRIMARY INVESTIGATORS

Susan M. Swearer, Ph.D.  Office: 402-472-1741
Paige T. Lembeck, M.A.  908-246-7881
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Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

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APPENDIX D

YOUTH ASSENT FORMS

Youth Assent Form

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Some of the questions may cause you to feel uncomfortable as they may touch on personal subjects. If you report that you have been physically harmed or that you intend to harm yourself or others, Dr. Susan Swearer will talk with you and your parents about this. Together we will come up with a plan to make sure that you are safe. Being in the study may help you think about some of your feelings and concerns you experience at school. We will provide you with a list of teachers and counselors who may be able to further help you. We hope the information from this research will help us better understand the struggles and challenges students may experience. Also, we hope to gain an understanding of how to help students feel safer in school.

Your responses will be kept private. Your name will be on the surveys for approximately two weeks to allow us to match them to your medical records. Your name and any identifying information will then be removed from your responses. Each questionnaire will have a code number that we will use to organize the data. So, there will be no way for us to know which responses belong to you or someone else after we have coded each questionnaire. We may publish a summary of everybody’s responses or present a summary at a scientific meeting, but your identity and your responses will be totally confidential.

Student’s Initials_________________
If you choose to participate, you and your parent (together) will be entered in a drawing to win one $150.00 gift card to Walmart. The odds of winning depend on how many people participate. There will be one drawing and one chance to win. If you win, you will be told on June 1, 2014 and the gift card will be given to both you and your parent. If you decide to complete the paper surveys either at Complete Children’s Health or at home (to be mailed back later), you will also be able to choose a small item (e.g., bracelet, free song download, gum).

We will also ask your parents or guardians for their permission for you to do this study. You may talk this over with them before you decide whether or not to participate. Your participation is completely voluntary. You are free to decide not to participate in this study or to withdraw at any time without negatively affecting your relationship with the investigators, the University of Nebraska, or Complete Children’s Health. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions at any time, you may call Dr. Susan Swearer at (402) 472-1741.

If you check “yes,” it means that you have decided to participate and have read everything that is on the form.

__________________________ Yes, I would like to participate in the study.

__________________________ No, I do not want to participate in the study.

_____________________________ SIGNATURE OF STUDENT _______________ DATE

_____________________________ PRINT YOUR NAME

INVESTIGATORS

Susan Swearer, Ph.D. Office: 402-472-1741

Paige Lembeck, M.A. 908-246-7881
Youth Assent Form

Target Bullying Prevention and Intervention Project: An Examination of Health Correlates

We are inviting you to participate in this study because you are a patient at Complete Children’s Health and we are interested in your health and your school experiences. The purpose of this study is to look at the relationship between bullying/victimization and health correlates (e.g., height and weight) among school-aged students in the United States.

This research will take you about 20 minutes to do. We will ask you to fill out several questionnaires online that ask questions about your emotions, about how you and other students in your school get along with each other, and about your thoughts about your body. We will ask you to complete the questionnaires one time during 2014 at your home on a computer or in paper form at Complete Children’s Health. If you wish, you and your parent may complete the paper surveys at home and mail them back to the investigators. We will also look at your medical records to find out information about your height and weight, medications, and prior and current diagnoses. If you decide to complete the survey and data are missing, one of the investigators may contact your parent or guardian via phone to follow up and to see if the survey can be completed.

Some of the questions may cause you to feel uncomfortable as they may touch on personal subjects. If you report that you have been physically harmed or that you intend to harm yourself or others, Dr. Susan Swearer will talk with you and your parents about this. Together we will come up with a plan to make sure that you are safe. Being in the study may help you think about some of your feelings and concerns you experience at school. We will provide you with a list of teachers and counselors who may be able to further help you. We hope the information from this research will help us better understand the struggles and challenges students may experience. Also, we hope to gain an understanding of how to help students feel safer in school.

