

**DOES APPEARANCE MATTER?
SCHOOL BULLYING AND BODY-ESTEEM IN EARLY ADOLESCENCE**

by

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Abstract

The present study integrates previous research in two distinct but related areas to address the links between physical size/weight, as measured by Body Mass Index (BMI), body-esteem, and peer bullying. Previous research on bullying has shown that being a victim of bullying is associated with lower levels of body-esteem; previous research has also shown that peer teasing, particularly teasing about physical appearance, partially mediates the relationship between BMI and body-esteem. Replicating and extending this research, the present study explored whether peer victimization, like teasing, serves to partially mediate the link between BMI and body-esteem, considering both general bullying and specific forms of bullying as well as bullying targeted directly at physical appearance/weight among both boys and girls in middle school (N = 801). As in prior research, high BMI was associated with poor body-esteem for girls, although for boys both high and low BMI were associated with poor body-esteem for boys (quadratic relation). As well, links between victimization and different aspects of body-esteem were demonstrated, particularly for body-esteem about appearance and weight for girls, and for all types of body-esteem (appearance, weight, and attribution) for boys. Moreover, peer victimization was found to serve as a partial mediator in the relationship between BMI and body-esteem for girls and boys. For girls, verbal victimization and victimization about physical appearance, weight, and body shape served as partial mediators in the relationship between BMI and appearance body-esteem, as well as BMI and weight body-esteem. For boys, a similar mediational role of victimization was demonstrated, but only for those who were above average in weight. Future directions, limitations, strengths, unique contributions, and implications are discussed.

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Chapter One: Introduction

In a 2002 survey, between 19 and 43% of Canadian adolescents, aged 11, 13, and 15, reported being dissatisfied with their bodies (World Health Organization, Mulvihill, Nemeth, & Vereecken, 2004). Our society highly values appearance and beauty. Not only are attractive children judged more positively than non-attractive children, they are treated more positively and have less negative interactions with others (Langlois et al., 2000). Current standards of beauty within Western society emphasize difficult, if not impossible, to achieve ideals of thinness, particularly for females, and muscularity for males. When a society primarily values thinness, a complementary relationship exists with its opposite, obesity, which is severely denigrated within Western society (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Indeed, children as young as three years of age have learned that “thin is good” and “fat is bad” (Cramer & Steinwert, 1998, p. 429).

A society so obsessed with appearance and beauty and maintaining ideals that are nearly impossible for the average individual to attain sets the stage for adolescents to become dissatisfied with their bodies. Body image, according to Heatherton and Hebl (1998), is a “multifaceted construct composed of perceptions, thoughts, and feelings” (p. 257) about the body and physical being, and body-esteem refers to the subjective evaluation of one’s body and/or appearance (Mendelson, Mendelson, & White, 2001). Early adolescence is a critical time for shaping body-esteem due to the maturational changes in body shape and size that occur during this period. As adolescence is also a time of increased self-attention and self-reflection, many adolescents become concerned, even obsessed, with their bodies (Heatherington & Hebl).

Current research has focused on risk factors for body dissatisfaction, which refers to a negative evaluation of one's body and/or appearance, in an attempt to determine how biological, psychological, and social occurrences during adolescence influence its development. According to Jones (2004; Jones, Vigfusdottir, & Lee, 2004), being accepted by peers is a central concern during adolescence, and peer acceptance has been associated with conforming to appearance-related ideals, highlighting the importance of peers in the prediction of body dissatisfaction.

One way that peers can have an impact on body-esteem is through bullying. Bullying is a significant social problem in Canada and other countries around the world. For example, in Canada in 2002, between 31 and 54% of adolescent boys and girls (aged 11, 13, and 15) reported being bullied (victimized) at least once in the previous couple of months and between 8 and 19% reported being bullied at least two or three times in the last month (World Health Organization, Craig & Harel, 2004). Bullying occurs when an individual is repeatedly subjected to negative actions on the part of one or more individuals; this behaviour can take many forms including physical, verbal, and social as well as, most recently, cyber bullying. As a unique form of interpersonal aggression, bullying is characterized by three qualities: (1) it is perceived as intentionally harmful or aggressive; (2) it occurs repeatedly and over time; and (3) it involves an imbalance of power in an interpersonal relationship (Olweus, 1999). The experience of being bullied by peers is referred to as peer victimization in this thesis.

Obese and overweight individuals have been found to be more likely than other groups to experience peer victimization and teasing (Griffiths, Walke, Page, & Horwood, 2005; Janssen, Craig, Boyce, & Pickett, 2004). Teasing involves aggressive behaviours

coupled with humor and/or play (Boulton & Hawker, 1997; Keltner, Capps, Kring, Young, & Heerey, 2001). Weight and appearance-related teasing experiences have been found to mediate and/or partially mediate the relationship between body mass and body dissatisfaction in a number of studies (Lunne et al., 2000; Smith, 2007; Thompson, Coover, Richards, Johnson, & Cattarin, 1995; Van Den Berg, Wertheim, Thompson, & Paxton, 2002). In other words, it is partly through the experience of teasing that students with greater body mass become dissatisfied with their bodies. Of interest in the present study is whether a similar relationship is demonstrated with bullying. The links between bullying and teasing are not entirely clear. Although some authors suggest that teasing can be considered a form of bullying (Boulton & Hawker, 1997; Roberts & Coursol, 1996), others distinguish between the two (Coloroso, 2003; Olweus, 1999; Warm, 1997).

Does peer victimization from bullying, like teasing, mediate the relationship among body mass and body-esteem? This study examined the relationship between peer victimization, body-esteem, and body mass, evaluating the indirect effect of peer victimization in the relationship between body mass and body-esteem, including the examination of different forms of victimization and/or physical appearance-related victimization. As will be demonstrated in the literature review to follow, only a handful of studies have considered the link between peer victimization and body-esteem and no known study has examined the role of peer victimization (beyond teasing) in the relationship between body mass and body-esteem.

This study addressed three major social concerns for adolescents: body-esteem, victimization, and body mass, all three of which have been associated with negative psychosocial correlates and possible consequences, such as eating disorders (Kaltiala-Heino,

Rimpela, Rantanen, & Rimpela, 2000). Accordingly, the present research is relevant to educators, policy makers, program developers, and counsellors in helping to inform prevention and intervention programs for body dissatisfaction, obesity, and bullying, as well as associated negative outcomes such as eating disorders.

Chapter Two: Literature Review

Appearance Culture

Society today highly values attractiveness and beauty. In a recent meta-analysis of 919 studies on attractiveness and beauty, Langlois and colleagues (2000) found that raters agree on who is and who is not attractive both across and within cultures and judge attractive children more positively than non-attractive children in terms of social appeal, as well as academic, developmental, interpersonal, and occupational competence even when raters had “behavioral or other information on which to base their judgments” (p. 400). Attractive children are treated more positively than unattractive children and experience more positive social interactions and fewer negative social interactions than unattractive children (Langlois et al., 2000). Attractive individuals also behave more positively and possess more positive traits than unattractive children and adults, in areas such as popularity, adjustment, intelligence/performance competence, occupation, self-esteem, social skills, and mental health. It is possible that some of these relationships reflect self-fulfilling prophecies; when attractive children are judged and treated more positively, they start to develop positive traits, especially those traits related to success, such as popularity and social skills.

This analysis by Langlois and colleagues (2000) primarily focused on facial attractiveness and the studies reviewed did not always include bodily attractiveness. Results from the body image literature suggest that each culture proscribes ideals for bodily attractiveness, a central tenet of socio-cultural theory. Thus, research on what constitutes bodily attractiveness varies across cultures, a remarkably different result than that obtained for facial attractiveness (Jackson, 2002). Individuals who conform to the prescribed cultural ideals of bodily attractiveness are judged and treated more positively within a society than

those who do not (Jackson, 2002). Currently, within western society, thinness for females and muscularity for males is idealized and obesity is denigrated and even punished (Thompson et al., 1999).

According to Thompson and colleagues (1999), cultural standards about what is considered attractive and desirable (as well as unattractive and undesirable) are generally learned before children enter school. Cramer and Steinwert (1998) looked at weight perceptions of pre-school aged children (three to five years of age) and found that the perception that “fat is bad” was prevalent among children as young as three years (p. 429). These perceptions and stigmatizations of overweight individuals were stronger among the older children. Cramer and Steinwert also found that overweight children were rated by children as mean more often than average and/or thin children, and as possessing more negative traits (such as stupid, sloppy, weak, lazy, mean, ugly, and gets teased) than average and/or thin children. Overweight body figures were viewed as undesirable self-images and overweight children were viewed as undesirable playmates. This stereotype of fat is bad was pervasive across children of both genders, regardless of the children’s own body types. In fact, overweight and obese children demonstrated more negative judgments related to the stigmatization of overweight individuals than non-overweight children.

Similar findings have been found for children of older ages. Kraig and Keel (2001) found that overweight figures were rated more negatively than average or thin figures among 7- to 9-year-olds. For boys, overweight figures were rated more negatively than average and thin figures; for girls, both overweight and average figures were rated more negatively than thin figures. These results suggest that the societal ideal for males includes both thin and average (or muscular) body builds; however, the ideal for females is primarily a thin body

build. These results, taken together, suggest that our society views overweight and obese individuals negatively, a view that is present at a relatively young age. In the next section, we consider whether such biased perceptions have negative consequences for children's body-esteem.

Body-Esteem

Body mass and body-esteem. Body mass involves an individual's weight taking into consideration his/her height as well as his/her age and sex and is commonly measured using body mass index, an anthropometric index of height and weight. Specifically, body mass index is defined as a measure of weight in kilograms divided by height in meters squared (kg/m^2) and is often used as an indicator of appropriate weight and height for a child or adolescent's age (Dietitians of Canada, Canadian Paediatric Society, College of Family Physicians of Canada, & Community Health Nurses Association of Canada, 2004).

Studies have consistently found significant negative correlations between body mass index and body-esteem among children, adolescents, and adults (Barker & Galambos, 2003; Kostanski, Fisher, & Gullone, 2004; Presnell, Bearman, & Stice, 2004; Smolak, 2004). According to Smolak and Levine (2001), the correlation between body mass index and body-esteem is likely created in response to societal attitudes towards obesity.

Early studies typically considered the relationship between body mass index and body-esteem to be linear for both girls and boys. Several more recent studies, however, have demonstrated that this relationship is quadratic for boys (Cortese et al., 2010; Kostanski et al. 2004; Presnell et al., 2004; Smolak, 2004; for an exception, see Braker & Galambos, 2003). Given these findings, both linear and quadratic relationships between BMI and body-esteem were considered in the present study and sex differences were a primary consideration.

Body-esteem and early adolescence. Body-esteem has been found to decrease from childhood to adolescence (Kostanski et al., 2004). During middle school, both boys and girls experience a decrease in body-esteem, although this decrease may be less pronounced for boys than for girls (Smolak, 2004). Adolescents are found to be more dissatisfied with their bodies than children (Kotanski et al.). Again, for girls, this dissatisfaction was associated with being too fat, and for boys, this dissatisfaction was associated with being too thin among the underweight boys and being too fat among the overweight boys, the quadratic nature of the relationship becoming more pronounced as the boys reached adolescence.

Early adolescence is a critical time for shaping body-esteem due to newly occurring maturational changes associated with puberty. For girls, puberty is associated with large amounts of weight gain, which is not evenly distributed throughout their bodies (Heatherington & Hebl, 1998). These weight gains are associated with distress because it shifts their body figure away from the cultural ideal of thinness. Given that this age period represents a time of increased self-attention and self-reflection, many adolescents become concerned, even obsessed, with their bodies (Heatherington & Hebl, 1998).

Low body-esteem has been linked to various health compromising behaviours during adolescence. In a five-year longitudinal study, Neumark-Sztainer, Paxton, Hannan, Haines, and Story (2006) investigated the consequences of low body satisfaction in adolescent males and females. They found that, for females, lower body satisfaction predicted higher rates of dieting behaviour, unhealthy weight control tactics, and binge eating, as well as lower levels of physical activity and fruit and vegetable intake over the next several years. For males, lower body satisfaction predicted higher rates of dieting, unhealthy weight control tactics, binge eating, and smoking, as well as lower levels of physical activity in subsequent years.

Johnson and Wardle (2005) found that body dissatisfaction among adolescent girls was the key contributor to the development of disordered eating, above and beyond restrained eating (dieting). Accordingly, low body-esteem is considered an important risk factor for eating disorders.

Given these serious health consequences, it becomes important to investigate the possible determinants of body-esteem among adolescents, including peer relations and victimization. Jones (2004) highlights the importance of peers and social acceptance (or lack thereof) in the prediction of body-esteem. Early adolescents have a central concern for social acceptance, and self-assessment is often the result of normative standards and peer feedback (Compain, Gowen, & Hayward, 2009).

An increasing amount of research into body image and body-esteem suggests that opinions of others have a significant impact on individuals' views of themselves and their bodies. According to Tantleff-Dunn and Gokee (2002), body image/esteem development is a lifelong process influenced by the significant others that are central in one's life at a given period of time. During adolescence, peers play a central role and become extremely influential in the development of body image and body-esteem concerns. Tantleff-Dunn and Gokee suggest that one of the most significant and direct ways peers have an influence on body-esteem is through peer feedback, most commonly in the form of teasing or bullying.

Converging Theories of the Importance of Peers in Body-Esteem Development

A number of converging theories point to the importance of peer involvement in socialization and, in turn, the development of body-esteem, including socio-cultural theory, group socialization theory, and goodness of fit theory. Each is described briefly below.

Socio-cultural theory. The socio-cultural theory of body image/esteem development suggests that social and cultural standards of attractiveness and beauty influence individuals' feelings about, and opinions towards, their bodies. Thus, the society or culture determines what an attractive body looks like and individuals' self-perceptions become reliant on these standards or ideals. These standards may be prevalent throughout society, in general, or may be more specific to "proximal environments in which individuals live," such as families, schools, or peer groups (Wertheim, Paxton, & Blaney, 2004, p. 464). The difference between these idealized images and reality, for most individuals, is viewed as a primary source of body dissatisfaction from the socio-cultural theory.

Socio-cultural theorists suggest that these cultural ideals are transmitted through three primary socialization agents: the media, parents, and peers (Smolak & Levine, 2001; Wertheim et al., 2004). Idealized body shapes, in the media, are portrayed as desired and essential to social success, wealth, and happiness (Jackson, 2002). According to Wertheim and colleagues (2004), immediate sub-cultural influences, such as parents, family, and peers are important in transmitting socio-cultural standards, ideals, and values. Parents and family members have been found to influence body image through modeling and communications with their children (Wertheim et al.). Whereas parents may be the most influential during childhood, peers are the primary influence for adolescents (Tantleff-Dunn & Gokee, 2002).

Peers, particularly during adolescence, provide a considerable proximal social environment, which can affect an individual's body-esteem in a variety of ways (Wertheim et al., 2004). Peers often portray and communicate values associated with idealized images, as well as dictate appearance norms and ideals within a group. Peers may actively reward or punish adherence to these appearance norms, which reinforces the perception that satisfaction

and social success are related to conforming to body ideals (Wertheim et al., 2004).

Frequently, popularity is the reward for conforming to attractiveness ideals. In a qualitative analysis by Wertheim Paxton, Shultz, and Muir (1997), popular girls, more than other peers, were idealized and considered thin and pretty. Negative feedback and teasing, as well as victimization about physical appearance can serve as powerful reinforcers of negative body-esteem (Wertheim et al., 2004).

Dunkley, Wertheim, and Paxton (2001) found that girls who showed the highest body image dissatisfaction were those who lived within a subculture of socio-cultural influences (media, parents, and peers) that supported the ideals. Although the combined influence of media, parents, and peers better predicted body dissatisfaction in girls than did the individual influence of each socialization agent, the influence of peers was the strongest single predictor of body image (when current body size was controlled). This study explores the mechanisms through which peers exert their influence on body-esteem.

Group socialization theory. Group socialization theory also points to the importance of peers in socialization and the transmission of group norms (Harris, 1995, 1998, 2009). Harris suggests that socialization outside the home occurs as a result of group processes, as children and adolescents come to identify with their peers. In childhood, the peer group typically includes individuals who share socially relevant characteristics, such as age, sex, and ethnicity. In adolescence, the peer group is defined more in terms of common interests and abilities, which manifests as cliques or crowds. Identification with a group and categorization into that group involves taking on the group's attitudes and norms, which may include an emphasis on thinness, muscularity, and/or attractiveness.

Group socialization theory suggests that parents do not directly transmit culture to their children; rather, peer groups are one of the most important influences. Between group and within group processes among peer groups are viewed as responsible for the transmission of culture. Between group processes involve in-group favoritism and out-group hostility, which serve to widen the differences between different groups. In fact, group contrast effects are often found or produced even when no real group difference originally existed. In-group favoritism involves the process of favoring one's own group. Out-group hostility often occurs and involves becoming hostile to members of other groups. Out-group hostility may take the form of bullying others who look different, which is evident in a general tendency of individuals to show aggression toward anything strange.

Within group processes can involve both assimilation and differentiation depending upon the context and the saliency of social categories (different groups) at the time. The process of assimilation serves to increase similarities among individuals within a group. It involves self-categorization into a particular group, as well as the adoption of that particular group's norms. Children and adolescents may receive both direct and indirect pressure to conform to group norms. Children and adolescents who do not conform are often subjected to bullying and teasing by the group.

The within-group process of differentiation involves the development of dominance and social power within groups (status hierarchies), which influences popularity. Adolescents are often treated differently as a function of their status in the hierarchy (level of dominance and social power) and their level of popularity. Adolescents who are rejected by their peers are typically unpopular (Hymel, Vaillancourt, McDougall, & Renshaw, 2002);

victims of bullying tend to have low dominance and social power, whereas bullies often enjoy high status and wield considerable power (Vaillancourt, Hymel, & McDougall, 2003).

Social comparisons also serve to create within group differences. Individuals compare themselves to others, which give them information about their relative strengths and weaknesses. Social comparisons with others can result in typecasting of individuals by the group, which may involve teasing and nicknames, such as fatso or skinny (Harris, 1995).

