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Family Differentiation, Family Recreation, and Symptoms of Eating Disorders

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FAMILY DIFFERENTIATION, FAMILY RECREATION, AND SYMPTOMS OF EATING DISORDERS

by

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ABSTRACT

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The purpose of this study was to examine the relationships between family differentiation, family recreation and symptoms of eating disorders. The Family Intrusiveness Scales, the Perceived Social Support from Family, the Family Leisure Activity Profile and the Eating Attitudes Test were used. Participants were students at two large universities, one in the East and one in the West. Data were analyzed using correlation and ANCOVA. Findings supported the hypothesis that a positive relationship exists between family leisure involvement and family differentiation. In addition, a negative relationship between family differentiation and symptoms of eating disorders for individuals whose parents are not in their first marriage was indicated by the results.

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Abstract

The purpose of this study was to examine the relationships between family differentiation, family recreation, and symptoms of eating disorders. The Family Intrusiveness Scales, the Perceived Social Support from Family, the Family Leisure Activity Profile and the Eating Attitudes Test were used. Participants were students at two large universities, one in the East and one in the West. Data were analyzed using correlation and ANCOVA. Findings supported the hypothesis that a positive relationship exists between family leisure involvement and family differentiation. In addition, a negative relationship between family differentiation and symptoms of eating disorders for individuals whose parents are not in their first marriage was indicated by the results.

Introduction

Eating disorders have been reported to have the highest mortality rate of any psychiatric illness (Pipher, 1994) and the incidence of eating disorders has risen significantly during the last few decades (Bailey, 1991; Meyer & Russell, 1998). This increase has been particularly marked among college women (Holston & Cashwell, 2000; Meyer & Russell, 1998) and has been described as reaching epidemic levels (Thombs, Rosenberg, Mahoney, & Daniel, 1996).

An estimated 15% of adolescent females have eating disorders severe enough for a clinical diagnosis and many more exhibit sub-clinical levels (Killian, 1994). Sixty-five percent of college women display psychological characteristics of disturbed eating (Meyer & Russell, 1998) and over 30% report eating disorder behaviors including bingeing, purging, and severe caloric restriction (Holston & Cashwell, 2000). Although eating disorders occur in both genders and a range of ages, they primarily affect young women. More than 90% of persons with eating disorders are female (Killian, 1994) and the most common age of onset is adolescence (Killian, 1994; Pipher, 1994).

A variety of factors including social, familial, and interpersonal factors have been associated with eating disorders (Bailey, 1991; Haworth-Hoeppner, 2000). It has been suggested that family influences play both a direct and an indirect role in the development of eating disorders (Haworth-Hoeppner, 2000; Holston & Cashwell, 2000; Levy & Hadley, 1998). Family differentiation is the system's tolerance for both individuality and intimacy in its members (Gavazzi, 1993). Family characteristics of youth with eating disorders appear to resemble those of poorly differentiated families. A

well-differentiated family system, on the other hand, may be associated with lower levels of symptoms of eating disorders.

It has been suggested that greater amounts of family recreation are associated with more emotional closeness and more adaptability within the family system (Zabriskie & McCormick, 2001). Therefore, family differentiation levels may be reflected in and affected by family leisure involvement. In addition, family recreation can create and solidify emotional bonds between family members (Orthner & Mancini, 1991; Zabriskie & McCormick, 2001). The purpose of this study was to explore the relationships among family differentiation, family recreation and symptoms of eating disorders.

Review of Literature

Eating disorders are characterized by an obsession with weight and a negative body image (Killian, 1994; Wiederman, 1996). They have been equated with addictions and are very difficult to treat (Pipher, 1994). Anorexia nervosa and bulimia nervosa are the primary types of eating disorders (Killian, 1994; Wiederman, 1996). The majority of individuals with eating disorders are women and most of the research on eating disorders has focused on women (Killian, 1994). Therefore, this section will review literature regarding women and eating disorders.

Anorexia

Anorexia is an intricate emotional syndrome (Killian, 1994) characterized by an intense fear of becoming fat (American Psychiatric Association (APA), 1994; Wiederman, 1996) and a fixation regarding food and weight (Killian, 1994). Two subtypes of anorexia have been identified (APA, 1994). Persons with restricting subtype

anorexia severely limit their caloric intake and starve themselves to the point of emaciation (APA, 1994; Killian, 1994; Wiederman, 1996), while individuals with binge-eating/purging subtypes maintain their low weight by purging through vomiting or the use of laxatives following binges (APA, 1994).