Your responses will be kept private. Your name will be on the surveys for approximately two weeks to allow us to match them to your medical records. Your name and any identifying information will then be removed from your responses. Each questionnaire will have a code number that we will use to organize the data. So, there will be no way for us to know which responses belong to you or someone else after we have coded each questionnaire. We may publish a summary of everybody’s responses or present a summary at a scientific meeting, but your identity and your responses will be totally confidential.

Student’s Initials_________________
If you choose to participate, you and your parent (together) will be entered in a drawing to win one pair of Beats Solo HD Headphones. The odds of winning depend on how many people participate. There will be one drawing and one chance to win. If you win, you will be told on December 1, 2014 and the headphones will be given to both you and your parent. If you decide to complete the paper surveys either at Complete Children’s Health or at home (to be mailed back later), you will also be able to choose a small item (e.g., bracelet, free song download, gum).

We will also ask your parents or guardians for their permission for you to do this study. You may talk this over with them before you decide whether or not to participate. Your participation is completely voluntary. You are free to decide not to participate in this study or to withdraw at any time without negatively affecting your relationship with the investigators, the University of Nebraska, or Complete Children’s Health. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions at any time, you may call Dr. Susan Swearer at (402) 472-1741.

If you check “yes,” it means that you have decided to participate and have read everything that is on the form.

________________ Yes, I would like to participate in the study.

________________ No, I do not want to participate in the study.

________________ SIGNATURE OF STUDENT __________ DATE

________________ PRINT YOUR NAME

INVESTIGATORS

Susan Swearer, Ph.D. Office: 402-472-1741
Paige Lembeck, M.A. 908-246-7881
### APPENDIX E

#### DATA COLLECTION SHEET FOR MEDICAL RECORD REVIEW AND DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Label</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject</td>
<td>Subject Code</td>
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</tr>
<tr>
<td>datesurv</td>
<td>Date survey completed</td>
<td>xx/xx/xxxx</td>
</tr>
<tr>
<td>datemed</td>
<td>Date of med record collection</td>
<td>xx/xx/xxxx</td>
</tr>
<tr>
<td>gender</td>
<td>Gender of subject <em>Get from Bully Survey’s last page.</em></td>
<td>1 = male, 2 = female</td>
</tr>
<tr>
<td>age</td>
<td>Age of participant <em>Get from Bully Survey’s last page.</em> In years and months</td>
<td></td>
</tr>
<tr>
<td>DOB</td>
<td>Date of Birth</td>
<td>xx/xx/xxxx</td>
</tr>
<tr>
<td>BMIdate</td>
<td>Date of most recent height/weight check</td>
<td>xx/xx/xxxx</td>
</tr>
<tr>
<td>height</td>
<td>Height of patient (inches or cm)</td>
<td></td>
</tr>
<tr>
<td>weight</td>
<td>Weight of patient (pounds or kg)</td>
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</tr>
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<td>BMI</td>
<td>BMI value</td>
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<td>BMI percentile</td>
<td></td>
</tr>
<tr>
<td>medname</td>
<td>Medication name(s)</td>
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</tr>
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<td>dosage</td>
<td>Medication dosage(s) _____ mg (for each med)</td>
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<td>diagnosespast</td>
<td>Medical/Psychological diagnoses (past)</td>
<td></td>
</tr>
<tr>
<td>diagnosescur</td>
<td>Medical/Psychological diagnoses (current)</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

KIDS EATING DISORDERS SURVEY (KEDS) BODY IMAGE SILHOUETTES

Instructions:
Circle the drawing that most looks like you. Then underline the drawing you would most like to look like.

If you underlined a figure that is different than the figure you circled, rate how bothered you are by your body size:

0 = I am not at all bothered
1 = I am somewhat bothered
2 = I am somewhat bothered
3 = I am somewhat bothered
4 = I am somewhat bothered
5 = I am somewhat bothered
6 = I am somewhat bothered
7 = I am somewhat bothered
8 = I am somewhat bothered
9 = I am extremely bothered
10 = I am extremely bothered
APPENDIX G

KEDS BODY IMAGE SILHOUETTES: MODIFIED FRIEND VERSION

Instructions: Circle the drawing that looks most like your friends.
APPENDIX H

BULLY SURVEY – STUDENT VERSION

Date: _________________________

The Bully Survey – Student Version (BYS-S)©

Instructions: In this survey you will be asked to respond to questions and statements about bullying.