Group socialization theory directly points to the significant impact of peers, particularly during adolescence, on socialization and development. Harris's (1995, 1998, 2009) theory sheds light into the possible peer processes operating in the relationship between bullying, particularly about appearance, and body-esteem. Between group processes, specifically out-group hostility, can lead to bullying about appearance, particularly if the adolescent does not conform to societal norms, which, in turn, may lead to difficulties in body-esteem. Within (intra) group processes may also operate to impact bullying and body-esteem. Assimilation involves finding a group and adopting its norms, including appearance-related norms. Adolescents may be bullied or teased if they do not conform (creating pressure to conform) and also if they do not measure up to these norms, some of which may be unattainable for most girls. Differentiation can also lead to bullying about appearance and potentially subsequent body-esteem concerns. Adolescents with low status and/or popularity may have difficulty with being bullied about their appearance, particularly given that conforming to appearance norms may be related to gaining status and popularity. Social comparisons may lead to bullying about appearance, especially when an adolescent does not match the other group members (the appearance norms). This theory provides strong support

for the importance of peers in development, highlighting the role of bullying in the development of body-esteem.

Goodness of fit model. Lerner and colleagues (Lerner, 1985; Lerner & Javanovic, 1990; Lerner & Lerner, 1994) proposed a dynamic interactions theory titled the goodness of fit model to explain the role of others in biological and psychological interactions, particularly during adolescence. The model suggests that on the basis of an adolescent's characteristics of individuality (physical and/or behavioural), he or she will evoke differential reactions in others and these reactions will, in turn, provide feedback to the adolescent, influencing his/her future development. It is the extent to which adolescents' characteristics of individuality fit the demands and/or expectations of the social environment and significant others (such as peers) that determines whether the social feedback will be positive or negative and thus, influence development accordingly.

Lerner (1985; Lerner & Javanovic, 1990) has applied this theory to adolescents' experiences of their bodies, a key component of individuality. Lerner suggests that, for adolescents, characteristics of individuality can involve bodily characteristics, such as body size and/or type, as well as physical attractiveness. He claims that adolescents who differ on these physical characteristics will evoke differential reactions from others. These reactions will feed back to the adolescents, through social commentary, teasing, and/or bullying, influencing their levels of body-esteem. If the individuals' characteristics (bodily characteristics) are congruent with the demands of significant others, such as peers, then social feedback will be positive and produce positive body-esteem levels. However, if individuals' characteristics are not congruent with the demands of others (for instance, if they

do not fit the ideals/expectations prescribed by society), then social feedback will be negative and contribute to negative body-esteem (Lerner, 1985; Lerner & Jovanovic, 1990).

In short, the goodness of fit model claims that individuals differ in their physical characteristics, particularly those traits related to attractiveness, such as weight and/or body shape, evoking differential evaluations and feedback from others. The extent to which individual characteristics of attractiveness fit the prevailing views and ideals of society determines whether the social feedback will be positive or negative. It is through social feedback, including teasing and/or bullying, that the views of others come to influence the views that individuals hold of themselves. Thus, individuals' levels of body-esteem become increasingly consistent with the expectations and feedback of others (Lerner, 1985; Lerner & Jovanovic, 1990; Lerner & Lerner, 1994; Rosenblum & Lewis, 1999). The goodness of fit model suggests that adolescents' body mass levels may influence the social feedback (including bullying) they receive from their peers, which, in turn, may influence their levels of body-esteem.

Bullying

Peer victimization (by means of bullying) is one method through which peer influences may have a substantial impact on body-esteem. As noted previously, bullying is a unique form of interpersonal aggression that is characterized by three distinct qualities – perceived intentionality, repetition, and power imbalance between bully and victim (Olweus, 1999). Craig and colleagues (2009) investigated general victimization and bullying among adolescents aged 11, 13, and 15 in 40 countries and found it to be a significant problem worldwide. Rates of victimization and bullying differed across countries, with Canada and the United States coming up in the mid to mid-high range for boys (21st and 20th) and girls

(26th and 24th), with 22% to 23% of boys and 16% to 17% of girls reporting general victimization and bullying at least once in the past two months.

Four different forms of peer victimization have been distinguished: physical, verbal, social, and cyber. Physical victimization (for example, hitting, biting, pushing, kicking, and property damage) and verbal victimization (for example, threatening, teasing, and name calling) are considered direct forms of bullying whereas social victimization (for example, social exclusion, name calling, and gossip) is considered an indirect form of bullying (Craig et al, 2009; Wang, Iannotti, & Nansel, 2009). Cyber victimization is a more recent form of bullying that involves victimization through an electronic medium (e.g., email, instant messages, text messaging, or websites). Wang and colleagues (2009) investigated the prevalence of the four types of victimization in a nationally representative sample of the United States. They found that approximately 13%, 36%, 27%, and 8% of youth in grades 6 to 10 were bullied physically, verbally, socially, and electronically (cyber), respectively, at least once in the last two months.

Bullying can also focus on specific content. In a qualitative focus group study, Horowitz and colleagues (2004) found that the content of bullying (what the bullying is about) commonly involved aspects of physical appearance. Through focus groups of 11 to 14-year olds, they identified four common reasons for bullying: physical appearance, personality and behaviour, family and environment, and school-related sources. The physical appearance category included bullying someone about any visible trait, clothing, or bodily feature that “deviated from a norm established by a peer group” (Horowitz et al., 2004, p. 169). The underlying theme of the study was that “being different in any way” was the

source of bullying and teasing (p. 165). Adolescents described experiences of bullying and teasing as common, even universal, and particularly distressing.

Kowalski (2000) completed a content analysis of two written narratives of undergraduates' previous experiences with victimization and found that physical appearance-related experiences were the most common victimization content recalled by victims, followed by relationships and behaviour. In a participatory action research study, Lovegrove and Rumsey (2005) found that, in a sample of 654 adolescents ranging in age from 11 to 19, 51% feared being teased or bullied regarding their physical appearance. Among the youngest adolescents (11-14 years), 75% reported this fear, which caused "considerable distress" (p. 36). For example, one 13-year-old girl described spending her "whole life trying to look thinner and prettier so that people will like me and not bully me" (p. 36). One in ten individuals reported not attending school due to "appearance-related concerns" and one in three reported not speaking in class for fear of "drawing attention to their appearance" (Lovegrove & Rumsey, 2005, p. 37). Taken together, these studies clearly demonstrate that appearance appears to have a significant impact on social interactions and is a major focus in students' bullying fears and experiences.

Body Mass and Bullying

As described previously, high body mass index (being overweight or obese) is often considered a risk factor for the development of negative body-esteem among boys and girls. For boys, low body mass index may also be considered a risk factor for negative body-esteem. Body mass index, particularly high body mass index, has been correlated with peer victimization experiences. Thompson and colleagues (2007) looked at peer-related influences on appearance and body dissatisfaction among average weight, overweight (85th to 95th

percentile – labeled at risk for overweight in this study), and obese (95th percentile or higher –labeled overweight in this study) adolescent girls. They found that overweight and obese adolescent girls had lower body satisfaction and more instances of dieting than normal weight girls. These overweight and obese girls also scored higher than normal weight girls on a peer measure of negative peer comments and attributions about appearance.

Frisen, Lunde, and Hwang (2009) investigated body mass index and victimization in 10-year-olds. They found that overweight girls were subjected to more weekly victimization than non-overweight girls. They also found that overweight girls and boys experienced higher levels of appearance-related teasing than non-overweight children. Lumeng and colleagues (2010) looked at weight status and victimization among sixth grade boys and girls, utilizing multiple sources for reporting levels of victimization (self, parent, and teacher reports). They found that being overweight or obese, as compared to normal weight, was related to increased levels of victimization.

In a study of 416 adolescents in grades 9 to 12, Pearce, Boergers, and Prinstein (2002) reported significant relationships between obesity and relational victimization (social bullying) for girls, and overt victimization (a combination of physical and verbal bullying) for boys. Obese girls reported higher levels of relational victimization than their same sex peers. In fact, the higher the girls' body mass indexes became, the more likely they were to report relational victimization. Obese boys were the most likely group to be victimized through overt bullying; however, underweight boys were not considered separately in this study. Interestingly, overweight adolescent boys (85th to 95th percentile) had lower levels of overt victimization than obese and normal weight boys. The authors suggest that this result was confounded by a subset of boys who have high muscle mass and an athletic build

(similar to the male muscular ideal, discussed earlier). Body mass index does not account for muscle mass; therefore, some boys may be classified as overweight when they are truly not. This group of boys, displaying male appearance ideals, may be “more popular among peers and more difficult to victimize” (p. 390). This study underscores the need to look at the experiences of different weight groups when studying body mass and victimization among boys.

Janssen, Craig, Boyce, and Pickett (2004) investigated the relationship between victimization behaviours, including physical, verbal, and relational bullying, and weight status among 5749 Canadian boys and girls between the ages of 11 and 16. They found that increased body mass index was associated with higher levels of all forms of peer victimization for all participants, controlling for age. Wang, Iannotti, and Luk (2010) found that overweight boys and girls were subjected to higher levels of verbal bullying, whereas underweight boys were victims of physical bullying. They also found an effect for severely underweight girls (bottom 5th percentile) indicating that these girls were subjected to relational victimization. Pearce and colleagues (2002) reported a similar positive association between body mass index category and verbal bullying, but also found the relationship for relational bullying, for both boys and girls. Interestingly, however, for girls, but not for boys, increased body mass index was associated with increased levels of physical bullying. This study, however, did not look at the underweight categories. Results of these studies underscore the need to include multiple forms of bullying in analyses of peer victimization and the need to look at underweight in addition to overweight and obese categories, particularly for boys.

Fox and Farrow (2009) investigated the link between weight status (being overweight/obese) and bullying (physical, verbal, and social) in grade 7 and 9 students (N = 376). They found that being overweight or obese was associated with higher levels of physical and verbal victimization (but not social). For obese and overweight students, body dissatisfaction and self-esteem about appearance mediated the relationship between weight status (being overweight/obese) and bullying (physical and verbal). In other words, overweight and obese youths' levels of body dissatisfaction accounted for the relationship between being overweight and obese and being bullied, physically and verbally.

The link between high body mass and peer victimization has also been demonstrated longitudinally. Griffiths and colleagues (2007) found that, for boys and girls, weight category at age 7.5 predicted overt victimization at age 8.5. Obese boys, compared with normal weight boys, were "1.40 times more likely" to be victims of physical bullying and "1.44 times more likely" to be victims of relational bullying; underweight boys were "0.69 times less likely" to be subjected to overt victimization than normal weight boys. Obese girls were "1.52 times more likely" to be victims of overt bullying than normal weight girls. Thus, body mass may also be a precursor to peer victimization experiences (p. 122).

By way of explanatory processes, Thompson and colleagues (1995) suggest that body mass index results in or leads to higher levels of teasing, and it is through teasing experiences that individuals with high levels of body mass index become dissatisfied with their bodies. Results of studies testing this theory will be discussed further in the coming sections.

Teasing

Currently there exists a gap in the research on the relationship between peer victimization and body-esteem. The research that exists has primarily focused on the

relationship between teasing, particularly regarding appearance and weight, and body-esteem. Teasing is an experience that is related to bullying and thus, the research on teasing in relation to body mass and body-esteem may provide insight into the research on bullying. Some authors suggest that teasing can be considered a form of bullying (Boulton & Hawker, 1997; Roberts & Coursol, 1996). However, others suggest there is difference between teasing and bullying (Coloroso, 2003; Warm, 1997). In a review of teasing, Keltner, Capps, Kring, Young, and Heerey (2001) suggested that almost all researchers agree that teasing involves aggression and most also believe that teasing incorporates aspects of humor and play. Thompson and colleagues (1999) suggested that teasing without humorous content is not actually teasing at all.

At the same time, Warm (1997) suggests that, although theorists may distinguish between teasing and taunting or bullying, when children and adolescents are asked to define teasing and provide examples, they include experiences of bullying, such as physical bullying and/or insults, in their definitions and examples. He also found that when students in the first, third, sixth, eighth, and eleventh grade were asked why they like to tease others, 80% indicated that their motive was aggressive in nature, including, for example, enjoying the misery of the victim, getting revenge, and wanting power. He found that the level of teasing associated with a friendly intent decreased from sixth to eighth grade, a time when this type of motive almost disappeared. Land (2003) suggests that researchers should classify teasing as bullying when it satisfies the criteria the researchers have defined as bullying; for example, when it is perceived as intentional, repeated and involves an imbalance of power in an interpersonal relationship (Olweus, 1999, p. 11). Accordingly, it is important to define the behaviours for adolescents and teach them to differentiate between teasing and bullying

when studying one or both of these behaviours. It appears that research on teasing can inform research on bullying given its similar aggressive nature. However, research that focuses on bullying, not solely teasing behaviours, is extremely important to encompass the wide range of behaviours associated with bullying and determine the true impact of bullying.

Physical Appearance-Related Teasing and Body-Esteem

Teasing about physical appearance, including appearance and weight, is the most common teasing content. Physical appearance-related teasing has been considered a risk factor for body dissatisfaction and related eating disturbances and disorders (Eisenberg, Neumark-Sztainer, Haines, & Wall, 2006; Eisenberg, Neumark-Sztainer, & Story, 2003; Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006). Thompson and colleagues (1995) found that body mass index, through teasing as a mediator, influenced body dissatisfaction. In fact, they found that, body dissatisfaction was predicted more strongly by a history of being teased than by body mass index. Examining retrospective reports of 111 female undergraduates less than 40 years of age, Cash (1995) investigated the role of previous appearance and weight-related teasing on body dissatisfaction. Physical appearance, especially facial attractiveness, and weight teasing were common in these women's adolescent lives, with peers considered to be the worst perpetrators. Not surprisingly, Cash found that women who experienced teasing frequently had low body images.

Eisenberg et al. (2003) looked at teasing history and body dissatisfaction among male and female adolescents as part of a report on the results of a study entitled Project EAT (eating among teens) involving 4,746 male and female students in junior high school (grades seven and eight) and high school (grades nine through twelve). They found that being the victim of weight-related teasing was consistently associated with low body satisfaction

(Eisenberg et al., 2002). Moreover, in a follow-up of 2,516 participants, Eisenberg, Neumark-Sztainer et al. (2006) found that adolescents who initially reported being teased regarding weight or appearance had lower body dissatisfaction five years later.

Teasing in the Relationship between Body Mass and Body-Esteem

In various studies, teasing has been found to mediate or partially mediate the relationship between body mass and body-esteem in adolescent females (Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002). In two cross-sectional studies conducted by Thompson and colleagues (1995), overweight status was found to be a risk factor for receiving teasing about weight, size, and overall appearance. In addition, these teasing experiences fully mediated the relationship between body mass and body dissatisfaction. In their final longitudinal analysis, Thompson and colleagues found that initial levels of obesity and teasing experiences predicted higher levels of body dissatisfaction three years later.

In a cross-cultural replication of this study with grade seven and eight adolescent girls from Sweden and Australia, Lunner and colleagues (2000) found that teasing partially mediated the relationship between body mass index and body dissatisfaction in all of the populations studied. Van den Berg and colleagues (2002) used structural equation modeling to demonstrate that teasing history mediated the relationship between body mass index and body dissatisfaction in a sample of 470 grade 10 girls. More recently, Smith (2007) found that teasing reported by multiple sources including self, teacher, peer reports mediated the relationship between body mass index and body image for both boys and girls. Together, these studies provide strong support for an interactive influence of body mass and teasing (negative verbal commentary) on body dissatisfaction.

Bullying and Body-Esteem

In their investigation of the role of peer victimization in self-esteem and body-esteem, Casey-Cannon, Hayward, and Gowen (2001) interviewed 26 adolescent girls who were randomly sampled from a previous quantitative study (Compain et al., 2009) to ensure a wide distribution of body-esteem scores. Bullying was viewed as a common experience for most children and adolescents; only one out of twenty-six adolescents interviewed could not describe an instance of being bullied. In explaining how being bullied by others impacted their perceptions of themselves, the girls stated that they often internalized the insults they received, even when the insult was false and intended to harm them. Some girls explicitly described how weight-related teasing and bullying impacted their self-esteem and body-esteem. Thus, victims of appearance-related teasing and bullying are well aware of the impact of such behaviour on their own body-esteem.

Gowen (1998) found that relational victimization and teasing about weight were associated with greater body dissatisfaction in 10-year-old girls. Similarly, in a sample of pre-adolescent girls in grade six, Compain and colleagues (2009) found that the adolescents who reported relational bullying, as well as advanced pubertal status, had higher rates of weight concerns, even after controlling for the effects of body mass index. They suggested, however, that it was not only weight-related teasing, but also bullying not related to physical appearance that has an impact on weight concerns in adolescents.

Taken together, both qualitative and quantitative studies have indicated a significant relationship between peer victimization, particularly relational or social bullying, and body-esteem. However, the studies reviewed thus far have only looked at this relationship in girls.

Lunde, Frisen, and Hwang (2006) looked at the relationship between body-esteem and global victimization as well as particular forms of victimization (e.g., social exclusion, name-calling, teasing, appearance-related teasing, threats of violence, and physical violence) in 10-year-old girls and boys. They found that, for girls, appearance related teasing, social exclusion, and global bullying were the strongest predictors of body-esteem and, for boys, social exclusion and teasing were the strongest predictors. Social exclusion was the “most powerful predictor of poorer body satisfaction” in each area of body-esteem (Lunde, 2009, p. 36).

In a follow-up longitudinal analysis, Lunde, Frisen, and Hwang (2007) investigated the relationship among peer victimization, body mass index, and body-esteem among the same adolescent girls and boys at age 13. Body-esteem at age 10 significantly predicted body-esteem at age 13, even though body-esteem had generally decreased for girls and boys over the two-year span. For girls, frequent victimization at age 10 predicted weight-related body-esteem at age 13; for boys, appearance-related teasing at age 10 predicted attribution-related body-esteem at age 13. Again, the authors speculated that appearance-related victimization was likely involved in the relationship between bullying and body-esteem, although they did not analyze the content of bullying received. The present study extends this research by examining the mediation effect of various forms of victimization and specifically physical appearance-related victimization on the association between body mass and body-esteem in a sample of both adolescent boys and girls.