Despite being at least 15% below their expected weight, people with anorexia see themselves as overweight and continue to restrict their food consumption (APA, 1994; Wiederman, 1996). Physical conditions resulting from anorexia include hypothermia, dehydration, amenhorrhea, and heart failure (APA, 1994; Killian, 1994; Pipher, 1994; Wiederman, 1996). Anorexia has the highest fatality rate of any psychiatric illness (Pipher, 1994) with mortality rates of over 10% of hospitalized patients being reported (APA, 1994). Individuals with anorexia quite literally starve themselves to death. Depression, compulsiveness, rigidity, and perfectionism characterize anorectic personalities. These traits may be intensified by or the result of self-imposed starvation (APA, 1994; Wiederman, 1996). A link between anorexia and a lack of autonomy or control has been suggested (Killian, 1994; Wechselblatt, Gurnick, & Simon, 2000) and difficulties in developing a sense of identity and independence have been expressed by individuals with anorexia (Wechselblatt et al., 2000).

Bulimia

Like anorexia, bulimia is characterized by a focus on food and weight (APA, 1994; Wiederman, 1996). Unlike persons with anorexia, however, individuals with bulimia are generally at or slightly above a normal body weight (APA, 1994; Wiederman, 1996). Bulimia is characterized by a binge-purge cycle in which the consumption of large

amounts of food in a relatively short period of time is followed by fasting or purging (APA, 1994; Killian, 1994; Levy & Hadley, 1998; Wiederman, 1996). During a binge, the person with bulimia may consume three to twenty-seven times the recommended daily food intake (Killian, 1994). Binging is accompanied by a sense of losing control (APA, 1994; Levy & Hadley, 1998; Wiederman, 1996) and is followed by "feelings of acute guilt, depression, or self-disgust" (Killian, 1994, p. 312). Following a binge, the individual with bulimia uses self-induced vomiting, laxatives, or intense exercise to rid the body of the excess calories (APA, 1994; Killian, 1994; Levy & Hadley, 1998). Health problems including menstrual irregularities, dental enamel erosion, electrolyte imbalances, and dehydration result from bulimia (Killian, 1994; Pipher, 1994).

Family Variables and Eating Disorders

Researchers agree that the family is central in the development, maintenance, and treatment of eating disorders (Bailey, 1991). A variety of family-of-origin patterns including shared family beliefs (Haworth-Hoeppner, 2000; Wechselblatt et al., 2000), parenting types (Haworth-Hoeppner, 2000; Killian, 1994), and distance regulation patterns (Haworth-Hoeppner, 2000; Holston & Cashwell, 2000; Killian, 1994; Meyer & Russell, 1998; Wechselblatt et al., 2000), have been linked to anorectic and bulimic symptoms.

Shared beliefs. Shared family beliefs may be one factor that determines the effect of societal influences. It has been suggested that the role of cultural expectations and ideals in the development of eating disorders may be mediated through the family (Haworth-Hoeppner, 2000). A focus on appearance and weight in the family-of-origin

appears to correlate with eating disordered symptoms (Haworth-Hoeppner, 2000) and may reinforce the cultural focus on thinness and appearance. This value can be stated directly in the form of critical comments regarding the daughter, modeled by the mother's preoccupation with weight and dieting, or expressed indirectly through negative comments about over-weight people (Haworth-Hoeppner, 2000). Regardless of the form, the meaning is clear; the family system confirms cultural values and expects its members to conform. Family members share a belief that weight is a determinant of worth. The family's support of society's expectations of physical appearance may be fundamental to the obsession with food and weight that characterizes eating disorders (Haworth-Hoeppner, 2000; Killian 1994).

Parenting characteristics. Although research on shared family values seems to lead to convergent views, contradictory parenting practices have also been associated with eating disorders. Mothers of women with eating disorders have been described as judgmental and over involved or as ineffective and unresponsive (Haworth-Hoeppner, 2000). Fathers have been identified as strict and overprotective or as withdrawn and uncaring (Haworth-Hoeppner, 2000; Killian, 1994; Wechselblatt et al, 2000). Whether over or under involved, parents of daughters with eating disorders appear to meet their own needs at the expense of responding to their daughter's needs.

Distance regulation. The dichotomy present in the parenting styles exhibited in families of persons with eating disorders is also present in their distance regulation, or the amount of emotional closeness and individual autonomy that characterizes the family. These families have been described as emotionally dependent (Holston & Cashwell,

2000), or alternatively as lacking emotional connection (Bailey, 1991), as highly cohesive (Holston & Cashwell, 2000) or lacking cohesion (Killian, 1994), and as over controlled or under controlled (Bailey, 1991). The family process of differentiation may provide a paradigm for examining these apparently contradictory findings.

Differentiation

Family differentiation is a systemic construct (Anderson & Fleming, 1986; Anderson & Sabatelli, 1990; Bomar & Sabatelli, 1996; Sabatelli & Mazor, 1985) defined as the system's tolerance of both intimacy and individuality (Gavazzi, 1993). In other words, it is the ability of the family as a whole to facilitate emotional bonds while allowing members to maintain their individual identity within the system. The family differentiation construct is closely related to distance regulation (Day, Gavazzi, & Acock, 2001).

