

THE INFLUENCE OF FRIENDSHIP ON EATING PATHOLOGY DURING
ADOLESCENCE AND EARLY ADULTHOOD: AN EXAMINATION
OF CONVERSATIONS ABOUT APPEARANCE

by

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The purpose of this study was to examine how conversations about appearance between adolescents and their best friends predicted eating pathology during adolescence and early adulthood. Participants were 711 adolescents and their best friends who were observed using a videotaped observation protocol and completing a number of conversational tasks. The tapes of these friend dyads were coded for content relating to attitudes and behaviors regarding appearance, weight, and dieting. There were four types of appearance talk related to comments about other people's appearance, their best friend's appearance, their own weight and dieting, and other people's weight and dieting. Appearance talk was frequent in conversations between adolescents, especially comments about other people's appearance.

Eating pathology was measured using the Eating Attitudes Test—26 during adolescence and as a symptom count during early adulthood. Eating pathology during adolescence predicted eating pathology during early adulthood. Adolescents who met clinical criteria for an eating disorder had higher rates of appearance talk than those who did not meet criteria.

Multiple regression was used to examine the relationship between eating pathology and the four types of appearance talk. For females, talking about their best friend's appearance predicted adolescent and early adult eating pathology. For males, talking about their own weight and dieting predicted adolescent eating pathology. Talking about other people's weight and dieting also predicted early adult eating pathology for both males and females, even when controlling for adolescent eating pathology.

Although appearance talk was common among adolescents, specific types of appearance talk predicted eating pathology differently for males and females. Furthermore, the most frequent types of appearance talk for males and females were not those that predicted eating pathology. This study supports the importance of the influence of friendship on eating pathology. Treatment implications are informed by these findings. This study informs future research and suggests the importance of observational methods in examining conversations about appearance.

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CHAPTER I

INTRODUCTION

According to the first nationally representative survey among adults in the United States, it is estimated that 9 million people suffer from eating disorders (Hudson, Hiripi, Pope, and Kessler, 2007). Prevalence rates appear to be increasing, and the consequences of the eating disorders can be severe. For example, the risk of death for those with anorexia nervosa is about twelve times greater than individuals of the same age who do not have this disorder (Eating Disorders Coalition for Research, Policy & Action, 2007). Individuals who experience eating disorders often have additional mental health problems. One study found that more than half of those with anorexia nervosa, nearly ninety-five percent of those with bulimia nervosa, and about seventy-nine percent of those with binge eating disorder met criteria for at least one other *DSM-IV* psychological disorder (Hudson et al., 2007). For example, symptoms of eating disorders and symptoms of depression have demonstrated covariation over time (Stice, Presnell, & Bearman, 2001), and anxiety disorders occur at a rate significantly higher for those with eating disorders than for those in the general population (see Swinbourne & Touyz, 2007 for review).

Eating disorders typically emerge as significant mental health problems during adolescence. Therefore, understanding the factors related to the onset of these disorders will provide directions for prevention and treatment. The Society of Adolescent Medicine

advocates for research to inform prevention and early intervention, the pathogenesis of early onset eating disorders, and the development of effective treatment for those in this developmental period (Golden, Katzman, Kreipe, Sawyer, Rees, Nicholls, & Rome, 2003).²

One of the factors that contribute to disordered eating in adolescence is peer influence. Given that adolescents spend increasing amounts of time with their peers (Berndt, 1996) and become socialized in peer contexts, it is important to understand the etiological correlates related to peer socialization. For example, some research has shown that friends directly and indirectly influence eating pathology through pressure to conform to appearance standards, through teasing their peers about appearance, through modeling dieting and pathological eating themselves, or through merely talking about appearance and body image (e.g., Jones, Vigfusdottir, & Lee, 2004; Lieberman, Gauvin, Bukowski, & White, 2001; Oliver & Thelen, 1996; Paxton, Eisenberg, & Neumark-Sztainer, 2006; Stice, Nemeroff, & Shaw, 1996; and Vincent & McCabe, 2000). In addition, some research has demonstrated that social comparison contributed to decreased body satisfaction and eating pathology for men (Hargreaves & Tiggeman, 2009; Hobza, Walker, Yakushko, & Peugh, 2007) and for women (Lindner, Hughes, & Fahy, 2008; Leahey & Crowther, 2008).

The purpose of this dissertation is to examine appearance talk between friends and the relationship between conversations about appearance and eating pathology. I will examine types of appearance talk (i.e., about themselves, their best friends, or other people), dyadic characteristics of these interactions, and gender differences. Central to this dissertation is the relationship between appearance talk and eating pathology, which

will be examined for adolescents and early adults. In addition, the course of disordered eating from adolescence to early adulthood will be examined.

CHAPTER II

LITERATURE REVIEW

Overview of Eating Disorders in Adolescence

Eating disorders are defined in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, revised (DSM-IV; American Psychiatric Association, 2000). In this dissertation, the term *eating disorders* will refer to this specific definition. Much of the current literature uses various terms to refer to those who experience symptoms related to eating disorders. Disordered eating and eating pathology can be defined as problematic eating attitudes and behaviors that span a continuum of severity and concerns related to the body's size and shape; compensatory methods, such as food restriction, fasting, purging, or excessive exercise; and binge eating. Eating pathology will be used to refer to the occurrence of a range of eating disorder symptoms and experiences that are psychologically, emotionally, and physically problematic for adolescents.

Epidemiology

Eating pathology tends to emerge during adolescence and has been estimated to affect as many as 10% of those in this age group (Agras, 2001; Reijonen, Pratt, Patel, & Greydanus, 2003). Prevalence has been estimated as 0.3% in females for anorexia nervosa and 1% for bulimia nervosa (Rastam et al., 2004) and ranges from 0%-0.16% in males for anorexia nervosa and 0%-0.7% for bulimia nervosa (Ricciardelli & McCabe, 2004). However, certainty about the prevalence of eating disorders in adolescents does

not exist, since estimates of clinical level eating disorders may be underrepresented due to underreporting and to the difficulty in seeking and obtaining a valid assessment.

Diagnosis of eating disorders in adolescents is further complicated by diagnostic assessment methods that utilize specific criteria that are often not applicable to adolescents. For example, the amenorrhea criterion does not apply to male adolescents or to females who have not begun to menstruate regularly or predictably. Furthermore, there is variability in the rate, timing, and magnitude of height and weight during puberty that affects weight fluctuations and complicates diagnosis (Reijonen et al., 2003). In addition, many adolescents have not developed the capability for abstract thinking and self-awareness pertaining to the motivation to lose weight.

Eating disorders have historically been reported to affect adolescent females at a rate four times more often than males. However empirical research indicates that males do struggle with disordered eating and body image concerns during adolescence, despite the fact that it is often not reported. Muise and colleagues (2003) provided a review of the literature pertaining to eating disorders among adolescent males and found that males are less likely to seek treatment. These authors explain that this may be partially due to the shame of struggling with a “female disorder” and partially due to fewer males seeking psychological treatment in general. Consequently, males tend to experience more medical problems and exhibit more severe disordered eating symptoms than females. Despite these findings, many similarities exist between males and females with eating disorders including physiologic characteristics, psychiatric comorbidity, and susceptibility to parental and media influences (Woodside, Garfinkel, Lin, Goering, Kaplan, Goldbloom, & Kennedy, 2001).

Course and Continuity

Recently, it has been recognized that adolescent eating pathology demonstrates continuity throughout adolescence and into adulthood. For example, one epidemiological study indicated that anorexia nervosa remained stable from adolescence to young adulthood and that bulimia nervosa increased during the transition to young adulthood (Lewinsohn, Streigel-Moore, & Seeley, 2000). Eating pathology during adolescence, regardless of clinical or sub-clinical status, has been associated with consequent physical and mental health problems in early adulthood (Johnson, Cohen, Kasen, & Brook, 2002). In further support of continuity, Streigel-Moore and colleagues (2003) found that young women who had experienced eating disorders during adolescence reported higher adult psychosocial impairment than peers without adolescent eating disorders, than those who reported non-comorbid lifetime major depressive disorder, or than those with a lifetime history of other (non-mood) disorders. Even though these women no longer met criteria for eating disorders during adulthood, they still experienced more psychosocial impairment, such as lower self-esteem, higher rates of depression, less family support, and poorer health than their adult peers who had not struggled with disordered eating during adolescence. These findings held true whether these individuals experienced full syndrome or partial syndrome eating disorders during adolescence.

Eating disorders have been proposed to be spectrum disorders, meaning these disorders present on a continuum of severity and often change categorically over time. For example, it has been demonstrated in prospective longitudinal research that those who experience symptoms of anorexia, in many cases, develop bulimia (Stice & Agras, 1998). Therefore, it may not be appropriate to regard eating disorders as discrete

diagnostic categories. Furthermore, it is likely that those who experience partial syndrome eating disorders during one time period likely experience them as full syndrome disorders at another point in time (Striegel-Moore & Marcus, 1995). Some researchers have found that the trajectories of some types of eating problems can be variable and unstable (Stice, Presnell, & Spangler, 2002). For example, while it is common for many female adolescents to recover after exhibiting elevations in eating pathology, some will continue to exhibit symptomatic periods (Fairburn, Cooper, Doll, Norman, & O'Connor, 2000).

There has also been empirical evidence to support that there are few differences between those who experience partial syndrome eating disorders from those who experience full syndrome eating disorders in terms of psychosocial adjustment and other mental health issues (Lewinsohn et al., 2000). Partial syndrome eating disorders are no less serious than full syndrome eating disorders and have been associated with serious conditions, such as elevated suicidality and co-morbid psychopathology (Lewinsohn, Striegel-Moore, & Seeley, 2000). Some investigators have advocated for the inclusion of a continuum of symptoms related to eating disorders in diagnostic criteria and screening practices (Muise et al., 2003). They cite, for example, that eating disorders appear to have a strong developmental component among males with most experiencing subclinical symptoms throughout adolescence and full syndrome eating disorders in adulthood (Muise et al., 2003). The Society of Adolescent Medicine advocates for more flexibility in eating disorder diagnosis, developmentally appropriate decision criteria, and consideration of partial syndrome disorders (Golden, Katzman, Kreipe, Stevens, Sawyer, Rees, Nicholls, & Rome, 2003).

Summary

Eating pathology significantly affects adolescents, however current methods of assessment and diagnosis derived from adult models of eating disorders are often not appropriate for adolescents. Research has demonstrated that eating pathology in adolescence is related to poor adjustment in adulthood regardless of whether they experienced full or partial symptom eating disorders during adolescence. Although research has largely focused on how eating pathology impacts females, males who experience these disorders exhibit similar characteristics to females, tend to enter treatment later and with more severe symptoms, and are likely to be undetected due to diagnostic shortcomings and decreased help-seeking.

In the next section, I will provide an overview of an etiological model of eating disorders and explain how peer interactions contribute to disordered eating through social processes during adolescence.

Etiology of Disordered Eating: A Biopsychosociocultural Model

The nature and development of eating disorders consists of a confluence of biological, psychological, and sociocultural processes (e.g., Ricciardelli & McCabe, 2004). This biopsychosociocultural approach recognizes that there is not one specific etiological marker for eating disorders and instead calls for a developmental framework that appropriately considers adolescent development. Following is an overview of the components of this model with emphasis on sociocultural influences, particularly peer contributions, with regard to disordered eating.

Biological Processes

Biological processes involved in eating disorders may include genetic factors (see Bulik, 2004 for review), personality factors (see Steiger & Bruce, 2004 for review), and physical composition (i.e., personal and family weight history) (Fairburn, Norman, Welch, O'Connor, Doll, & Peveler, 1995). For adolescent females, biological and physical developmental processes related to puberty (especially relatively early onset) have been shown to impact the development of body dissatisfaction, which is a consistent predictor of disordered eating (Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Hayward & Sanborn, 2002). Biological processes interact with psychological and sociological factors to contribute to the development of eating pathology. For example, Stice and colleagues (1996) proposed that bulimic symptoms result from a combination of pubertal onset and physical maturation (biological processes). These authors specifically discuss how the combination induces physical changes that are incongruent with a thin ideal (sociocultural process) that in turn contribute to depression (psychological process) and bulimic symptoms.

Neurochemical and neurological disturbances have also been found in individuals suffering from disordered eating, although it is difficult to discern if these are consequences of disordered eating, result in disordered eating, or function bidirectionally to influence one another (for review, see Brewerton & Steiger, 2004; Bailer & Kaye, 2004; and Treasure & Uher, 2004). Research has consistently demonstrated a connection between neurochemical functioning and disordered eating (Brewerton & Steiger, 2004). For example, while increased or decreased levels of serotonin, have been associated with

dietary restraint and bingeing, respectively, it seems that these neurochemical disturbances can both predict, and be predicted by, disordered eating.

Psychological Processes

Psychological processes involved in body dissatisfaction and eating disorders include cognitive and emotional experiences, as well as comorbid internalizing disorders. For example, anxiety disorders are significantly more frequent in individuals with eating disorders compared to those in the general population (see Swinbourne & Touyz, 2007 for review). Although it is unclear exactly how anxiety impacts eating pathology, several studies have demonstrated that it is often the case that onset of an anxiety disorder precedes the onset of an eating disorder (Brewerton et al., 1995; Bulik, 2003). In addition, negative affect has been demonstrated to mediate the relationship between body dissatisfaction and disordered eating (Stice, 2001). When McCabe and Vincent (2003) examined psychological factors related to disordered eating, they found that depression and low self-esteem were the most consistent predictors of various forms of disordered eating for females, while anxiety, self-esteem, and ineffectiveness were the most important predictors for males. Other cognitive and emotional processes such as limitations in emotional awareness and emotional coping have also been linked to disordered eating (Janzen, Kelly, & Saklofske, 1992; Sim & Zeman, 2006).

Sociocultural Processes

Sociocultural processes involved in body dissatisfaction and eating disorders include internalization of body ideals, media influences, and interpersonal influences. Body dissatisfaction, internalization of the thin ideal, and dieting behaviors have consistently predicted disordered eating in adolescent girls (Stice & Bearman, 2001;

Thompson, Heinberg, Altbe, & Tantleff-Dunn, 1999). Adolescents exist in media saturated environments. In their investigation of the effects of media exposure on youth, Dubow, Huesmann, and Greenwood (2007) found that 51% of youth in the United States report their television being on “most of the time” in their homes and that viewing peaks between eleven and thirteen years of age. Media images portray certain body ideals that may become internalized and may contribute to body dissatisfaction and dieting, which are consistent predictors of eating disorders (Stice & Bearman, 2001). Another study found that the strongest predictor of disordered eating for adolescents was the rate to which these youth looked at appearance-focused magazines (Levine, Smolak, & Hayden, 1994). This makes sense given the nature of images in the media. For example, one study found that approximately 75% of women in popular magazines are of a body composition that meets criteria for anorexia nervosa (Brown & Witherspoon, 2002). Attempts to attain the bodies of same-sex figures in the media were predictive of weight concerns and constant dieting in a large sample of adolescent females and males (Field, Camargo, Taylor, Berkey, Roberts, & Colditz, 2001).

Media influences are embedded within youth culture, and it has been recognized that the modeling and socialization processes that occur within interpersonal relationships are similar to how adolescents are affected by the media (Dubow, Huesmann, & Greenwood, 2007). Unrealistic expectations of body composition can be reiterated by friends and family, which further impacts an individual’s risk for eating pathology. Researchers suggest that there is pressure on females to strive for attractiveness and to maintain close relationships by becoming and remaining socially acceptable through attaining physical ideals (Striegel-Moore and colleges, 1986, 1993). These pressures

often become exacerbated when adolescent girls begin dating (Levin, Smolak, Moodey, Shuman, & Hessen, 1994). These authors found that although recent menarche (biological process) and recent onset of dating (sociocultural process) were both related to increased weight management efforts, it was the *combination* of these two events that was associated with significantly more weight management techniques. Pressure to maintain an ideal body type does not only apply to females. Recently, it has been recognized that the lean, muscular body ideals have been related to body dissatisfaction and disordered eating in adolescent males (Jones & Crawford, 2006; McCabe & Ricciardelli, 2003).

Certain subcultures may also provide environments more conducive to developing eating pathology. For example, adolescent males and females who have participated in athletics have been more likely to experience body dissatisfaction and disordered eating (Jacobi, Morris, & de Zwaan, 2004; Smolak, Murnen, & Ruble, 2000; Muise, Stein, & Arbess, 2003). This is another example in which socialization contributes to the internalization of norms related to the body and appearance.

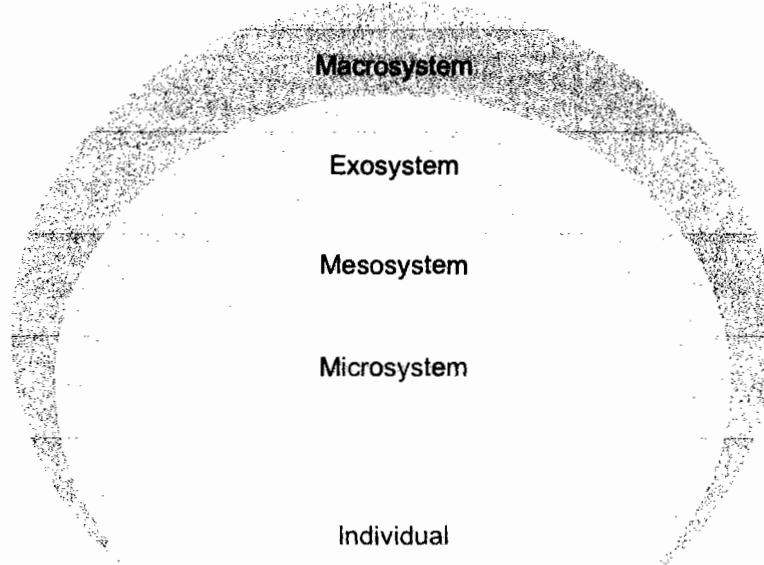
Summary

Disordered eating evolves within a complex phenomenon where individual characteristics intersect with environmental factors. Adolescence is a developmental period during which eating disorders tend to emerge and also when biological changes and peers gain influence. Next, I will describe how adolescent disordered eating can be conceptualized in an ecological framework, describe socialization theory related to the development of disordered eating, and narrow the focus of the literature review to peer factors that contribute to disordered eating.