Bullying happens when someone hurts or scares another person on purpose and the person being bullied has a hard time defending himself or herself. Usually, bullying happens over and over.

- Punching, shoving and other acts that hurt people physically
- Spreading bad rumors about people
- Keeping certain people out of a group
- Teasing people in a mean way
- Getting certain people to “gang up” on others

*****************************************************************************************

There are two parts to this survey: (A) When you were bullied by others and (B) When you bullied others.

*****************************************************************************************

Copyright © 2001 by Susan M. Swearer, Ph.D. Revised: 4/21/11
PART A: In this part, you will be asked about times when you were bullied.

REMEMBER: Bullying happens when someone hurts or scares another person on purpose and the person being bullied has a hard time defending himself or herself. Usually, bullying happens over and over.

- Punching, shoving and other acts that hurt people physically
- Spreading bad rumors about people
- Keeping certain people out of a group
- Teasing people in a mean way
- Getting certain people to “gang up” on others

1a. Have you been bullied this school year?
☐ Yes ☐ No

1b. If yes, how often have you been bullied? (Check one)
☐ one or more times a day
☐ one or more times a week
☐ one or more times a month

If you have not been bullied this year, you may move on to Part B on page 6

2a. Where have you been bullied? (Check all that apply)
☐ homeroom ☐ cafeteria
☐ academic class ☐ before school
☐ bus ☐ after school
☐ gym ☐ dances
☐ hallway ☐ sporting events
☐ bathroom ☐ telephone
☐ online/texting during school ☐ online/texting outside of school

2b. If you checked online/texting, please explain. (Check all that apply)
☐ Facebook ☐ IMing
☐ Myspace ☐ Email
☐ Twitter ☐ Texting
☐ Online Gaming ☐ Other:

Circle the ONE place you have been bullied the most.
3. How did you get bullied? (Check how often these things happened)

<table>
<thead>
<tr>
<th></th>
<th>Never Happened</th>
<th>Rarely Happened</th>
<th>Sometimes Happened</th>
<th>Often Happened</th>
<th>Always Happened</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Called me names</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Made fun of me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Said they will do bad things to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Played jokes on me</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>e. Wouldn’t let me be a part of their group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Broke my things</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Attacked me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Nobody would talk to me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Wrote bad things about me</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Said mean things behind my back</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>k. Pushed or shoved me</td>
<td></td>
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</tr>
<tr>
<td>l. Other ways you were bullied:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Who bullied you? (Check all that apply)

- □ older boys
- □ older girls
- □ younger boys
- □ younger girls
- □ boys in the same grade
- □ girls in the same grade
- □ someone who is strong
- □ someone who is weak
- □ someone who I didn’t know
- □ someone I was interested in but never went out with
- □ someone who is powerful
- □ someone who is not powerful
- □ someone who has many friends
- □ someone who doesn’t have many friends
- □ someone who is popular
- □ someone who is not popular
- □ someone who is smart
- □ someone who is not smart
- □ someone who is an adult
- □ my girlfriend/boyfriend
- □ other ______________________
5. How much of a problem was the bullying for you?

<table>
<thead>
<tr>
<th></th>
<th>Never a Problem</th>
<th>Rarely a Problem</th>
<th>Sometimes a Problem</th>
<th>Often a Problem</th>
<th>Always a Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Made me feel sick</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. I couldn’t make friends</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Made me feel bad or sad</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Made it difficult to learn at school</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. I didn’t come to school</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f. I had problems with my family</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g. Other ways this was a problem:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6a. Why do you think you were bullied? (Check all that apply)