Distance regulation patterns have been described as the primary indicator of family differentiation (Anderson & Sabatelli, 1990). Sabatelli and Mazor (1985) conceptualize differentiation as being focused on transactional and adaptational processes. It reflects the ability of the family to negotiate levels of both interpersonal closeness and individuality and to react to members' changing needs for independence. The result of this negotiation is reflected in family distance regulation. Well-differentiated families result from distance regulation patterns that promote both individuality and intimacy among family members, while poorly-differentiated families lack tolerance for either individuality or intimacy (Day et al., 2001).

Well-differentiated. A well-differentiated system is characterized by high tolerance for both individuality and intimacy (Gavazzi, 1993). Members have feelings of closeness and belonging while maintaining their individuality and agency. Family relationships are not sacrificed to attain individuality nor are emotional bonds maintained at the expense of individuation (Bomar & Sabatelli, 1996). High levels of family differentiation result in an age appropriate balance of connectedness and separateness (Gavazzi, 1993; Sabatelli & Mazor, 1985) and facilitate both family cohesion and adaptability (Sabatelli & Mazor, 1985). The sensitivity of the system to the changing needs of family members may enable the family to adapt readily to variations in both internal and external conditions. According to Anderson and Sabatelli (1990), family differentiation plays a significant role in the family's ability to adapt to social and environmental changes. The system's tolerance for individuality allows members of well-differentiated families to engage in developmentally appropriate tasks (Kerr & Bowen, 1988).

Poorly differentiated. In contrast to well-differentiated families, poorly differentiated families are characterized by low tolerance for intimacy and/or individuality (Anderson & Sabatelli, 1990). Low levels of differentiation may prevent appropriate developmental progress of the family or the individuals comprising the family (Gavazzi, 1993). There are two types of poorly differentiated families (Bomar & Sabatelli, 1996). Those low in intimacy and high in individuality are identified as being disengaged, while families with high levels of intimacy and low levels of individuality are described as fused or enmeshed.

Disengaged families display a lack of external boundaries and rigid within-system boundaries. They are characterized by a lack of "emotional support, empathy, integration, and cohesion" (Bomar & Sabatelli, 1996). Family members may lack a sense of connectedness since individuality is attained at the expense of emotional bonds as family patterns of distance regulation discourage intimacy. Family members have an implicit understanding that emotional closeness is not acceptable within the family.

In contrast to disengaged families, enmeshed families are characterized by having rigid external boundaries and internal boundaries that are vague and permeable (Bomar & Sabatelli, 1996). In an enmeshed or highly fused family the separation between the family and the outside world is distinct, while between family members, emotional separation is almost non-existent. A fused system inhibits autonomy and individuality (Anderson & Sabatelli, 1990) and may lead to family members being unable to make decisions independently. Members of fused families are reactive, and high levels of unexpressed conflict may exist within the family (Sabatelli & Mazor, 1985). Suppressed conflict may manifest itself in the form of triangles. Triangulation occurs when, in response to interpersonal tension, two family members involve a third person in their relationship in order to avoid dealing directly with their dyad's problems (Butler & Harper, 1994; Kerr & Bowen, 1988). This third person may take the role of an ally of one of the individuals (a coalition triangle), a shared enemy (a displacement triangle), or a "common cause" (substitutive triangle). Regardless of the role the third person assumes, the relationship of the family dyad is routed through the third family member (Butler & Harper, 1994). Low levels of differentiation promote the development of interpersonal

triangles, and higher levels of fusion result in more entrenched triangulation and preventing the individuals involved in the triangle from engaging in age appropriate developmental tasks (Bomar & Sabatelli, 1996).

Family distance regulation patterns that may reflect poor differentiation have been correlated with eating disorders. Families of anorexics appear to display enmeshed patterns while families of bulimics exhibit both enmeshed and disengaged patterns. The ability of a system to successfully negotiate intimacy and individuality may influence the development of eating disorders in its members. A poorly differentiated family may facilitate the occurrence of eating disorders.

Anorexia and Family Differentiation

Researchers have suggested that strong associations between enmeshed patterns of family differentiation and anorexic symptoms may exist (Killian, 1994; Meyer & Russell, 1998). Repressed conflict, elevated amounts of fusion, and extremely high levels of cohesion characterize families of persons with anorexia (Killian, 1994; Meyer & Russell, 1998). These families exhibit a lack of both clear interpersonal boundaries and autonomy granting (Meyer & Russell, 1998) that reflect poor differentiation. Rather than encouraging age appropriate individuation, parents of persons with anorexia tend to be overprotective and appear unresponsive to their daughter's efforts at identity development (Meyer & Russell, 1998). Within a system such as this, family members may lack a sense of separate identity. It has been suggested that refusal to eat is an attempt by the individual to distinguish herself from the family system (Wechselblatt et

al., 2000) and to gain a sense of personal power and individual identity (Meyer & Russell, 1998).