Socialization within an Ecological Framework

The biopsychosociocultural perspective of eating disorders can be applied to adolescent eating pathology within an ecological framework that includes individual and environmental aspects of development. Bronfenbrenner (1979, 2005) described individual development within an ecological framework consisting of ecosystems (see Figure 1).

Figure 1.

Ecological Model

The ecological model incorporates the bidirectional influences of individuals within multiple contexts. The microsystem includes immediate environments such as family, peer groups, and school settings. Each context within the microsystem communicates and influences one another within a system called the macrosystem. All of these subsystems are subject to influence by exosystems, which include larger institutional bodies, such as

laws, policies, and organized institutions. The macrosystem is comprised of all the sociocultural aspects of communities, societies, and belief systems and surrounds all other systems. The systems in this model contribute to the way in which individuals view themselves and aspects of their environment, which changes over the course of time; this is referred to as the chronosystem.

The peer microsystem consists of cultural norms both created by adolescents and by societal norms within the macrosystem that influence individuals within the peer group. Peer culture is created and impacts other systems in an adolescent's environment, and at the same time, peer culture is impacted by other ecosystems. The essential system of focus for this investigation is the microsystem of the peer context, in which friendship influences adolescents' development of eating pathology.

Theories of socialization have often been used to explain many aspects of adolescent development, and several scholars have found empirical evidence for social learning theories pertaining to adolescent attitudes and behaviors (Bandura, 1977; Hartup, 1983, 1996; Maccoby, 2007). Socialization is defined as the processes related to the transmission of motivations, skills, behavior patterns, and values necessary for competent functioning of individuals in a particular developmental culture (Maccoby, 2007). Within the scope of this definition, individuals learn components of social competence within social contexts. For example, peers exert influence through modeling group appropriate norms and behaviors (Bandura, 1977; Brown, 1989). Adolescents gain much of their social knowledge through peer interactions during which they learn the norms of peer culture (e.g., Cairns & Cairns, 1994; Hartup, 1996). Dynamic models of the socialization process emphasize the bidirectional nature of interpersonal interactions and recognize

that the accumulation of interactions over time provides a framework through which individuals understand and interpret each other's behaviors (Kuczynski & Parkin, 2007; Kuczynski, 2003; Hinde, 1979). As individuals interact with one another, patterns of communication begin to develop and norms are formed and reinforced through communication. The more that peers interact with one another to develop routine scripts, and the more that certain norms are reinforced, the more likely it is that certain beliefs become crystallized and act as filters that impact beliefs, attitudes, and behaviors (Bandura, 1986; Guerra et al., 2003).

Summary

Adolescents exist in multiple contexts, or ecosystems, at the same time. Within these contexts, they learn expectations from their friends, families, communities, governing agencies, and society at large. Much of this learning takes place in social settings where direct and indirect communication reinforces certain beliefs, attitudes, and norms. Socialization theory relates to individual development, contributes to the norms within the peer culture, and these norms are communicated through language and modeling. In the next section, I will describe how peer interactions specifically influence individuals through the communication of norms, attitudes, and beliefs regarding appearance.

Peer Socialization

Peer socialization is one of the most salient aspects of adolescent development (Hartup, 1996). Throughout adolescence, increasingly more time is spent with peers than family members (Larson et al., 1996). Although families remain influential, adolescents are closer to their peers than their parents in many ways (Berndt, 1996; Youniss &

Smollar, 1985). Peer relationships are particularly important in social development and significantly impact adolescent development. This impact can also extend into early adulthood. For example, research has demonstrated that short-term (adolescent) and long-term (adult) social behaviors are related to characteristics of the peers with whom an individual associates during early adolescence (Magnusson, Stattin, & Allen, 1985).

Communication and Appearance Culture

Language is used in social situations to form and create social organization, patterns, and identities (Goodwin, 1990). Adolescents actively participate in social scripts without individual reflection on these patterns (Rogoff, Moore, Najafi, Dexter, Correa-Chavez, & Solis, 2007). Scripts are specific to the peer situation and involve individuals who share an understanding of a sequence of events based on cultural norms regarding how one behaves in certain settings (Schank & Abelson, 1977). Adolescents develop methods of communicating in these situations, such as how to talk and how to behave in appropriate ways. This process of socialization is useful for transmitting culturally appropriate norms, however sometimes norms can be maladaptive. For example, Dishion and colleagues (1996) observed that reinforcement for deviancy talk and future deviant behaviors developed when pairs of adolescent males discussed rule-breaking topics. This was referred to as “deviancy training,” and it seems possible that similar processes are found in conversation related to appearance. For example, social reinforcement promotes the internalization of the thin ideal and may be communicated directly through verbal interactions or indirectly through modeling of behaviors (Stice, 1998). Next, I will describe some of the direct, verbal mechanisms for communicating appearance norms among adolescents.

Social Processes in Appearance Culture

Understanding common speech routines is important for identifying how cultural norms pertaining to appearance are reproduced among adolescents. Conversations with friends provide daily contexts for attending to, creating, and understanding information regarding appearance. This process of redundancy provides a sense of belonging to a group with shared understandings (Corsaro & Eder, 1994; Eder, Evans, & Parker, 1995). It is common for adolescent youth to discuss their own and others' appearance with their friends. In one case study conducted at the school level, males were observed to regularly discuss female bodies and attractiveness and females reported that they mostly talked about other females' appearance in their free time (Eder et al., 1995). Females expressed fears of being "too skinny" or "too fat" and there were often comments related to others' weight. More recent empirical studies have demonstrated that appearance talk is not specific to only females and have explored sex differences and similarities within appearance talk. For example, females tend to discuss weight loss and dieting in congruence with the current thin ideal (Paxton, 1999; Vincent & McCabe, 2000) and males tend to discuss muscularity and convey messages about body shape or size through teasing (Jones & Crawford, 2006; McCabe & Ricciardelli, 2003).

In social contexts, adolescents learn about "appropriate" aspects of appearance through direct feedback from peers, from observing their friends talk about other people's appearance, and through social comparison. Some research indicates that females and males value facial attributes and height when considering attractiveness of same- and other-sex peers (Jones, 2001). In regards to body shape and size, boys and females reported that weight is an important factor in attractiveness of females and that a male's

build is essential to his level of attractiveness (Jones, 2001). This suggests that body attractiveness is based on current ideals: thinness for females and lean muscularity for males. Relatively few adolescents believe they are their “desired size” (12% of females and 16.6% of males) (Ricciardelli & McCabe, 2001) and some will actively attempt to attain an “idealistic” body appearance. In one study, 12.4% of females and 4.6% of males endorsed engaging in extreme weight loss behaviors, such as restricting food and over-exercising (Neumark-Sztainer et al., 2002).

Adolescents tend to compare themselves to their peers and models seen in the media, and social comparison functions as an important influence in attitudes toward oneself (Festinger, 1954). In one study of adolescents, males tended to compare their weight and height to same-sex peers, and females’ weight comparisons were equally likely to occur with peers and models (Jones, 2001). Females and males equally endorsed comparing their shape or build to both models and peers, and all who engaged in social comparison reported higher body dissatisfaction; this finding was especially strong for females and held true regardless of body size (Jones, 2001). Adolescents understand that “appropriate” aspects of appearance are related to social success and often perceive that they would be more accepted by peers if they conformed to proscribed body types. For example, overweight females reported that they thought their peers would be more accepting if they were thinner and perceived more pressure to diet than females who were of average size or underweight (Jones & Crawford, 2006).

Social comparison can continue to influence body dissatisfaction and eating pathology in early adulthood. Two studies of young men found that those who viewed media images of men who conform to the male body ideal reported lower body-esteem

and lower body satisfaction than those who viewed neutral images or images depicting men who appeared to enjoy financial success (Hargreaves & Tiggeman, 2009; Hobza et al., 2008). Other studies of young adult women indicated that social comparison contributed to body dissatisfaction and eating pathology (Leahy & Crowther, 2008; Lindner, Hughes, & Fahy, 2008). For example, one study found that women who experienced body dissatisfaction also engaged in more social comparison than women who reported being satisfied with their bodies (Leahy & Crowther, 2008).

Although peers are clearly influential during adolescence, it is important to recognize that females and males experience peer influences related to appearance prior to adolescence. Peer messages concerning weight and shape impact females as young as 3rd grade, and young females who believed that their peers would accept them more if they were thinner, reported weight concerns (Oliver & Thelen, 1996; Taylor et al., 1998). Although parents have been recognized to contribute to appearance concerns, some research has established that peer modeling and teasing was more strongly related to body dissatisfaction for females in the 3rd through 5th grades than perceived parental concern (Vander Wal & Thelen, 2001). Since eating disorders peak in early and late adolescence, eating pathology has been studied primarily among adolescents rather than among younger children. However, some existing research on younger children demonstrates that rates of appearance concerns were found to be similar between elementary school girls and middle school girls. One study found peer influence to be the largest contribution to overall variance of appearance concerns. For elementary school girls and for middle school girls, 34% and 32.6% of the variance (respectively), in weight concerns was accounted for by the importance that their peers put on weight and eating.

Summary

Societal norms regarding “appropriate” appearance are communicated among peers during adolescence. Since adolescents spend significant amounts of time with peers and value these relationships, peers can exert great influence on their friends’ thoughts, feelings, and behaviors. It is common for adolescents to focus on their bodies, since they are in environments that provide opportunities for appearance comparison while they are also undergoing physical changes. While talking about appearance is a common phenomenon among adolescent friends, it can also be harmful when messages about acceptance are related to obtaining and maintaining a physical ideal. In the next section, I will review the literature regarding the connections among appearance talk, body dissatisfaction, and disordered eating.

Appearance Talk

Appearance talk seems relatively common for adolescents, and these conversations seem to contribute to beliefs about appearance ideals as well as provide a context for socialization by establishing and reinforcing norms based on appearance. One study reported that almost 42% of middle school aged females surveyed reported talking with their friends about weight, body shape, and dieting (Levine & Smolak, 1992). Conversations related to appearance are not unique to female friendships: in another study, males reported even more appearance teasing and peer pressure regarding appearance than females (Jones & Crawford, 2006). This normative conversational practice could be exacerbating family, media, and societal pressures related to appearance, which has been linked to body dissatisfaction when not meeting “appropriate” standards.

Appearance Talk and Body Dissatisfaction

Research has established a relationship between appearance talk and body dissatisfaction. Paxton, Eisenberg, and Neumark-Sztainer (2006) cite recent literature, which indicates that 24-47% of adolescent females and 12-26% of adolescent males report being dissatisfied with their bodies. For males, dissatisfaction tends to be related to being either overweight or underweight (Presnell, Bearman, & Stice, 2004), and for females, it tends to be related to being larger (Cattarin & Thompson, 1994; Stice & Whitenton). Females and males who engaged in frequent appearance conversations reported greater internalization of body ideals and body dissatisfaction than those who engage in these conversations less often (Jones, 2004; Jones et al., 2004). Qualitative research has also indicated that conversations with peers about appearance are associated with feelings of insecurity and body image concerns (Nichter, 2000; Wertheim et al., 1997).

Talking about appearance has been linked to internalization of appearance ideals and body dissatisfaction. Jones, Vigfusdottir, and Lee (2004) examined three dimensions of “peer appearance culture,” including appearance conversations, viewing appearance oriented magazines, and the experience of appearance criticism by their peers. These authors examined how the three aspects of appearance culture were associated with body dissatisfaction and internalization of appearance ideals. Appearance conversation and criticism of appearance by peers both significantly contributed to self-reported internalization of appearance ideals and body dissatisfaction. Internalization of appearance ideals mediated the relationship between appearance conversations and body dissatisfaction, and this was stronger for females than males. The strongest predictor of

body dissatisfaction for boys was peer criticism of their appearance. In general, the authors concluded that norms regarding appearance ideals are transmitted within the interpersonal contexts of conversations, and this process is related to internalization of appearance ideals and body dissatisfaction.

This finding is consistent with other research that demonstrated that females with heightened appearance schematicity (i.e., those with a stronger personal investment in appearance) experienced predicted increases in body dissatisfaction from mid-adolescence to late adolescence (Hargreaves & Tiggemann, 2002). Similarly, appearance schematicity was related to concurrent body dissatisfaction and to appearance related interactions among peers in another study of pre-adolescent females (Sinton & Birch, 2006).

Different types of appearance talk have been found to influence males and females differently. Jones and Crawford (2006) explored early adolescent (7th grade) and mid-adolescent (10th grade) appearance talk, which consisted of body change talk, appearance pressure, teasing by peers, and peer acceptance. They found that appearance conversations and talking about dieting and muscularity were more frequent among older adolescents than early adolescents. While females reported more appearance conversations than males, males endorsed discussing more body change strategies and endorsed more pressure and appearance teasing than females. For males, being less muscular or being larger had the greatest impact on body dissatisfaction: smaller males perceived more pressure to build muscle and more appearance teasing than other males, while larger males reported the most body dissatisfaction. For females, being larger was associated with the most undesirable outcomes, such as the perception that peer

acceptance would improve if they were thinner, engaging in more social comparison, and experiencing greater body dissatisfaction. Average size females were more dissatisfied with their bodies than smaller females. Larger females were most likely to report appearance teasing, and this perception was not significantly different from the underweight females.

The findings of this study also suggest a developmental process. Mid-adolescent males perceived an association between peer acceptance and muscularity compared to early adolescent males, and peer social comparisons were more frequent in 10th grade than 7th grade for both females and males. In addition, 10th grade males perceived more peer appearance pressure than 7th grade males. There were no grade differences for females regarding this developmental increase in body consciousness.

Paxton, Eisenberg, and Neumark-Sztainer (2006) investigated the prospective risk factors for increases in body dissatisfaction of early and mid-adolescent females and males. They found that body dissatisfaction at Time 1 predicted body dissatisfaction for all adolescents at the Time 2 follow-up assessment five years later. They also found that higher BMI predicted increases in body dissatisfaction. For the early adolescent group, friends' dieting for females and weight teasing for males predicted increases in body dissatisfaction.

Summary. Appearance talk is common among adolescents and has been found to contribute to body dissatisfaction. Appearance talk appears to be related to internalization of appearance ideals for males and females. It seems that females engage in appearance talk more than males throughout adolescence, however males report more pressure and more body change strategies around 10th grade. Results suggest that larger males and

females were teased the most and had high rates of body dissatisfaction. Females tend to compare themselves to others and to report more negative social consequences for not meeting appearance ideals.

Appearance Talk, Dieting, and Disordered Eating

Peer relationships and interactions with friends have not only been shown to impact attitudes and perceptions related to body image but also to disordered eating, dieting, and weight loss behaviors. Body dissatisfaction is a well-established risk and maintenance factor for eating pathology (Stice, 2002). As part of participation in appearance culture, adolescents discuss body shape and body change strategies.

Females have reported that conversation with peers and friends typically revolves around dieting and weight loss strategies (Levine & Smolak, 1992; Nichter & Vuckovic, 1994; Oliver & Thelen, 1996; Paxton, 1996). Males have reported the tendency to discuss body change strategies related to gaining muscularity. Ricciardelli and McCabe (2006) found that 12.4% of adolescent males reported thinking about using steroids or supplements or actually using them to gain muscle. While these conversations are normative in adolescent peer culture, they have the potential to contribute to maladaptive outcomes. Sociocultural theoretical models of disordered eating regard peers as a mediator of appearance concerns among adolescents (Levine, et al., 1994; Pike, 1995; Stice, 1994). Discussions regarding body and weight change strategies have been associated with eating pathology in some studies (Crandall, 1988; Levine et al., 1994; Stice, Nemerooff, & Shaw, 1996).

Vincent and McCabe (2000) found that direct influences (i.e., discussion of appearance, encouragement to lose weight, appearance teasing) and indirect influences

(i.e., modeling of these behaviors), predicted body dissatisfaction and disordered eating among 10th grade males and females. These authors found that discussion about weight loss and encouragement by significant others were consistent predictors of disordered eating for females. Encouragement by peers to lose weight was shown to predict disordered eating for males, as well. These effects were related to the focus on appearance during these social interactions and were not related to the quality of the relationships (Vincent & McCabe, 2000). Similarly, other research has noted that teasing about weight was predictive of dieting and bulimic symptoms, and peer pressure regarding appearance contributed to disordered eating above all other variables (Lieberman, Gauvin, Bukowski, & White, 2001).

Paxton, Schultz, Wertheim, and Muir (1999) also found direct friend influences on disordered eating in their sample of 10th grade females. For example, peer teasing and appearance talk among friends predicted dietary restraint. Groups of friends in this study who reported higher levels of body image concerns and weight loss behaviors also reported talking more about weight loss and dieting with their friends than groups who did not. Individuals in these particular groups also reported more teasing from friends about weight and shape and indicated that their friends were more important in influencing their decisions to diet. In addition to direct influences, the authors found some indirect peer influences on disordered eating. For instance, friends' concerns about thinness were also related to their own body image concerns, dietary restraint, extreme weight loss behaviors, and binge eating. Individuals were impacted indirectly by the behaviors of their friends. For example, the extreme weight loss behaviors of friends contributed independently to the prediction of individuals' use of these behaviors.