**Because:**
- □ they think my face looks funny
- □ they think I’m fat
- □ they think I’m skinny
- □ they think I look too old
- □ they think I look too young
- □ they think I am a wimp
- □ they think my friends are weird
- □ I’m sick a lot
- □ I’m disabled
- □ I get good grades
- □ I get bad grades
- □ where I live
- □ the clothes I wear
- □ the color of my skin
- □ the country I’m from
- □ I am different
- □ the church I go to
- □ my parents
- □ my brother
- □ my sister
- □ my family is poor
- □ my family has a lot of money
- □ someone in my family has a disability
- □ I am too tall
- □ I am too short
- □ I am in special education
- □ I get angry a lot
- □ I cry a lot
- □ I can’t get along with other people
- □ they say I’m gay
- □ the way I talk
- □ other (describe): _________________

6b. Circle the MAIN reason why you were bullied.
7a. Were you able to protect yourself from the bullying?

☐ Yes  ☐ No

7b. If yes, what did you do?

8. Did your teachers and school staff know about the bullying that happened to you?

☐ Yes  ☐ No  ☐ I don’t know

9. How do you think the teachers and school staff take care of the bullying?

☐ Very well  ☐ Okay  ☐ Bad  ☐ I don’t know

10. Tell us what the teachers and school staff did to take care of the bullying.

11. Did your parents know about the bullying that happened to you?

☐ Yes  ☐ No  ☐ I don’t know

12a. Does anyone bully you at home? (Check everyone who has bullied you)

☐ no one  ☐ sister  ☐ friend
☐ father  ☐ stepfather  ☐ other relative
☐ mother  ☐ stepmother  ☐ neighbor
☐ brother  ☐ grandparent  ☐ other: ______________

12b. Is the bullying at home different from the bullying at school? How?

13. Is bullying a problem in your school?

☐ Yes  ☐ No

14. Do you think that schools should worry about bullying?

☐ Yes  ☐ No
PART B: In this part, you will be asked about when you bullied another student.

REMEMBER: Bullying happens when someone hurts or scares another person on purpose and the person being bullied has a hard time defending himself or herself. Usually, bullying happens over and over.
- Punching, shoving and other acts that hurt people physically
- Spreading bad rumors about people
- Keeping certain people out of a “group”
- Teasing people in a mean way
- Getting certain people to “gang up” on others

15a. Did you bully anyone this school year?
☐ Yes ☐ No

15b. If yes, how often did you bully this person? (Check one)
☐ one or more times a day
☐ one or more times a week
☐ one or more times a month

If you never bullied other students this year, go to Part C on page 10 and answer the rest of the questions.

16a. Where did you bully him or her? (Check all that apply)
☐ homeroom ☐ cafeteria
☐ academic class ☐ before school
☐ bus ☐ after school
☐ gym ☐ dances
☐ hallway ☐ sporting events
☐ bathroom ☐ telephone
☐ online/texting during school ☐ online/texting outside of school

16b. If you checked online/texting, please explain. (Check all that apply)
☐ Facebook ☐ IMing
☐ Myspace ☐ Email
☐ Twitter ☐ Texting
☐ Online Gaming ☐ Other:

Circle the ONE place you bullied the person the most.
17. **How did you bully this person?** (Check how often these things happened)

<table>
<thead>
<tr>
<th></th>
<th>Never Happened</th>
<th>Rarely Happened</th>
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<th>Often Happened</th>
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<td>b. Made fun of him/her</td>
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<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>c. Said I will do bad things to him/her</td>
<td>[ ]</td>
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<td>d. Played jokes on him/her</td>
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<td>e. Wouldn’t let him/her be a part of my group</td>
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<td>h. Nobody would talk to him/her</td>
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<tr>
<td>i. Wrote bad things about him/her</td>
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<td>j. Said mean things behind his/her back</td>
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<td>k. Pushed or shoved him/her</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>l. Other ways (s)he was bullied: ________________________________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. **Who did you bully?** (Check all that apply)

- [ ] older boys  
- [ ] older girls  
- [ ] younger boys  
- [ ] younger girls  
- [ ] boys in the same grade  
- [ ] girls in the same grade  
- [ ] someone who is strong  
- [ ] someone who is weak  
- [ ] someone who I didn’t know  
- [ ] someone I was interested in but never went out with  
- [ ] someone who is powerful  
- [ ] someone who is not powerful  
- [ ] someone who has many friends  
- [ ] someone who doesn’t have many friends  
- [ ] someone who is popular  
- [ ] someone who is not popular  
- [ ] someone who is smart  
- [ ] someone who is not smart  
- [ ] someone who is an adult  
- [ ] my girlfriend/boyfriend  
- [ ] other _____________________________
### 19a. How much was this a problem for the student you bullied?