Typically, parents of daughters with anorexia do not express marital conflict openly (Killian, 1994; Meyer & Russell, 1998). Instead, it is manifested primarily through triangulation involving the daughter with anorexia (Killian, 1994; Wechselblatt et al., 2000). Substitution triangles often involve the parents relying on the daughter for emotional support and validation, and result in a blurring of intergenerational boundaries (Butler & Harper, 1994; Killian, 1994; Wechselblatt et al., 2000). Meyer and Russell (1998) have suggested that a relationship exists between the strength of the coalitions within the triangles and the severity of anorexic symptoms.

Some researchers have suggested that the development of anorexia is a rebellion against lack of autonomy (Haworth-Hoeppner, 2000; Meyer & Russell, 1998), while others have suggested it is the ultimate surrender to family expectations of self-denial and other-orientation (Killian, 1994; Wechselblatt et al., 2000). While the psychological paths differ in these two explanations, both identify a link between enmeshed family systems and anorexia. The high tolerance for intimacy and low tolerance for individuality could result in either of these patterns.

The individual who feels a need to express her uniqueness in a system in which she has little autonomy may choose to resist in a way that will allow her, at least initially, to maintain the close emotional ties she has with her family. Alternatively, the lack of individuation resulting from the emotional closeness and blurring of interpersonal boundaries in an enmeshed system may create a high level of compliance. In response to

shared values which encourage both thinness and a focus on the needs of others at the expense of one's own, a family member without an identity separate from the system may engage in food limiting behaviors. Both of these mechanisms, either an assertion of personal control or a surrender to the values of the system, may lead to anorexic behaviors.

Bulimia and Family Differentiation

Research on families of women with bulimia appears to present a paradox. The families have been described using characteristics that would suggest both enmeshment and/or disengagement. Women with bulimia have identified their families as detached and lacking in cohesion (Killian, 1994), low in communication and affective expression (Casper & Troiani, 2001), and emotionally unresponsive (Meyer & Russell, 1998). This pattern of low intimacy and high individuality would seem to reflect a disengaged pattern of differentiation. It has been suggested that eating is a method of self-soothing used in response to a lack of emotional support (Meyer & Russell, 1998). In other words, bingeing is an attempt to fill the emptiness created by a lack of intimacy.

Paradoxically, families of persons with bulimia have also been described as fused (Levy & Hadley, 1998), overprotective (Levy & Hadley, 1998), and controlling (Killian, 1994). Like families of persons with anorexia, these families display enmeshed patterns of distance regulation. Bulimia may be a rebellion against the lack of individuation tolerated by the system. As Killian (1994) states, "no one can force a bulimic to stop bingeing and purging …bulimia allows women a degree of power" (p. 314). Like the

refusal of a person with anorexia to eat, the cycle of bulimia may be a statement of autonomy.

Family Recreation

The relationship between family recreation and a number of family variables has been explored. Marital stability (Hill, 1988), marital satisfaction (Holman & Jacquart, 1988), family bonding (Orthner & Mancini, 1991), and cohesion (West & Merriam, 1970; Zabriskie & McCormick, 2001) have all been linked with family leisure involvement. A common thread in all of these publications was the association between emotional closeness among family members and family leisure.

Drawing explanations from a number of family theories including exchange, family development, symbolic interaction, and systems frameworks, Orthner and Mancini (1991) have suggested that family recreation may be a primary source of family bonding (West & Merriam, 1970; Zabriskie & McCormick, 2001). According to parents, promoting family togetherness is an important outcome of family recreation (Shaw & Dawson, 2001). As Olson (1993) has suggested, however, too much cohesion may not be positive. This may reflect an enmeshed family that has a low tolerance for individuality in its members. A family that recreates constantly together and in which family members have no individual interests may reflect an unhealthy system.

Unlike intimacy, autonomy development has not been studied in the context of family recreation. Although a relationship between adolescent identity and individual leisure choices has been demonstrated (Shaw, Caldwell, & Kleiber, 1996; Shaw, Kleiber, & Caldwell, 1995), this has not been extended to family leisure choices.