What is Missing in the Literature

The literature reviewed here demonstrates a relationship between bullying (victimization) and body-esteem, yet, there were a number of gaps that the present study

attempted to address. First, the impact of different forms of bullying behaviour—physical, verbal, social, and cyber—has not been distinguished in previous studies. This study examined the victimization – body-esteem link across four different forms of victimization. Second, little attention has been directed toward examining the content or focus of bullying, with bullying specifically about physical appearance-related content expected to be most strongly predictive of body-esteem. This is a central focus of the present study. Third, most of the research on body-esteem has focused on females. This study included adolescents of both sexes. Fourth, previous research has often assumed a linear relationship between body mass and body-esteem for both females and males. The present study analyzed the possible quadratic functions of this relationship. Fifth, this is the first study to address the mediation of peer victimization (bullying) in the relationship between body mass index and body-esteem, as only teasing as a mediator has been previously investigated.

The Study

This study extends previous research on the relationship between peer victimization (bullying) and body-esteem by examining this relationship across four forms of victimization—physical, verbal, social, and cyber—and with regard to the content of the victimization, with particular interest in physical appearance-related victimization. The primary aim, however, was an examination of the mediating role of peer victimization in the relationship between body mass and body-esteem.

Research Questions and Hypotheses

(1) What is the relationship between general victimization and body-esteem for boys and girls?

Hypothesis (1): Replicating Lunde et al. (2006, 2007) and others (see preceding review), it was hypothesized that a significant negative relationship would be observed between general victimization and body-esteem for both boys and girls, whereby high frequencies of general victimization was associated with low levels of body-esteem.

(2) What is the relationship between the different forms of victimization—physical, verbal, social, and cyber victimization—and body-esteem for boys and girls and what form of victimization is the most important predictor of body-esteem for boys and girls?

Hypothesis (2): Replicating Lunde et al. (2006, 2007) and others, it was hypothesized that a significant negative relationship would be observed between the different forms of peer victimization and body-esteem for both boys and girls, whereby high frequencies of peer victimization was associated with low levels of body-esteem. Of interest was whether the magnitude of the relationship between victimization and body-esteem differed across forms of victimization. According to Gowen (1998), Compain and colleagues (2009), Lunde (2009), and Lunde et al. (2006), social victimization was hypothesized to be the most important predictor of body-esteem, particularly for girls.

(3) What is the relationship between physical appearance-related victimization (physical appearance, weight, body shape, physical strength/weakness, and dress) and body-esteem for

boys and girls and what content of victimization is the most important predictor of body-esteem for boys and girls?

Hypothesis (3): A significant negative relationship was expected between the frequency of physical appearance-related victimization and body-esteem for boys and girls, whereby high frequencies of physical appearance-related victimization is associated with low levels of body-esteem in girls and boys. The role of physical appearance-related victimization in body-esteem was implied by the research concerning physical appearance-related teasing and body-esteem (Cash, 1995; Eisenberg et al., 2006; Eisenberg et al., 2003; Haines et al., 2006; Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002), discussed previously. The literature on teasing has not yet differentiated between the different physical appearance-related victimization (physical appearance, weight, body shape, physical strength/weakness, and dress) in the prediction of body-esteem so no hypothesis was made.

(4) What is the relationship between body mass index and body-esteem for boys and girls?

Hypothesis (4): Replicating previous research (Barker & Galambos, 2003; Kostanski et al., 2004; Presnell et al., 2004; Smolak, 2004), it was expected that there would be a significant relationship between body mass index and body-esteem for boys and girls. For girls, there would be a linear negative relationship between body mass index and body-esteem, with high levels of body mass index indicating low levels of body-esteem. For boys, a quadratic relationship was expected between body mass index and body-esteem, with low and high levels of body mass index indicating low levels of body-esteem.

(5). Does peer victimization (general, forms, and/or physical appearance-related) mediate the relationship between body mass index and body-esteem for boys and girls?

Hypothesis (5): Extending research on the links between teasing and body mass index as well as body-esteem (Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002), it is expected that peer victimization would mediate or partially mediate the relationship between body mass index and body-esteem.

Chapter Three: Methods

Operational Definitions

Peer victimization (bullying). Peer victimization occurs when an individual is exposed to negative actions from one or more individuals (Olweus, 1993, 1999). According to Olweus (1999), bullying is characterized by the following three qualities: (1) it is perceived as intentionally harmful or aggressive; (2) it occurs repeatedly and over time; and (3) it involves an imbalance of power in an interpersonal relationship. A single individual or a group can carry out bullying behaviour; peer victimization can also be targeted at a single individual or a group (Olweus, 1993). Various researchers have suggested that bullying may take different forms including physical, verbal, social, and cyber bullying (Hymel, White, Ishiyama, Jones, and Vaillancourt, 2006; Wang et al., 2009).

Physical appearance-related victimization. Physical appearance-related victimization involves any bullying behaviour that is about physical appearance, including facial or body appearance, weight, body shape, physical strength or weakness, and dress.

Body-esteem. Body-esteem refers to the subjective component of body image and is reflected in ones' self-evaluations of appearance and body. As measured by the Body-Esteem Scale for Adolescents and Adults (Mendelson et al., 2001), body-esteem consists of three components: appearance (refers to general feelings about appearance), weight (refers to general feelings about weight), and attribution (refers to evaluations an individual believes others hold about his/her body and appearance).

Body mass. Body mass, most commonly measured using body mass index or BMI, involves an individual's weight taking into consideration his/her height as well as his/her age and sex. BMI is defined as a measure of weight in kilograms divided by height in meters

squared (kg/m^2). For children and adolescents, BMI is measured in relation to age and sex (World Health Organization, 2010).

Sample

Setting and participants. Participants were 801 middle school students (409 girls, 392 boys) in grade six through eight from three suburban middle schools ($N = 203, 185$ and 412 across schools) in the Lower Mainland of British Columbia, Canada. Of those students who returned their parent consent forms, 80% completed the survey, representing 58% of all possible participants. Participants ranged in age from 10.4 to 14.8 with a mean age of 12.4 ($SD = 0.84$) and were roughly equally split across grade levels (34% in grade 6, 39% in grade 7 and 28% in grade 8). See Table 1 for distribution of participants by grade and gender. As for the racial/ethnic make-up of the sample, 1% were Aboriginal, 1% were African/Caribbean, 2% were South Asian, 21% were Asian, 45% were Caucasian, 1% were Latin American, 5% were Middle Eastern, 14% were mixed race, 4% were other, and 7% did not know their race/ethnicity.

Table 1

Distribution of Participants by Grade and Gender

Gender	Grade 6	Grade 7	Grade 8
Girls	139	154	116
Boys	129	157	105

Procedure

After receiving approval for the research from the University of British Columbia Behavioural Ethics Review Board (Appendix A) as well as the school district review board, a recruitment letter was sent out to 13 schools in southwestern British Columbia (Appendix B). Three schools agreed to participate. Across the three participating schools, the author visited

each of 53 classrooms to explain the study to students, answer any questions, and distribute parent/guardian consent forms to take home (Appendix C). Parent consent forms were translated into appropriate languages for the school district including Chinese (both traditional and simplified), Korean, and Farsi. All students who returned permission forms were entered into a school-wide draw for one of two \$50 gift certificates to a local mall.

Surveys were administered by the author and/or trained research assistants in each classroom. Students who had received parental consent to participate were asked to sign an informed assent form (Appendix D). Students who did not receive parent/guardian permission or did not assent to participate were assigned schoolwork to do by their teacher.

All of the data were collected using hand held, electronic devices or “clickers” (complete with an LCD screen indicating the question the students were answering and the answer for each question; students were able to review questions already answered and change these answers). Each participant was given a paper copy of the survey and an individual clicker on which he/she would indicate his/her responses to each survey item. No names were used on the survey or clickers; students were assigned an identification number to ensure confidentiality. Students were trained in the use of the clicker using a PowerPoint presentation by the author and/or trained research assistant and practice questions were completed to assure that each participant understood how to use them. The demographic and BMI questions were completed on the clickers as part of the PowerPoint presentation (to allow researchers to answer questions and aid in conversions from metric measurements to pounds/inches). Students were then given a definition of bullying and asked to complete the rest of the survey on their own. Responses entered by participants on the clickers were checked by the researchers during data collection to ensure that student responses were

complete; if students missed items or provided out of range responses, the researchers would let the student know and ask him/her to go back and reconsider that question.

Following completion of the survey, the students were given a bookmark that listed referral and youth assistance resources as well as help lines (Appendix E) that students could contact if they were experiencing social difficulties and needed help. Participants were also given an opportunity to request additional support from their school counsellor by filling out a form provided in their survey package (Appendix F). Following completion of the survey, students were then thanked for their participation. Completed request for help forms were immediately given the appropriate school counsellor or youth worker at the school for follow up.

Data Collection

All measures used in this study are reported in Appendix G (question numbers are not sequential as they were part of a larger survey). For the present study, measures included demographic characteristics; body mass index (weight, height, and date of birth); frequency of general, physical, verbal, social, and cyber victimization and associated behaviours; frequency of victimization about physical appearance, weight, body shape, physical strength/weakness, and dress; and body-esteem. The order of the measures was chosen in an attempt not to bias the results associated with body-esteem (the dependant variable).

Measures/ Variables

Demographic information. A number of questions regarding demographic information were presented at the beginning of the survey, including identification number (assigned by researchers), school, grade, gender, and ethnic/racial/cultural identification.

Peer victimization (bullying). The Safe Schools Survey was developed by Hymel, White, and Ishiyama in collaboration with British Columbia schools (as cited in Hymel, White, Ishiyama, Jones, and Vaillancourt, 2006) and was later adapted by Totten, Quigley, and Morgan (2004) for the Canadian Public Health Association and the National Crime Prevention Strategy. The Survey included a self-report index of students' experiences with bullying, as a perpetrator, a victim, and/or a witness. In the present study, only reports of victimization were considered. Specifically, respondents were first provided with a definition of various forms of bullying—general, physical, verbal, social, and cyber bullying—and were asked to rate how often they had experienced each over the past school year. In an attempt to provide greater methodological soundness, student reports of victimization were also assessed in terms of specific behaviours that characterized each form of bullying (physical, verbal, social, and cyber). These behavioural items are reported in Table 2.

An exploratory factor analysis of student responses regarding the behaviours associated with the various forms of victimization was conducted using M-Plus with categorical variables (given a Likert-type response scale was used), Weighted Least Squares Mean and Variance Corrected with Oblimin rotation was used. Results are presented in Table 2. Three factors were identified reflecting (1) social, (2) physical/verbal, and (3) cyber victimization, with eigenvalues of 12.57, 2.41, and 1.53, respectively. The RMSEA was 0.06 and the CFI was 0.97. A parallel analysis confirmed the three factors. The majority of the items loaded on the expected factors. Although there were some significant cross-loadings, many of these cross-loadings were higher on the expected factor. Two items (5 and 19) did not load on the expected factor and were removed from further analyses. A highly similar factor structure was found when responses from boys and girls were analyzed separately.

Although items describing physical and verbal victimization loaded on a single factor, reflecting the likely co-occurrence of such behaviours in direct bullying, this physical/verbal victimization factor was later conceptually split into two variables for subsequent data analyses.

The multiple questions addressing each form of victimization (physical, verbal, social, and cyber) were averaged to compute composite scores for each form. Specifically, individual responses to relevant items, ranging from 1 (never) to 5 (several times a week) were averaged to compute a single composite score for each form of victimization. Each of the four victimization composites demonstrated satisfactory consistency, with Cronbach alphas at .82 for physical victimization, .83 for verbal victimization, .89 for social victimization, and .83 for cyber victimization for this sample.

The adapted measure involved all of the characteristics recommended for assessing bullying by Olweus (1993), including provision of a definition of bullying so the students have clear understanding of what the researcher is looking for, reference to a particular time period (for example, this school year), and specific response alternatives (for example, once a week or several times a week).

Table 2

Exploratory Factor Analysis of Forms of Victimization Scale

Item #	Question: How often have you...	Factor 1: Social	Factor 2: Physical/ Verbal	Factor 3: Cyber
1.	been physically bullied?	.09	.68	- .01
2.	been verbally bullied?	.49	.47	- .04
3.	been socially bullied?	.62	.03	.26
4.	been cyber bullied?	.05	.04	.71
5.	had someone tell your secrets to others?	.25	.07	.46
6.	been slapped, pinched, or scratched?	-.12	.74	.13
7.	had someone try to get others not to like you or hang out with you?	.63	- .08	.35
8.	been kept out of the group?	.89	- .03	.01
9.	been shoved, tripped, or pushed?	- .01	.83	.06
10.	been threatened that something bad will happen to you?	.14	.49	.22
11.	had someone threaten or hurt your feelings using email, instant messages, text messaging, or websites?	- .06	- .04	.94
12.	found out you are not invited to something?	.46	- .05	.28
13.	been excluded?	.87	.04	- .08
14.	had someone humiliate, embarrass, or made you look bad using email, instant messages, text messaging, or websites?	< .01	.14	.73
15.	been called names, mocked, or hurtfully teased?	.44	.54	- .05
16.	been gossiped about or had rumours spread about you?	.38	.07	.47
17.	been made fun of, humiliated, or embarrassed?	.40	.47	.08
18.	been hit, kicked, punched, or bit?	- .10	.96	- .03
19.	had someone try to get you into trouble or look foolish with other students?	.28	.48	.16
20.	had someone spread rumours or tell your secrets using email, instant messages, text messaging, or websites?	.05	- .01	.79
21.	been accused or blamed for something you did not do?	.25	.41	.17
22.	been ignored or not listened to?	.57	.19	.05
23.	had someone send you mean emails or text messages?	- .05	.03	.84
24.	had your property damaged or stolen or had someone play keep away with your property?	.20	.46	.02
25.	had someone send embarrassing pictures using email, instant messages, text messaging, or websites?	.04	.05	.65
26.	had someone roll their eyes or make mean faces at you?	.40	.21	.23

Note. Items in grey were removed. Items loading on each proper factor are bolded. For the physical/verbal factor, items retained as physical are bolded and items retained as verbal are bolded/italicized.

Content of victimization. The Safe Schools Survey (described above) also included a question about the content of victimization, asking students to rate “how often have you been left out or treated badly because of _____?” followed by a list of possible content or foci of victimization including appearance, weight, and physical strength/weakness. This measure was adapted for the purposes of this study. First, items were modified to reflect the victimization content themes identified by Horowitz and colleagues (2004) in focus groups with middle school students. Second, the wording of the question was changed to “how often have you been bullied about _____?” The adapted measure required students to rate from never (1) to several times a week (5) how often they had been bullied about 17 personal characteristics and behaviours, including physical appearance, weight, body shape, physical strength or weakness, and dress. Each of the 5 personal characteristics and behaviours, related to appearance (just described), were used as individual items reflecting physical appearance-related victimization, with higher scores indicating more frequent victimization.

Body-esteem. The Body-Esteem Scale for Adolescents and Adults created by Mendelson and colleagues (2001) was used in this study to assess participants’ levels of body-esteem, with permission of the author, Dr. Beverly Mendelson. The items included in this measure were divided into three subscales or domains: appearance (general feelings about appearance), weight (weight satisfaction), and attribution (evaluations attributed to others about one’s body and appearance). Items in each subscale are positively and negatively worded. Sample items from each subscale include “I wish I looked like someone else,” “I am satisfied with my weight,” and “Other people consider me good looking,” respectively. Students rated each item on a 5-point Likert scale ranging from “never” to “always.” The subscales have demonstrated high internal consistency in previous research by

Mendelson and colleagues (2001) (Cronbach's $\alpha = .93$ for appearance, Cronbach's $\alpha = .81$ for weight, and Cronbach's $\alpha = .94$ for attribution) and test-retest reliability at three months ($r(95) = .89, p < .001$ for appearance, $r(95) = .92, p < .001$ for weight, and $r(95) = .83, p < .001$ for attribution).

A confirmatory factor analysis was conducted to verify that the data obtained in the present study fit the factor structure of the body-esteem scale. Results of the confirmatory factor analysis indicated that the proposed factor structure did not fit the data; the RMSEA was 0.20 and the CFI was 0.88, indicating ill fit. An exploratory factor analysis was then conducted to explore the factor structure of the present data using M-Plus with Weighted Least Squares Mean and Variance Corrected with Oblimin rotation. Table 3 presents the results of the factor analysis. Three factors were obtained: body-esteem attribution, body-esteem appearance, and body-esteem weight, with eigenvalues of 9.99, 2.57, and 1.83, respectively. The RMSEA was 0.07 and the CFI was 0.97. A parallel analysis confirmed the three factors. The majority of the items loaded on the expected factor. There were a few significant cross-loadings but, in each case, these cross-loadings were higher on the expected factor. Two items (1 and 6) that did not load on the expected factor were removed from subsequent analyses. Items in each subscale were averaged to compute each subscale composite score, with higher scores indicative of higher levels of body-esteem. Cronbach alpha levels were .88 for body-esteem appearance, .88 for body-esteem weight, and .74 for body-esteem attribution for this sample.

Table 3

Exploratory Factor Analysis of Body-Esteem Scale

Item #	Question	Factor 1: Attribution	Factor 2: Appearance	Factor 3: Weight
1.	I like what I look like in pictures.	.45	.24	.05
2.	Other people consider me good looking.	.79	.01	-.03
3.	I'm proud of my body.	.39	.16	.48
4.*	I am preoccupied with trying to change my weight.	-.20	.15	.62
5.	I think my appearance would help me get a job.	.42	-.13	.02
6.	I like what I see when I look in the mirror.	.48	.28	.19
7.*	There are lots of things I'd change about my looks if I could.	.02	.76	.02
8.	I am satisfied with my weight.	.06	-.16	.89
9.*	I wish I looked better.	.06	.85	-.03
10.	I really like what I weigh.	.11	.11	.89
11.*	I wish I looked like someone else.	.03	-.83	.10
12.	People my own age like my looks.	.79	.05	-.06
13.*	My looks upset me.	.06	.78	.03
14.	I'm as nice looking as most people.	.58	.21	.13
15.	I'm pretty happy about the way I look.	.43	.44	.21
16.	I feel I weigh the right amount for my height.	.16	.03	.65
17.*	I feel ashamed of how I look.	.11	.65	.19
18.*	Weighing myself depresses me.	-.22	.30	.68
19.*	My weight makes me unhappy.	-.23	.26	.74
20.	My looks help me to get attention from the opposite sex.**	.62	-.11	< .01
21.*	I worry about the way I look.	-.06	.66	.05
22.	I think I have a good body.	.42	.16	.46
23.	I'm looking as nice as I'd like to.	.41	.43	.17

Note. Items in grey were removed. Items loading on each proper factor are bolded. Items marked with an asterisk were reversed (*). Items marked with a double asterisk ** were changed from the original scale (based on input from the schools involved).