<table>
<thead>
<tr>
<th></th>
<th>Never a Problem</th>
<th>Rarely a Problem</th>
<th>Sometimes a Problem</th>
<th>Often a Problem</th>
<th>Always a Problem</th>
<th>I Don’t Know</th>
<th>I Don’t Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Made him/her feel sick</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. (S)he couldn’t make friends</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Made him/her feel bad or sad</td>
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<td>☐</td>
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<tr>
<td>d. Made it difficult for him/her to learn</td>
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<tr>
<td>e. (S)he didn’t come to school</td>
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</tr>
<tr>
<td>f. (S)he had problems with his/her family</td>
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<td>☐</td>
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<td>g. Other ways this was a problem:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 19b. How much was the bullying you did a problem for you?

<table>
<thead>
<tr>
<th></th>
<th>Never a Problem</th>
<th>Rarely a Problem</th>
<th>Sometimes a Problem</th>
<th>Often a Problem</th>
<th>Always a Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Made me feel sick</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. I couldn’t make friends</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Made me feel bad or sad</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Made it difficult for me to learn</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. I didn’t come to school</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. I had problems with my family</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Other ways this was a problem:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
20a. Why did you bully this person? (Check all that apply)

Because:

☐ his/her face looks funny ☐ the church (s)he goes to
☐ (s)he is fat ☐ his/her parents
☐ (s)he is skinny ☐ his/her brother
☐ (s)he looks too old ☐ his/her sister
☐ (s)he is looks too young ☐ his/her family is poor
☐ (s)he is a wimp ☐ his/her family has a lot of money
☐ his/her friends are weird ☐ someone in his/her family is disabled
☐ (s)he is sick a lot ☐ (s)he is too tall
☐ (s)he is disabled ☐ (s)he is too short
☐ (s)he gets good grades ☐ (s)he is in special education
☐ (s)he gets bad grades ☐ (s)he gets angry a lot
☐ where (s)he lives ☐ (s)he cries a lot
☐ the clothes (s)he wears ☐ (s)he can’t get along with other people
☐ the color of his/her skin ☐ (s)he is gay
☐ the country he/she is from ☐ the way (s)he talks
☐ (s)he is different ☐ other (describe):_________________

20b. Circle the MAIN reason why you bullied this person.

20c. Was the student able to protect him/herself from your bullying?

☐ Yes ☐ No

21. Did the teachers and school staff know about the bullying that you did?

☐ Yes ☐ No ☐ I don’t know

22. How do you think the teachers and school staff took care of the bullying?

☐ Very well ☐ Okay ☐ Bad ☐ I don’t know

23. Tell us what the teachers and staff did to take care of the bullying.

____________________________________________________________

24. Is bullying a problem in your school?

☐ Yes ☐ No

25. Do you think that schools should worry about bullying?

☐ Yes ☐ No
26. Please write any other ideas you have about bullying and being bullied.