One model that has attempted to explain the relationship between family recreation and family processes is the Core and Balance Model of Family Leisure Functioning (Zabriskie & McCormick, 2001). According to the model, family recreation can be divided in to core and balance activities. Core family activities are relatively low-cost, spontaneous, often home based, and accessible. They often occur frequently and are shorter in duration. These familiar interactive activities are hypothesized to facilitate family cohesion. Balance family activities are less frequent, but are often of longer duration than core activities. They generally require more planning and often require greater investments of time, money and energy. These family recreation activities often contain elements of unfamiliarity or unpredictability which are said to facilitate adaptability in the family system (Zabriskie & McCormick, 2001).

Core activities may promote tolerance of intimacy in the family system. The proposed link between balance activities and adaptability (Zabriskie & McCormick, 2001) may influence a family's tolerance for individuality. Therefore, it could be argued that combination of core and balance family activities would likely facilitate and reflect family differentiation. Flexibility generated and practiced in family leisure settings may facilitate the granting of age appropriate autonomy that characterizes well-differentiated families, which in turn may reduce the incidence of eating disorders.

Summary and Hypotheses

In summary, both too much and too little family cohesion have been found to be correlated with bulimia (Bailey, 1991). This would suggest that both the over-involvement of enmeshed families and the under involvement of disengaged families

may be associated with bulimia. The association between fusion and anorexia might suggest that enmeshed families may have high incidences of anorexia. The balance of individuation and intimacy encouraged by a well-differentiated family may offer protection from eating disordered thinking and behaviors. Without the compulsion for autonomy or closeness created by too much or too little cohesion, food may not become a source of power and comfort. Family recreation patterns may both reflect and facilitate family differentiation patterns. The purpose of this study was to investigate the relationships between family recreation, family differentiation, and symptoms of eating disorders. The following hypotheses (H) emerged from the review of the previous body of literature:

H1: Family differentiation is negatively correlated with symptoms of eating disorders. Tolerance for intimacy and tolerance for individuality are negatively correlated with symptoms of eating disorders.

H2: Family differentiation is positively correlated with family leisure involvement.

H3: The family system's tolerance for intimacy is positively correlated with core family leisure involvement.

H4: The family system's tolerance for individuality is positively correlated with balance family leisure involvement.

H5: Core family leisure involvement and balance family leisure involvement, are significant predictors of differentiation when controlling for the influence of parental income, parental marital status, university attended, and ethnicity.

H6: Family differentiation is a significant predictor of symptoms of eating disorders when controlling for the influence of university attended, parental income, ethnicity, and parental marital status.

Methods

Sample

Participants in this study were students at a private western university and a public eastern university. The general increase in the prevalence of eating disorders has been particularly marked among college women (Holston & Cashwell, 2000; Meyer & Russell, 1998) and has been described as reaching epidemic levels (Thombs et al., 1996). College students have demonstrated a higher prevalence rate of eating disorders than other samples (Vohs, Heatherton, & Herrin, 2001). Therefore, researchers have suggested that because of the stress associated with the transition to college, this may be a preferred sample for research regarding eating disorders (Cooley & Toray, 2001).

Data were collected using questionnaires distributed in social science undergraduate and graduate level classes. Individual professors determined whether the questionnaires would be completed during class time or if the students would take the survey to complete outside of class. A majority of the professors gave minor course credit for participating. A list of eating disorder information and treatment resources was included with the participant's copy of the consent form. At the western university a total of 209 questionnaires were distributed and 181 were returned for a return rate of 87%. One questionnaire was discarded due to comments written on the Likert scale form that indicated the participant did not understand the questions. At the eastern university a total

of 200 questionnaires were distributed and 178 were returned for a return rate of 89%. Thus, the number of completed usable questionnaires was 358.

Instrumentation

Four instruments were used in this study: the Eating Attitudes Test (EAT; Garner, Olmsted, & Bohr, 1982), the Family Intrusiveness Scale (FIS; Gavazzi & Sabatelli, 1990), the Perceived Social Support from Family Scale (PSS-Fa; Procidano & Heller, 1983), and the Family Leisure Activity Profile (FLAP; Zabriskie & McCormick, 2001). In addition, each participant completed a demographic questionnaire.

Symptoms of eating disorders. The Eating Attitudes Test (EAT; Garner et al., 1982) was used to evaluate symptoms of eating disorders. The EAT contains 40 items measured on a six point Lickert scale. Items 1, 18, 19, 23, and 39 are scored 6 = 3, 5 = 2, 4 = 1 and 3, 2 and 1 = 0. When marked 'never' (6) these items indicate anorexia. The remaining items are scored 1 = 3, 2 = 2, 3 = 1, and 4, 5, and 6 = 0. When scored always (1) these items indicate anorexia. Item values are summed to determine a total score which can range from 0 to 120. This instrument has an established ability to differentiate between persons diagnosed with eating disorders and those without eating disorders. A mean of 15.6 (SD = 9.3) has been reported for a normative sample of non-eating disordered individuals (Fischer & Corcoran, 1994). Scores above 30 indicate serious eating-disorder concerns. This measure has demonstrated adequate reliability and validity. An alpha coefficient of 0.94, indicating acceptable internal consistency, has been reported for the EAT (Fischer & Corcoran, 1994).