Body mass index. Body mass index or BMI involves a calculation of weight in kilograms divided by height in meters squared (kg/m^2); for children and adolescents, body mass index is measured in relation to age and sex. The World Health Organization (2007a; 2007b; 2010; Onis et al., 2007) has determined z-scores taking into account body mass index

for age and sex. The World Health Organization (2010) provides a SPSS syntax for creating BMI z-scores based on a normative sample that take into account the age and sex of a child or adolescent who is five to nineteen. According to the World Health Organization, an individual with a BMI-for-age z-score three standard deviations below the mean (and lower) ($< -3SD$) is severely thin, a z-score between two and three standard deviations below the mean ($< -2SD$) is thin, a z-score between two standard deviations below the mean and one standard deviation above the mean is normal weight ($> -2SD$ and $< +1SD$), a z-score one standard deviation above the mean ($> +1SD$) is overweight, and a z-score two standard deviations above the mean (and higher) ($> +2SD$) is obese (World Health Organization, 2010).

Chapter Four: Results

Data Screening and Assumptions

The data were screened for accuracy of data entry, missing data, and assumptions of normality, as outlined by Tabachnick and Fidell (2007). Given the data were entered using electronic clickers, with built-in checks at the point of data collection, there were few errors in data entry and very little missing data in this data set (i.e., .1% to 1.4% across measures). Given the low amount of missing data, the missing data was dealt with using list-wise deletion.

The data were examined for univariate outliers. The boxplots did not reveal any extreme scores that were outside normal expectations. BMI and body-esteem variables did not reveal any outliers when z-scores were examined. According to Hair, Black, Bain, Anderson, and Tatham (2006), univariate outliers refer to z-scores with an absolute value greater than or equal to four. The bullying variables did reveal outliers, ranging from zero to fifteen outliers per item. Outliers in bullying research are expected, as there are individuals who are severely bullied; an inspection of the outliers indicated that these values were not due to procedural error and were plausible. According to Hair and colleagues (2006) outliers should not be deleted unless proven to be non-representative of the population; in this case, these outliers were deemed representative of the population and were not deleted.

The correlation matrix was assessed for multicollinearity and singularity; no correlations above 0.90 were found and thus, multicollinearity and singularity were not considered a problem. Bivariate scatterplots were assessed for linearity; all relationships except the relationship between BMI and body-esteem weight for boys were found to be linear (BMI predicting body-esteem weight was found to be quadratic and was therefore

dealt with using polynomial regression, as discussed below). Multivariate normality, homoscedacity, and linearity were assessed using plots of the predicted values to the standardized residuals. No significant violations were found in the plots, except the quadratic relationship that was found between BMI and body-esteem weight for boys, which was expected (see above literature review). Tolerance indexes, variance inflation factors (VIF), and condition indexes for all regression models were within normal ranges and thus are not reported. For a few of the regression analyses conducted, Durbin Watson statistics were slightly above 2.0, indicating there might be some slight serial correlation; thus, these statistics are reported for all regression models. Whether the predictors for each regression equation and the standardized residuals were correlated was also assessed; for a few regression analyses, the predictors and residuals were correlated, indicating a violation of the assumption that the predictors and residuals do not co-vary and these violations are reported for each regression model as appropriate.

Variables were assessed for normality. Skewness and kurtosis values are presented in Table 4. Following Tabachnick and Fidell (2007), the significance of the skewness and kurtosis indices for each variable was determined (z-value reported in table). Efforts were made to transform skewed dependant variables (body-esteem appearance and body-esteem weight) using a square root transformation for moderate negative skewness, as described in Tabachnick and Fidell; however, they were not successful (i.e., transformed moderately negatively skewed distributions into moderately positively skewed distributions). According to Tabachnick and Fidell, in such cases, there is no advantage to transformation; thus, the untransformed scores are reported.

Table 4

Skewness and Kurtosis of Variables

Variable	Skewness	S.E. of Skewness	Statistical Test of Skewness (z-score)	Kurtosis	S.E. of Kurtosis	Statistical Test of Kurtosis (z-score)
Body-Esteem Appearance	- 0.724	.086	- 8.419*	- 0.010	.173	- 0.058
Body-Esteem Weight	- 0.823	.087	- 9.460*	0.118	.173	- 0.682
Body-Esteem Attribution	- 0.036	.087	0.414	- 0.164	.173	- 0.948
BMI	- 0.066	.087	0.759	0.384	.174	2.207
General Victimization	1.494	.086	17.372*	4.490	.173	25.954*
Physical Victimization	1.790	.086	20.814*	3.219	.173	18.607*
Verbal Victimization	1.582	.086	18.395*	3.223	.173	18.630*
Social Victimization	1.559	.086	18.127*	12.464	.173	72.046*
Cyber Victimization	2.857	.086	33.221*	2.418	.173	13.977*
Victimization about Physical Appearance	1.888	.086	21.953*	3.536	.173	20.439*
Victimization about Weight	2.367	.086	27.523*	6.087	.173	35.185*
Victimization about Body Shape	2.831	.086	32.919*	9.046	.173	52.289*
Victimization about Physical Strength/Weakness	2.102	.086	24.442*	5.201	.173	30.064*
Victimization about Dress	2.490	.086	28.953*	7.438	.173	42.994*

Note. * $p < .01$ (one tailed, z-score above 2.33)

Descriptive Statistics

The means, standard deviations, and variances are reported in Table 5 for all measures, computed separately for boys and girls. All analyses that follow were computed separately for boys and girls due to the differences in body-esteem for girls and boys (as

discussed in the literature review); for example, for girls, the relationship between BMI and body-esteem has been found to be linear and for boys, it has been found to be quadratic (Cortese et al., 2010; Kostanski et al. 2004; Presnell et al., 2004; Smolak, 2004).

A multivariate analysis of variance was completed to determine grade, school, and sex differences among all of the variables. No significant differences as a function of grade or school were found for any of these variables. However, significant sex differences were observed [$F(13,746) = 13.646, p < .01$] and are also reported in Table 5 and thus, confirming the need to conduct all analyses separately for boys and girls.

Table 5

Sex Differences AND Means, Standard Deviations, and Variances for the Girls and Boys

Variables	Girls		Boys		Sex Differences	
	Mean	SD	Mean	SD	Difference	<i>p</i>
Body-Esteem Appearance	3.69	0.89	3.98	0.80	G < B	< .001*
Body-Esteem Weight	3.69	0.98	3.97	0.82	G < B	< .001*
Body-Esteem Attribution	3.04	0.78	3.11	0.81	No Difference	.079
BMI	- 0.25	1.24	0.19	1.17	G < B	< .001*
General Victimization	1.84	0.92	1.85	0.96	No Difference	.974
Physical Victimization	1.46	0.56	1.73	0.67	G < B	< .001*
Verbal Victimization	1.73	0.62	1.85	0.75	No Difference	.014
Social Victimization	1.86	0.65	1.72	0.66	G > B	.007*
Cyber Victimization	1.31	0.49	1.20	0.35	G > B	.001*
Victimization about Physical Appearance	1.59	0.86	1.62	1.01	No Difference	.776
Victimization about Weight	1.43	0.82	1.44	0.82	No Difference	.836
Victimization about Body Shape	1.36	0.74	1.28	0.70	No Difference	.140
Victimization about Physical Strength/Weakness	1.40	0.69	1.53	0.86	No Difference	.013
Victimization about Dress	1.43	0.71	1.41	0.82	No Difference	.723

Note. * $p < .01$

Correlation Analyses

Correlation analyses were conducted to ascertain whether there was a significant relationship between the dependant variables (body-esteem appearance, body-esteem weight, and body-esteem attribution) and (1) general victimization, (2) forms of victimization, (3) physical appearance-related victimization, and (4) BMI.

Question (1): What was the relationship between general victimization and body-esteem for boys and girls? For both girls and boys, significant negative correlations were observed between body-esteem and general victimization, as expected. Students who reported greater victimization also reported less positive reports of body-esteem (see Table 6).

Question (2): What was the relationship between the different forms of victimization—physical, verbal, social, and cyber victimization—and body-esteem for boys and girls? Some variations were observed across different body-esteem subscales. Specifically, for both girls and boys, body-esteem appearance was significantly negatively related to all forms of victimization. For girls, body-esteem weight was significantly negatively correlated with all forms of victimization. For boys, significant negative correlations between body-esteem weight and verbal and social victimization were observed. For girls, significant negative correlations were obtained between body-esteem attribution and verbal and social victimization. For boys, significant negative correlations were observed between body-esteem attribution and physical, verbal, and social victimization. Across the significant correlations observed between body-esteem composites and various forms of victimization, more positive body-esteem was associated with fewer reports of victimization (see Table 6).

Table 6

Correlations between Types of Victimization and Body-Esteem for Girls and Boys

	Victimization (GIRLS/BOYS)				
	General	Physical	Verbal	Social	Cyber
BMI	.076 / - .076	.108 / - .055	.184 */.044	.099 /.027	.097 / - .015
Body-Esteem	- .258 */	- .270 */	- .358 */	- .394 */	- .371 */
Appearance	- .319*	- .268*	- .408*	- .422*	- .210*
Body-Esteem	- .194 */	- .237 */	- .317 */	- .270 */	- .309 */
Weight	- .175*	- .103	- .247*	- .243*	- .089
Body-Esteem	- .143 */	- .111 /	- .133 */	- .155 */	- .048 /
Attribution	- .247*	- .172*	- .245*	- .256*	.037

Note. **Girls are BOLD/ Boys are Italics**

* $p < .01$

Question (3): What was the relationship between physical appearance-related victimization (physical appearance, weight, body shape, physical strength/weakness, and dress) and body-esteem for boys and girls? Correlations observed between body-esteem variables and student reports of the physical appearance-related content of victimization were considered next. As expected, greater levels of victimization about all content related to physical appearance were associated with lower levels of body-esteem, although some differences across type of body-esteem emerged. For both girls and boys, significant negative correlations were observed for body-esteem appearance with all physical appearance-related victimization. For girls, significant negative correlations were observed for body-esteem weight and all physical appearance-related victimization. For boys, significant negative correlations were obtained for body-esteem weight and victimization about physical appearance, weight, body shape, and physical strength/weakness. Finally, body-esteem attributions were significantly negatively related to victimization about physical appearance and dress for girls and with victimization about physical appearance, weight, body shape, and physical strength/weakness for boys (see Table 7).

Table 7

Correlations between Physical Appearance-Related Victimization and Body-Esteem for Girls and Boys

	Physical Appearance-Related Victimization (GIRLS/BOYS)				
	About Physical Appearance	About Weight	About Body Shape	About Physical Strength/Weakness	About Dress
BMI	.159*/.114	.193*/.219*	.208*/.155*	.034/ - .092	.103/ - .045
Body-Esteem Appearance	- .405*/ - .359*	- .236*/ - .251*	- .289*/ - .346*	- .291*/ - .227*	- .320*/ - .230*
Body-Esteem Weight	- .348*/ - .256*	- .384*/ - .423*	- .384*/ - .389*	- .185*/ - .185*	- .216*/ - .079
Body-Esteem Attribution	- .154*/ - .186*	- .098/ - .150*	- .084/ - .164*	- .077/ - .229*	- .162*/ - .126

Note. **Girls are BOLD/ Boys are Italics**

* $p < .01$

Question (4): What was the relationship between body mass index and body-esteem for boys and girls? Consistent with hypotheses and previous literature, significant negative correlations were observed between BMI and body-esteem, especially for girls. Specifically, for girls, there were significant negative correlations observed between BMI and all forms of body-esteem. For boys, only the correlation between BMI and body-esteem weight reached significance (see Table 8).

Table 8

Correlations between BMI and Body-Esteem

	BMI	Body-Esteem Appearance	Body-Esteem Weight	Body-Esteem Attribution
BMI	1	<i>-.119</i>	<i>-.249*</i>	<i>-.037</i>
Body-Esteem Appearance	-.291*	1	<i>.546*</i>	<i>.351*</i>
Body-Esteem Weight	-.440*	.678*	1	<i>.404*</i>
Body-Esteem Attribution	-.138*	.416*	.336*	1

Note. **Girls are BOLD** and *Boys are Italics*

* $p < .01$

Regression Analyses

Significance, effect sizes, and Pratt indices. A p value of less than .01 ($p < .01$) for significance was used due to the large number of analyses in this study. Effect sizes (f^2) were computed using the formula put forth by Cohen (1992): $f^2 = R^2 / (1 - R^2)$. An effect size of .02 is considered small, .15 is considered medium, and .35 is considered large (Cohen, 1992). Relative Pratt Indices were also computed for all regression analyses (Thomas, Hughes, & Zumbo, 1998). The Relative Pratt Index (d_j) is the Beta-weight (β) multiplied by the Pearson Correlation between the independent and dependant variable (r); the resulting number is divided by the R^2 of the model: $d_j = [\beta * r] / R^2$ (Thomas et al., 1998). Negative Relative Pratt Indices are considered suppressor variables; therefore, to account for suppressor variables, Relative Pratt Indexes are re-scaled by dividing each positive index by the sum of all of the positive indexes (Thomas et al., 1998). According to Thomas and colleagues (1998) and R. Thomas (personal communication, July 18, 2010), the amount that the suppressor increases the R^2 by is equal to $R^2 - R^2_{NS}$, where R^2 is the R^2 of the entire model (including suppressors

and non-suppressors) and the R^2_{NS} is the R^2 in the regression of the dependant variable on the non-suppressor variables. A variable with a Relative Pratt Index of below $1/(2 * p)$, where p is the number of independent variables, is considered unimportant (Ochieng & Zumbo, 2001; Thomas et al., 1998).

Regression analyses. Four sets of regressions were completed separately for girls and boys, predicting each of the three body-esteem subscales (appearance, weight, and attribution) from (1) general victimization, (2) forms of victimization, (3) physical appearance-related victimization, and (4) BMI. Analyses were performed using SPSS Regression.

Question (1): What was the relationship between general victimization and body-esteem for boys and girls? General victimization was found to predict all types of body-esteem for both girls and boys (see Table 9), although all of the effect sizes were considered small (Cohen, 1992). As indicated in Table 9, for girls, body-esteem appearance was found to be significant with 7% of the variance in body-esteem appearance being predicated by student reports of general victimization. Body-esteem weight was found to be significant; 4% of the variance in body-esteem weight was predicted by reports of general victimization. Body-esteem attribution was also significant with 2% of the variance in body-esteem attribution accounted for by general victimization.

For boys, body-esteem appearance was found to be significant with 10% of the variance in body-esteem appearance being predicated by general victimization. Approximately 3% of the variance in body-esteem weight was predicated by general victimization. Body-esteem attribution was also found to be significant with 6% of the variance in body-esteem attribution accounted for by general victimization.

Table 9

Regression of General Victimization on Body-Esteem for Girls and Boys

Dependent Variable	R ²	F	df	Effect Size (f ²)	B	SE B	β	t	partial r
<i>GIRLS</i>									
Appearance	.067	28.982*	1, 406	.072	-.252	.047	-.258	-5.383*	-.258
Weight	.038	15.819*	1, 406	.040	-.207	.052	-.194	-3.977*	-.194
Attribution	.021 ^D	8.444*	1, 402	.021	-.121	.042	-.143	-2.906*	-.143
<i>BOYS</i>									
Appearance	.102	44.221*	1, 390	.114	-.267	.040	-.319	-6.650*	-.346
Weight	.031	12.240*	1, 388	.032	-.150	.043	-.175	-3.499*	-.175
Attribution	.061	25.242*	1, 387	.065	-.209	.042	-.247	-5.024*	-.247

Note. ^D = Durbin Watson slightly above 2.0

* p < .01

Question (2): What was the relationship between the different forms of victimization—physical, verbal, social, and cyber victimization—and body-esteem for boys and girls and what form of victimization is the most important predictor of body-esteem for boys and girls? All types of body-esteem were separately regressed on all four forms of victimization. Together the four forms of victimization predicted all types of body-esteem, except body-esteem attribution for girls (see Table 10), with small to medium effect sizes (Cohen, 1992). Specifically, as shown in Table 10, for girls, approximately 18% of the variance in body-esteem appearance was predicated by forms of victimization (small to medium effect size); social and cyber victimization emerged as significant predictors. The Adjusted Relative Pratt Index indicated that social accounted for approximately 48%, cyber accounted for 36%, and verbal accounted for 18% of the variance in the R² (see Table 11). Forms of victimization predicted approximately 12% of the variance in body-esteem weight (small to medium effect size), although only cyber victimization emerged as a significant

predictor. The Adjusted Relative Pratt Index indicated that verbal accounted for approximately 54% and cyber accounted for 46% of the variance in the R^2 (see Table 11).

For boys, all regression analyses were significant (see Table 10). Forms of victimization predicted approximately 20% of the variance in body-esteem appearance (medium to large effect size), especially verbal and social victimization. The Adjusted Relative Pratt Index indicated that social victimization accounted for approximately 49% and verbal victimization accounted for 48% of the variance in the R^2 (see Table 11). Physical victimization acted as a suppressor variable in this model and increased the R^2 by .005 (.200 - .195 = .005; see formula described above $R^2 - R^2_{NS}$). Forms of victimization predicted 9% of the variance in body-esteem weight, particularly physical and verbal victimization (effect size was between small and medium). The Adjusted Relative Pratt Index indicated that verbal accounted for approximately 60% and social accounted for 38% of the variance in the R^2 (see Table 11). Physical victimization acted as a suppressor variable in this model and increased the R^2 by .016 (.085 - .069 = .016; see formula described above $R^2 - R^2_{NS}$). Body-esteem attribution was found to be significant with approximately 10% of the variance in body-esteem attribution accounted for by forms of victimization (small to medium effect size). Body-esteem attribution was significantly predicted by social and cyber victimization. Adjusted Relative Pratt Index indicated that social accounted for approximately 64% and verbal accounted for 30% of the variance in the R^2 ; although cyber was significant, it only accounted for 7% of the variance in the R^2 (see Table 11).