It is not surprising that these authors found similarities among friendship groups regarding body image concerns, dietary restraint, and extreme weight loss behaviors. Adolescents tend to select peers who are similar to themselves and attitudes, beliefs, and behaviors are reinforced within the friendship (Berndt, 1996; Rose, 2002). Females seem to model the behaviors of their friends and espouse similar attitudes related to weight, shape, and dieting, which seem to be verbally communicated or indirectly observed by individuals.

Schroff and Thompson (2006) investigated friendship group influence on appearance related variables, such as body dissatisfaction, drive for thinness, bulimic behaviors, and self-esteem among a sample of early to late adolescent girls. They found that an individual's drive for thinness was related to their friends' influence and the perception of their friends' preoccupation with weight and dieting. This finding is similar to other research demonstrating that peer modeling contributed to dieting (Lieberman, Gauvin, Bukowski, & White, 2001). These results supported earlier research that indicated that peer investment (i.e., friends talking about dieting) significantly contributed to the variance in disordered eating (Levine, Smolak, Moodey, Shuman, & Hessen, 1994). In addition, these authors found that peer investment in thinness, parental pressure to be slender, and exposure to peer modeling was related to pathological dieting, and not to less extreme dieting behaviors.

Summary. It seems clear from present literature that peers contribute to individual maladaptive beliefs, attitudes, and behaviors related to appearance. Whether this process is one of reinforcing similar existing beliefs, attitudes, and behaviors or of modeling

norms regarding appearance, peers and friends can definitely influence an individual's body dissatisfaction and disordered eating.

Observation of Appearance Talk and Peer Influence

Very few studies conducted over the past 20 years have used observational methods to examine eating pathology. Those that have used this method focused on adults, eating behaviors, or family interactions but not on interpersonal dynamics. More recently, researchers have advocated for in vivo behavioral observations to explore cognitive, affective, social, and environmental antecedents related to eating pathology (Smyth, Wonderlich, Crosby, Miltenberger, Mitchell, & Rorty, 2001).

One commonly used observational method consists of participants being observed in laboratory situations consuming test meals and engaging in bingeing or dietary restraint (Williamson, Goreczny, & Duchmann, 1987). For example, one study investigated affective antecedents correlated with binge eating behaviors during different times of the day and across social contexts (Schlundt, 1985).

Only a few studies have examined observed interpersonal dynamics as they relate to disordered eating, and these studies are limited to the family context. For example, one study observed conversations between late adolescent daughters and their parents and found that positive and negative interpersonal interactions were key variables that differentiated families with a bulimic or anorexic daughter from those families who did not have a daughter with eating pathology (Humphrey, Apple, & Kirschenbaum, 1986). Another study observed specific characteristics of families who had a daughter receiving inpatient treatment for eating disorders (Kog, Bertommen, & Vandereycken, 1987). These authors coded videotaped nonverbal interaction processes to determine the fit of

Minuchin's Psychosomatic Family Model, however, no analyses or conclusions were made regarding these interactions.

Researchers have often used behavioral observation to explore mental health issues in children and adolescents. Observational measures designed to investigate characteristics of anxiety and fear, conduct disorders, hyperactivity, and autism have been used for decades (see Gettinger & Kratochwill, 1985). Although observation of adolescent peer interactions has been limited, previous research has provided some important information about dynamic relationship patterns and individual outcomes. For example, Dishion and colleagues (Dishion, Capaldi, Spracklen, & Li, 1995; Dishion, Neslon, & Bullock, 2004; and Dishion, Spracklen, Andrews, & Patterson, 1996) have explored how interpersonal interactions have contributed to antisocial behavior and substance use. During one of these investigations, the authors reviewed videotaped conversations between adolescent males and their friends to explore how interaction processes influenced antisocial behavior (Dishion et al., 1996). They found that dyads comprised of non-delinquent males were less likely to reinforce rule-breaking talk than dyads of delinquent males who tended to encourage this kind of talk with positive reinforcements, such as laughing. Not only did the reinforcement of delinquent talk encourage more of the same, this interaction actually predicted future serious delinquent offenses, especially among those males who were initially low in delinquency during the first assessment. Similar findings were reported in another study, which demonstrated that positive reinforcement of friends in dyadic interactions predicted increased use tobacco, alcohol, and other drugs (Dishion et al., 1995).

Summary. Direct observation of behaviors has been used in research to explore peer interactions, family interactions, and mental health issues. To date, research on the influence of peers on eating attitudes and behaviors has only included qualitative, self-report and retrospective data. , There has been no observational research linking eating disorders with risk factors and peer interactions. There have been no quantitative studies published to date that directly observe appearance conversations among adolescent peers and examine how they relate to eating pathology. This will be the first study known to code actual appearance talk and outcomes of eating pathology in an adolescent sample.

Research Questions

This study utilizes existing data from Project Alliance (Dishion & Kavanagh, 2003), which includes observations of peer interactions and self-report data regarding eating attitudes and behaviors for adolescents when they are 17-years old and when they are entering early adulthood at 19-years old. For the purpose of this study, appearance talk will be operationalized to include verbalization of body image, appearance, weight, and behaviors related to dieting or compensatory methods regarding themselves or others.

Research questions include:

- How frequent is appearance talk in conversations between adolescents and their best friends?
- To what degree do adolescents talk about others people's appearance, each other's appearance, their own weight and dieting behaviors, and others people's weight and dieting behaviors? How do the levels of appearance talk differ between participants and their best friends and between males and females?

- Does eating pathology in adolescence predict eating pathology as youth begin to transition into early adulthood?
- Are different types of appearance talk predictive of eating pathology during adolescence, and are there differences between males and females?
- Are different types of appearance talk predictive of eating pathology two years later in early adulthood, and are there differences between males and females?

CHAPTER III

METHODOLOGY

Participants

Selection

Participants in this study included 999 ethnically diverse adolescents enrolled in three public middle schools in a Pacific Northwest metropolitan area. This community sample of adolescents was assessed during a prospective, longitudinal research project, Project Alliance (funded by NIDA: DA 07031 to Thomas Dishion; Dishion & Kavanagh, 2003). The sample comprised two cohorts recruited and assessed beginning in the 6th grade. Cohort 1 ($n = 676$) was recruited and initially assessed during the 1996–1997 academic year, and Cohort 2 ($n = 323$) was recruited and initially assessed during the 1998–1999 academic year. All sixth graders were invited to participate in this research program on a voluntary basis and were recruited by advertising in schools and sending letters home to caregivers. Adolescents who obtained consent from a caregiver were allowed to participate. Consent was obtained by passive consent for Cohort 1 and active consent for Cohort 2. Ninety-five percent of the sixth graders were successfully recruited for Cohort 1 and 83% of the sixth graders for Cohort 2. Of the original 999 total participants, those who completed disordered eating measures ($n = 823$, 82% of the sample) and video taped peer interaction tasks ($n = 711$, 71% of the sample) were used for this study.

Data were collected once per year on each participant in the study when they were 17-years old and 19-years old. This study included all intervention and control participants who completed measures related to disordered eating and who participated in video taped peer interaction tasks during 11th grade. Participants were reimbursed \$10.00 per hour for participating in any aspect of this research project.

Assignment

Participants were randomly assigned at the individual level into a treatment or control group for the purposes of the larger project. The treatment was a multilevel, family-centered intervention embedded within the public school environment designed to expand understanding related to the etiology and onset of substance abuse and other mental health issues. The primary goal of the intervention was to enhance parenting skills for the purpose of addressing adolescent problem behaviors. Twelve percent of the total participants ($n = 115$) received this concurrent selected intervention, which did not specifically target the variables examined within this dissertation. Intervention outcomes will not be examined in this study, and results of the intervention can be found in Connell, Dishion, Yasui, and Kavanaugh (2007).

Demographics

Fifty-two percent of the participants identified as male and 48% identified as female. The participants self-identified as European American ($n = 385$, 43%), African American ($n = 271$, 30%), Multiethnic ($n = 69$, 8%), Latino/Latina ($n = 59$, 7%), Asian American ($n = 43$, 5%), European American and African American ($n = 34$, 4%), Native American ($n = 19$, 2%), Pacific Islander ($n = 7$, 1%), or another ethnicity not listed as an option ($n = 18$, 2%).

Design

Data were collected from participants during 11th grade and two years later when participants were about nineteen years old. One self-report questionnaire regarding disordered eating was collected in 11th grade when participants were an average age of 17-years old and another self-report regarding eating pathology was collected when participants were about 19-years old. Appearance talk was coded from the collected videotaped Peer Interaction Tasks, which were recorded during 11th grade as part of a broader, longitudinal research project called, Project Alliance.

Measures

Appearance talk. Appearance talk was defined as “verbal exchanges that focus attention on general appearance-related issues, reinforce the value and importance of appearance to close friends, and promote the construction of appearance-ideals” (Jones & Crawford, 2006, p. 258).

To measure appearance talk, this study coded previously video taped dyadic interactions of 11th grade study participants (referred to in this study as the “Participants”) with their self-identified best friends (referred to in this study as “Best Friends”). During these interaction tasks, adolescents were instructed to discuss eight different topics for five minutes each. Each dyad was given standardized, verbal instructions and written instruction cards by trained research project staff. Topics included planning an activity the dyad could do together within the next week, a current problem the participant identified, a current problem the best friend identified, beliefs regarding substance use, a major goal each individual had for the coming year, aspects of dating that each likes and dislikes, describing their peer group and what they like and

don't like about their friends, and planning a party (see Appendix A for instruction scripts and discussion topics). None of these topics explicitly included appearance related items, therefore any appearance talk may be considered spontaneous.

Trained coders rated each individual's level of participation in appearance talk items on a 9-point Likert-type scale ranging from one to nine (1 = "not at all," 5 = "somewhat," 9 = "very much"). Four items within this coding system pertained to appearance-related beliefs, attitudes, and behaviors. Items included: a) "Discussed or commented on others' body image or appearance," b) "Discussed or commented on own weight or dieting behaviors" c) Discussed or commented on friend's body image or appearance" and d) Discussed or commented on others' weight or dieting behaviors" These items were intended to broadly capture appearance conversation about others' appearance, their own appearance and body change behaviors, each other's appearance and body change behaviors, and others' body change behaviors. There were ten trained coders for this project who were only allowed to code data when they reached a reliability level of $\alpha = .85$ or greater.

Eating pathology. Eating pathology in 11th grade was measured using the Eating Attitudes Test-26 (EAT-26; Garner, Olmstead, Bohr & Garfinkel, 1982). Cronbach's coefficient alpha has been reported at $\alpha = .83$ in two studies, which demonstrated acceptable internal reliability (Garner et al., 1982; Koslowski, Scheinberg, Bleich, Apter, Danon, & Solomon, 1992).

The EAT-26 is a 26 item self-report questionnaire designed to measure symptoms of anorexia nervosa, bulimia nervosa, and eating disorders not otherwise specified (see Appendix B). Each item contains a 5-point Likert-type scale (0 = "Never," 0 = "Rarely,"

1 = "Sometimes," 2 = "Very Often," and 3 = "Always") with one question reverse coded ("I enjoy trying new rich foods"). Scores can be totaled for the entire questionnaire and may range from 0-78. A cutoff total score of ≥ 20 has been empirically established as identifying clinical levels of disordered eating (Garner et al., 1982). This assessment has been normed on adolescent populations (Rosen, Silberg, & Gross, 1988), and the same cut-off criteria are applicable to this population (Moss, Jennings, McFarland, & Carter, 1984).

Adolescent eating pathology among all participants was assessed during grade eleven when all participants completed the EAT-26 and videotaped peer interactions were administered. Mintz and O'Halloren (2000) demonstrated that the EAT-26, when applying the cut-off score, is able to indicate clinically significant levels of disordered eating, although it is not able to differentiate among specific eating disorders. These authors determined that the EAT-26, when used in this way, is able to accurately detect 90% of individuals with disordered eating who meet DSM-IV criteria (Mintz & O'Halloren, 2000). It has been suggested that the EAT-26 can also be used as a continuous measure to represent levels of disordered eating, although is not able to differentiate between EDNOS and full symptom disorders (and may not detect restricting type anorexia, but is considered valid for binge-eating/purging type anorexia) (Mintz & O'Halloren, 2000). In this study, eating pathology was measured as continuously in the 11th grade.

Outcomes of eating pathology during the follow-up assessment were measured dichotomously using items related to eating disorder criteria, which were assessed with the Composite International Diagnostic Interview (CIDI). The CIDI is a structured

interview designed for use by trained interviewers for the assessment of DSM-IV and ICD-10 mental health disorders. It is intended for use in epidemiological, cross-cultural studies, and for clinical and research purposes. The diagnostic section of the interview is based on the World Health Organization's Composite International Diagnostic Interview (WHO CIDI, 1990; for additional information, see Haro, Arbabzadeh-Bouchez, Brugha, de Girolamo, Guyer, Jin, Lepine, Mazzi, Reneses, Vilagut, Sampson, & Kessler, 2006; and Kessler & Usten, 2004).

Four items of the CIDI pertaining to eating pathology are included: "Have you ever had a concern about your weight, your eating, or being too fat?," "Have you ever lost a lot of weight, that is, fifteen pounds or more, either by dieting or without meaning to, not by having a baby or an operation?," "Did relatives ever say you were much too thin or looked like a skeleton?," and "Have you ever had a time when you would eat abnormally large amounts of food within a few hours—that is, eat in binges?" These items were coded as either "1" (present) or "0" (not present). These items were summed to comprise an eating pathology symptom score during the early adulthood assessment.

CHAPTER IV

RESULTS

The purpose of this study is to examine the presence and nature of appearance talk among adolescents and their best friends and to explore how appearance talk is related to eating pathology. Results are organized into three main sections. The first section includes results pertaining to appearance talk. I examined the frequency of appearance talk, correlations among the types of appearance talk, and gender differences within the different types of appearance talk. The next section includes results examining the relationship between appearance talk and eating pathology, including gender differences. Finally, the predictive relationship between eating pathology in adolescence and in early adulthood is examined. Appearance talk is included in these models in order to test the additive impact of observational data as a predictor of later pathology.

Appearance Talk

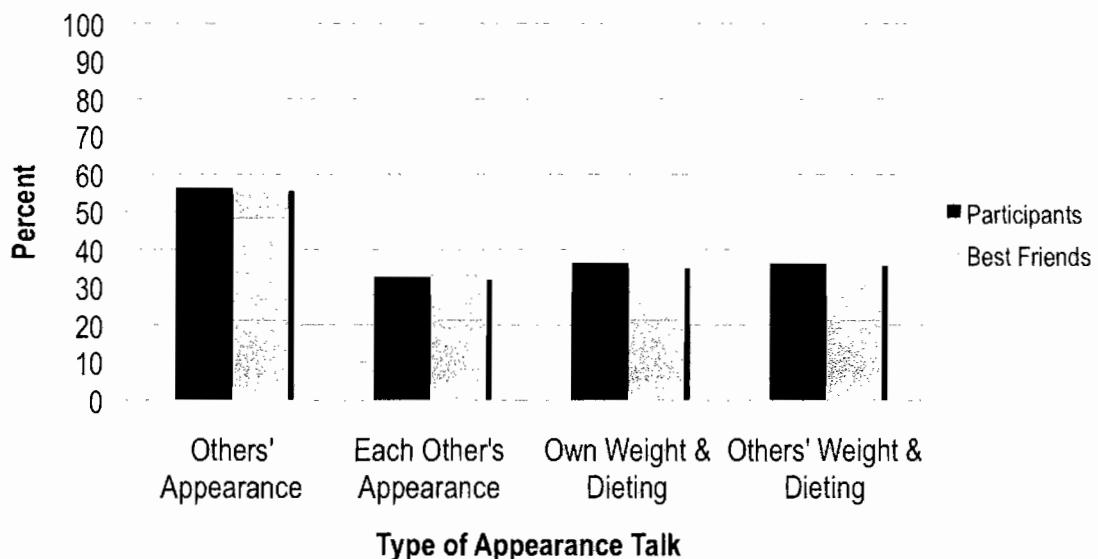
The first research question examines the frequency of appearance talk between participants and their best friends, differences between participants and best friends, and differences between male and female dyads. First, I present descriptive results for appearance talk. Then, I show how the four types of appearance talk are correlated. Next, I present results for the level of appearance talk among participants and best friends. Finally, I examine the differences in appearance talk between the female and male dyads.

Frequency

Four types of appearance talk were coded for participants and their best friends, which were defined by comments about: a) others people's appearance, b) each other's appearance, c) their own weight and dieting behaviors, and d) others people's weight and dieting behaviors. All four types of appearance talk occurred in each dyad, and talk of other people's appearance was especially frequent. I examined the frequency at which these types of appearance talk occurred during discussions between participants and their best friends (see Figure 2).

Figure 2.

Percent of Participants' and Best Friends' Level of Appearance Talk



Most conversations included talking about other people's appearance.

Frequencies indicate that during conversation, 56.5% ($n = 317$) of the participants and 57% ($n = 321$) of their best friends commented on other people's appearance. These

findings demonstrate that adolescents frequently discuss others people's appearance with each other.