System tolerance for intimacy. The Perceived Social Support from Family Scale (PSS-Fa; Procidano & Heller, 1983) was used to measure the family's tolerance for intimacy. The PSS-Fa is a 20 item scale. Respondents are asked to indicate by selecting 'yes,' 'no,' or 'don't know,' how well each item describes their family. 'Don't know' responses are scored 0. 'No' responses to items 3, 4, 16, 19, and 20 are scored 1. 'Yes' responses to all other items are scored 1. Item scores are totaled to create scale scores that range from 0 to 20 (Fischer & Corcoran, 1994). This scale has been used in previous research to measure tolerance for intimacy in a differentiation context (Gavazzi, 1993). The PSS-Fa demonstrates adequate internal consistency, with reported alpha coefficients of 0.90 (Procidano & Heller, 1983). A normative mean of 15.5 (SD = 5.08) has been reported for college students (Fischer & Corcoran, 1994).

System tolerance for individuality. The Family Intrusiveness Scale (FIS; Gavazzi & Sabatelli, 1990) was used to evaluate the family's tolerance for individuality. The FIS is a 13 item scale that measures the participant's perception of parental intrusiveness (Gavazzi, 1993). Participants respond using a Lickert scale from 1 (strongly disagree) to 7 (strongly agree). Total scores are the sum of the item scores and range from 13 to 91. A high score on the FIS was used to indicate a low tolerance for individuality. This was achieved by reverse scoring the measure. In order to place the FIS on the same metric as the PSS-Fa, scores on the reverse-scored FIS were divided by 91 and multiplied by 20 to create scores that ranged from 1 to 20. This instrument has been used in previous research to measure tolerance for individuality (Gavazzi, 1993). Alpha levels of 0.90, indicating acceptable internal consistency, have been reported for the FIS (Gavazzi, 1993).

Evidence for construct validity has been reported in a number of studies using the FIS (Gavazzi, 1993; Gavazzi, Reese, & Sabatelli, 1998).

Differentiation. A total differentiation score (TDS) was calculated for each participant by multiplying the reverse scored FIS score (rcFIS) with the PSS-Fa score. This method has been used previously to measure differentiation (Gavazzi, 1993).

Family recreation patterns. The Family Leisure Activity Profile (FLAP; Zabriskie & McCormick, 2001) was used to assess family recreation patterns. Respondents are asked to identify whether or not they engage in 16 activity categories with family members. They are also asked to indicate the frequency and duration of their participation and their level of satisfaction with the amount of participation. This instrument contains two eight item subscales; a core family leisure index and a balance family leisure index. Each activity is scored by multiplying frequency and duration of participation. The eight activity scores in each subscale are then summed to create a core family leisure index (cFLAP) and a balance family leisure index (bFLAP). A total family leisure index is determined by summing the two indices. These subscales have yielded test-retest reliability estimates of 0.74 and 0.78 ($p \leq .001$) respectively. Content validity of this instrument was supported by a panel of experts (Zabriskie & McCormick, 2001).

Means of 41.99 (SD = 12.24) have been reported for the cFLAP (Zabriskie, 2000). Previous data from college populations has reported means of 58.8 (SD = 29.1) for the bFLAP. FLAP scores have yielded a mean of 102.52 (SD = 33.37) in previous research using a non-college sample (Zabriskie & McCormick, 2001).

Analysis

A table of bivariate correlations was examined to test hypotheses one through four. Due to the presence of continuous and categorical predictor variables, analysis of covariance (ANCOVA) was used to test hypotheses five and six. Models were run with differentiation scores and EAT scores as the dependent variables.

For hypothesis five, ANCOVA ($p < .05$) was used to test the hypothesis that parental income, parental marital status, ethnicity, and family leisure involvement are significant predictors of differentiation. Covariates (continuous variables) included age, cFLAP, and bFLAP scores. Categorical variables were parent's income, school attended, ethnicity, gender and parental marital status.

For hypothesis six, ANCOVA ($p < .05$) was used to test the hypothesis that parental income, ethnicity, parental marital status, and total family differentiation are significant predictors of symptoms of eating disorders. Covariates (continuous variables) included age, and differentiation scores. Categorical variables included parents' income, ethnicity, school attended, and parental marital status. Due to the relatively small number of males in the sample, an alpha coefficient for the EAT (0.27) indicating unacceptably low internal consistency, and concerns regarding the applicability of the EAT to a male population, only data for female participants were used in this analysis.