__________________________________________________________________________

27. What language is spoken in your home? ________________

28. What country is your family from? ________________

29. Gender:

☐ Male ☐ Female

30. Age: _______

31. Race:

☐ White/Caucasian ☐ Black/African American

☐ Latino/Hispanic ☐ Middle Eastern

☐ Native American ☐ Asian

☐ Eastern European ☐ Other: __________________________

☐ Biracial (Please specify):

__________________________________________________________________________

32. Circle only your current grade:

Grade: 6  7  8  9  10  11  12

33. How well do you do in your schoolwork? On your last report card, if you think of all of your subjects, what did you get? (Check one)

☐ mostly As ☐ As and Bs

☐ mostly Bs ☐ Bs and Cs

☐ mostly Cs ☐ Cs and Ds

☐ mostly Ds ☐ Ds and lower

Thank You!
May 23, 2011

Dear Dr. Swearer,

I am pediatrician at Lincoln Pediatric Group at 4501 S. 70th Street in Lincoln, Nebraska. I am writing an enthusiastic letter of support for the Target Bullying Prevention and Intervention Project. We at LPG would like to participate in a research study that will examine the relationship between bullying, victimization, and physical health.

We’re excited about working with you and your students on the Target Bullying Prevention and Intervention Project: An Examination of Health Correlates. With parental consent and youth assent to participate, we will give middle school students who are undergoing their 7th grade physical two measures to complete: The Bully Survey-Youth Version and the Kids’ Eating Disorders Survey-Body Image Silhouette (KEDS). We will also give parents The Bully Survey-Parent Version and the KEDS-Body Image Silhouette. Additionally, consent and assent will allow you and your graduate students access to medical records to obtain data on height, weight, medication usage, and prior and current medical and/or psychological diagnoses. It is our hope that by understanding the relationship between health behaviors and bullying behaviors that we can help our patients and their parents understand that bullying and victimization are phenomena that can be addressed with their pediatrician. Additionally, we would like to disseminate the results of the study in the Journal of Pediatrics in order to elucidate this important connection.

In this initial letter of support we are agreeing to participate in this study, Target Bullying Prevention and Intervention Project: An Examination of Health Correlates, and understand that you will be seeking UNL IRB approval for the study. We will incorporate the parental consent and youth assent forms into our regular physical exam paperwork and we will give the parents and their son or daughter the Bully Surveys and the KEDS that they can complete while they’re waiting for the physical exam. In the event that parental consent is not given, those parents and their children will not participate in the research study.

We at Lincoln Pediatric Group are very excited about this joint partnership with you and your doctoral students.

Sincerely,

Douglas Ebers, MD
Pediatrician, Lincoln Pediatric Group

Comprehensive Care for Infants, Children and Adolescents
Lincoln Pediatric Group, LLC
4501 S. 70th • Suite 110 • Lincoln, Nebraska 68516 • 402 489-3834 • Fax 402 489-5049
www.lincolnpediatricgroup.medem.com
Susan Swearer, PhD
Professor of School Psychology and Licensed Psychologist
Co-Director, Bullying Research Network
40 Teachers College Hall
University of Nebraska-Lincoln
Lincoln, NE 68588-0345

September 12, 2012

Re: NU Grant Project ID 11486: Target Bullying Prevention and Intervention: An Examination of Health Correlates

Dear Dr. Swearer,

I am writing to offer my full support to add the Complete Children’s Health pediatric offices of Lincoln, NE, as data collection sites to the research project, “Target Bullying Prevention and Intervention Project: An Examination of Health Correlates.”

Given the complexity of bullying and its negative impact on the psychological (e.g., Swearer et al., 2001) and physical health (e.g., Rigby, 1998) of youth, research is warranted that further examines these outcomes. Partnering with the Target Bullying Research Team will promote the empirical examination of medical risk factors for bullying involvement, such as childhood obesity. Also, we recognize the secondary benefits of allowing this study to be conducted at Complete Children’s Health locations, such as the potential for increased communication between pediatricians and their patients about bullying.

Pediatric practices are ideal settings for research about, and interdisciplinary treatment of, bullying and victimization. We are excited about the prospect of contributing to this important research alongside other pediatrician’s offices in Lincoln, such as Lincoln Pediatric Group.