Table 10

Regression of Forms of Victimization on Body-Esteem for Girls and Boys

Dependent Variable <i>predictors</i>	R ²	F	df	Effect Size (f ²)	B	SE B	β	t	partial r
<i>GIRLS</i>									
Appearance	.180	22.163*	4, 403	.220					
<i>Physical</i>					.002	.104	.002	0.023	.001
<i>Verbal</i>					-.118	.120	-.083	-0.989	-.049
<i>Social</i>					-.297	.099	-.218	-3.012*	-.148
<i>Cyber</i>					-.316	.114	-.175	-2.772*	-.137
Weight	.119	13.667*	4, 403	.135					
<i>Physical</i>					.017	.119	.010	0.145	.007
<i>Verbal</i>					-.324	.138	-.206	-2.351	-.110
<i>Social</i>					-.007	.113	-.004	-0.059	-.003
<i>Cyber</i>					-.358	.131	-.179	-2.732*	-.128
Attribution	.033 ^D	3.369	4, 399	.034					
<i>Physical</i>					-.066	.099	-.048	-0.668	-.033
<i>Verbal</i>					-.057	.115	-.046	-0.492	-.250
<i>Social</i>					-.208	.094	-.174	-2.210	-.110
<i>Cyber</i>					.191	.109	.121	1.751	-.087
<i>BOYS</i>									
Appearance	.200	12.535*	4, 386	.250					
<i>Physical</i>					.135	.082	.112	1.649	.084
<i>Verbal</i>					-.292	.089	-.273	-3.292*	-.165
<i>Social</i>					-.325	.092	-.269	-3.525*	-.177
<i>Cyber</i>					-.061	.118	-.027	-0.517	-.026
Weight	.085 ^D	8.898*	4, 384	.093					
<i>Physical</i>					.237	.091	.191	2.617*	.132
<i>Verbal</i>					-.290	.098	-.263	-2.961*	-.149
<i>Social</i>					-.210	.102	-.169	-2.058	-.100
<i>Cyber</i>					.040	.130	.017	0.307	.015
Attribution	.101	10.844*	4, 384	.112					
<i>Physical</i>					.022	.088	.018	0.255	.013
<i>Verbal</i>					-.136	.095	-.125	-1.427	-.069
<i>Social</i>					-.318	.099	-.261	-3.220*	-.156
<i>Cyber</i>					.451	.126	.196	3.573*	.173

Note. Dependant Variables (BOLD) are subscales of body-esteem; Predictors (Italics) are forms of victimization.

^D = Durbin Watson slightly above 2.0

* $p < .01$

Table 11

Pratt Index for Forms of Victimization on Body-Esteem for Girls and Boys Regression Model

Sex	Dependant Variable	Independent Variable	β	Pearson Correlation with Dependant Variable	Relative Pratt Index (d_j)	Re-scaled Pratt Index (accounting for suppressors)	
GIRLS	Appearance	Physical	.002	-.270	-.003	-	
		Verbal	-.083	-.358	.165**	.165**	
		Social*	-.218	-.394	.477**	.476**	
		Cyber*	-.175	-.371	.361**	.360**	
	Weight	Physical	.010	-.237	-.020	-	
		Verbal	-.206	-.317	.549**	.537**	
		Social	-.004	-.270	.009	.009	
		Cyber*	-.179	-.309	.465**	.455**	
	Attribution						
			R ² not significant so Relative Pratt Indexes were not computed				
BOYS	Appearance	Physical	.112	-.268	-.150	-	
		Verbal*	-.273	-.408	.557**	.483**	
		Social*	-.269	-.422	.568**	.493**	
		Cyber	-.027	-.210	.028	.024	
	Weight	Physical*	.191	-.103	-.231	-	
		Verbal*	-.263	-.247	.764**	.604**	
		Social	-.169	-.243	.483**	.382**	
		Cyber	.017	-.089	.018	.014	
	Attribution	Physical	.018	-.172	-.030	-	
		Verbal	-.125	-.245	.307**	.295**	
		Social*	-.261	-.256	.662**	.636**	
		Cyber*	.196	.037	.072	.069	

Note. All Relative Pratt Indexes in the table above $1/(2*4) = .125$ are considered important and are marked with **.

* $p < .01$ in above Regression Analyses (Table 10).

Question (3): What was the relationship between physical appearance-related victimization (physical appearance, weight, body shape, physical strength/weakness, and dress) and body-esteem for boys and girls and what content of victimization is the most important predictor of body-esteem for boys and girls? All types of body-esteem were separately regressed on all physical appearance-related victimization, for boys and girls. Physical appearance-related victimization predicted all types of body-esteem, except body-esteem attribution for girls (see Table 12). Effect sizes were medium with the exception of

body-esteem attribution for boys, which was a small effect size (Cohen, 1992). For girls, body-esteem appearance was found to be significant with approximately 20% of the variance in body-esteem appearance accounted for by physical appearance-related victimization, particularly victimization about appearance and dress (see Table 12). Adjusted Relative Pratt Index indicated that victimization about physical appearance accounted for approximately 53%, victimization about dress accounted for 24%, and victimization about physical strength and weakness accounted for 16% of the variance in the R^2 (see Table 13). Approximately 19% of the variance in body-esteem weight was predicted by physical appearance-related victimization; however, body-esteem weight was not specifically significantly predicted by any of the physical appearance-related victimization (with adjusted alpha of $p < .01$) (see Table 12). Adjusted Relative Pratt Index indicated that victimization about weight accounted for approximately 36%, victimization about body shape accounted for 34%, and victimization about physical appearance accounted for 26% of the variance in the R^2 (see Table 13).

For boys, body-esteem appearance was found to be significant with 17% of the variance associated with physical appearance-related victimization; body-esteem appearance was significantly predicted by victimization about appearance and body shape, as shown in Table 12. Adjusted Relative Pratt Index indicated that victimization about physical appearance accounted for approximately 45% and victimization about body shape accounted for 41% of the variance in the R^2 (see Table 13). For body-esteem weight, 21% of the variance was predicated by physical appearance-related victimization, specifically by victimization about weight and body shape (see Table 12). Adjusted Relative Pratt Index indicated that victimization about weight accounted for approximately 58% and victimization

about body shape accounted for 39% of the variance in the R^2 (see Table 13). As discussed in Table 12, 7% of the variance in body-esteem attribution was accounted for by physical appearance-related victimization, particularly victimization about physical strength or weakness (small effect size). Adjusted Relative Pratt Index indicated that victimization about strength and weakness accounted for approximately 61% and physical appearance accounted for 27% of the variance in the R^2 (see Table 13).

Table 12

Regression of Physical Appearance-Related Victimization on Body-Esteem for Girls and Boys

Dependent Variable <i>predictors</i>	R^2	F	df	Effect Size (f^2)	B	SE B	β	t	partial r
<i>GIRLS</i>									
Appearance	.203	20.515*	5, 402	.255					
Appearance					-.284	.062	-.276	-4.569*	-.222
Weight					.047	.072	.043	0.653	.029
Body Shape					-.069	.082	-.057	-0.831	-.037
Strength/ Weakness					-.147	.066	-.114	-2.230	-.099
Dress					-.195	.064	-.157	-3.052*	-.136
Weight	.187	18.748*	5, 402	.230					
Appearance					-.162	.070	-.142	-2.323	-.115
Weight					-.209	.080	-.175	-2.597	-.128
Body Shape					-.222	.093	-.167	-2.398	-.119
Strength/ Weakness					.003	.074	.002	0.034	.002
Dress					-.042	.071	-.031	-0.591	-.029
Attribution	.035 ^D	2.896	5, 398	.036					
Appearance					-.095	.060	-.105	-1.576	-.079
Weight					-.027	.069	-.029	-0.396	-.020
Body Shape					.045	.080	.043	0.563	.028
Strength/ Weakness					-.006	.064	-.005	-0.089	-.004
Dress					-.130	.062	-.119	-2.091	-.104

Dependent Variable <i>predictors</i>	R ²	F	df	Effect Size (f ²)	B	SE B	β	t	partial r
<i>BOYS</i>									
Appearance	.171	15.842*	5, 385	.206					
<i>Appearance</i>					-.170	.046	-.215	-3.664*	-.184
<i>Weight</i>					-.002	.059	-.002	-0.034	-.002
<i>Body Shape</i>					-.235	.072	-.205	-3.261*	-.164
<i>Strength/ Weakness</i>					-.021	.053	-.023	-0.403	-.021
<i>Dress</i>					-.072	.053	-.075	-1.356	-.069
Weight	.210 ^D	2.345*	5, 383	.266					
<i>Appearance</i>					-.026	.047	-.032	-0.556	-.028
<i>Weight</i>					-.291	.059	-.290	-4.931*	-.244
<i>Body Shape</i>					-.244	.072	-.208	-3.374*	-.170
<i>Strength/ Weakness</i>					-.017	.053	-.017	-0.315	-.016
<i>Dress</i>					.064	.054	.064	1.190	.061
Attribution	.067 ^D	5.453*	5, 382	.071					
<i>Appearance</i>					-.078	.050	-.097	-1.559	-.080
<i>Weight</i>					-.034	.063	-.035	-0.544	-.028
<i>Body Shape</i>					-.025	.077	-.022	-0.329	-.017
<i>Strength/ Weakness</i>					-.167	.057	-.177	-2.952*	-.149
<i>Dress</i>					.010	.057	.010	0.177	.009

Note. Dependant Variables (BOLD) are subscales of body-esteem; Predictors (Italics) are physical appearance-related victimization content.

^D = Durbin Watson slightly above 2.0

* $p < .01$

Table 13

Pratt Index for Physical Appearance-Related Victimization on Body-Esteem for Girls and Boys Regression Model

Sex	Dependant Variable	Independent Variable	β	Pearson Correlation with Dependant Variable	Relative Pratt Index (d_j)	Re-scaled Pratt Index (accounting for suppressors)	
GIRLS	Appearance*	Appearance*	-.276	-.405	.551**	.525**	
		Weight	.043	-.236	-.050	-	
		Body Shape	-.057	-.289	.081	.077	
		Strength/ Weakness	-.114	-.291	.163**	.155**	
	Weight*	Dress*	-.157	-.330	.255**	.243**	
		Appearance	-.142	-.348	.264**	.263**	
		Weight	-.175	-.384	.360**	.359**	
		Body Shape	-.167	-.384	.343**	.342**	
	Attribution R ² = .035	Strength/ Weakness	.002	-.185	-.002	-	
		Dress	-.031	-.216	.036	.036	
		R ² not significant so Relative Pratt Indexes were not computed					
	BOYS	Appearance*	Appearance*	-.215	-.359	.451**	.451**
			Weight	-.002	-.251	.003	.003
Body Shape*			-.205	-.346	.412**	.412**	
Strength/ Weakness			-.023	-.227	.030	.030	
Weight*		Dress	-.075	-.230	.101	.101	
		Appearance	-.032	-.256	.008	.008	
		Weight*	-.290	-.423	.584**	.584**	
		Body Shape*	-.208	-.389	.385**	.385**	
Attribution*		Strength/ Weakness	-.017	-.185	.015	.015	
		Dress	.064	-.079	.024	.024	
		Appearance	-.097	-.186	.269**	.269**	
		Weight	-.035	-.150	.078	.078	
R ² = .067		Body Shape	-.022	-.164	.054	.054	
		Strength/ Weakness*	-.177	-.229	.605**	.605**	
	Dress	.010	-.126	.019	.019		

Note. All Relative Pratt Indexes in the table above $1/(2*5) = .100$ are considered important and are marked with **.

* $p < .01$ in above Regression Analyses (Table 12).

Question (4): What was the relationship between body mass index and body-esteem for boys and girls? All types of body-esteem were regressed on BMI separately and for both boys and girls. BMI predicted body-esteem appearance, body-esteem weight, and body-

esteem attribution for girls and BMI predicted body-esteem weight for boys (see Table 14). The effect sizes were small to medium (Cohen, 1992). For girls, approximately 9% of the variance in body-esteem appearance was predicated by BMI (small effect size) (see Table 14). For body-esteem weight, approximately 19% of the variance was accounted for by BMI (medium effect size). Only approximately 2% of the variance in body-esteem attribution was predicted by BMI (small effect size) (see Table 14). The standardized residuals for BMI and body-esteem appearance were correlated for girls (.122, $p < .01$) and BMI and body-esteem weight were also correlated for girls (.157, $p < .01$). Therefore, there was a violation of the assumption that the standardized residuals and predictors were not correlated.

For boys, the relationship between BMI predicting body-esteem weight was found to be quadratic with 17% of the variance in body-esteem weight being accounted for by BMI and BMI² (medium effect size) (see Table 14). The difference between the R² of the linear and the quadratic model was .110 (from linear to quadratic) and the residual plots indicated a quadratic relationship. The standardized residuals for BMI and body-Esteem weight (Quadratic Model) were correlated for boys (- .114 and .165, $p < .01$). Thus, for these relationships, the assumption that the standardized residuals and predictors were not correlated was violated.

Table 14

Regression of BMI on Body-Esteem for Girls and Boys

Dependent Variable	R ²	F	df	Effect Size (f ²)	B	SE B	β	t	partial r
<i>GIRLS</i>									
Appearance	.085	37.069*	1, 400	.093	-.209	.034	-.291	-6.088*	-.291
Weight	.194	95.995*	1, 400	.238	-.350	.036	-.440	-9.798*	-.440
Attribution	.019 ^D	7.715	1, 396	.020	-.086	.031	-.138	-2.778	-.138
<i>BOYS</i>									
Appearance	.014	5.491	1, 385	.012	-.081	.035	-.119	-2.343	-.119
Weight	.172 ^D	39.742*	1, 382	.208	-.194	.040	-.225	-4.820*	-.249
(Quadratic)					-.312	.044	-.333	-7.125*	-.343
Attribution	.001 ^D	0.530	1, 382	.001	-.026	.035	-.037	-0.728	-.037

Note. ^D = Durbin Watson slightly above 2.0

* $p < .01$

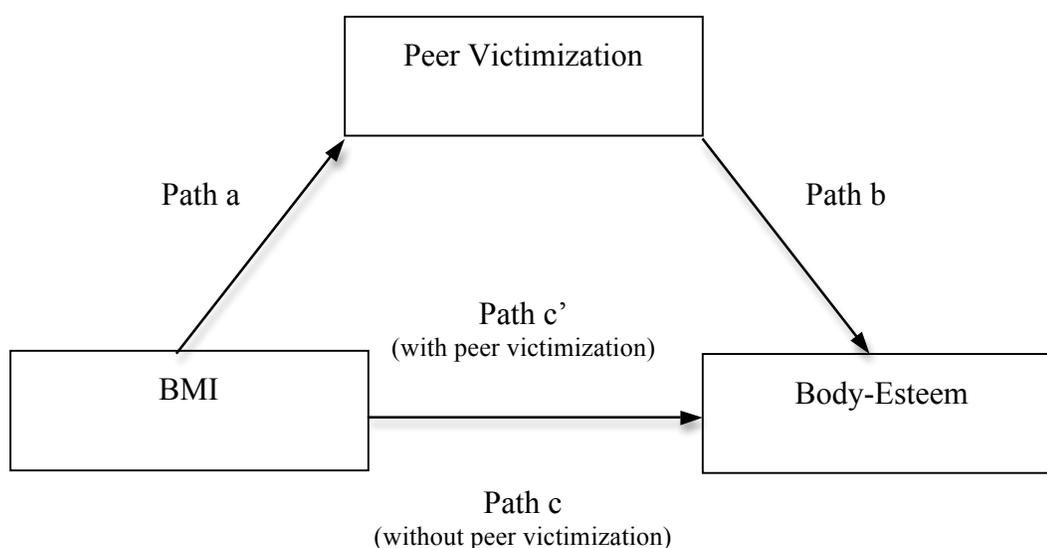
Mediation Analyses

Description of procedures. Baron and Kenny (1986) propose guidelines for mediation. Following these guidelines, regression analyses were conducted in order to evaluate the impact of peer victimization on the relationship between BMI and body-esteem. It was hypothesized that victimization would partially mediate this relationship. Partial mediation is established if peer victimization accounts for part of the relationship between BMI and body-esteem. Evidence for mediation or partial mediation occurs when four conditions are met (as described by Baron and Kenny). First and second, the independent variable (BMI) must be significantly associated with the proposed mediator (peer victimization) and dependant variable (body-esteem). Third, the mediator must be significantly related to the dependant variable (body-esteem) while controlling for the independent variable (BMI). Finally, there should be a reduction of the effect of the independent variable on the dependant variable when controlling for the mediator. The resulting value is an indirect effect and then Sobel's test of significance is used to determine

if the indirect effect is significantly different from zero (Preacher & Hayes, 2004). All analyses are reported from SPSS using the Sobel test of the indirect effects and confidence interval bootstrapping, as calculated from Preacher and Hayes (2004). Figure 1 is a demonstration of the mediation analyses that follow.

Figure 1

Mediation Analyses for BMI, Peer Victimization, and Body-Esteem



Note. Indirect effect = path a * path b OR path c – path c’; for quadratic relationship between BMI and Body-Esteem (for boys) indirect effect = path a * path b (as path c and c’ are not corrected for the quadratic nature of this relationship (A. Hayes, personal communication, July 2, 2010; B. Zumbo, personal communication, July 2, 2010))

Correlation tables. Correlation tables (as previously reported in Tables 6, 7, and 8) were investigated to determine the relationships between BMI, the proposed mediators (all victimization variables), and body-esteem; the significant correlations will be described below.