For both models, in cases where some independent variables were not significant predictors, reduced models were explored to determine the most parsimonious model which did not appear to be under-fit. Adjusted R^2 was used to compare the fit of the models.

Results

Sample Descriptives

Levene's test for homogeneity of variance indicated no significant differences between participants from the two schools, so the two groups were combined into a single sample of 358 subjects. Participants were predominantly female (271, 75.7%). The age of participants ranged from 18 to 35 with a mean of 20.88 (SD = 2.42). For females, the mean age was 20.4 (SD = 2.03). For males, the mean was 22.4 (SD = 2.90). The sample consisted of 57 freshmen (15.9%), 109 sophomores (30.4%), 89 juniors (25.0%), 88 seniors (24.6%), and 13 graduate students (3.6%). Thirty-nine of the participants (10.8%) were married and one participant was divorced. Parents of the majority of the participants (293 or 81.8%) were currently in their first marriage.

White/ Caucasian ethnicity was reported by 91% (326) of the sample. Other ethnicities reported by participants included Asian/Pacific Islander (12 or 3.4%), African (7 or 2%), Hispanic (3 or 0.83%), and mixed ethnicity (9 or 2.5%). Participants were asked to estimate their parents' annual income. Twenty percent of participants (n = 66) reported family incomes below $50,000 per year, 45% (n = 156) reported family incomes between $50,000 and $100,000 per year, and 35% (n = 124) reported family incomes greater than $100,000 per year.

In order to obtain group sizes large enough for analysis, some categories were collapsed. Because of the low number of ethnic minorities in the sample, the categories of Asian/Pacific Islander, African, Hispanic, and mixed ethnicity were combined into a single category of ethnic minority. Because of the low numbers of parents who were not

married, the categories of single, divorced, remarried, and widowed were combined into a category of not first marriage.

Symptoms of eating disorders. Participant scores on the EAT ranged from 3 to 72 with a mean of 13.9 (SD = 9.6). For males the average was 9.98 (SD = 4.9) and for females 15.1 (SD = 10.3). Scores for females in this sample were within one standard deviation of a mean of 15.6 (SD = 9.3) reported for a normative sample of non-eating disordered individuals. The alpha coefficient for the males in this sample was 0.48 when question 23, which asked about regular menstruation, was deleted. When it was not deleted, the alpha coefficient was 0.27. Neither of these alphas indicate acceptable internal consistency (Suen, 1990). The alpha coefficient for the females was .84, which indicates acceptable internal consistency (Suen, 1990).

System tolerance for individuality. Scores on the reverse scored FIS ranged from 26 to 91 with a mean of 68.75 (SD = 13.54). For males the average was 68.48 (SD = 13.37) and for females 68.83 (SD = 13.62). The alpha coefficient for males, females, and the full sample was -0.88, indicating acceptable internal consistency (Suen, 1990).

System tolerance for intimacy. Scores on the PSS-Fa ranged from 1 to 20 with a mean of 15.93 (SD = 4.21). This was within one standard deviation of the normative mean of 15.5 (SD = 5.08) reported for college students. For males the average was 15.4 (SD = 3.73) and for females 16.10 (SD = 4.351). The alpha coefficient was 0.77 for males and 0.88 for females, which indicates acceptable internal consistency (Suen, 1990).

Family differentiation. Scores ranged from 10.33 to 400 with a mean of 244.91 (SD = 85.91). For males the average was 235.03 (SD = 79.59) and for females 249.73 (SD = 87.35).

Family recreation patterns. Participants reported core activity index scores ranging from 0 to 124 with a mean of 44.07 (SD = 19.17) which is within one standard deviation of previous reported means of 41.99 (SD = 12.24) (Zabriskie, 2000). Mean scores for females and males were 45.00 (SD = 19.379) and 41.17 (SD = 18.30), respectively.

Balance activity index scores ranged from 0 to 197 with a mean of 59.54 (SD = 28.39). Previous data from college populations has reported means of 58.8 (SD = 29.1; Zabriskie & McCormick, 2001). Mean scores for females and males were 59.95 (SD = 27.87) and 58.26 (SD = 30.09).

FLAP scores ranged from 4 to 267 with a mean of 103.61 (SD = 41.73). Mean scores for females and males were 104.95 (SD = 41.70) and 99.44 (SD = 41.80). These scores are within one standard deviation of the mean of 102.52 (SD = 33.37) reported in previous research using a non-college sample.

Correlations

Tables of bivariate correlations were examined to test hypotheses one through four (See Tables 1 and 2). The majority of the hypothesized correlations were found to be significant at a 0.05 level.