Sincerely,

Stephen R. Russell, M.D.
Dear Parent/Guardian,

You are receiving this letter because your child has an appointment scheduled at Lincoln Pediatric Group and is between the ages of 11 and 18. The physicians at Lincoln Pediatric Group recognize that bullying/victimization is a significant problem that negatively impacts children’s emotional, psychological, and even physical well-being. Therefore, we are pleased to be collaborating with Dr. Susan Swearer and her research team at the University of Nebraska-Lincoln to collect data on bullying/victimization and health correlates. You and your child have an opportunity to participate in this study, which investigates bullying/victimization, emotionality, and health correlates such as height and weight.

Information collected for this study will be gathered online using your home computer. It will take you and your child approximately 20 minutes to complete the surveys. After you complete the study questionnaires, one of the researchers from Dr. Swearer’s research team will look at your child’s medical record to gather age, height, weight, prior and current psychological and medical diagnoses, and medication usage information. Any information obtained during this study that could identify you and your son or daughter will be kept strictly confidential. Your name and your child’s name will be on the surveys for approximately two weeks to allow the university researchers to match them to your child’s medical records. Once the medical record review has been conducted, your name, your child’s name and any identifying information will be removed from your responses and will be replaced with a code number.

You and your child’s participation are completely voluntary. If you and your child would like to participate, the link can be most easily accessed at the Lincoln Pediatric Group website, www.lincolnpeds.com, under “For Parents” and “Web Resources.” Or, you can access the link directly at the following website: http://bit.ly/ya02Wx. All the questionnaires (both parent and child) can be found at this link. If you wish, you and your child may complete the surveys in paper form instead of completing them online. Please complete the questionnaires independently. The parent/guardian should complete the consent forms and the questionnaires first and then your son or daughter can complete the assent form and the child questionnaires. You are free to decide not to enroll yourself or your child in this study or to withdraw at any time without adversely affecting your or your child’s relationship with the investigators, the University of Nebraska-Lincoln, and/or Lincoln Pediatric Group. If you decide to participate, you and your child will be entered in a drawing to win an iPad 2. Additional information is provided within the consent and assent forms. If you have any questions about this research study, please contact Dr. Susan Swearer at (402) 472-1741.

Sincerely,

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Joel A. Greisen, MD-FAAP
Michael J. Germer, MD-FAAP
Douglas D. Ebers, MD-FAAP
Kay L. Anderson, MD-FAAP
Carrie A. Dell, MD
Jeffrey J. David, MD-FAAP
Jason J. Davis, MD-FAAP
Susan M. Swearer, Ph.D.
Kurstin L. Friesen, MD-FAAP
Heather A. Dews, MD-FAAP
Paige T. Lembeck, M.A.
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Julie Timme, PA-C
Becky Waegli, PA-C
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If you decide to participate, you and your child will be entered in a drawing to win one pair of Beats Solo HD Headphones, which will take place on 12/1/14. Additional information is provided within the consent and assent forms. If you have any questions about this research study, please contact Dr. Susan Swearer at (402) 472-1741.

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You and your child’s participation are completely voluntarily. If you and your child would like to participate, the link can be easily accessed at the following website: [http://bit.ly/Slhsrm](http://bit.ly/Slhsrm). All the questionnaires (both parent and child) can be found at this link. If you wish, you and your child may complete the surveys in paper form instead of completing them online. Please complete the questionnaires independently. The parent/guardian should complete the consent forms and the questionnaires first and then your son or daughter can complete the assent form and the child questionnaires. You are free to decide not to enroll yourself or your child in this study or to withdraw at any time without adversely affecting your or your child’s relationship with the investigators, the University of Nebraska-Lincoln, and/or Complete Children’s Health. **If you decide to participate, you and your child will be entered in a drawing to win an iPad 2.** Additional information is provided within the consent and assent forms. If you have any questions about this research study, please contact Dr. Susan Swearer at (402) 472-1741.

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Principal Investigators
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Sincerely,

Susan Swearer, PhD and Paige Lembeck, MA
Principal Investigators
Study of Bullying/Victimization and Health Issues: Instructions

Please complete the parent consent form, PHI Authorization, and surveys provided in this packet. Also, please have your child complete the youth assent form and youth surveys. Please complete the surveys independently. The completed packet should be mailed back using the envelope provided. Both you and your child will be automatically entered in a drawing to win one (iPad2, $150.00 Walmart Gift Card/pair of Beats Solo HD Headphones) upon receipt of the completed surveys. After two weeks, one of the investigators will follow up with you to answer any questions you may have and to check the status of your participation if the packet is not received prior to that time.