Although talk of other people's appearance was common, participants and their best friends did not talk as much about each other's appearance. About one-third of participants and their best friends discussed each other's appearance during their conversations; 32.9% ($n = 103$) of the participants commented on their best friend's appearance and 33.4% ($n = 108$) of best friends commented on participants' appearance.

Adolescents also discussed weight and dieting behaviors less frequently than general appearance. About one-third of adolescents talked about either their own or other people's weight and dieting behaviors. The frequency of talking about one's own weight and dieting behaviors was 36.6% ($n = 137$) for the participants and 36.5% ($n = 136$) for their best friends. Similar rates were found for comments about other people's weight and dieting behaviors; 36.4% ($n = 135$) of the participants and 37.2% ($n = 142$) of their best friends.

In summary, although it was quite common for adolescents to talk about other people's appearance, it was less common for them to discuss each other's appearance or weight and dieting behaviors of themselves and others. Interestingly, adolescents and their best friends talked about all four types of appearance talk at similar rates.

Type of Appearance Talk

Four types of appearance talk were coded for participants and their best friends, which were defined by comments about: a) other people's appearance, b) each other's appearance, c) their own weight and dieting behaviors, and d) others people's weight and dieting behaviors. First, I examined the relationships among these four types of

appearance talk for the participants and their best friends using bivariate correlations.

Almost every type of appearance talk was correlated (see Table 1). The only exception was participants' comments on other people's appearance and best friends comments on participants' appearance. In addition, within each type of appearance talk, participants' level of talk was correlated with their best friends', that is, participants and their best friends seemed to talk about appearance to a similar degree.

Table 1.

*Correlations of Type of Appearance Talk for Participants and Best Friends
(n = 711).*

Type of Appearance Talk	1	2	3	4	5	6	7	8
1. Participant: Others' Appearance	1							
2. Best Friend: Others' Appearance	.871*	1						
3. Participant: Best Friend's Appearance	.182*	.104*	1					
4. Best Friend: Participant's Appearance	.072	.098*	.523*	1				
5. Participant: Own Weight & Dieting	.119*	.129*	.364*	.463*	1			
6. Best Friend: Own Weight & Dieting	.192*	.134*	.594*	.393*	.590*	1		
7. Participant: Others' Weight & Dieting	.415*	.382*	.337*	.194*	.175*	.259*	1	
8. Best Friend: Others' Weight & Dieting	.343*	.380*	.260*	.232*	.219*	.264*	.856*	1

Note: * Correlation is significant at the $p \leq 0.001$ level (2-tailed).

Participants and best friends. The mean level of appearance talk of participants' and best friends' was compared for females and males. Results of paired samples t-tests indicate that participants and best friends did not differ in their levels of the four types of appearance talk (see Table 2). These results suggest that individuals within dyads were similar to one another in their level of appearance talk, and these similarities were found for males and females.

Table 2.

Level of Appearance Talk Differences Between Participants and Best Friends within Male and Female Dyads

Type of Appearance Talk	Participants <i>M (SD)</i>	Best Friends <i>M (SD)</i>	<i>t</i>	<i>p</i>
Males^a				
Others' Appearance	2.72 (2.16)	2.63 (2.09)	1.485	.14
Each Other's Appearance	1.19 (.68)	1.19 (.70)	.162	.87
Own Weight & Dieting	1.30 (.93)	1.31 (.96)	-.298	.77
Others' Weight & Dieting	1.40 (1.04)	1.40 (1.04)	-.086	.93
Females^a				
Others' Appearance	1.98 (1.63)	1.95 (1.56)	.650	.52
Each Other's Appearance	1.29 (.83)	1.27 (.72)	.479	.63
Own Weight & Dieting	.1.55 (1.28)	1.54 (1.27)	.187	.85
Others' Weight & Dieting	1.35 (.96)	1.36 (1.00)	-.585	.56

^a *n* = 355.

Gender differences. Using independent sample t-tests, comparisons were made between the level of appearance talk for males and females (see Table 3). Table 3.

Table 3.

Differences in Level of Appearance Talk Between Male and Female Participants and Male and Female Best Friends

Type of Appearance Talk	<i>M (SD)</i>		<i>t</i>
	<u>Males</u>	<u>Females</u>	
Others' Appearance			
Participants	2.72 (2.16)	1.98 (1.63)	5.17*
Best Friends	2.63 (2.09)	1.95 (1.56)	4.92*
Each Other's Appearance			
Participants	1.19 (.68)	1.29 (.83)	-1.69
Best Friends	1.19 (.70)	1.27 (.72)	-1.54
Own Weight & Dieting			
Participants	1.30 (.93)	1.55 (1.28)	-3.02*
Best Friends	1.31 (.96)	1.54 (1.27)	-2.70*
Others' Weight & Dieting			
Participants	1.40 (1.04)	1.35 (.96)	.636
Best Friends	1.40 (1.04)	1.36 (1.00)	.479

Note: * Independent samples t-test is significant at the $p \leq .007$.

Note: For all tests, $df = 708$.

Males and females differed in their comments about others people's appearance and about their own weight and dieting, but there were no differences found in talking about each other's appearance or talking about other people's weight and dieting. Males commented on others people's appearance to a greater degree than females, $M_{Males} = 2.72$ ($SD = 2.16$) and $M_{Females} = 1.98$ ($SD = 1.63$), $t(708) = 5.17$, $p = .000$. Females discussed their own weight and dieting behaviors more than males, $M_{Females} = 1.55$ ($SD = 1.278$)

and $M_{Males} = 1.30$ ($SD = .930$), $t = -3.023$ (708), $p = .003$. When examining participants' discussion of others people's weight and dieting behaviors, males and females did not differ, $M_{Males} = 1.40$ ($SD = 1.04$) and $M_{Females} = 1.35$ ($SD = .964$), $t = .636$ (708), $p = .162$. They also did not differ in comments about their best friend's appearance, $M_{Females} = 1.29$ ($SD = .828$) and $M_{Males} = 1.19$ ($SD = .679$), $t = -1.686$ (708), $p = .092$. Overall, males talked more about others people's appearance, while females tended to talk about their own weight and dieting. Best friends demonstrated a similar pattern in regards to appearance talk; female's best friends talked more about their own weight and dieting and male's best friends talked more about other people's appearance (see Table 3).

Summary. As expected, adolescents in this sample engaged in fairly high levels of appearance talk. Adolescents discussed other people's appearance in nearly 60% of their conversations and talked about each other's appearance or about weight and dieting about a third of the time. Participants and their best friends engaged to a similar degree across all types of appearance talk, and this was found for males and females. All four types of appearance talk were correlated, however differences emerged when comparing males and females. Male dyads talked more about other people's appearance than females, while female dyads talked more about their own weight and dieting. Male and female dyads did not differ in their talk of other people's weight and dieting or about each other's appearance.

Eating Pathology

In this section, I will examine the relationship between eating pathology in adolescence and eating problems 2 years later in early adulthood. Of interest to this study is the unique contribution of observations of appearance talk to eating pathology. I will

examine appearance talk as a predictor of adolescent and early adult eating pathology.

First, I will present results on the incidence of eating pathology during adolescence.

Then, I will show how appearance talk predicts eating pathology during adolescence, as well as test differences between males and females. Finally, I will examine the relationship between appearance talk and eating pathology in early adulthood.

Prevalence

In this sample, 7.7% ($n = 53$) of the participants meet criteria for a clinically diagnosable eating disorder based on EAT-26 total sum cut-off scores during adolescence. More females met criteria for an eating disorder than males: 10.5% ($n = 41$) and 3% ($n = 12$), respectively. An independent samples t-test indicates that females scored higher on average on the EAT-26 than males ($M_{Females} = 9.49$, $SD = 7.81$ and $M_{Males} = 5.98$, $SD = 4.63$), $t(788) = -7.704$, $p = 000$.

Diagnostic and Non-Diagnostic Differences

Next, I examined how the level of appearance talk among those with clinical levels of eating pathology differed from those who do not meet criteria during adolescence using one-way ANOVA (Table 4).

Table 4.

Type of Appearance Talk Differences Between All, Male, and Female Participants with Eating Disorder Diagnosis and No Diagnosis (ANOVA).

Type of Appearance Talk	<i>M (SD)</i>		<i>F</i>
	<u>Diagnosis</u>	<u>No Diagnosis</u>	
Others' Appearance			
Participant Commented	2.90 (2.10) ^a	2.31 (1.93) ^b	4.20*
Males	4.40 (2.37) ^c	2.67 (2.14) ^d	6.31**
Females	2.51 (1.88) ^e	1.92 (1.58) ^f	4.70*
Best Friend Commented	2.80 (2.00) ^a	2.26 (1.87) ^b	3.72*
Males	4.10 (2.38) ^c	2.60 (2.08) ^d	5.02*
Females	2.46 (1.78) ^e	1.89 (1.52) ^f	4.67*
Each Other's Appearance			
Participant Commented	1.57 (1.16) ^a	1.21 (.72) ^b	10.30***
Males	1.20 (.63) ^c	1.19 (.68) ^d	.00
Females	1.67 (1.24) ^e	1.24 (.75) ^f	9.35**
Best Friend Commented	1.31 (.59) ^a	1.22 (.72) ^b	.68
Males	1.00 (.00) ^c	1.19 (.71) ^d	.69
Females	1.38 (.63) ^e	1.25 (.73) ^f	1.15
Own Weight & Dieting			
Participant Commented	1.94 (1.56) ^a	1.39 (1.08) ^b	11.20***
Males	2.40 (1.96) ^c	1.26 (.87) ^d	15.16***
Females	1.82 (1.45) ^e	1.50 (1.25) ^f	1.91
Best Friend Commented	1.82 (1.41) ^a	1.40 (1.11) ^b	6.29**
Males	1.60 (1.35) ^c	1.30 (.95) ^d	.93
Females	1.87 (1.44) ^e	1.50 (1.25) ^f	2.96
Others' Weight & Dieting			
Participant Commented	1.41 (.89) ^a	1.37 (1.01) ^b	.08
Males	1.00 (.00) ^c	1.40 (1.05) ^d	1.46
Females	1.51 (.97) ^e	1.33 (.96) ^f	1.25
Best Friend Commented	1.45 (1.02) ^a	1.38 (1.02) ^b	.23
Males	1.00 (.00) ^c	1.41 (1.06) ^d	1.51
Females	1.56 (1.12) ^e	1.34 (.99) ^f	1.75

Note: $df = 1$

Note: ^a $n = 49$, ^b $n = 657$, ^c $n = 10$, ^d $n = 341$, ^e $n = 39$, ^f $n = 315$

Note: * Significant at the $p \leq .05$ level (2-tailed), ** Significant at $p \leq .01$, *** Significant at $p \leq .001$

Results indicate that the level of comments on other people's appearance was higher for those who meet criteria for diagnosis than for those who do not meet criteria. In addition, for those who meet criteria, their best friends also commented on other people's appearance at a higher rate. All differences are statistically significant for all participants as well as for males and for females.

Those who meet criteria made more comments about their best friend's appearance than those who did not meet criteria ($F = 10.30, p = .001$). This difference held true for females ($F = 9.35, p = .002$) but not for males ($F = .00, p = .96$). When best friends commented on participants' appearance, there was no difference between those who meet diagnostic criteria versus those who do not.

Results show that participants who meet diagnostic criteria discussed their own weight and dieting behaviors more than those who do not meet criteria ($F = 11.20, p = .001$). This difference is statistically significant for males ($F = 15.16, p = .000$) but not for females ($F = 1.91, p = .17$). For those who meet diagnostic criteria, their best friends made more comments related to their own weight and dieting compared with those who do not meet criteria, although this was not significant when males and females were investigated independently.

Participants who meet diagnostic criteria did not differ in their appearance talk from those who do not meet criteria in comments related to others people's weight and dieting behaviors. Also, there was no difference between those who meet criteria versus those who do not and the level of their best friends' comments on other people's weight and dieting behaviors.

In addition, 2 x 2 ANOVAs were conducted to examine the effects of gender and diagnostic status on each of the four types of appearance talk, as well as the interactions between gender and diagnostic status. The means and standard deviations for each type of appearance talk as a function of gender and diagnostic status are included in Table 4.

Following are the results for each type of appearance talk.

Others' appearance. The results of the 2 x 2 ANOVA indicated a significant main effect for diagnostic status, $F(1, 701) = 11.37, p = .001$, partial $\eta^2 = .02$, a significant effect for gender $F(1, 701) = 14.69, p = .000$, partial $\eta^2 = .02$, but no significant interaction between diagnostic status and gender $F(1, 701) = 2.70, p = .10$, partial $\eta^2 = .00$. The main effects for diagnostic status and gender indicated that those who met diagnosis and those who were male tended to comment more on others' appearance than those who did not meet diagnosis and those who were female.

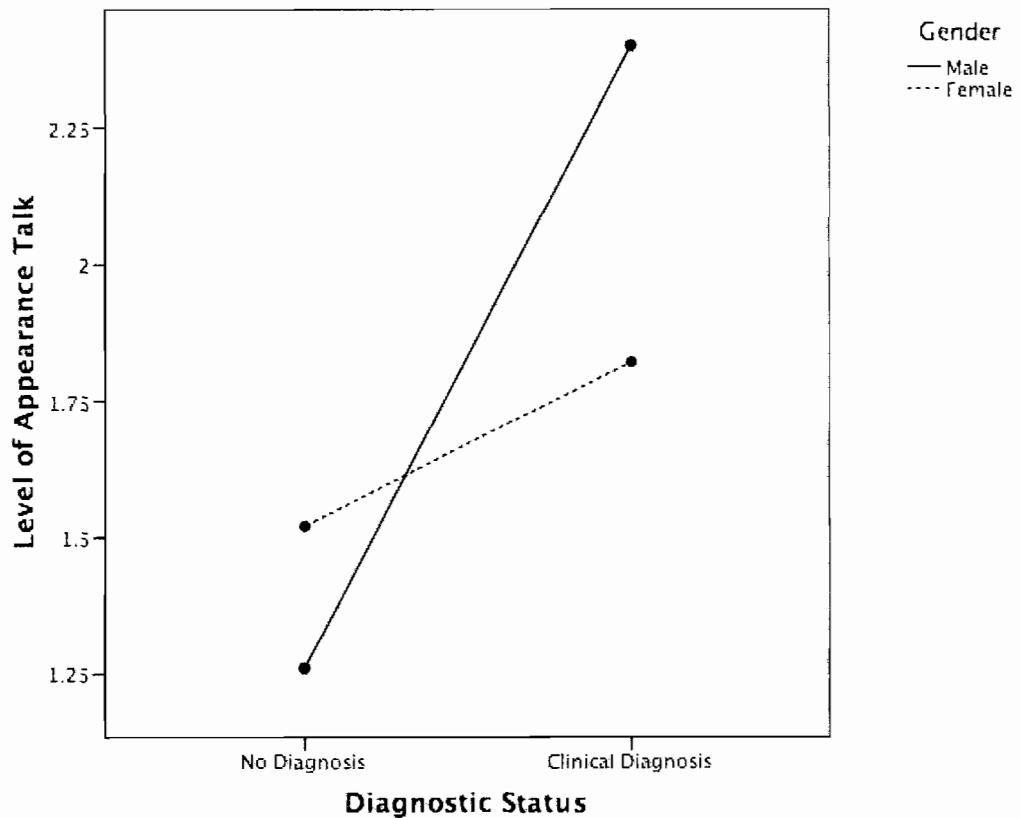
Best friends' appearance. The results of the 2 x 2 ANOVA indicated a non-significant main effect for diagnostic status, $F(1, 701) = 2.56, p = .11$, partial $\eta^2 = .00$, a non-significant effect for gender $F(1, 701) = 3.62, p = .06$, partial $\eta^2 = .01$, and did not show a significant interaction between diagnostic status and gender $F(1, 701) = 2.29, p = .13$, partial $\eta^2 = .00$. The main effects indicated that there weren't any tendencies for males or females to comment on best friends' appearance more than the other or for those who meet diagnosis versus those who do not.

Own weight and dieting. The results of the 2 x 2 ANOVA indicated a significant main effect for diagnostic status, $F(1, 701) = 12.74, p = .000$, partial $\eta^2 = .02$, a non-significant effect for gender $F(1, 701) = .630, p = .000$, partial $\eta^2 = .00$, but did show a

significant interaction between diagnostic status and gender $F(1, 701) = 4.33, p = .04$, partial $\eta^2 = .01$ (see Figure 3).

Figure 3.

Level of Participants' Comments on Their Own Weight and Dieting Behaviors as a Function of Diagnostic Status and Gender.



The main effects for diagnostic status indicated that those who met criteria tended to talk more about their own weight and dieting behaviors, however there was not a main effect for gender. In addition, there was an interaction between gender and diagnosis indicating that females who did not meet diagnosis talked more about their own weight

and dieting than males while males who meet diagnosis talked more about their own weight and dieting than females.

Others' weight and dieting. The results of the 2 x 2 ANOVA indicated a non-significant main effect for diagnostic status, $F(1, 701) = .36, p = .55$, partial $\eta^2 = .00$, a non-significant effect for gender $F(1, 701) = 1.48, p = .23$, partial $\eta^2 = .00$, and did not show a significant interaction between diagnostic status and gender $F(1, 701) = 2.59, p = .11$, partial $\eta^2 = .00$. The main effects indicated that there weren't any tendencies for males or females to comment on others' weight and dieting more than the other or for those who met diagnosis versus those who not.