For girls, the important relationships, as discussed above, between the independent variable and dependant variable(s), independent variable and mediator(s), and mediator(s) and dependant variable(s) were examined. BMI was significantly correlated with body-esteem appearance, body-esteem weight, and body-esteem attribution. BMI was significantly correlated with verbal victimization, victimization about physical appearance, victimization about weight, and victimization about body shape. All of these proposed mediators (verbal victimization, victimization about physical appearance, victimization about weight, and victimization about body shape) were significantly correlated with body-esteem appearance and body-esteem weight; only verbal victimization and victimization about physical appearance were correlated with body-esteem attribution. For boys, BMI was significantly correlated with body-esteem weight (quadratic). BMI was significantly correlated with victimization about weight and body shape. The proposed mediators (victimization about weight and body shape) were significantly correlated with body-esteem weight.

Mediation¹. Mediation analyses for body-esteem appearance for girls were all significant. Table 15 provides details of each indirect effect. Effect sizes ranged from .133 (between small to medium) to .312 (between medium and large). Mediation analyses for body-esteem weight for girls were all significant. Table 15 provides details of each indirect effect. Effect sizes ranged from .337 (between medium and large) to .399 (large). Mediation analyses for body-esteem attribution for girls were not significant. The mediation analysis for body-esteem weight for boys was significant. As the relationship between BMI and body-esteem weight is quadratic, the correct indirect effect value is found from path a multiplied by path b (not path c minus path c') (pathways are shown in Figure 1 above), as pathway c

¹ Indirect effects were also tested with M-Plus and highly similar results were obtained so only the SPSS results are reported.

and c' are not corrected for the quadratic nature of this relationship (A. Hayes, personal communication, July 2, 2010; B. Zumbo, personal communication, July 2, 2010). Table 16 provides details for the indirect effect. Effect sizes were .236 and .264 (between medium and large), respectively.

Given the relationship between BMI and body-esteem weight was quadratic for boys in the present study, the sample was split in half and mediation analyses were conducted on each half (recommendation from B. Zumbo, personal communication, July 2, 2010). One half of the sample was a BMI z-score above 0.00 ($N = 215$ and 214) and the second half of the sample was a BMI z-score below 0.00 ($N = 168$); thus, producing two linear relationships between BMI and body-esteem weight (one negative and positive, respectively). For boys above 0 (normal to obese), peer victimization about weight and body shape mediated the relationship between BMI and body-esteem weight. Effect sizes were .435 and .397 (large), respectively. For boys below 0 (underweight to normal), peer victimization about weight and body shape did not mediate the relationship between BMI and body-esteem weight. The results of these analyses are presented in Table 17 and 18, respectively¹.

Table 15

Mediation Analyses for Girls

Mediator Variable (foci of victimization)	BMI to Mediator (path a)	Mediator to Body-Esteem (path b)	BMI TO Body-Esteem (without Mediator) (path c)	BMI to Body-esteem with Mediator (path c')	Indirect Effect	S.E. of Indirect Effect	z	R ²	Effect Size f ²
<i>Body-Esteem Appearance</i>									
Verbal Appearance	.093	-.445	-.209	-.168	-.041	.013	-3.233*	.181	.221
Weight	.112	-.375	-.209	-.167	-.042	.014	-3.003*	.215	.274
Body Shape	.130	-.196	-.209	-.183	-.025	.009	-2.701*	.117	.133
	.126	-.281	-.209	-.173	-.035	.011	-3.204*	.138	.312
<i>Body-Esteem Weight</i>									
Verbal Appearance	.093	-.387	-.350	-.313	-.036	.011	-3.079*	.252	.337
Weight	.111	-.329	-.350	-.313	-.037	.013	-2.878*	.275	.379
Body Shape	.129	-.368	-.350	-.302	-.048	.014	-3.428*	.285	.399
	.125	-.401	-.350	-.299	-.051	.014	-3.626*	.284	.397
<i>Body-Esteem Attribution</i>									
Verbal Appearance	.096	-.131	-.086	-.074	-.013	.007	-1.796	.030	.030
	.115	-.117	-.086	-.073	-.014	.007	2.003	.036	.037

Note. N = 402; Italics = dependant variable (body-esteem)

* $p < .01$

Table 16

Mediation Analyses for Boys

Mediator Variable (foci of victimization)	BMI to Mediator (path a)	Mediator to Body-Esteem (path b)	BMI TO Body-Esteem (without Mediator) (path c)	BMI to Body-esteem with Mediator (path c')	Indirect Effect	S.E. of Indirect Effect	z	R ²	Effect Size f ²
<i>Body-Esteem Weight</i>									
Weight	.153	-.394	-.176	-.115	-.060	.016	3.857*	.209	.264
Body Shape	.092	-.426	-.176	-.137	-.040	.014	2.810*	.191	.236

Note. N = 385 and 384; Italics = dependant variable (body-esteem)

* $p < .01$

Table 17

Mediation Analyses for Boys Above 0 (Above Average Weight to Obese Boys)

Mediator Variable (foci of victimization)	BMI to Mediator (path a)	Mediator to Body-Esteem (path b)	BMI TO Body-Esteem (without Mediator) (path c)	BMI to Body-esteem with Mediator (path c')	Indirect Effect	S.E. of Indirect Effect	z	R ²	Effect Size f ²
<i>Body-Esteem Weight</i>									
Weight	.511	-.365	-.542	-.355	-.187	.043	-4.346*	.303	.435
Body Shape	.211	-.351	-.537	-.463	-.074	.028	-2.611*	.284	.397

Note. N = 215 and 214; Italics = dependant variable (body-esteem)

* $p < .01$

Table 18

Mediation Analyses for Boys Above 0 (Underweight to Below Average Weight Boys)

Mediator Variable (foci of victimization)	BMI to Mediator (path a)	Mediator to Body-Esteem (path b)	BMI TO Body-Esteem (without Mediator) (path c)	BMI to Body-esteem with Mediator (path c')	Indirect Effect	S.E. of Indirect Effect	z	R ²	Effect Size f ²
<i>Body-Esteem Weight</i>									
Weight	-.057	-.278	.185	.169	.016	.023	0.683	.132	.152
Body Shape	-.034	-.425	.185	.170	.014	.029	0.499	.187	.230

Note. N = 168; Italics = dependant variable (body-esteem)

* $p < .01$

Chapter Five: Discussion

Overview

This study sought to clarify the contribution of peer victimization in the development of body-esteem among young adolescents by examining the relationship between peer victimization (general victimization, multiple forms of victimization, and physical appearance-related victimization) and body-esteem (body-esteem appearance, weight, and attribution). It also examined the role of peer victimization (multiple forms of victimization and physical appearance-related victimization) in the relationship between BMI and body-esteem, contributing to the sparse literature on the relationship between peer victimization in the form of bullying and body-esteem (Compain et al., 2009; Gowen, 1998; Lunde, 2009; Lunde et al., 2006) and the role of peer victimization in the relationship between BMI and body-esteem (Eisenberg et al., 2002, 2003, 2006; Thompson et al., 1995). In this section, the findings are summarized and then the limitations, strengths, contributions, implications, and conclusions of this study are discussed.

Summary of Findings

Victimization and body-esteem. An initial goal of this study was to replicate and extend previous findings on the relationship between victimization and body-esteem. Replicating Lunde and colleagues (2006, 2007) a significant negative relationship was found between general victimization (being bullied) and all types of body-esteem, for girls and for boys, with high frequencies of victimization associated with low levels of body-esteem. A significant negative relationship was found between most forms of peer victimization as well as physical appearance-related victimization and all the three types of body-esteem for boys and girls. This finding extends the research conducted by Lunde and colleagues (2006, 2007)

by including more forms of victimization and multiple content in physical appearance-related victimization (Lunde et al. only included physical appearance-related teasing). For each type of body-esteem, for boys and for girls, different forms and physical appearance-related content were important, as discussed below.

Forms of victimization and body-esteem. This study examined the relationship between multiple forms of victimization—physical, verbal, social, and cyber—and body-esteem. For girls, there was a significant negative relationship between body-esteem appearance and weight with all forms of victimization. Thus, girls who reported greater victimization by peers (physically, verbally, socially or electronically) held more negative perceptions of their appearance and weight. Results of regression analyses and Pratt Indices demonstrated that social, cyber, and verbal victimization were especially important in predicting girls' negative perceptions of their appearance (body-esteem appearance), whereas verbal and cyber victimization were especially important in predicting for negative perceptions of their weight (body-esteem weight). Body-esteem attribution, however, was only significantly negatively related to verbal and social victimization. In other words, girls who reported frequent verbal and social victimization were more likely to feel that others perceived their appearance and weight negatively, although results of regression analyses indicated that specific forms of victimization did not emerge as significant predictors in this regard.

For boys, a significant negative relationship was observed between body-esteem appearance and all forms of victimization; multiple regression and Relative Pratt Indices revealed that social and verbal victimization were especially important in predicting body-esteem appearance. Thus, boys who reported greater victimization by peers, especially

through social and verbal victimization, were more likely to report negative self-perceptions of their appearance.

Regarding boys' self-perceptions about their weight, correlation analyses indicated that body-esteem weight was significantly and negatively related to verbal and social victimization, although results of regression analyses indicated that physical, as well as verbal and social victimization were important in predicting body-esteem weight. That is, boys who were more often socially and verbally bullied by peers, as well as those who were more often physically bullied, were more likely to feel badly about their weight. With regard to perceptions of how *others* feel about your appearance and weight (body-esteem attribution), results of correlation analyses indicated that boys who reported being physically, verbally, or socially victimized more often were more likely to report more negative body-esteem attributions. However, results of subsequent regression analyses indicated that social, verbal, and cyber victimization were most important in predicting body-esteem attribution, although cyber victimization only accounted for a very small amount of the variance.

These findings are consistent with research conducted by Compain and colleagues (2009), Gowen (1998), Lunde (2009), Lunde et al. (2006, 2007) indicating that social victimization is especially important in the prediction of body-esteem, particularly for girls. This study found it to be the most important predictor of body-esteem appearance for girls and all types of body-esteem for boys. Social victimization was not found to be important in predicting body-esteem weight for girls, according to results of regression analyses. This study was the first to consider the impact of cyber victimization, which was the most important and the only significant predictor of body-esteem weight for girls, and as a result, this finding may appear inconsistent with the literature. However, the behaviours that

comprise cyber bullying (as seen in the cyber victimization composite created for this study) are primarily verbal (threats, mean emails, etc) and social (gossip, telling secrets, embarrassing, making look bad, etc), in nature, and thus, this finding is consistent with the idea that social victimization (through any method) is negatively associated with body-esteem. Future research may benefit from consideration of cyber bullying as a new medium for verbal and especially social victimization.

These findings are also consistent with the literature on teasing (Eisenberg et al., 2006; Eisenberg et al., 2003; Haines et al., 2006; Lunner et al., 2000), given that verbal victimization was of primary importance in predicting body-esteem weight for boys and of secondary importance in predicting other aspects of body-esteem for both girls and boys (except body-esteem attribution for girls). Thus, verbal victimization, which likely includes teasing, is common among adolescents and contributes to decreased body-esteem.

Physical appearance-related victimization and body-esteem. Extending research on the impact of teasing about appearance on body-esteem, this study investigated the relationship between physical appearance-related bullying (victimization about physical appearance, weight, body shape, physical strength or weakness, and dress) and body-esteem. For girls, a significant negative relationship was found between all physical appearance-related victimization and body-esteem appearance and body-esteem weight; a significant negative relationship was found between body-esteem attribution and victimization about physical appearance and dress. Results of multiple regression analyses and Relative Pratt Indices revealed that victimization about physical appearance, dress, and physical strength or weakness were important in predicting body-esteem appearance. Victimization about weight, body shape, and physical appearance were important in predicting body-esteem weight. The

regression for physical appearance-related victimization on body-esteem attribution was not significant and thus, no content was considered important in predicting this type of body-esteem for girls. Taken together, the results of the present study confirm that girls who reported being bullied about their appearance more often had more negative perceptions of their appearance and weight, although they did not necessarily feel that others perceived their appearance and weight more negatively.

For boys, a significant negative relationship was found between all physical appearance-related victimization and body-esteem appearance. Body-esteem weight and body-esteem attribution were significantly negatively related to victimization about physical appearance, weight, body shape, and physical strength or weakness. Multiple regression and Relative Pratt Indices revealed that victimization about physical appearance and body shape were important in predicting body-esteem appearance; victimization about weight and body shape were important in predicting body-esteem weight; and victimization about physical strength or weakness was important in predicting body-esteem attribution. Thus, boys who were victimized about their appearance and body shape more often reported more negative perceptions of their own appearance; boys who were frequently bullied about their weight and/or body shape were more likely to feel badly about their weight. Being bullied more often about physical strength or weakness, however, impacted boys' perceptions of what others think about their appearance and weight.

These findings are consistent with the literature on physical-appearance related and weight-based teasing (Cash, 1995; Eisenberg et al., 2006; Eisenberg et al., 2003; Haines et al., 2006; Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002) that find teasing history predicts body-esteem. The present study extends previous literature by going

beyond teasing and looking at bullying; the victimization (through bullying) that is related to physical appearance could be in the form of teasing (that meets the criteria for bullying, discussed previously) or other bullying behaviours. Also, the research on teasing has primarily focused on physical appearance and weight/size-based teasing (Eisenberg et al., 2006; Eisenberg et al., 2003; Haines et al., 2006; Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002); the present study extends this literature by looking at all forms of physical appearance-related victimization through bullying, including physical appearance, weight, body shape, physical strength or weakness, and dress.

Body mass index, victimization, and body-esteem. The primary focus of this study was to examine the role of peer victimization in the relationship between BMI and body-esteem. Given evidence that peer teasing has been found to partially mediate the link between BMI and body-esteem (Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002), it was expected that peer victimization would also function as a partial mediator in the relationship between BMI and body-esteem. First, however, it was important to verify that the relationship between BMI and body-esteem, as demonstrated in previous research (Barker & Galambos, 2003; Cortese et al., 2010; Kostanski et al. 2004; Presnell et al., 2004; Smolak, 2004), was also evident in the present sample.

Body mass index and body-esteem. A significant negative relationship was found for girls between BMI and all forms of body-esteem. The higher the BMI, the more negatively girls viewed their own appearance and weight and the more negatively they felt others judged their appearance and weight. For boys, a significant and negative relationship between BMI and body-esteem weight was observed, but the BMI was not significantly related to other forms of body-esteem. Replicating previous research on the relationship

between BMI and body-esteem (Barker & Galambos, 2003; Kostanski et al., 2004; Presnell et al., 2004; Smolak, 2004), a significant quadratic relationship was observed between BMI and body-esteem weight for boys. Thus, boys who were underweight as well as those who were overweight were likely to report negative feelings about their weight. For body-esteem appearance and body-esteem attribution, a significant quadratic relation was not observed for boys, underscoring the importance of utilizing a multi-dimensional measure of body-esteem that taps into feelings about appearance, weight, and attribution, as was used in the current study.

Body mass index, peer victimization, and body-esteem. Exploring the meditational role of peer victimization in the relationship between BMI and body-esteem was only possible when significant relationships were established among the critical variables. For girls, BMI was related to all types of body-esteem, as well as verbal victimization and victimization about physical appearance, weight, and body shape. Thus, the meditational model was tested for these variables. Verbal victimization as well as victimization about physical appearance, weight, and body shape all partially mediated the relationship between BMI and body-esteem appearance as well as between BMI and body-esteem weight. Replicating and extending previous research findings that teasing, particularly about physical appearance and weight/body shape, mediates the relationship between BMI and body dissatisfaction (Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002), the present study demonstrated the same meditational relationship for verbal victimization and being bullied about specific physical appearance-related content including victimization about physical appearance, weight, and body shape. Thus, it is girls with high BMI who are frequently victimized by their peers verbally, or specifically about their appearance, weight

and/or body shape who are especially vulnerable to poor body-esteem; they feel bad about their appearance and weight.

This study is the first to document a similar meditational effect for boys. Boys with high BMI were more likely to feel bad about their weight if they had been victimized about their weight. Despite the quadratic relationship observed between BMI and body-esteem weight among boys, further analyses revealed that this meditational role of peer victimization only held for boys with above average weight, not for boys whose weight was below average. Thus, peer victimization may be more harmful for boys who are above average weight, overweight, and obese, than for boys who are underweight and below average weight boys. It appears that an above average BMI coupled with peer victimization leads to lower levels of body-esteem for above average weight boys not below average weight boys. For both high BMI girls and high BMI boys, it may be important to provide information and opportunities for adopting healthy eating and lifestyle choices as well as help for coping with peer bullying in order to avoid a cycle of increasingly negative self perceptions.

Limitations and Future Directions

Although the present study provides an important extension of previous research on the impact of peers on body-esteem, there are several limitations that should be acknowledged. First, with regard to measurement issues, the present study relied exclusively on self-report measures and, in some cases, on single item measures. Although reliance on only self-report measures raises concerns about mono-method biases, self-report measures have several advantages over other types of measures. In comparison with peer reports, self-reports of victimization are easier to obtain and can capture victimization episodes of which peers may be unaware (Crick & Bigbee, 1998). Self-reports also take less time, are more

easily administered, and can more effectively protect anonymity. Importantly, with regard to the assessment of body-esteem, self-reports are the best measure to ascertain individual perceptions. However, BMI was also measured using self-reports. Although objective measures of height and weight were initially proposed, concerns were raised by school staff members regarding the possibility that such efforts might stigmatize children and, for those who are obese, cause further public humiliation. Therefore, self-report methods were used. According to Brener, McManus, Galuska, Lowry, and Wechsler (2003), on average, high school students overreport their height by 2.7 inches and underreport their weight by 3.5 pounds, raising concerns that self-reported values can underestimate the prevalence of overweight and obese students to some extent. However, research by Strauss (1999) has demonstrated that self reported height and weight are highly correlated with objective measures of height and weight (e.g., .87 to .94 for weight, .82 to .91 for height), suggesting that self-reports do not greatly impact classification of children into proper weight categories. Nevertheless, replication of the present results using objective BMI measures may be worthwhile in future research.

An additional measurement issue concerns the fact that, although multiple-item measures were used for the majority of the variables, physical-appearance related victimization involved five single items measuring physical appearance-related content individually. Future research may benefit from assessing victimization about physical appearance-related content using multiple item measures. At the same time, results of the present study did indicate differential findings for some of these single-item variables, suggesting some utility in examining different foci of peer victimization separately.