Thank you!
YOU

have the opportunity to participate in an *exciting* research study!

Lincoln Pediatric Group and the University of Nebraska–Lincoln are thrilled to offer the opportunity for LPG patients and their parents to participate in an exciting online study looking at bullying and health factors.

Conducting research on bullying in a variety of settings is necessary for finding effective ways to put an end to bullying. If you and your child are interested in contributing to the research efforts in this area, please take a recruitment letter or log on to the LPG website for additional information and the link to the study.

All participants will be entered in a drawing for an opportunity to win a free iPad2!

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Thank you!
Bullying/Victimization and Health Issues Study

Seeking participants between the ages of 11 and 18 years and their parents

Lincoln Pediatric Group and the University of Nebraska-Lincoln are thrilled to invite LPG patients and their parents to participate in an exciting survey study looking at bullying and health factors.

If you are interested in learning more, please take a recruitment letter from one of the receptionists or speak to a research representative if one is available.

Participants will be entered in a drawing to win Beats Solo HD Headphones (scheduled for December 1, 2014)
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APPENDIX L

SCRIPTS FOR FOLLOW-UP OPTIONS

Text: This text is just a reminder to please complete the surveys for the Bullying and Health Issues Study that you received at (name of pediatrician’s office). Participation is voluntary. Please contact Paige Lembeck at this number or at plembeck@huskers.unl.edu if you have any questions. Thank you!

Phone Call: “Hi (patient name), my name is Paige Lembeck and I am calling from the University of Nebraska-Lincoln to follow up about the study we are conducting with (name of pediatrician’s office) on bullying and health issues. You received the survey packets two weeks ago, so I wanted to check in to answer any questions you may have. Are you still interested in participating in the study? If yes- Great! Do you have any questions about the packets? You may contact me at (908) 246-7881 or plembeck@huskers.unl.edu if any questions come up. Please send the surveys back in the pre-paid envelope as soon as you and your child are able to finish them. If no- Okay! Thank you for your time. You may dispose of the surveys or return them to the pediatrician’s office.

E-mail:

Subject: Reminder: Bullying and Health Issues Study

You are receiving this e-mail because your child recently had an appointment at (name of pediatrician’s office) and you received a packet of survey measures for a study investigating bullying and health Issues.

Participation in this study is completely voluntary. Therefore, if you are no longer interested in participating, no further steps need to be taken. You may dispose of the surveys or return them to (name of pediatrician’s office). If you are still interested in participating, please follow the instructions included in the packet and return the surveys in the pre-paid envelope. Please reply to this e-mail or call Paige Lembeck at (908) 246-7881 if you have any questions.

Thank you!

Paige Lembeck, MA & Susan M. Swearer, PhD
Study Investigators
APPENDIX M

CONTACT SHEET FOR PACKET FOLLOW-UP

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail Address or Phone Number (indicate call or text)</th>
<th>Date Packet Given</th>
<th>Date of Follow Up</th>
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APPENDIX N

FLOW CHART OF PROCEDURES

The patient's parent/guardian arrives for his/her child's appointment and is informed about the study either as they are waiting or immediately following their appointment

Participants either a) access the Qualtrics link and complete surveys online, b) complete paper-and-pencil measures in office, or c) take packets to complete surveys at home

Parent: Consent for their own participation, consent for their child's participation, PHI form
Patient/Child: Assent form, child measures

The primary investigator schedules a time with medical staff to conduct medical record reviews (DOB, height, weight) within two weeks following survey completion

Graduate assistant or medical staff conduct medical record reviews using designated form

Names and identifying information are replaced with a code number before data are entered into the database

Parent does not wish to participate

Physical examination or appointment takes place as planned