In summary, adolescents who meet criteria for a clinically diagnosable eating disorder talked significantly more about other people's appearance. Females who meet criteria talked more about their best friend's appearance, while males who meet criteria talked more about their own weight and dieting. In addition, those who meet diagnosis and those who are male commented more on others' appearance than those who did not meet diagnosis or those who are female, although there was no significant interaction between gender and diagnostic status. Also, those who meet criteria tended to talk more about their own weight and dieting behaviors than those who do not, and an interaction indicated that males who meet criteria talked more about their weight and dieting than females, while females who did not meet criteria talked more about their own weight and dieting than males who did not meet criteria.

Adolescence to Early Adulthood

Multiple regression analysis was used to determine whether eating pathology in adolescence would predict eating pathology in early adulthood. Initial correlations

between eating pathology at these two time points were positive and significant for adolescents ($r = .359, p = .000, n = 716$), for females ($r = .420, p = .000, n = 358$) and for males ($r = .195, p = .000, n = 357$).

In the multiple regression analyses adolescent eating pathology produced an R^2 of .129 [$F(1) = 105.478, p < .000$] for the prediction of eating pathology two years later. Results for females and for males suggested that adolescent eating pathology predicted eating pathology in early adulthood. Adolescent females' eating pathology produced an R^2 of .176 [$F(1) = 76.116, p = .000$] and adolescent males' produced an R^2 of .038 [$F(1) = 11.974, p = .000$]. Predictors were also significant for all youth ($t = 10.270, p = .000$), for females ($t = 8.724, p = .000$), and for males ($t = 3.704, p = .000$). Results demonstrate that 12.9% of the variance of eating pathology in early adulthood was predicted by adolescent eating pathology. Differences emerged for females and males; whereas 17.6% of the variance of early adulthood eating pathology can be predicted from females' adolescent eating pathology, just 3.8% of the variance can be predicted from males' adolescent eating pathology.

In summary, adolescent eating pathology significantly predicted eating pathology two years later. Results were stronger for females than males, with more variance predicted for females than males in all models.

Appearance Talk and Eating Pathology

A central research question in this study was whether appearance talk predicts eating pathology in adolescence and early adulthood. First, I examined how appearance talk and eating pathology were related during adolescence. Then I examined how appearance talk predicted eating pathology 2 years later in early adulthood.

Adolescent Eating Pathology

First, I examined the relationship between appearance talk and eating pathology for adolescent male and female participants during 11th grade. It was hypothesized that adolescents who had higher levels of eating pathology would also have higher levels of appearance talk. Appearance talk and eating pathology were first compared using bivariate correlations. Then multiple regression was used to predict eating pathology from appearance talk. Results are presented for the males and females.

Results show that participants' discussion of their own weight and dieting ($r = .143, p = .000$) as well as comments on their best friend's appearance ($r = .089, p = .018$) were both significantly correlated with eating pathology. Participants' comments on other people's appearance ($r = .045, p = .24$) and others people's weight and dieting behaviors ($r = -.006, p = .87$) were not significantly related to eating pathology scores. Best friends' comments were significantly related to eating pathology when they pertained to their own weight and dieting behavior ($r = .084, p = .03$). In summary, conversations about others were not related to adolescent eating pathology, however discussing one's self or commenting on their best friends were related to pathological eating.

Gender Differences

The relationship between males' eating pathology and appearance talk was investigated separately from females,' and group differences emerged in these correlations (see Table 5).

Table 5.

Correlations Between Appearance Talk and Adolescent Eating Pathology for Males and Females.

Type of Appearance Talk	Males ^a <i>r</i>	Females ^b <i>r</i>
Others' Appearance		
Participants	.10	.12*
Best Friends	.10	.10*
Each Other's Appearance		
Participants	-.01	.11*
Best Friends	.04	.04
Own Weight & Dieting		
Participants	.14*	.11*
Best Friends	.02	.08
Others' Weight & Dieting		
Participants	-.06	.04
Best Friends	-.06	.06

Note: ^a*n* = 351, ^b*n* = 354.

Note: *Correlation significant at the *p* ≤ .05 level (two-tailed).

Eating pathology in adolescence was significantly correlated with just one type of appearance talk for males: comments about their own weight and dieting behaviors (*r* = .144, *p* = .01). Females' adolescent eating pathology was correlated with three types of appearance talk: comments on other people's appearance, comments on best friends' appearance, and talking about their own weight and dieting. Female participants talking about other people's appearance (*r* = .122, *p* = .02) and their best friends talking about other people's appearance were both related to eating pathology (*r* = .102, *p* = .05). Also related to females' eating pathology were comments about their best friends' appearance (*r* = .114, *p* = .03) and discussing their own weight and dieting (*r* = .144, *p* = .01).

Multiple regression analysis was used to examine predictors of adolescent eating pathology. Results confirmed that talking about one's own weight and dieting behaviors was a strong predictor of adolescent eating pathology for males (see Table 6). All eight categories of appearance talk produced an R^2 of .045 [$F(8) = 324.112, p = .04$] for the prediction of adolescent eating pathology. Talking about one's own weight and dieting explained 4.5% of the variance of eating pathology in adolescence for males.

Table 6.

Multiple Regression for Appearance Talk on Males' Eating Pathology in Adolescence.

	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	β	t	P
Constant	5.193	.608		8.539	.000
Others' Appearance					
Participant	.200	.236	.096	.850	.396
Best Friend	.077	.238	.036	.323	.747
Each Other's Appearance					
Participant	-.327	.514	-.049	-.637	.525
Best Friend	.273	.424	.042	.643	.521
Own Weight & Dieting					
Participant	.841	.318	.173	2.642	.009
Best Friend	-.269	.340	-.057	-.790	.430
Others' Weight & Dieting					
Participant	-.318	.451	-.073	-.704	.482
Best Friend	-.153	.431	-.035	-.355	.723

Note: $n = 351$.

Multiple regression analysis suggested that talk about their best friend's appearance was the strongest predictor of adolescent eating pathology for females (see Table 7). All eight categories of appearance talk produced an R^2 of .040 [$F(8) = 913.941, p = .07$] for the prediction of adolescent eating pathology. Talking about their best friend's appearance explained 4% of the variance of eating pathology in adolescence.

Table 7.

Multiple Regression for Appearance Talk on Females' Eating Pathology in Adolescence.

	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	β	t	P
Constant	7.602	1.032		7.366	.000
Others' Appearance					
Participant	.676	.565	.137	1.196	.233
Best Friend	-.053	.594	-.010	-.090	.929
Each Other's Appearance					
Participant	1.566	.721	.162	2.171	.031
Best Friend	-.961	.796	-.086	-1.207	.228
Own Weight & Dieting					
Participant	.843	.489	.135	1.724	.086
Best Friend	-.556	.503	-.088	-1.104	.270
Others' Weight & Dieting					
Participant	-1.425	1.069	-.172	-1.332	.184
Best Friend	1.039	1.037	.130	1.002	.317

Note: n = 354.

In summary, some types of appearance talk were positively correlated with eating pathology during adolescence. For males, only talking about one's own weight and dieting was related to eating pathology. For females, talking about other people's appearance, their best friend's appearance, and their own weight and dieting were all correlated with eating pathology. In general, best friends' appearance talk was not related to participants' eating pathology, with the exception of female's best friends talking about other people's appearance. Multiple regression demonstrated that for females, commenting on their best friend's appearance was most predictive of increases in eating pathology, while for males, talking about one's own weight and dieting was most predictive.

Early Adulthood Eating Pathology

The final set of research questions examined the different types of appearance talk as predictors of eating pathology in early adulthood. Only one female participant met

criteria for a DSM-IV diagnosis of Bulimia Nervosa and no others met criteria for an eating disorder. For this reason, outcomes are explored on a symptom level. Specifically, four symptoms comprise eating problems during early adulthood. Multiple regression was used to examine how the level of appearance talk predicted the presence of symptoms related to disordered eating and body dissatisfaction two years later.

Multiple regression results demonstrate that appearance talk in adolescence was a predictor of eating pathology in early adulthood. Adolescent eating pathology was also included in the model to control for levels of eating pathology two years earlier. Adolescent eating pathology and appearance talk produced an R^2 of .186 [$F(9)= 16.264, p = .000$] for the prediction of early adult eating pathology. Adolescent eating pathology significantly predicted early adult eating symptoms in this model, consistent with prior results ($t = 9.959, p = .000$). Appearance talk also significantly predicted early adult eating symptoms. Participants' comments on other people's weight and dieting ($t = -3.733, p = .000$), best friends' comments on other people's weight and dieting ($t = 3.813, p = .000$), and participants' comments on their best friend's appearance ($t = 2.948, p = .003$) all explained 18.6% of the variance of eating pathology in early adulthood (see Table 8).

When males and females were examined separately, differences emerged. For males, adolescent eating pathology and appearance talk produced an R^2 of .098 [$F(9) = 4.866, p = .000$). Significant predictors were participants' comments on other people's weight and dieting ($t = -2.799, p = .005$) and best friends' comments on the same ($t = 3.355, p = .001$). These three predictors accounted for 9.8% of adult eating pathology for males.

Table 8.

Multiple Regression for Appearance Talk on Males' Eating Pathology in Early Adulthood.

	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	β	t	P
Constant	.303	.141		2.153	.032
Adolescent Eating Pathology	.050	.011	.240	4.400	.000
Others' Appearance Participant	.043	.049	.096	.870	.385
Best Friend	-.079	.049	-.175	-1.610	.108
Each Other's Appearance Participant	.205	.109	.148	1.887	.060
Best Friend	-.132	.087	-.100	-1.513	.131
Own Weight & Dieting Participant	-.026	.066	-.026	-.391	.696
Best Friend	.120	.070	.125	1.717	.087
Others' Weight & Dieting Participant	-.265	.095	-.277	-2.799	.005
Best Friend	.304	.091	.317	3.355	.001

Note: n = 325.

For females, appearance talk produced an R^2 of .222 [$F(9) = 8.289, p = .000$] and significant predictors were talk about other people's weight and dieting ($t = -2.596, p = .010$) and best friends' comments on the same ($t = 1.991, p = .047$). In addition, female participants' comments on their best friend's appearance were also significant ($t = 2.230, p = .026$) (see Table 9). These three predictors accounted for 22.2% of the variance of early adult eating pathology for females.

Table 9.

Multiple Regression for Appearance Talk on Females' Eating Pathology in Early Adulthood.

	Unstandardized Coefficients		Standardized Coefficients		
	B	SE	β	t	p
Constant	.435	.131		3.332	.001
Adolescent Eating Pathology	.050	.006	.402	7.968	.000
Others' Appearance Participant	.106	.066	.174	1.589	.113
Best Friend	-.057	.070	-.090	-.814	.416
Each Other's Appearance Participant	.187	.084	.155	2.230	.026
Best Friend	.018	.092	.013	.196	.845
Own Weight & Dieting Participant	-.045	.057	-.058	-.780	.436
Best Friend	.006	.059	.007	.094	.925
Others' Weight & Dieting Participant	-.322	.124	-.315	-2.596	.010
Best Friend	.239	.120	.243	1.991	.047

Note: n = 330.

Summary

Appearance talk in adolescence predicted eating pathology in early adulthood, even after controlling for prior levels of eating problems in adolescence. In particular, participants and best friends' talk of other people's weight and dieting during adolescence were significant. Although this relationship was significant for males and females, there was one predictor specific to only the females; talking about their best friend's appearance was a predictor of early adult eating pathology. These predictors were

significant even when accounting for adolescent eating pathology in the model, suggesting unique contributions of appearance talk to later eating problem symptoms.

CHAPTER V

DISCUSSION

The purpose of this study was to examine how conversations about appearance between adolescents and their best friends predicted eating pathology during adolescence and early adulthood. Adolescents were videotaped engaging in conversations with their best friends, and an observational protocol was developed to code appearance talk during these interactions. Research questions addressed in this study were related to the frequency of appearance talk, differences between participants and their best friends, differences between males and females, and the relationship between appearance talk and eating pathology during adolescence and early adulthood.

In this chapter, I will first summarize the findings related to the description of appearance talk in adolescence, how appearance talk is related to eating pathology during adolescence, and how appearance talk and eating pathology in adolescence are related to symptoms of eating pathology in early adulthood. Second, I will discuss the general implications of these findings for theory, research, and practice. Then I will address general limitations of the study related to the design, internal and external validity, analysis, and measurement. Finally, I will conclude with future directions in this body of research.

Discussion of Results

Appearance Talk

My first goal in this study was to explore and examine the nature of adolescent appearance culture by observing appearance talk between adolescents and their best friends. This is the first study known to directly observe appearance talk. I was interested in how different types of appearance talk were related to one another and how they were related to eating pathology in adolescence and in early adulthood. In addition, I was interested in how types of appearance talk differed for female and for male participants.

Frequency. There were four types of appearance talk observed for participants and their best friends: comments on other people's appearance, comments on each other's appearance, comments related to their own weight and dieting behaviors, and comments related to other people's weight and dieting behaviors. As expected, adolescents engaged in high levels of appearance talk, and frequencies indicated that discussing other people's appearance occurred in nearly 60% of these conversations, while each of the other three types of appearance talk occurred in about a third of these conversations.

This finding demonstrates that appearance culture is an important topic of conversation between adolescents. Even though participants and their best friends were not instructed to discuss appearance during their observed tasks, they spontaneously incorporated these topics into their conversation. These findings reflect previous literature, which concludes that appearance talk is prevalent among adolescents and a frequent topic of conversation (Jones, 2004; Jones et al., 2004; Levine & Smolak, 1992).

Type of appearance talk. The four types of appearance talk in this study were comments about others people's appearance, comments about each other's appearance,

comments about one's own weight and dieting behavior, and comments about other people's weight and dieting behavior. All types of appearance talk were related to one another except for one. This finding suggests that when adolescents talk about one aspect of appearance, they also talk about others to a similar degree.

Participants and best friends. The levels of appearance talk between participants and their best friends were similar. Similar levels were found in all types of appearance talk for male and female dyads. Perhaps this similarity is related to maintaining relationships with one another through agreement and engagement. Another potential explanation is that adolescents tend to choose friends who hold similar values and opinions, which could be indicated by similar engagement in appearance conversations. This possibility would be congruent with previous research suggesting that adolescents tend to befriend others with similar interests and values, which are reinforced through conversational scripts (e.g., Cairnes & Cairnes, 1994).

This finding may also reflect a mutual influence on one another or maybe an influence of one person over another within these dyads. For example, these friends may be constructing a norm of appearance talk together, or perhaps one is accommodating another in this conversation. Conversely, similar levels of engagement could also mean that friends differed in their opinions and were engaged in a similar level of disagreement. The interpretation most supported by previous research is that adolescents participated in conversation that reinforced certain norms, beliefs, attitudes, and behaviors (Bandura, 1986; Guerra et al., 2003).

Gender differences. The levels of appearance talk differed between males and females. Males talked about other people's appearance more than females on average.

Perhaps this was due to increased comfort with talking about others rather than about one's self or about each other. Another explanation could be that males may have been talking about appearance in different ways and to a different end than females. For example, previous literature has indicated that boys often discuss female bodies and attractiveness (Eder et al., 1995). In this study, males might have been commenting on females' appearance. Females have been observed to frequently comment on other females, likely as a means of body comparison (Eder et al., 1995). It would be important for future research to investigate the specific nature and purpose of talking about other people's appearance, because the content could have different intentions and impact on males and females.

Another gender difference in appearance talk was that females talked more about their own weight and dieting than males. This finding fits the hypothesis that females would engage in this kind of conversation more than males, since weight and dieting are more relevant to female appearance ideals. Previous literature demonstrates that females tend to discuss weight loss and dieting in congruence with a thin-ideal (Paxton, 1999; Vincent & McCabe, 2000). In addition, females might be more likely to discuss their own weight and dieting, because they tend to report more body dissatisfaction. For example, previous research indicates higher rates of reported body dissatisfaction among females (24-47%) compared to males (12-26%) (Paxton, Eisenberg, & Neumark-Sztainer, 2006).

The measure in this study is perhaps more suited to detect a certain type of talk about weight and dieting that is more congruent for females and female appearance ideals. For example, males are likely less prone to participate in weight loss strategies or to comment on the fit of their clothing. When males talk about appearance it is not

typically related to weight and dieting, rather to muscularity and stature (Jones & Crawford, 2006; McCabe & Ricciardelli, 2003). For males, appearance emphasis is related less to weight and restricting food and more to form and shape.

It is important to note that one previous study demonstrated that although females talked more about appearance, males engaged in more body change talk and teased each other more resulting in more appearance-related pressure (Jones & Crawford, 2006). Future research could discern more accurately the type of body change talk that happens within the male dyads and the female dyads and expand observational options to account for different types of body shape and body change talk.

Interestingly, I did not find differences between males' and females' comments on each other's appearance. Although females made more comments about each other's appearance, it was not significantly different from males. It was expected that females would engage in more comments about each other's appearance than males, since females have been shown in research to be more relationally oriented. For example, there are common scripts among adolescent females in which depreciating one's own appearance tends to elicit compliments from their friends as well as their friends' own self-depreciation. At the same time, previous research supports that males tend to tease each other about appearance more than females. It is possible that while there were no differences in the rate of comments about each other, there could have been differences in the content of these comments for males and females.

I also did not find gender differences for commenting on others' weight and dieting behaviors. Non-significant differences may be reflective of comparisons between different aspects of other people's weight and dieting. One limitation of this particular

analysis is that the measure does not detect the nuances of the comments that are specifically made by the participants. Perhaps the males and females commented on different aspects of appearance (and for different reasons). Future research could address these limitations with more specificity in their measurement.