This study was a complex analysis of the effect of peer victimization on body-esteem. Guided by the previous research and theory, the present study considered body mass index as a risk factor for peer victimization and peer victimization, in turn, as a risk factor for low body-esteem. However, causal directions cannot be determined in the presents study, as all measures were assessed concurrently. Indeed, it is possible that individuals with low body-esteem carry themselves or behave in such a way that they attract bullying efforts from others and in this case, low body-esteem would lead to bullying (Fox & Farrow, 2009). As well there may well be a cyclical relationship between bullying and body-esteem, where as victimization through bullying leads to low body-esteem and low body-esteem leads to more bullying. For example, Fox and Farrow recently found that self-esteem about physical appearance and body dissatisfaction mediated the relationship between overweight and obese weight status and being a victim of bullying. These authors suggest that the experience of victimization may heighten students' levels of body dissatisfaction and in turn, reduce body-esteem. Moreover, Fox and Farrow suggest that lower levels of body-esteem may also lead to emotional eating and weight gain thereby increasing BMI as well as the likelihood of peer bullying, and decreasing body-esteem. Longitudinal research is needed to tease out the direction of these relationships. In one longitudinal study by Lunde (2007), peer victimization at time one lead to lower levels of body-esteem at time two, supporting the directionality considered in the present study. As well, qualitative research, investigating the actual experiences of victimization among students with high level of peer victimization and low body-esteem may also be important in helping to understand the nature and direction of these relations. Such a study has already begun by the author.

Some of the results, particularly those obtained for general indices of victimization, although significant, had small effect sizes (.021-.114). Previous research by Lunde et al. (2006) also found small effect sizes for the influence of victimization (bullying) on body-esteem. However, in the present study, medium effect sizes were obtained when particular forms of victimization were evaluated (.093 - .250) and when the physical appearance content of victimization was evaluated (.071 - .266), underscoring the importance of assessing more specific types of peer victimization behaviour. Importantly, in the present study, the effect sizes for the mediation analyses conducted were medium to large for both girls (.133 - .399) and boys (.236 - .435). Thus, the majority of the effect sizes were substantial, particularly for the mediation.

This study was completed in Canada, a Western society. The ideals in Western societies emphasize thinness, for girls, and thinness but also muscularity, for boys, as described previously (Thompson et al., 1999). Thus, the relationships found in the present study between BMI, peer victimization, and body-esteem fit with the culture. However, these ideals are not the same everywhere in the world and therefore, the relationships may be different elsewhere. More cross-cultural research, particularly among non-western countries, is needed to see if the relationships found in the present study hold in other countries.

Most of the research studies on BMI and peer feedback have focused on the negative psychosocial correlates associated with this relationship, such as low body-esteem (as found in this study), unhealthy dieting, and eating disorders (Barker & Galambos, 2003; Kostanski et al., 2004; Presnell et al., 2004; Smolak, 2004; Thompson et al., 2007). However, it would be interesting for future research to investigate any potential benefits that peer feedback may have on those who are overweight and/or obese (maybe not in the extreme form of bullying,

however, but in discussions with close and trusted peers). For instance, receiving feedback from peers may lead children who are overweight or obese (and thus, at risk for health consequences) to make healthier choices and lose weight. These possible benefits of peer feedback need to be further explored through interviews with students looking at the impact of peer feedback.

Strengths and Unique Contributions

Extending previous research, the present study demonstrated a clear relationship between peer victimization and body-esteem, particularly body-esteem about appearance and weight, for girls, and all types of body-esteem for boys. Following recommendations for future research made by Lunde et al. (2006, 2007), this study advanced the literature by focusing on more specific physical appearance-related content of bullying in body-esteem and also including cyber victimization among the forms of victimization.

Perhaps the most significant contribution, however, was in regard to the demonstration of bullying as a partial mediator in the relationship between BMI and body-esteem for both girls and boys. For girls, of particular importance was verbal victimization and victimization about physical appearance, weight, and body shape as mediators in the relationship between BMI and appearance and weight body-esteem. For boys, victimization about weight and body shape served as mediators in the relationship between BMI and body-esteem weight. This study extends the literature even further for boys by splitting the sample into boys above average and below average weight given the quadratic function of the relationship between BMI and body-esteem, to find that the mediational role of victimization is only present for boys who are above average in weight.

Much of the research on body-esteem had focused on girls and previous research on the mediational role of teasing in the relationship between BMI and body-esteem was only conducted with girls (e.g., Lunner et al., 2000; Thompson et al., 1995; Van den berg et al., 2002). By examining these relationships among both male and female adolescents, this study extends this literature by demonstrating similar mediational links for boys. Further, following recent studies demonstrating a quadratic function (Cortese et al., 2010; Kostanski et al., 2004; Presnell et al., 2004) in the links between BMI and body-esteem among boys, results of the present study demonstrated that the proposed mediation was only present for the above average weight boys.

Implications

The results of this study, indicating that increased body weight is associated with increased bullying and in turn, decreased levels of body-esteem, are useful in informing intervention and prevention programs with individuals, peers, and schools. Craig and colleagues (2010) as well as Haines, Neumark-Sztainer, and Thiel (2007) have suggested a number of strategies counsellors and educators can use with youth who are victimized and have low body-esteem. Programs designed to enhance self-esteem and develop positive body image, which focus on personal strengths, may be beneficial for overweight and obese students who are victimized. Additional programs that focus on promoting positive social relationships may be beneficial at reducing bullying and thus, increasing body-esteem. At the classroom and school level, students may be matched with socially skilled youth to provide mentorship and guidance in social skills and build self-confidence.

According to Gray, Kahhan, and Janicke (2009), intervention programs for weight-based stigmatization need to take a socioecological approach that targets peers, school

officials, parents and society. Similar recommendations have been made for bullying prevention programs, such as the Olweus Bullying Prevention Program (Gray et al., 2009; Olweus, 1993; Swearer, Espelage, Vaillancourt, & Hymel, 2010). Based on results of focus groups with students, parents and school staff, Haines and colleagues (2007) suggest that programs should go beyond healthy living and focus on peer victimization and the associated reductions in body-esteem. Results of the current study underscore the importance of intervention and prevention programs to reduce weight bias among children and youth in an effort to address bullying that is most commonly associated with decreased body-esteem, namely verbal and social bullying, as well as bullying about physical appearance-related content. Bullying about physical appearance is the most common focus of bullying among adolescents (Horowitz et al., 2004; Kowalski, 2000; Lovegrove & Rumsey, 2005) and should be a target for intervention, given it has such negative impacts on body-esteem.

According to Gray and colleagues (2009), intervention and prevention programs need to work at reducing the socially sanctioned nature of peer victimization against overweight and obese children, which often takes the form of bullying about physical appearance-related content. According to Haines et al. (2007), guidelines can be set up at schools that discourage physical appearance-related teasing and bullying. The findings of the meditational analyses of this study point to the importance of reducing stigmatization against overweight and obese boys and girls, as well as challenging the socially sanctioned nature of the victimization against these youth. Schools can implement curriculum and school-wide education programs that focus on healthy lifestyles and the role the media plays in perpetuating negative stereotypes. Adults at school can also provide support for youth, as having one supportive adult at school can make a difference for many youth (Craig et al., 2010).

Conclusion

Results of the present study demonstrate the critical role that peer bullying can play in undermining body-esteem in middle school youth, with peer victimization mediating the relationship between BMI and body-esteem for both boys and girls. Counsellors and educators can work with high BMI, victimized youth, not only to address health issues but also to reduce the impact of victimization on body-esteem and work to raise body-esteem in these youth. For the larger peer group, bullying and weight-bias prevention programs are needed to increase students' awareness and acceptance of all appearances, weights, and body sizes.

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Appendix A: Behavioural Research Ethics Board (BREB) Approval



The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL - FULL BOARD

PRINCIPAL INVESTIGATOR: Shelley Hymel	INSTITUTION / DEPARTMENT: JBC/Education/Educational & Counselling Psychology, and Special Education	UBC BREB NUMBER: H08-01194
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:		
Institution		Site
N/A		N/A
Other locations where the research will be conducted: Middle schools within the lower mainland including schools within the _____ and schools within the _____. Middle Schools in _____ Alberta may also be included (_____), if necessary for sample sizes required in Structural Equations Modelling.		
CO-INVESTIGATOR(S): Crystal June McLennan		
SPONSORING AGENCIES: UBC Faculty of Education		
PROJECT TITLE: Does Appearance Matter? School Bullying and Body Esteem in Early Adolescence		
REB MEETING DATE: September 25, 2008	CERTIFICATE EXPIRY DATE: September 25, 2009	
DOCUMENTS INCLUDED IN THIS APPROVAL:		DATE APPROVED: March 16, 2009
Document Name	Version	Date
Consent Forms:		
Revised Parent/ Guardian Consent Form - Interview	N/A	February 4, 2009
Revised Parent/ Guardian Consent Form - Survey	N/A	February 4, 2009
Assent Forms:		
Revised Student Assent Form - Interview	3	March 9, 2009
Revised Student Assent Form - Survey	3	March 9, 2009
Advertisements:		
Student Interview Recruitment Form	N/A	September 11, 2008
Questionnaire, Questionnaire Cover Letter, Tests:		
Additional survey questions requested by school	N/A	January 29, 2009
Revised Survey	N/A	January 29, 2009
Interview Protocol	N/A	September 9, 2008
Letter of Initial Contact:		
Teacher and Administrator Initial Contact Form	N/A	September 11, 2008
Other Documents:		
Referral Bookmark Handout	N/A	September 9, 2008
Survey Referral Form	N/A	September 9, 2008
The application for ethical review and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.		
<p>Approval is issued on behalf of the Behavioural Research Ethics Board and signed electronically by one of the following:</p> <hr/> <p>Dr. M. Judith Lynam, Chair Dr. Ken Craig, Chair Dr. Jim Rupert, Associate Chair Dr. Laurie Ford, Associate Chair Dr. Anita Ho, Associate Chair</p>		



The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL - MINIMAL RISK AMENDMENT

PRINCIPAL INVESTIGATOR: Shelley Hymel	DEPARTMENT: UBC/Education/Educational & Counselling Psychology, and Special Education	UBC BREB NUMBER: H08-01194
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:		
Institution	Site	
N/A		
Other locations where the research will be conducted: Middle schools within the lower mainland including schools within the _____ and schools within the _____. Middle Schools in _____ Alberta may also be included (_____), if necessary for sample sizes required in Structural Equations Modelling.		
CO-INVESTIGATOR(S): Crystal June McLennan		
SPONSORING AGENCIES: The Edith Lando Charitable Foundation UBC Faculty of Education		
PROJECT TITLE: Social Experiences of Middle School Students formerly: Does Appearance Matter? School Bullying and Body Esteem in Early Adolescence Note that title change is necessary to reflect broadened scope of project as adapted for schools with this amendment		

Expiry Date - Approval of an amendment does not change the expiry date on the current UBC BREB approval of this study. An application for renewal is required on or before: October 2, 2010

AMENDMENT(S):	AMENDMENT APPROVAL DATE: February 4, 2010
Document Name	Version Date
The amendment(s) and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.	
<p>Approval is issued on behalf of the Behavioural Research Ethics Board</p> <hr style="width: 50%; margin: auto;"/> <p style="text-align: center;">Dr. M. Judith Lynam, Chair Dr. Ken Craig, Chair Dr. Jim Rupert, Associate Chair Dr. Laurie Ford, Associate Chair Dr. Anita Ho, Associate Chair</p>	

Appendix B: School, Principal, and Teacher Recruitment

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational & Counseling Psychology & Special Education
Faculty of Education
2125 Main Mall
Vancouver, B. C. Canada V6T 1Z4

Tel: _____ | Fax: _____

THE SOCIAL EXPERIENCES OF MIDDLE SCHOOL STUDENTS A UBC AND _____ SCHOOL RESEARCH PROJECT Information for Principals and Teachers

Principal Investigator:	Shelley Hymel, Ph.D. University of British Columbia Department of Educational and Counselling Psychology & Special Education Phone: _____
Co-Investigator:	Crystal McLennan, Master of Arts Student, Counselling Psychology University of British Columbia Department of Educational and Counselling Psychology & Special Education Phone: _____ Email: _____

WHAT IS THE STUDY ABOUT?

- The social experiences and the well-being of youth today is vital to their success. Social experiences and wellbeing are related to numerous positive outcomes, including increased academic success and high self-esteem. This survey asks questions related to the social experiences of youth and the learning environment that fosters such development. The purpose of this survey is to help administrators and teachers improve the learning environment for youth within the _____ School District. Students will fill out a questionnaire.
- This project will involve some questions for the Masters Thesis research of Crystal McLennan, a graduate student at the University of British Columbia, and Dr. Shelley Hymel in the Faculty of Education. The Masters Thesis study is entitled "School Bullying and Body Esteem in Early Adolescence". Teens face a number of challenges during their school years, among them peer bullying and low self-esteem. School bullying is a problem in schools around the world, and we've only begun to understand the long-term effects of bullying. This project looks at one possible outcome, how youth feel about themselves and their appearance. How does bullying and teasing play a part in such difficulties? There are two parts to the Masters project. In Part 1, students fill out a questionnaire (these questions are included in the above-mentioned questionnaire) and in Part 2, a smaller number of students are interviewed.

WHO WILL ACTUALLY CONDUCT THE STUDY?

The Co-Investigator, Crystal McLennan, a Masters Student in the Department of Educational and Counselling Psychology, and Special Education (ECPS) at UBC, is completing this study for her Masters Thesis in Counselling Psychology. She will conduct this study with the help of trained graduate research assistants. All research activities will be undertaken under the supervision of the Principal Investigator, Dr. Shelley Hymel, who has been involved in research on peer relations with children and adolescents for the past 25 years.

HOW WILL STUDENTS BE ASKED TO PARTICIPATE?

Crystal McLennan and research assistants will visit the schools to describe the study and hand out permission letters/forms to students. Students are asked to take the permission letters/forms to their parents/guardians and bring back signed permission slips indicating consent (yes or no) for the survey, as well as consent (yes or no) to be contacted for a follow-up interview. Teachers will be asked to oversee the return and collection of permission forms. Crystal McLennan will contact each participating teacher to collect signed permission letters/forms and arrange for an appropriate time for the surveys to be given.

WHAT ARE THE MEASURES THE STUDENTS WILL BE ASKED TO COMPLETE?

Students will complete measures on: Background information (for example: gender, ethnicity, height, weigh, birth date), bullying (for example: "how often have you been...physically bullied"), body esteem (for example: "I like what I look like in pictures"), physical appearance social comparison (for example: "I compare my physical appearance to the physical appearance of others"), general self-esteem (for example: "Overall, I have a lot to be proud of"), subjective age (for example: "Most of the time I feel younger/older/same than my age"), safety (for example: "I feel safe at school"), normative beliefs about bullying (for example: "Is it wrong or OK when students tease weaker students in front of others"), engagement in learning (for example: "When I am in school, I feel good"), collective efficacy (for example: "Students at my school can be trusted"), self-efficacy (for example: "How well can you make and keep friends?"), belonging (for example: "I feel like I matter at school"), and school climate (for example: "Students at my school really care about each other"). Responses will be made directly on a paper and pencil questionnaire or an electronic keypad provided by the researchers.

HOW LONG WILL THESE MEASURES TAKE TO COMPLETE?

One group session (about 60 minutes) held in the regular classroom at a time convenient to the teacher.

WHAT ARE THE FOLLOW-UP INTERVIEWS (WHO, WHAT, WHEN, & WHERE)?

WHO: Follow-up interviews will be conducted with a small group of students (approximately 8 to 10 students of entire population). Students must volunteer at the end of the survey to be contacted for a follow-up interview and must also have parent/guardian consent to be contacted (included on the original consent form). Students will be contacted for a follow-up interview using the contact information they provide in the volunteer form at the end of the survey (telephone number and/or email).

WHAT: Each student selected will be provided with parent/guardian consent forms, as well as student assent forms. Once consent is provided, students will engage in 1 to 2 interviews with the co-investigator. Participation will involve an initial interview, which will be 45 minutes to 1 hour in length, and a possible follow-up interview, after the initial interview had been transcribed, to go over the transcript and allow the participants to add any additional information.

WHEN, & WHERE: 1 to 2 interviews for each student (45 minutes to 1 hour for the first and possibly 15 to 20 minutes for the second) will be held at a time and in a location convenient to the teacher.

WHAT WILL TEACHERS BE ASKED TO DO?

1. To collect permission slips from students and remind students to bring these forms back.
2. To coordinate with the researchers to determine a convenient time to administer the surveys to students, as well as follow-up interviews (for students selected)

HOW WILL CONFIDENTIALITY BE MAINTAINED?

All the information obtained from individual students in this project is considered strictly confidential and will only be seen by researchers. All reports of the findings of this study will be at the level of group findings, not individuals.

SURVEYS: Names will not be asked for in the questionnaires unless the students volunteer for a follow up interview; these names will be kept strictly confidential and only seen by researchers. Responses will be kept in a secure, locked location.

INTERVIEWS: Student's names and identities will be kept strictly confidential. Students will not be identified by name in any data analysis or results. All interview transcripts and audiotapes will be identified by number and kept in a secure, locked location. Surveys and consent forms will be stored in a separate cabinet.

WHAT INFORMATION WILL BE PROVIDED TO TEACHERS/SCHOOLS?

RESULTS: Written descriptions of the results of the study and, if desired, verbal presentation of the results will be provided. Group level information on student experiences of victimization and/or body esteem will be provided (useful for school self-assessments).

WORKSHOPS: Workshops about bullying and/or body esteem can also be provided to staff and/or students (useful for raising awareness about these issues).