Summary of appearance talk. Appearance talk was present in many of the adolescents' conversations, even though they were not prompted to discuss appearance. Although it seemed quite common for adolescents to talk about other people's appearance, it seemed less common for them to discuss each other's appearance or weight and dieting behaviors of themselves and others. Almost all types of appearance talk observed in this study were related to one another. Within dyads, participants and their best friends demonstrated similar levels of each type of appearance talk. Gender differences suggest that females tended to talk more about their own weight and dieting behaviors, and males tended to comment more on other people's appearance. There were no differences found for comments on each other's appearance or comments on other people's weight and dieting behaviors.

Eating Pathology

A central question in this dissertation research was how eating pathology was related to appearance talk. I examined how appearance talk was related to adolescent eating pathology as well as how it was related to eating problems two years later in early adulthood. I also examined gender differences regarding the relationship between appearance talk and eating pathology.

Prevalence. In this study 7.7% of the participants met criteria for an eating disorder during adolescence. This finding is consistent with previous literature regarding

clinical levels of eating pathology in this population. For example, eating pathology has been estimated to be as high as 10% during adolescence (Agras, 2001; Reijonen, Pratt, Patel, and Greydanus, 2003). In this particular sample, 10.5% of those meeting clinical criteria were females and 3% were males. Although these rates are higher than in some previous reports, it is important to remember that the rates reflect all classifications of eating disorders—*anorexia nervosa*, *bulimia nervosa*, and *eating disorders not otherwise specified*. The female participants' rate of eating pathology was higher than the males', which is consistent with previous research.

Rates of eating disorders must be interpreted with caution. One of the limitations of the measure used (EAT-26) is that it has been normed on females who have presented mostly with symptoms congruent with *anorexia nervosa* (Garner and Garfinkel, 1979). It is possible that the EAT-26 is better able to detect eating pathology among females than among males. Future research in measurement could address this deficit by developing more appropriate measures through standardization on a broader population, including males. In addition, future research and classification of eating disorders should expand criteria to allow for more accurate detection of such pathology not only by enhancing measures but also by reformulating diagnostic criteria to incorporate more inclusive symptom definitions.

Continuity of eating pathology. Adolescent eating pathology significantly predicted eating pathology in early adulthood. This finding was congruent with previous research, which found that eating pathology remained present over time (Lewinsohn, Striegel-Moore, & Seeley, 2000). These authors also present findings that show that although eating pathology remained present, symptom clusters changed from adolescence

to adulthood. Eating disorders appear to have a developmental component with subclinical symptoms throughout adolescence evolving into full syndrome eating disorders in adulthood for males (Muise et al., 2003).

These results suggest that predictions may be stronger for females than males. However, the limitations in measurement regarding eating pathology among males in this study warrants future research that would attend to the link between eating pathology in adolescent males and more serious eating disorders in adulthood.

Diagnostic differences. Participants who met criteria for an eating disorder had higher rates of appearance talk than those who did not during adolescence. Participants who met criteria talked about others people's appearance more than those who did not meet criteria for an eating disorder. Best friends' comments were also higher in dyads in which the participant met criteria. These findings held true for the males and the females.

Male and female participants who met diagnosis differed from one another in their levels of different types of appearance talk. For males, commenting on their own weight and dieting was reflective of meeting diagnosis at a clinical level. For females, comments on their best friends' appearance were related to clinical level eating disorders.

Females' comments on their best friend's appearance were predictive of clinical eating disorder diagnosis. This could be related to participants' expression of social comparison. For example, if females were complimenting their best friends' appearance or engaging in body comparison, it would make sense that these kinds of comments could be related to eating disorders. Perhaps this finding further also demonstrates the importance of the relational nature of the maintenance of eating disorders for females. However, it was surprising that talk of their own bodies and body change strategies were

not related to clinical eating disorders. Perhaps this kind of talk is generally prevalent for females whether or not they have clinical levels of eating pathology.

Males' comments about their own weight and dieting behaviors were predictive of clinical eating disorders. It could be more unlikely for males to talk about their bodies and body change strategies in general, that those who do, tend to also experience more significant body dissatisfaction and eating pathology. Other research has found that males' discussion of dieting and muscularity significantly increased in mid-adolescence (Jones & Crawford, 2006). Therefore, as appearance pressures increase for males during this time, talk of their own weight and dieting could reflect underlying eating disorders.

Best friends' comments on others people's appearance and on their own weight and dieting were related to participants' clinical eating disorders. Best friends' discussion of their own weight and dieting could have been reflective of their own potential disordered eating. Perhaps this is reflective of shared values or modeling of body change strategies between these friends. Similarly, best friends' comments on other people's appearance could indirectly influence participants' clinical eating disorders if the comments were related to appearance ideals. Best friends' comments on the participants' appearance were thought to be related to eating pathology, because of best friends' expected influence on participants' body esteem and because of potential modeling of body change talk and behaviors. The reason this was not found could be that best friends are offering positive comments to the participants, which would not presumably be related to eating pathology.

Summary. Overall, adolescents who met criteria for an eating disorder had higher levels of appearance talk than those who did not meet criteria. Specifically, adolescents

who met criteria for a clinically diagnosable eating disorder talked significantly more about other people's appearance. In addition, females who met criteria talked more about their best friend's appearance, while males who met criteria talked more about their own weight and dieting. Best friends' comments on other people's appearance and on their own weight and dieting were both related to participants' clinical eating disorders.

Appearance Talk and Adolescent Eating Pathology

Some types of appearance talk predicted eating pathology during adolescence. The most interesting relationships between eating pathology and appearance talk were found in the differences between the male and female participants.

For males, talking about one's own weight and dieting was related to eating pathology during adolescence. This finding fits with the hypothesis that those with higher levels of eating pathology would talk more about their own strategies regarding body change, as well as their own appearance. This seems congruent with previous literature that links discussions of body and weight change strategies with eating pathology (Crandall, 1988; Levine et al., 1994; Stice, Nemeroff, & Shaw, 1996).

Although males made more frequent comments about other people's appearance, these comments were not related to eating pathology. Perhaps appearance comments were more general for males. Another explanation is that the comments about appearance could be related to females' appearance. Some previous research indicates that males talk more about females' appearance than about others males (Eder et al., 1995). Appearance comments may not be able to discern between males who have eating pathology and those who do not, however talking about oneself does seem reflective of eating problems.

For females, talking about other people's appearance, their best friend's appearance, and their own weight and dieting were all related to eating pathology. Further analysis demonstrated that females' comments on their best friend's appearance were most predictive of eating pathology. Perhaps this finding is a reflection of the body comparison that occurs for those who have body dissatisfaction and eating pathology. Since social comparison has been implicated in body dissatisfaction and eating pathology for adult women, perhaps these processes impact adult females, as well. For example, upward comparisons has been related to increased dieting thoughts (Leahey & Crowther, 2008). If males did engage in internal comparison, perhaps verbalization of such thoughts was not as common due to socialization factors.

It is interesting to note that although participants with higher eating pathology commented on their best friend's appearance, there was not a relationship between best friends' comments on the participant's appearance and eating pathology. This finding did not reveal an expected important influence of best friends' comments on participants' eating pathology but does reveal the importance of having more qualitative information about these comments.

One limitation of this particular measure is that it does not differentiate between positive or negative comments. It is possible that while participants were engaging in potential critical talk about themselves, their best friends may have been offering a counter argument that was more positive toward the participants' appearance. This could explain why the participants' comments were related to eating pathology and their best friends' were not. This could likely be the case for females more than males, since

females tend to engage in interactions that are more relationship preserving and supportive.

One similarity between the males and females is that while their own participation in appearance talk was related to eating pathology, their best friends' comments generally did not appear to be related. This demonstrates that participant generated comments were more connected to eating pathology regardless of the type of appearance talk. This is congruent with previous literature, which demonstrates a strong relationship between body dissatisfaction and appearance talk for males and females (Jones & Crawford, 2006; Jones, Vigfusdottir, & Lee, 2004). This study adds to this literature by demonstrating how males and females might differently express eating pathology in conversations.

In summary, although males tended to talk more about other people's appearance and less about their own weight and dieting, these comments about themselves were most related to eating pathology. Conversely, although females talked more about their own weight and dieting than males, these comments were not predictive of eating pathology. For females, the strongest predictor of eating pathology was talking about their best friend's appearance.

Appearance Talk and Early Adulthood Eating Pathology

Appearance talk in adolescence was predictive of eating pathology two years later, in early adulthood. For males and females, talk of other people's weight and dieting behaviors was predictive of later eating pathology. For females, talking about their best friend's appearance was also related to eating pathology in early adulthood.

There was some inconsistency in eating pathology measurement between adolescence and early adulthood, which could impact findings and limit interpretation.

Only one female participant, and no male participants met criteria for an eating disorder during the follow-up. This was an unexpected finding, considering over 10% of females and 3% of males met criteria during adolescence. Since the eating pathology measure in adulthood was different from the one in adolescence, this finding could be due to differences in measurement across time points. The follow-up measure did not include a broad or continuous measure of eating pathology and other symptoms were not assessed when screening criteria were not met. Therefore, I examined the impact of appearance talk on the four symptoms of eating pathology that were assessed for an adequate number of participants during follow-up. The four symptoms examined were concerns about weight, eating, or being too fat; binge eating; losing “a lot” of weight; and whether or not relatives or friends had ever told participants that they were “much too thin” or looked “like a skeleton.”

One of the most important findings regarding how appearance talk predicts future eating pathology is how influential talk of other people’s weight and dieting behaviors was for both males and females. It was interesting that talk of other people’s weight and dieting was not related in any way to adolescent eating pathology but that it contributed to later eating pathology. This finding suggests that the modeling of body change behaviors is influential but not necessarily immediately. This finding was different from when these males were adolescents, and talk of one’s own weight and dieting were most related to eating pathology. This prediction was also a surprise for the females, because talk of other people’s weight and dieting was not related to eating pathology during adolescence. Outcomes for females further confirmed the relationship between commenting on their best friend’s appearance and eating pathology, which was a

predictor during both adolescence and early adulthood. For females, talking about their best friend's appearance was once again a strong predictor of eating pathology. Clearly the results for the females as a whole indicate a strong component within this type of appearance talk and could represent body comparison. In previous research, Leahey and Crowther (2008) found that early adult women who were dissatisfied with their bodies experienced more negative self-evaluations when comparing themselves to their peers (but not when comparing themselves to media images) compared with women who were not dissatisfied with their bodies. These authors note that whether women compared themselves favorably (downward comparison) or more negatively (upward comparison) with their peers, both kinds of comparison were linked to lower self-esteem. Future research could explore this factor more in-depth and examine the specific qualities of this kind of discussion as it relates to friendship and eating pathology.

Although body comparisons seem likely to be related to eating pathology for females, talk of others people's weight and dieting behaviors could serve another function related to future eating pathology. It seems that participants' and best friends' comments on other people's weight and dieting may indicate that strategies discussed were later employed or that females look to others as models of body change strategies. It is important to note that even though I only found one female participant who met criteria for an eating disorder, this does not necessarily indicate that these young adult females are not impacted, especially if they reported eating pathology in adolescence. For example, in a related study, 19-year old females who reported eating pathology during adolescence exhibited lower self-esteem, higher rates of depression, poorer health, and

less family support than those who did not report eating pathology during adolescence (Striegel-Moore, Seeley, & Lewinsohn, 2003).

Summary

Eating pathology in early adulthood was related to a different type of appearance talk than for adolescent eating pathology. For males and females, talk of other people's weight and dieting was predictive of later eating pathology. For females, comments on their best friend's appearance were also related to adult eating pathology, which was also a predictor of adolescent eating pathology.

Implications

The results of this study support theories of socialization, which posit that social learning influences attitudes and behaviors (e.g., Bandura, 1977; Hartup, 1983, 1996; Maccoby, 2007). The fact that adolescents in this study discussed appearance at all is reflective of the prevalence of appearance culture and how the values of this culture are reinforced and modeled within these conversations. Although I cannot be certain as a result of this study how adolescents and their friends qualitatively influenced each other, I could conclude that what was observed is a dynamic process representative of routine scripts that function to crystallize beliefs, attitudes, and behaviors, as described by others (Bandura, 1986; Guerra et al., 2003; Schank & Abelson, 1977). Certainly, this study supports that certain expectations and norms are communicated and transmitted within the microsystem of peer relationships (Bronfenbrenner, 1979, 2005).

Clinical Implications

Appearance talk was present in adolescents' conversations with their best friends and it impacted eating pathology; this finding can be utilized to inform clinical practice.

Although it is not possible to determine exactly how appearance talk and eating pathology influence one another, it seems that while eating pathology may be less visible (e.g., thoughts and behaviors), verbalization of appearance and strategies to change the body are more tangible markers of potential eating pathology. It seems that practical implications related to these findings include an incorporation of challenging this appearance talk through prevention and intervention treatment plans.

Some treatment plans offer some strategies for addressing eating pathology, body dissatisfaction, and appearance talk in adulthood. One intervention approach incorporates a feminist narrative framework that addresses how women express their experience of disempowerment through controlling the body as a form of resistance (Brown, 2007). Brown proposed that once women are allowed to speak their struggles, they would be able to decrease their need to manifest them through their bodies. Thus, talking and expression is used to treat the motivation to continue eating pathology that has likely been fueled by negative body talk and messages received from peers, family, and the media. This approach is proposed for women in individual therapy and would need to be modified for adolescents who may not yet have the capacity for insight and introspection on this level. Although it has not been empirically tested, others have developed a similar feminist narrative treatment approach for females in a school setting (Daigneault, 2000). This approach takes advantage of the peer context and seems more specific to adolescent females. While these approaches use talk and expression as a means to undo the impact of negative messages in the past, they also reflect the need to circumvent the damage before eating pathology develops and increases in severity.

Prevention Implications

These results also point to a need for increased prevention efforts related to peer interactions and challenging the negative aspects of appearance talk prior to the development of eating pathology. Stice and colleagues (2001) developed a dissonance-based eating disorder prevention program to address cognitions related to the binge behaviors. This program is four weeks and includes a group format consisting of female high school students and was structured to challenge the thin-ideal. Participants were engaged in appearance talk that was body positive and challenged appearance culture norms. Talking about appearance in a challenging manner seems to inoculate females from developing high levels of eating pathology, perhaps by buffering the psychological impact of appearance talk with their peers. It is important to note that although this prevention program has shown empirical success, participants were selected based on not having symptoms of eating pathology and may be representative to those who are less likely than their peers to develop these symptoms for confounding reasons.

Another school-based prevention program was developed for middle school females and included a peer support group who were exposed to a 10-session manualized prevention program (McVey, Lieberman, Voorberg, Wardrobe, & Blackmore, 2003). Participants demonstrated decreased dieting and increased body esteem compared with the control group at post-test and a three-month follow-up.

While all of the peer group approaches seem appropriate, effective, or at least promising in the treatment of eating pathology, all of them are focused on girls and women. The results of the present study demonstrate that males who reported eating pathology also engaged in appearance talk, however this population has clearly been

overlooked in terms of treatment and prevention. Research on boys and men regarding eating pathology shows that body dissatisfaction begins in childhood and adolescence, however treatment seeking tends to happen in adulthood when eating pathology is particularly severe and long-standing (for review, see Muise et al., 2003).

Prevention and treatment programs for adolescent males could be most effective if they address body dissatisfaction and the impact of a male appearance ideal. Previous research has demonstrated that appearance talk and teasing among peers was related to body dissatisfaction (Vincent & McCabe, 2000; Jones, 2004; Jones et al., 2004; Paxton et al., 2006) and disordered eating (Vincent & McCabe, 2000) among males. Therefore, prevention and treatment programs could focus on appearance teasing.

Certain contexts may increase disordered eating, and prevention and intervention efforts could be tailored to specific environments. For example, adolescent males and females who are involved in sports seem to be more susceptible to developing disordered eating. Perhaps some effective peer-based programs could be delivered on a team level and could target some of the teasing and criticism that has been shown in previous literature to impact body dissatisfaction among males. In addition, since appearance talk that perpetuates appearance ideals is related to eating pathology, it would be important to account for potential contagion during group treatment.

Limitations

One of the limitations of this study that has impacted interpretation of these findings the most has been some inconsistency and lack of specificity in measurement. In terms of eating pathology, it was not possible to examine the continuity across adolescence and into early adulthood due to different measurement of this construct at the

different time points. In adolescence it was possible to examine eating pathology on a continuum and also diagnostically. It would have been more informative to examine how appearance talk impacted eating pathology on a more continuous level during the two-year follow-up as well as diagnostically.

Appearance talk, as observed did yield some interesting results overall, however it has been difficult to determine the factors that contributed to these results due to a lack of specificity in measurement. For example, there were some interesting patterns that emerged as differences between the males and females, however it would have made the results richer if there were more qualitative aspects of the appearance talk to examine. For example, males and females talked about other people's appearance, but the subjects of discussion were unclear and the types of comments were not measured.

The four categories of appearance talk are limited in their scope, and future research regarding appearance talk could include more specific analysis of themes within appearance talk. For example, there might have been differences in the tone or intention of the comments. In addition, another limitation to be addressed by future research would be to define about whom adolescents are speaking. For example, "other people" could be peers, family, or figures in the media, and future research could clarify the subject of discussion.

The finding that participants' comments on others people's appearance was not related to best friends' comments on participants' appearance could be reflective of a power difference in the dyadic relationship. Given that best friends were invited by the participants to be included in part of a research study could create more power for the participants who may have been more comfortable in that situation. A limitation in the

methods of this study is a lack of information about the quality and dynamics of the relationship between the participants and their best friends. Perhaps further exploration of the quality of these relationships could provide more information about the influence of each individual in the dyad on the other in these kinds of conversations.

It was interesting to find that the levels of appearance talk between participants and their best friends were similar, however reasons for this similarity were not measured. Future research could focus on power dynamics within these friend dyads or examine the amount to which these friends agree on different opinions and values. In addition, similar levels of comments might not reflect agreement, rather they could reflect engagement fueled by disagreement. Further research could address the qualitative nature of comments as well as the qualitative nature of the power dynamics within the dyads.

Future Directions

One of the greatest contributions of this study to the body of literature regarding appearance talk and eating pathology is that appearance talk was directly observed, yet further detail in the protocol could provide richer and more detailed information. Future research would benefit from employing this measurement strategy and could enhance this method by including more specific information related to appearance talk within the categories included in this study. For example, future research could employ a mixed method design to examine the qualitative themes of appearance talk as well as how it relates to eating pathology. More information about the qualitative nature of appearance talk comments would further elucidate how these interactions function in a similar or different way for males and females and could inform treatment and prevention more

suited to males and females based on some unique aspects of appearance culture depending on gender.

APPENDIX A

PEER INTERACTION ACTIVITY (PIT) INSTRUCTIONS

NOTE:

- 1) *Have them each select 1 problem from the PROINE. Say, "We use this form to pick one of the topics for discussion. You checked 3 important and unresolved problems, please choose one of these to talk about."*
- 2) *Always have the TC sitting on the LEFT when looking through the viewfinder. If 2 TC's have the 1 whose visit this is on the left, or if both doing this one (a joint PIT) just note on the label which TC is on left and which is on the right.*
- 3) *All instructions must be read verbatim.*

Introducing the Activity (not taped)

“This discussion is about how friends go about planning activities and how they talk together. It will take about 40 minutes. It involves the two of you talking to each other about different topics. I will leave the room after giving you the instruction for each discussion topic.

This is confidential videotape; we won’t share the information with your parents or anyone else outside of Project Alliance, so you can talk freely. And because we want to keep this video confidential, please use only first names when talking about each other or other people.

Please try to talk in as much detail as you can, and try to use up the full 5 minutes. If you finish the topic early, relax and just talk about other things. Please talk in a normal voice tone and don’t get out of your chairs or move them around at all during the discussions. I will keep track of time and come tell you each new topic when time is up. When I turn the camera on, I’ll ask you to introduce yourselves, please just say your first names.”

“Do you have any questions before we begin?”

INTERVIEWER STARTS RECORDING: *Make sure the TIMER is ON!*

Introduction

Please introduce yourselves. For the next 40 minutes we would like you to talk about several topics. You may have talked with each other about some of these things before and some may be new. We'll give you a cue card for each topic to help guide your discussion.

Activity #1: Plan an Activity

First, I would like you to plan an activity that you can do with each other next week. Make it something that you enjoy and plan it in as much detail as possible. It doesn't need to be expensive or take a lot of time. You'll have 5 minutes for this discussion. Try to use the full amount of time. Here's your card. Do you have any questions?

GREEN CARD

After 5 minutes, knock and re-enter the room.

Activity #2: Current Problems for TC (from PROIN)

Now I'd like the two of you to talk about a current problem that (TC) identified a few minutes ago, _____. (TC) please talk about why it is a problem and then if you've tried to solve it what you did and if it worked. Then talk with (friend's name) about ways you might solve the problem and ways that (friend's name) could help. You'll have 5 minutes for this discussion. Here's your card. Do you have any questions?

LIGHT BLUE CARD

After 5 minutes, knock and re-enter the room

Activity #3: Current Problems for Friend (from PROIN)

This time, I'd like the two of you to talk about a current problem that (friend's name) identified a few minutes ago, _____. (Friend's name) please talk about why it is a problem and then if you've tried to solve it what you did and if it worked. Then talk with (TC) about ways you might solve the problem and any ways that (TC) could help. You'll have 5 minutes for this discussion. Here's your card. Do you have any questions?

AQUA CARD

After 5 minutes, knock and re-enter the room.

Activity #4: Alcohol and Drug Use

For the next 5 minutes please talk about your beliefs about drinking alcohol, and using tobacco, marijuana and other drugs. Please talk about each one separately. If you think that use is appropriate for people your age, please say why and in what settings it is appropriate to drink alcohol, use tobacco, marijuana, and other drugs. Again please talk about each separately. Here is a card to guide your discussion. Any questions?

YELLOW CARD

After 5 minutes, knock and re-enter the room.

Note: “other drugs” do not need to be illegal drugs, let them decide what to talk about.

Activity #5: Goals

For the next 5 minutes we would like each of you to talk about a major goal you have for the next year. We would like you each to describe your goal, why it's important and how you are going to get there. You can also react to each other's goals, or talk about how you can help each other reach your goals. Please make sure that each of you has an opportunity to describe your goal. Here is a card to guide your discussion. Do you have any questions?

PURPLE CARD

After 5 minutes, knock and re-enter the room.

Note: the next year would be from now until a year from now.

Activity #6: Relationships

This next activity is about dating. Please discuss some of the things you like and don't like about people you might date. Please discuss personality traits that you like or dislike, such as being outgoing, friendly, mean or shy but not about their appearance. Here is a card to guide your discussion. You will have 5 minutes for this discussion. Do you have any questions?

ORANGE CARD

After 5 minutes, knock and re-enter the room.

Activity #7: Friends

This next topic is about the peer group you spend time with. We'd like you to describe your friends, and the kinds of things you like to do together. Then talk about what you like and don't like about the friends you spend time with.

If you don't hang out with a group, what group would you like to spend time with and why? Once again, here is a card to guide your discussion. Any questions? I'll be back in 5 minutes.

PINK CARD

After 5 minutes, knock and re-enter the room.

Activity #8: Planning a Party

For the last 5 minutes, we'd like you to plan a party. This is a party you would have at one of your houses. Please talk about who would be there, what you would do, and about how long it would last and anything else that you think is important. Here is a card to guide your discussion. Do you have any questions?

PINK CARD

After 5 minutes, knock and re-enter the room.

Debriefing.

"We are all done. Thank you. We're interested in what you thought about this discussion.
Was this discussion typical of how you talk together? {Pause}
Do you have any other comments or suggestions? {Pause; do not re-prompt}
Thank you very much for participating."

APPENDIX B

EATING ATTITUDES TEST-26 (EAT-26)

INSTRUCTIONS: Please fill in the circle that best describes how often each of these statements applies to you. (*Assessment has a Likert-type scale to the right of each answer and participants could select “never,” “rarely,” “sometimes,” “very often,” or “always” for each answer.*)

1. I am scared of being overweight.
2. I stay away from eating when I am hungry.
3. I think about food a lot of the time.
4. I go on eating binges where I feel that I might not be able to stop.
5. I cut my food into small pieces.
6. I am aware of the energy (calorie) content in the foods I eat.
7. I try to stay away from foods like breads, potatoes, and rice.
8. I feel that others would like me to eat more.
9. I vomit after I have eaten.
10. I feel very guilty after eating.
11. I think a lot about wanting to be thinner.
12. I think about burning up energy (calories) when I exercise.
13. Other people think I am too thin.
14. I think a lot about having fat on my body.
15. I take longer than others to eat my meals.
16. I stay away from foods with sugar in them.
17. I eat diet foods.
18. I think that food controls my life.
19. I can show self-control around food.
20. I feel that others pressure me to eat.
21. I give too much time and thought to food.

22. I feel uncomfortable after eating sweets.
23. I have been dieting.
24. I like my stomach to be empty.
25. I enjoy trying new rich foods.
26. I have the urge to vomit after eating.

BIBLIOGRAPHY

- Alonso, A. T. V., Rodriguez, M. A. R., Alonso, J. E. L., Carretero, G. R., & Martin, M. F. (2005). Eating disorders: Prevalence and risk profile among secondary school students. *Social Psychiatry and Psychiatric Epidemiology*, 40, 980-987.
- Arnett, J. J. (2007). Socialization in emerging adulthood: From the family to the wider world, from socialization to self-socialization. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 208-231). New York: Guilford.
- Bailer, U. F., & Kaye, W. H. (2004) Neuroendocrine and neuropeptide dysregulation in anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 283-295). New York: Marcel Dekker, Inc.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice Hall.
- Beato-Fernandez, L., & Rodriguez-Cano, T. (2005). Gender differences regarding psychopathological, family and social characteristics in adolescents with abnormal eating behavior. *Eating Behaviors*, 6, 337-344.
- Berndt, T. J., & Hestenes, S. L. (1996). The developmental course of social support: Family and peers. In L. Smolak, M. P. Levine, & R. Striegel-Moore (Eds.), *The Developmental Psychopathology of Eating Disorders* (pp. 77-106). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Blowers, L. C., Loxton, N. J., Grady-Flesser, M., Occhipinti, S., & Dawe, S. (2003). The relationship between sociocultural pressure to be thin and body dissatisfaction in preadolescent girls. *Eating Behaviors*, 4, 229-244.
- Brewerton, T. D., & Steiger, H. (2004). Neurotransmitter dysregulation in anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 257-281). New York: Marcel Dekker, Inc.

- Bronfenbrenner U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (2005). *Making Human Beings Human*. Thousand Oaks, CA: Sage.
- Brown, B. B. (1989). The role of peer groups in adolescents' adjustment to secondary school. In T. J. Berndt, & G. W. Ladd (Eds.), *Peer Relationships in Child Development* (pp. 188-215). New York: Wiley.
- Brown, C. (2007). Talking body talk: Merging feminist and narrative approaches to practice. In C. Brown & T. Augusta-Scott (Eds.), *Narrative Therapy: Making Meaning, Making Lives*, (pp. 269-302). Thousand Oaks, CA: Sage Publications, Inc.
- Brown, J. D., & Witherspoon, E. M. (2002). The mass media and American adolescents' health. *Journal of Adolescent Health*, 31, 153-170.
- Buhrmester, D. (1996). Need fulfillment, interpersonal competence, and the developmental contexts of early adolescent friendship. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The Company They Keep* (pp. 158-185). New York: Cambridge University Press.
- Bukowski, W. M., Brendgen, M., & Vitaro, F. (2007). Peers and socialization: Effects on externalizing and internalizing problems. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 355-381). New York: Guilford.
- Bulik, C. M. (2002). Role of genetics in anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 165-182). New York: Marcel Dekker, Inc.
- Bulik, C. M. (2005). Exploring the gene-environment nexus in eating disorders. *Journal of Psychiatry Neuroscience*, 30(5), 335-339.
- Byely, L., Archibald, A. B., Graber, J., & Brooks-Gunn, J. (2000). A prospective study of familial and social influences on girls' body image and dieting. *International Journal of Eating Disorders*, 28, 155-164.
- Cairns, R. B., & Cairns, B. D. (1994). *Lifelines and Risks: Pathways of Youth in Our Time*. Cambridge, England: Cambridge University Press.
- Canals, J., & Carbajo, G. (1996). Biopsychopathologic risk profile of adolescents with eating disorder symptoms. *Adolescence*, 31(122), 443-550.

- Carter, J. C., McFarlane, T. L., & Olmsted, M. P. (2004). Psychometric assessment of eating disorders. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 21-46). New York: Marcel Dekker, Inc.
- Connell, A. M., Dishion, T. J., Yasui, M., & Kavanagh, K. (2007). An adaptive approach to family intervention: Linking engagement in family-centered intervention to reductions in adolescent problem behavior. *Journal of Consulting and Clinical Psychology*, 75(4), 568-579.
- Daigneault, S. D. (2000). Body talk: A school-based group intervention for working with disordered eating behaviors. *Journal for Specialists In Group Work*, 25(2), 191-213.
- Dishion, Capaldi, Spracklen, & Li (1995). Peer ecology of male adolescent drug use. *Development and Psychopathology*, 7, 803-824.
- Dishion, T. J., McCord, J., & Poulin, F. (1999). When interventions harm: Peer groups and problem behavior. *American Psychologist*, 54, 755-769.
- Dishion, T. J., Spracklen, K. M., Andrews, D. W., & Patterson, G. R. (1996). Deviancy training in male adolescent friendships. *Behavior Therapy*, 27, 373-390.
- Dohnt, H. K., & Tiggemann, M. (2006). Body image concerns in young girls: The role of peers and media prior to adolescence. *Journal of Youth and Adolescence*, 35(2), 141-151.
- Dubow, E. F., Huesmann, L. R., & Greenwood, D. (2007). Media and youth socialization: Underlying processes and moderators of effects. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 404-430). New York: Guilford.
- Eating Disorders Coalition for Research, Policy & Action (2007). Statistics & study findings. Retrieved September 23, 2007, from <http://www.eatingdisorderscoalition.org/reports/statistics.html>
- Ebeling, H., Tapanainen, P., Joutsenoja, A., Koskinen, M. K., Morin-Papunen, L., Jarvi, L., Hassinen, R., Keski-Rahkonen, A., Rissanen, A., & Wahlbeck, K. (2003). A practice guideline for treatment of eating disorders in children and adolescents. *Annals of Medicine*, 35, 488-501.
- Eder, D., Evans, C. C., & Parker, S. (1995). *School Talk: Gender and Adolescent Culture*. New Brunswick, New Jersey: Rutgers University Press.
- Erwin, P. (1993). *Friendship and Peer Relations in Children*. New York: John Wiley & Sons.

- Fairburn, C. G., Cooper, Z., Doll, H. A., Norman, P., & O'Connor, M. (2000). The natural course of bulimia nervosa and binge eating disorder in young women. *Archives of General Psychiatry*, 57, 659-665.
- Fairburn, C. G., Norman, P. A., Welch, S. L., O'Connor, M. E., Doll, H. A., & Peveler, R. C. (1995). A prospective study of outcome in bulimia nervosa: The long-term effects of three psychological treatments. *Archives of General Psychiatry*, 52, 304-312.
- Fassinger, R. E. (2000). Gender and sexuality in human development: Implications for prevention and advocacy in counseling psychology. In S.D. Brown & R.W. Lent (Eds.), *Handbook of Counseling Psychology, Third Edition* (pp. 346-378). New York: John Wiley and Sons, Inc.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117-140.
- Field, A. E., Camargo, C. A., Taylor, C. B., Berkey, C. S., Roberts, S. B., & Colditz, G. A. (2001). Peer, parent, media influences on the development of weight concerns and frequent dieting among preadolescent and adolescent girls and boys. *Pediatrics*, 107(1), 54-60.
- Fisher, M., Pastore, D., Schneider, M., Pegler, C., & Napolitano, B. (1994). Eating attitudes in urban and suburban adolescents. *International Journal of Eating Disorders*, 16(1), 67-74.
- Franko, D. L., Striegel-Moore, R. H., Barton, B. A., Schumann, B. C., Garner, D. M., Daniels, S. R. Schreiber, G. B., & Crawford, P. B. (2003). Measuring eating concerns in black and white adolescent girls. *International Journal of Eating Disorders*, 35, 179-189.
- Garner, D. M., & Desai, J. J. (2001). Eating disorders in children and adolescents. In J. N. Hughes, A. M. LaGreca, & J. C. Conoley, *Handbook of Psychological Services for Children and Adolescents* (pp. 399-419). New York: Oxford University Press.
- Garner, D. M., & Garfinkel, P. E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, 9, 273-279.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine*, 12, 871-878.

- Gerner, B., & Wilson, P. H. (2005). The relationship between friendship factors and adolescent girls' body image concern, body dissatisfaction, and restrained eating. *International Journal of Eating Disorders*, 37, 313-320.
- Gettinger, M., & Kratochwill, T. R. (1987). Behavioral assessment. In C. L. Frame, & J. L. Matson (eds.), *Handbook of Assessment in Childhood Psychopathology: Applied Issues in Differential Diagnosis and Treatment Evaluation* (pp. 131-161). New York: Plenum.
- Ghaderi, A. (2003). Structural modeling analysis of prospective risk factors for eating disorder. *Eating Behaviors*, 3, 387-396.
- Golden, N. H., Katzman, D. K., Kreipe, R. E., Stevens, S. L., Sawyer, S. M., Rees, J., Nicholls, D., & Rome, E. S. (2003). Eating disorders in adolescents: Position paper of the society for adolescent medicine. *Journal of Adolescent Health*, 33, 496-503.
- Graber, J. A., & Brooks-Gunn, J. (2001). Co-occurring eating and depressive problems: An 8-year study of adolescent girls. *International Journal of Eating Disorders*, 30, 37-47.
- Gralen, S. J., Levine, M. P., Smolak, L., & Murnen, S. K. (1990). Dieting and disordered eating during early and middle adolescence: Do the influences remain the same? *International Journal of Eating Disorders*, 9(5), 501-512.
- Hargreaves, D., & Tiggemann, M. (2002). The role of appearance schematics in the development of adolescent body dissatisfaction. *Cognitive Therapy and Research*, 26(6), 691-700.
- Haro, J. M., Arbabzadeh-Bouchez, S., Brugha, T. S., de Girolamo, G., Guyer, M. E., Jin, R., Lepine, J. P., Mazzi, F., Reneses, B., Vilagut, G., Sampson, N. A., Kessler, R. C. (2006). Concordance of the Composite International Diagnostic Interview Version 3.0 (CIDI 3.0) with standardized clinical assessments in the WHO World Mental Health Surveys. *International Journal of Methods in Psychiatric Research*, 15(4), 167-180.
- Hartup, W. W. (1983). Peer relations. In E. M. Hetherington (Ed.), *Handbook of Child Psychology, Socialization, Personality, and Social Development* (vol. 4) (pp. 103-198). New York: Wiley.
- Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, 67, 1-13.