THANK YOU

Appendix C: Parent/Guardian Consent

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational & Counseling Psychology & Special Education
Faculty of Education
2125 Main Mall
Vancouver, B. C. Canada V6T 1Z4

Tel: _____ | Fax _____

Dear Parent(s) or Guardian(s),

We are writing to ask your permission for your son or daughter to take part in a research project called “The Social Experiences of Middle School Students” at _____. This is a collaborative project between the University of British Columbia and _____ Middle Schools. This study will involve questions for the Masters Thesis research of Crystal McLennan, a graduate student at the University of British Columbia, and Dr. Shelley Hymel in the Faculty of Education. There are two parts to the project. In Part 1, students fill out a questionnaire and in Part 2, a smaller number of students are interviewed.

Who Participates: All students in grades 6 to 8 at _____ are invited to take part in this project. Only students who get parent/guardian permission and who are willing can take part in the project. Participation is voluntary and students can stop at any time without penalty. To help you decide whether your child can participate, we provide a description of the project here.

Project Description: The social experiences and the well-being of youth today is vital to their success. Social experiences and well-being are related to numerous positive outcomes, including increased academic success and high self-esteem. This survey asks questions related to the social experiences of youth and the learning environment that fosters such development. The purpose of this survey is to help administrators and teachers improve the learning environment for youth within the _____ School District. Students will fill out a questionnaire.

A smaller part of this project involves a Masters Thesis study. Teens face a number of challenges during their school years, among them peer bullying and low self-esteem. School bullying is a problem in schools around the world, and we’ve only begun to understand the long-term effects of bullying. This project looks at one possible outcome, how youth feel about themselves and their appearance. How does bullying and teasing play a part in such difficulties?

Part 1: Students who take part will fill out a questionnaire that asks about their experiences with school and peers, about their learning environment, about bullying, and about how they feel about themselves. Students will also be asked to tell us their current height and weight. All answers are confidential.

Part 2: A smaller number of students will be asked to come in later for an interview where we can find out more about how students deal with these issues. Only students whose parents agree and who are willing to volunteer will be contacted for these interviews, and not everyone who volunteers will be contacted. For those students who are selected, we will provide the students and their parents more information later. Students’ names and interviews will be kept private and only seen by the researchers.

Confidentiality: All information given by students is considered confidential (private). No one but the researchers will know students’ answers. All reports of the project will be about teens in general, not about individual students.

Consent: Please complete the form on the next page if you give permission for your son/daughter to participate or not in the questionnaire. Your son/daughter should then return the form to his or her teacher by Friday of this week. Please also indicate if you are willing to allow your son/daughter to be contacted for the interviews if they volunteer to do so. *Please return the form even if you do not want your child to participate so that we know you received our request.* You may keep this letter and the top portion of the consent form for your records.

Contact: We would be very pleased if your son/daughter takes part in our project and we hope that you will give him/her permission to do so. If you have any questions, feel free to call Crystal McLennan (_____) or Dr. Shelley Hymel (_____). If you have any questions about your child's treatment or rights as a research participant, please contact the Director of Research Services at the University of British Columbia at _____. Thank you very much for your time and consideration of this request.

Sincerely,

Crystal McLennan, M.A. Student

Shelley Hymel, UBC Professor

***** PLEASE KEEP THIS LETTER
AND THIS COPY OF THE CONSENT FORM FOR YOUR RECORDS *****

PARENT/GUARDIAN CONSENT FORM

Project Title: The Social Experiences of Middle School Students

Principal Investigator: Shelley Hymel, Professor, University of British Columbia

Co-Investigators: Crystal McLennan, M.A. Student, University of British Columbia

Consent: I have read and understood the information given about the project called "The Social Experiences of Middle School Students". I understand that my son/daughter's participation in the project is voluntary and he/she may stop at any time without any penalty. I have a copy of this form for my records.

I give my permission for my son/daughter to participate in the confidential questionnaire. *Please check one:*

- YES, I consent to my son/daughter's participation in this project. NO, I do not consent to my son/daughter's participation in this project.

If you indicated YES on the previous question, your son/daughter will be asked his/her height and weight as part of the questionnaire. Can you please make sure your son/daughter KNOWS this information before participating in the questionnaire.

I give my permission for my son/daughter to be contacted to participate in the interviews if they volunteer to do so. *Please check one:*

- YES, I consent to my son/daughter being contacted for an interview. NO, I do not consent to my son/daughter being contacted for an interview.

*** PLEASE RETURN YOUR COMPLETED CONSENT FORM TO THE SCHOOL ***

PARENT/GUARDIAN CONSENT FORM

Project Title: The Social Experiences of Middle School Students

Principal Investigator: Shelley Hymel, Professor, University of British Columbia

Co-Investigators: Crystal McLennan, M.A. Student, University of British Columbia

Consent: I have read and understood the information given about the project called “The Social Experiences of Middle School Students”. I understand that my son/daughter’s participation in the project is voluntary and he/she may stop at any time without any penalty. I have a copy of this form for my records.

I give my permission for my son/daughter to participate in the confidential questionnaire. *Please check one:*

- YES, I consent to my son/daughter’s participation in this project. NO, I do not consent to my son/daughter’s participation in this project.

If you indicated YES on the previous question, your son/daughter will be asked his/her height and weight as part of the questionnaire. Can you please make sure your son/daughter KNOWS this information before participating in the questionnaire.

I give my permission for my son/daughter to be contacted to participate in the interviews if they volunteer to do so. *Please check one:*

- YES, I consent to my son/daughter being contacted for an interview. NO, I do not consent to my son/daughter being contacted for an interview.

Son/Daughter’s Name (please print)

Parent/Guardian Signature

Date

Appendix D: Student Assent

RESEARCH ID #:

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Educational & Counseling Psychology & Special Education
Faculty of Education
2125 Main Mall
Vancouver, B. C. Canada V6T 1Z4

Tel: _____ | Fax: _____

Dear Student(s),

We invite you to take part in a project to take part in a research project called “In Their Eyes: The Social and Emotional Wellbeing of Middle School Students” at _____. This is a joint project between the University of British Columbia and the _____ School District. This study will involve questions for the Masters Thesis research of Crystal McLennan, a graduate student at the University of British Columbia, and Dr. Shelley Hymel in the Faculty of Education. There are two parts to the project. In Part 1, students fill out a questionnaire and in Part 2, a smaller number of students are interviewed.

What’s it about? The social and emotional wellbeing of youth today is vital to their success. Social and emotional wellbeing is related to numerous positive outcomes, including increased academic success and high self-esteem. This survey asks questions related to the social and emotional development of youth and the learning environment that fosters such development. The purpose of this survey is to help administrators and teachers improve the learning environment for youth within the _____ School District.

A smaller part of this project involves a Masters Thesis study entitled “School Bullying and Body Esteem in Early Adolescence”. Teens face a number of challenges during their school years, among them peer bullying and low self-esteem. School bullying is a problem in schools around the world, and we’ve only begun to understand the long-term effects of bullying. This project looks at one possible outcome, how youth feel about themselves and their appearance. How does bullying and teasing play a part in such difficulties?

What do you have to do? If you take part, you’ll fill out a questionnaire that asks about your experiences with your school and peers, about your learning environment, about bullying, and about how you feel about yourself. You will also be asked to tell us your current height and weight. All your answers are confidential. Some of you will be asked to come in later for an interview where we can find out more about how students deal with these issues. Only students whose parents agree and who are willing to volunteer will be contacted for these interviews, and not everyone who volunteers will be contacted. For those who are selected, we will provide you and your parents with more information later. Your name and your interview will be kept private and only seen by the researchers. You can tell us at the end of the survey if you want to be contacted for an interview.

Who takes part? Only students who get parent/guardian permission and who are willing can take part in the project. Participation is voluntary and you can stop at any time without penalty.

Confidentiality? All of the information you provide is considered strictly confidential (private). That means that no one other than the researchers will know your answers. All reports of the findings of this project will be about teens in general, not about individual students.

Contact: We would be very pleased if you take part in our project; your input can really help us to understand better the problems students face. If you have any questions, feel free to call Crystal McLennan (_____) or Dr. Shelley Hymel (_____). If you have any questions about your rights as a research participant, you can contact the Director of Research Services at the University of British Columbia at _____.

Thank you very much for your help with this project.

Sincerely,

Crystal McLennan, M.A. Student

Shelley Hymel, UBC Professor

I am willing to participate in this questionnaire project:

- YES, I consent to participate in this questionnaire.
- NO, I do not consent to participate in this questionnaire.

Name (PRINT CLEARLY): _____

Signature: _____ Date: _____

THANK YOU

Appendix E: Bookmark



If you are having troubles with other students at school, please know that we are here to help.



You can talk to any adult that you trust at the school. You can talk to a counsellor, or a teacher, or a coach, or a youth worker, or a custodian, or a bus driver. As long as it is someone you trust.

If you would like help from someone outside of the school you could call one of the following help lines.



BC Crisis Center (24 Hours)	604-872-3311
BC Crisis Center (toll free)	1-866-661-3311
Help Line for Children (24 Hours)	604-310-1234
Emergency Line (24 hour for food, shelter)	604-660-3194
Kids Help Phone	1-800-668-6868
Youth Against Violence	1-800-680-4264
Victims Info Line	1-800-563-0808

(*1-800 numbers can be called FREE from payphones, no money

Appendix F: Referral Page

If you are having troubles with other students at school,
please know that we are here to help.

You can talk to any adult that you trust at the school.
You can talk to a counsellor, or a teacher, or a coach, or a youth worker,
or a custodian, or a bus driver. As long as it is someone you trust.

We want to help.....contact us.

If you are having problems with other students at school and need help,
you can put your name and phone number or email address here and
we will contact you.

Yes, I would like to have some help...

My name is _____
I am in grade _____ and you can contact me
at this phone number _____ or this
email address _____.

If you would like help from someone outside of the school
you could call one of the following help lines
(*1-800 numbers can be called FREE from payphones, no money needed).

BC Crisis Center (24 Hours)	604-872-3311
BC Crisis Center (toll free)	1-866-661-3311
Help Line for Children (24 Hours)	604-310-1234
Emergency Line (24 hour for food, shelter)	604-660-3194
Kids Help Phone	1-800-668-6868
Youth Against Violence	1-800-680-4264
Victims Info Line	1-800-563-0808

For online help, contact youthinbc.com

THANK YOU FOR COMPLETING THIS SURVEY

Appendix G: Measures

TELL US ABOUT YOURSELF

3. What is your RESEARCH ID #: _____ (*this is the number on your consent form*)
4. What school do you attend? _____
5. What grade are you in?
- A Sixth Grade
 - B Seventh Grade
 - C Eighth Grade
6. Are you a girl or boy?
- A Girl
 - B Boy
7. People sometimes identify themselves by racial, ethnic, or cultural group to which their parents, grandparents, or ancestors belong. How do you primarily identify yourself? *PLEASE SELECT ONLY ONE ANSWER.*
- 1 Aboriginal/ Native People (North American Indian, Metis, Inuit, First Nations, etc)
 - 2 African/ Caribbean (Black)
 - 3 South Asian (Indian, Indonesian, Pakistani, etc)
 - 4 Asian (Chinese, Korean, Japanese, Taiwanese, etc)
 - 5 Caucasian/European (White) (Russian, Spanish, Italian, Norwegian, etc)
 - 6 Latin American (Mexican, Brazilian, South American, etc)
 - 7 Middle Eastern (Arabic, Iranian, Kuwaiti, Persian, Israeli, etc)
 - 8 Mixed (More than one of the above)
 - 9 Other
 - 10 I don't know
8. How much do you weigh? _____ pounds
9. How tall are you? _____ inches
10. What **DAY** of the month were you born? _____
11. What **MONTH** were you born? _____ (*01 for January, 02 for February, etc*)
12. What **YEAR** were you born? _____ (*1997, 1998, 1999, etc*)

BULLYING at your school...

There are lots of different ways to bully someone, but a bully wants to hurt the other person (it's not an accident), and does so repeatedly and unfairly (the bully has some advantage over the victim). Sometimes a group of students will bully another student. Bullying takes many forms: physical, verbal, social, and cyber.

THINK ABOUT **THIS SCHOOL YEAR** WHEN YOU ANSWER THESE QUESTIONS ABOUT BULLYING

How often have you been...		Never	Once or a few times	Every month	Every week	Several times a week
37.	bullied?	A	B	C	D	E

Bullying takes many forms, including physical bullying, verbal bullying, social bullying, and cyber bullying.

- Physical Bullying
 - When someone hits, shoves, kicks, spits, or beats up on others
 - When someone damages or steals another student's property
- Verbal Bullying
 - Name-calling, mocking, hurtful teasing
 - Humiliating or threatening someone
 - Making people do things they don't want to
- Social Bullying
 - Excluding others from the group
 - Gossiping or spreading rumors about others
 - Setting others up to look foolish
 - Making sure others don't associate with the person
- Cyber Bullying
 - Using computer, email, or text messages or pictures to
 - Threaten or hurt someone's feelings
 - Single out, embarrass or make someone look bad
 - Spread rumours or reveal secrets about someone

BULLYING at your school...

How often have you been...			Never	Once or a few times	Every month	Every week	Several times a week
40.	physically bullied?	Examples: - hit, kicked, punched, slapped - otherwise physically hurt you - property damaged or stolen	A	B	C	D	E
41.	verbally bullied?	Examples: - said mean things to you - teased you or called you names - threatened you or tried to hurt your feelings	A	B	C	D	E
42.	socially bullied?	Examples: - said bad things behind your back or gossiped - got other students not to like you - left you out on purpose or refused to play with you	A	B	C	D	E
43.	cyber bullied?	Examples: - using the computer, websites, emails, text messages or pictures to threaten you, hurt you, make you look bad, or spread rumours about you	A	B	C	D	E

BULLYING at your school...

THINK ABOUT **THIS SCHOOL YEAR** WHEN YOU ANSWER THESE QUESTIONS

How often have you...		Never	Once or a few times	Every month	Every week	Several times a week
52.	had someone tell your secrets to others?	A	B	C	D	E
53.	been slapped, pinched, or scratched?	A	B	C	D	E
54.	had someone try to get others not to like you or hang out with you?	A	B	C	D	E
55.	been kept out of the group?	A	B	C	D	E
56.	been shoved, tripped, or pushed?	A	B	C	D	E
57.	been threatened that something bad will happen to you?	A	B	C	D	E
58.	had someone threaten or hurt your feelings using email, instant messages, text messaging, or websites?	A	B	C	D	E
59.	found out you are not invited to something?	A	B	C	D	E
60.	been excluded (for example, someone not letting you sit or hang out with them)?	A	B	C	D	E
61.	had someone humiliate, embarrass, or made you look bad using email, instant messages, text messaging, or websites?	A	B	C	D	E
62.	been called names, mocked, or hurtfully teased?	A	B	C	D	E
63.	been gossiped about or had rumours spread about you?	A	B	C	D	E
64.	been made fun of, humiliated or embarrassed?	A	B	C	D	E
65.	been hit, kicked, punched, or bit?	A	B	C	D	E
66.	had someone try to get you into trouble or look foolish with other students?	A	B	C	D	E
67.	had someone spread rumors or tell your secrets using email, instant messages, text messaging, or websites?	A	B	C	D	E
68.	been accused or blamed for something you did not do?	A	B	C	D	E
69.	been ignored or not listened to?	A	B	C	D	E
70.	had someone send you mean emails or text messages?	A	B	C	D	E
71.	had your property damaged or stolen or had someone play keep away with your property?	A	B	C	D	E
72.	had someone send embarrassing pictures using email, instant messages, text messaging, or websites?	A	B	C	D	E
73.	had someone roll their eyes or make mean faces at you?	A	B	C	D	E

BULLYING at your school...THINK ABOUT **THIS SCHOOL YEAR** WHEN YOU ANSWER THESE QUESTIONS

How often have you been bullied...		Never	Once or a few times	Every month	Every week	Several times a week
100.	about how popular you are?	A	B	C	D	E
101.	about how well or poorly you do in school?	A	B	C	D	E
102.	about your physical appearance?	A	B	C	D	E
103.	about a disability or handicap?	A	B	C	D	E
104.	about the colour of your skin?	A	B	C	D	E
105.	about your weight?	A	B	C	D	E
106.	about what you like or do not like to do (i.e. sports, music, extracurricular activities)?	A	B	C	D	E
107.	about your religion?	A	B	C	D	E
108.	about your body shape?	A	B	C	D	E
109.	about where or how you live?	A	B	C	D	E
110.	about the country you or your ancestors came from?	A	B	C	D	E
111.	about your personality or the way you act?	A	B	C	D	E
112.	about your physical strength or weakness?	A	B	C	D	E
113.	about your accent or because English is your second language?	A	B	C	D	E
114.	about how much or how little money you have?	A	B	C	D	E
115.	about how you dress?	A	B	C	D	E
116.	about who your friends are or how many you have?	A	B	C	D	E

How you feel about how you LOOK...

Please choose an answer to tell how often you agree with the following statements ranging from "never" to "always".		Never	Seldom	Sometimes	Often	Always
117.	I like what I look like in pictures.	A	B	C	D	E
118.	Other people consider me good looking.	A	B	C	D	E
119.	I'm proud of my body.	A	B	C	D	E
120.	I am preoccupied with trying to change my body weight.	A	B	C	D	E
121.	I think my appearance would help me get a job.	A	B	C	D	E
122.	I like what I see when I look in the mirror.	A	B	C	D	E
123.	There are lots of things I'd change about my looks if I could.	A	B	C	D	E
124.	I am satisfied with my weight.	A	B	C	D	E
125.	I wish I looked better.	A	B	C	D	E
126.	I really like what I weigh.	A	B	C	D	E
127.	I wish I looked like someone else.	A	B	C	D	E
128.	People my own age like my looks.	A	B	C	D	E
129.	My looks upset me.	A	B	C	D	E
130.	I'm as nice looking as most people.	A	B	C	D	E
131.	I'm pretty happy about the way I look.	A	B	C	D	E
132.	I feel I weigh the right amount for my height.	A	B	C	D	E
133.	I feel ashamed of how I look.	A	B	C	D	E
134.	Weighing myself depresses me.	A	B	C	D	E
135.	My weight makes me unhappy.	A	B	C	D	E
136.	My looks help me to get attention from the opposite sex.	A	B	C	D	E
137.	I worry about the way I look.	A	B	C	D	E
138.	I think I have a good body.	A	B	C	D	E
139.	I'm looking as nice as I'd like to.	A	B	C	D	E