- Hayward, C., & Sanborn, K. (2002). Puberty and the emergence of gender differences in psychopathology. *Journal of Adolescent Health, 30*(4S), 49-58.
- Heebink, D. M., Sunday, S. R., & Halmi, K. A. (1995). Anorexia nervosa and bulimia nervosa in adolescence: Effects of age and menstrual status on psychological variables. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*(3), 378-382.
- Hobza, C. L., Walker, K. E., Yakushko, O., & Peugh, J. L. (2007). What about men? Social comparison and the effects of media images on body and self-esteem. *Psychology of Men & Masculinity, 8*(3), 161-172.
- Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*, 348-358.
- Humphrey, L. L., Apple, R. F., & Kirschenbaum, D. S. (1986). Differentiating bulimic-anorexic from normal families using interpersonal and behavioral observational systems. *Journal of Consulting and Clinical Psychology, 54*(2), 190-195.
- Jacobi, C., Morris, L., & de Zwaan (2004). An overview of risk factors for anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 117-163). New York: Marcel Dekker, Inc.
- Janzen, B. L., Kelly, I. W., and Saklofske, D. H. (1992). Bulimic symptomatology and coping in a nonclinical sample. *Perceptual Motor Skills, 75*, 395-399.
- Johnson, J. G., Cohen, P., Kasen, S. & Brook, J. S. (2002). Eating disorders during adolescence and the risk for physical and mental disorders during early adulthood. *Archives of General Psychiatry, 59*, 545-552.
- Jones, D. C. (2001). Social comparison and body image: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles, 45*(9/10), 645-664.
- Jones, D. C. & Crawford, J. K. (2006). The peer appearance culture during adolescence: Gender and body mass variations. *Journal of Youth and Adolescence, 2*, 257-269.
- Jones, D. C., Vigfusdottir, T. H., & Lee, Y. (2004). Body image and the appearance culture among adolescent girls and boys: An examination of friend conversations, peer criticism, appearance magazines, and internalization of appearance ideals. *Journal of Adolescent Research, 19*(3), 323-339.

- Keel, P. K., & Herzog, D. B. (2004). Long-term outcome, course of illness, and mortality in anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 97-116). New York: Marcel Dekker, Inc.
- Kelly, C., Ricciardelli, L. A., & Clarke, J. D. (1999). Problem eating attitudes and behaviors in young children. *International Journal of Eating Disorders*, 25, 281-286.
- Kessler R. C., Ustun, T. B. (2004). The World Mental Health (WMH) Survey Initiative version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *The International Journal of Methods in Psychiatric Research*, 13(2), 93-121.
- Kog, E., Vertommen, H., & Vandereycken, W. (1987). Minuchin's psychosomatic family model revised: A concept-validation study using a multitrait-multimethod approach. *Family Process*, 26, 235-253.
- Koslowski, M., Scheinberg, Z., Bleich, A., Mark, M., Aptek, A., Danon, Y., & Solomon, Z. (1992). The factor structure and criterion validity of the short form of the eating attitudes test. *Journal of Personality Assessment*, 58(1), 27-35.
- Kostanski, M. & Gullone, E. (1999). Dieting and body image in the child's world: Conceptualization and behavior. *The Journal of Genetic Psychology*, 160(4), 488-499.
- Kuczynski, L. & Parkin, C. M. (2007). Agency and bidirectionality in socialization: Interactions, transactions, and relational dialectics. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 259-283). New York: Guilford.
- Leahey, T. M., & Crowther, J. H. (2008). An ecological momentary assessment of comparison target as moderator of the effects of appearance-focused social comparisons. *Body Image*, 5, 307-311.
- Levine, M. P., Smolak, L., Hayden, H. (1994). The relation of sociocultural factors to eating attitudes and behaviors among middle school girls. *Journal of Early Adolescence*, 14(4), 471-490.
- Levine, M. P., Smolak, L., Moodey, A. F., Shuman, M. D., & Hessen, L. D. (1994). Normative developmental challenges and dieting and eating disturbances in middle school girls. *International Journal of Eating Disorders*, 15(1), 11-20.

- Lewinsohn, P. M., Striegel-Moore, R. H., & Seeley, J. R. (2000). Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39(10), 1284-1292.
- Lieberman, M., Gauvin, L., Bukowski, W. M., & White, D. R. (2001). Interpersonal influence and disordered eating behaviors in adolescent girls: The role of peer modeling, social reinforcement, and body-related teasing. *Eating Behaviors*, 2, 215-236.
- Lilenfeld, L. R. R. (2004). Psychiatric comorbidity associated with anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 183-207). New York: Marcel Dekker, Inc.
- Lindner, D., Hughes, A., & Fahy, R. (2008). Eating pathology and social comparison in college females. *North American Journal of Psychology*, 10(3), 445-462.
- Lunner, K., Wertheim, E. H., Thompson, J. K., Paxton, S. J., McDonald, F., & Halvaarson, K. S. (2000). *International Journal of Eating Disorders*, 28, 430-435.
- Macoby, E. (2007). Historical overview of socialization research and theory. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 13-41). New York: Guilford.
- Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. *Journal of Youth and Adolescence*, 14, 267-283.
- Mash, E. J. & Dozois, D. J. A. (2003). Child psychopathology: A developmental-systems approach. In E. J. Mash and R. A. Barkley (Eds.), *Child Psychopathology* (2nd Ed.) (pp. 3-71). New York: Guilford.
- Measelle, J. R., Stice, E., & Hogansen, J. M. (2006). Developmental trajectories of co-occurring depressive, eating, antisocial, and substance abuse problems in female adolescents. *Journal of Abnormal Psychology*, 115(3), 524-538.
- McCabe, M. P. & Vincent, M. A. (2003). The role of biodevelopmental and psychological and psychological factors in disordered eating among adolescent males and females. *European Eating Disorders Review*, 11, 315-328.
- McDermott, B. M. & Jaffa, T. (2005). Eating disorders in children and adolescents: An update. *Current Opinion in Psychiatry*, 18, 407-410.

- Mintz, L. B., & O'Halloren, M. S. (2000). The eating attitudes test: Validation with DSM-IV eating disorder criteria. *Journal of Personality Assessment, 74*(3), 489-503.
- Muiise, A. M., Stein, D. G., & Arbess, G. (2003). Eating disorders in adolescent boys: A review of the adolescent and young adult literature. *Journal of Adolescent Health, 33*, 427-435.
- Murray, S. H., Touyz, S. W. & Beumont, P. J. V. (1995). The influence of personal relationships on women's eating behavior and body satisfaction. *Eating Disorders, 3*(3), 243-252.
- Netemeyer, S. B. & Williamson, D. A. (2001). Assessment of eating disturbances in children and adolescents with eating disorders and obesity. In J. K. Thompson & L. Smolak, *Body Image, Eating Disorders, and Obesity in Youth: Assessment, Prevention, and Treatment*, (pp. 215-233). Washington DC: American Psychological Association.
- Nolen-Hoeksema, S., Stice, E., Wade, E., Bohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology, 116*(1), 198-207.
- Oliver, K. K., & Thelen, M. H. (1996). Children's perceptions of peer influence on eating concerns. *Behavior Therapy, 27*, 25-39.
- Pauls, B. S. & Daniels, T. (2000). Relationship among family, peer networks, and bulimic symptomatology in college women. *Canadian Journal of Counselling, 34*(4), 260-272.
- Paxton, S. J. (1996). Prevention implications of peer influences on body image dissatisfaction and disturbed eating in adolescent girls. *Eating Disorders, 4*(4), 334-347.
- Paxton, S. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Prospective predictors of body dissatisfaction in adolescent girls and boys: A five-year longitudinal study. *Developmental Psychology, 42*(5), 888-899.
- Paxton, S. J., Neumark-Sztainer, D., Hannan, P. J., & Eisenberg, M. E. (2006). Body dissatisfaction prospectively predicts depressive mood and low self-esteem in adolescent girls and boys. *Journal of Clinical Child and Adolescent Psychology, 35*(4), 539-549.

- Paxton, S. J., Schutz, H. K., Wertheim, E. H., & Muir, S. L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors, and binge eating in adolescent girls. *Journal of Abnormal Psychology, 108*(2), 255-266.
- Pennington, B. F. (2002). *The Development of Psychopathology: Nature and Nurture*. New York: Guilford Press.
- Pratt, H. D., Phillips, E. L., Greydanus, D. E., & Patel, D. R. (2003). Eating disorders in the adolescent population: Future directions. *Journal of Adolescent Research, 18*(3), 297-317.
- Presnell, K., Bearman, S. K., & Stice, E. (2004). Risk factors for body dissatisfaction in adolescent boys and girls: A prospective study. *International Journal of Eating Disorders, 36*, 389-401.
- Rastam, M., Gillberg, C., van Hoeken, D., & Hoek, H. W. (2004). Epidemiology of eating disorders and disordered eating: A developmental overview. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 71-95). New York: Marcel Dekker, Inc.
- Reijonen, J. H., Pratt, H. D., Patel, D. R., & Greydanus, D. E. (2003). Eating disorders in the adolescent population: An overview. *Journal of Adolescent Research, 18*(3), 209-222.
- Riccardelli, L. A., & McCabe, M. P. (2004). A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychological Bulletin, 130*(2), 179-205.
- Rogoff, B., Moore, L., Najafi, B., Dexter, A., Correa-Chavez, M., & Solis, J. (2007). Children's development of cultural repertoires through participation in everyday routines and practices. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research* (pp. 490-515). New York: Guilford.
- Rosen, J. C., Silberg, N. T., & Gross, J. (1988). Eating attitudes test and eating disorders inventory: Norms for adolescent girls and boys. *Journal of Consulting and Clinical Psychology, 56*(2), 305-308.
- Schlundt, D. G. (1985). An observational methodology for functional analysis. *Bulletin of the Society of Psychologists in Addictive Behaviors, 4*(4), 234-249.
- Schultz, H. K., Paxton, S. J., & Wertheim, E. H. (2002). Investigation of body comparison among adolescent girls. *Journal of Applied Social Psychology, 32*(9), 1906-1937.

- Shisslak, C. M., & Crago, M. (2001). Risk and protective factors in the development of eating disorders. In J. K. Thompson & L. Smolak, *Body Image, Eating Disorders, and Obesity in Youth: Assessment, Prevention, and Treatment*, (pp. 103-125). Washington DC: American Psychological Association.
- Shroff, H. & Thompson, J. K. (2006). Peer influences, body-image dissatisfaction, eating dysfunction and self-esteem in adolescent girls. *Journal of Health Psychology*, 11(4), 533-551.
- Sim, L. & Zeman, J. (2006). The contribution of emotion regulation to body dissatisfaction and disordered eating in early adolescent girls. *Journal of Youth and Adolescence*, 35(2), 219-228.
- Sinton, M. M. & Birch, L. L. (2006). Individual and sociocultural influences on pre-adolescent girls' appearance schemas and body dissatisfaction. *Journal of Youth and Adolescence*, 35(2), 165-175.
- Smolak, L. (2005). Eating disorders in girls. In D. J. Bell, S. L. Foster, & E. J. Mash (Eds.), *Handbook of Behavioral and Emotional Problems in Girls* (pp. 463-487). New York: Kluwer Academic/Plenum.
- Smolak, L. & Levine, M. P. (2001). Body image in children. In J. K. Thompson & L. Smolak, *Body Image, Eating Disorders, and Obesity in Youth: Assessment, Prevention, and Treatment*, (pp. 41-66). Washington DC: American Psychological Association.
- Smolak, L., Murnen, S. K., & Ruble, A. E. (2000). Female athletes and eating problems: a meta-analysis. *International Journal of Eating Disorders*, 27, 371-380.
- Smyth, J., Wonderlich, S., Crosby, R., Miltenberger, R., Mitchell, J., & Rorty, M. (2001). The use of ecological momentary assessment approaches in eating disorder research. *Eating Disorders*, 30, 83-95.
- Spoor, S. T. P., Stice, E., Bekker, M. H. J., Van Strien, T., Croon, M. A., & Van Heck, G. L. (2006). Relations between dietary restraint, depressive symptoms, and binge eating: A longitudinal study. *International Journal of Eating Disorders*, 39, 700-707.
- Stice, E., & Bearman, S. K. (2001). Body image and eating disturbances prospectively predict growth in depressive symptoms in adolescent girls: A growth curve analysis. *Developmental Psychology*, 37, 597-607.
- Stice, E., Chase, A., Stormer, S., & Appel, A. (2001). A randomized trial of a dissonance-based eating disorder prevention program. *International Journal of Eating Disorders*, 29, 247-262.

- Stice, E., Hayward, C., Cameron, R. P., Killen, J. D., & Taylor, C. B. (2000). Body-image and eating disturbances predict onset of depression among female adolescents: A longitudinal study. *Journal of Abnormal Psychology, 109*(3), 438-444.
- Stice, E., Presnell, K., & Bearman, S. K. (2001). Relation of early menarche to depression, eating disorders, substance abuse, and comorbid psychopathology among adolescent girls. *Developmental Psychology, 37*, 608-619.
- Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: A longitudinal investigation. *Developmental Psychology, 38*(5), 669-678.
- Steiger, H., & Bruce, K. R. (2004). Personality traits and disorders associated with anorexia nervosa, bulimia nervosa, and binge eating disorder. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 209-230). New York: Marcel Dekker, Inc.
- Streigel-Moore, R. H., Seeley, J. R., & Lewinsohn, P. M. (2003). Psychological adjustment in young adulthood of women who experienced an eating disorder during adolescence. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*(5), 587-593.
- Swinbourne, J. M., & Touyz, S. W. (2007). The co-morbidity of eating disorders and anxiety disorders: A review. *European Journal of Eating Disorders Review, 15*, 253-274.
- Taylor, C. B., Sharpe, T., Shisslak, C., Bryson, S., Estes, L. S., Gray, N., McKnight, K. M., Crago, M., Kraemer, & Killen, J. D. (1998). Factors associated with weight concerns in adolescent girls. *International Journal of Eating Disorders, 24*, 31-42.
- Toro, J. Castro, J., Gila, A., & Pombo, C. (2005). Assessment of sociocultural influences on the body shape model in adolescent males with anorexia nervosa. *European Journal of Eating Disorders Review, 13*, 351-359.
- Treasure, J., & Uher, R. (2004). Neuroimaging of the eating disorders. In T. D Brewerton (Ed.), *Clinical Handbook of Eating Disorders: An Integrated Approach* (pp. 297-321). New York: Marcel Dekker, Inc.
- Vander Wal, J. S., & Thelen, M. H. (2000). Predictors of body image dissatisfaction in elementary-age school girls. *Eating Behaviors, 1*(2), 105-122.
- Viglione, V., Muratori, F., Maestro, S., Brunori, E., & Picchi, L. (2006). Denial of symptoms and psychopathology in adolescent anorexia nervosa. *Psychopathology, 39*, 255-260.

- Vincent, M. A., & McCabe, M. P. (2000). Gender differences among adolescents in family, and peer influences on body dissatisfaction, weight loss, and binge eating behaviors. *Journal of Youth and Adolescence*, 29(2), 205-221.
- Wertheim, E. H., Koerner, J. & Paxton, S. J. (2001). Longitudinal predictors of restrictive eating and bulimic tendencies in three different age groups of adolescent girls. *Journal of Youth and Adolescence*, 30(1), 69-81.
- Wertheim, E. H., Paxton, S. J., Schutz, H. K., & Muir, S. L. (1997). Why do adolescent girls watch their weight? An interview study examining sociocultural pressures to be thin. *Journal of Psychosomatic Research*, 42(4), 345-355.
- Williams, R. L., Schaefer, C. A., Shisslak, C. M., Gronwaldt, V. H., & Comerci, G. D. (1986). Eating attitudes and behaviors in adolescent women: Discrimination of normals, dieters, and suspected bulimics using the eating attitudes test and eating disorder inventory. *International Journal of Eating Disorders*, 5(5), 879-894.
- Williamson, D. A., Goreczny, A. J., & Duchmann, E. G. (1987). Behavioral and psychophysiological assessment of bulimia. *Behavior Science*, 9(4), 8-11.
- Wills, W., Backett-Milburn, K., Gregory, S., & Lawton, J. (2006). Young teenagers' perceptions of their own and others' bodies: A qualitative study of obese, overweight and 'normal' weight young people in Scotland. *Social Science and Medicine*, 62, 396-406.
- Wilson, G. T., Becker, C. B., & Heffernan, K. (2003). Eating disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child Psychopathology*, (pp. 687-715). New York: Guilford Press.
- Woodside, D. B., Garfinkel, P. E., Lin, E., Goering, P., Kaplan, A. S. Goldbloom, D. S., & Kennedy, S. H. (2001). Comparisons of men with full or partial eating disorders, men without eating disorders, and women with eating disorders in the community. *American Journal of Psychiatry*, 158, 570-574.
- Young, E. A., McFatter, R., & Clopton, J. R. (2001). Family functioning, peer influence, and media influence as predictors of bulimic behavior. *Eating Behaviors*, 2, 323-337.
- Youniss, J., & Smollar, J. (1985). *Parents and Peers in Social Development: A Sullivan-Piaget Perspective*. Chicago: The University of Chicago Press.
- Zaider, T. I., Johnson, J. G., & Cockell, S. J. (2002). Psychiatric disorders associated with the onset and persistence of bulimia nervosa and binge eating disorder during adolescence. *Journal of Youth and Adolescence*, 31(5), 319-329.