Hypothesis one. The hypothesis that symptoms of eating disorders (EAT scores) are significantly negatively correlated with family differentiation (TFD scores), tolerance

for intimacy (PSS-Fa scores), and tolerance for individuality (reverse coded (rc) FIS scores) was partially supported for females and was not supported for males. For females, EAT scores were significantly negatively correlated with reverse-coded FIS scores ($r = -.154$, $p < .05$) and TFD scores ($r = -.126$, $p < .05$). In other words, lower levels of symptoms of eating disorders were associated with higher levels of tolerance for individuality and total family differentiation for the women in this study.

Hypothesis two. The hypothesis that family differentiation (TFD scores) are positively correlated with family leisure involvement (FLAP scores) was supported for both males ($r = .409$, $p < .01$) and females ($r = .222$, $p < .01$). In addition, family leisure involvement (FLAP scores) was significantly correlated with both tolerance for individuality (rcFIS scores; $r = .249$, $p < .05$) and tolerance for intimacy (PSS-Fa scores; $r = .409$, $p < .01$) for males and with only tolerance for intimacy (PSS-Fa scores; $r = .315$, $p < .01$) for females. In other words, higher levels of family leisure involvement were associated with higher levels of family differentiation.

Hypothesis three. The system's tolerance for intimacy, as measured by PSS-Fa scores, was significantly correlated with core family leisure involvement for both males ($r = .302$, $p < .01$), and females ($r = .315$, $p < .01$). Balance leisure family involvement was also significantly correlated with tolerance for intimacy (PSS-Fa scores) for males ($r = .385$, $p < .01$), and females ($r = .252$, $p < .01$). In other words, higher levels of both core and balance family leisure involvement were associated with greater tolerance for intimacy in the family system.

Hypothesis four. The hypothesis that the system tolerance for individuality as measured by rcFIS scores are positively correlated with balance family leisure involvement was supported for males ($r = .226$, $p < .05$), but not for females. Higher levels of balance family leisure involvement were associated with greater tolerance for individuality in the family system.

ANCOVA Models

Hypothesis five. The hypothesis that family leisure involvement is a significant predictor of family differentiation was supported. The final ANCOVA model accounted for about 17% of the variance in total differentiation scores ($n = 324$, $R^2 = .173$, adjusted $R^2 = .146$). Significant main effects were found for parental income, core family leisure involvement (cFLAP scores), and balance family leisure involvement (bFLAP scores) and significant two-way interaction effects for school and parental income, and parental income and balance family leisure involvement (bFLAP score). Non-significant main effects for school and age were included because the model appeared under-fit without them (See Tables 3 and 4).

Hypothesis six. The hypothesis that family differentiation is a significant predictor of symptoms of eating disorders (EAT scores) was supported. The final ANCOVA model accounted for almost 7% of the variance in total EAT scores ($n = 261$, $R^2 = .069$, adjusted $R^2 = .041$). Significant main effects were found for school, parental marital status, and family differentiation and significant interaction effects for parental marital status and school, and parental marital status and differentiation. A non-significant main effect for

parental income was included because the model appeared under-fit without it (See Table 5 and 6).

Discussion

Bivariate Correlations

For the women in this study, the significant correlation between family differentiation and symptoms of eating disorders was less than 0.15 ($p < 0.05$), which is considered low (Suen, 1990). For men, this relationship was non-significant, and the low alpha coefficient for the EAT makes it impossible to determine the exact nature of the relationship. The unacceptably low alpha coefficient would indicate that the EAT is not an appropriate instrument to use with a male sample. Given the documented increase in eating disorders among males (Cohane & Pope, 2001), it is unfortunate that the relationship between family differentiation and eating disorders was not able to be explored.

Family leisure involvement was more strongly correlated with family differentiation for males than for females. For males, recreational involvement with other family members may be more important in providing a context for communication and the development of relationships than it is for females. Tolerance for intimacy was related to both core and balance family leisure involvement for both males and females, which suggests that regardless of the activity, time spent together is related to greater feelings of family bonding. Tolerance for individuality, in contrast, was related only to balance family leisure involvement and only for males. As has been found in previous research (Shaw & Dawson, 2001) this difference suggests that family recreation may be

experienced differently by family members of different genders. The hypothesized opportunities to negotiate changing roles and generate adaptability within the family system (Zabriskie & McCormick, 2001) may be particularly salient to males' perceptions of their families.

The significant main effects for the ANCOVA models predicting family differentiation and eating disorder attitudes and behaviors cannot be interpreted without discussing the significant interactions of both continuous and categorical variables. Slopes for continuous variables and least squares means for categorical variables were used to determine the source of significant effects in the model and partial eta squareds from the between effects ANCOVA table were used to indicate effect size. (See Tables 4 and 6).

Family differentiation. In the model predicting differentiation, significant main effects were found for parental income, age, core family leisure involvement, and balance family leisure involvement. Parental income was part of significant interaction with both school and balance family leisure involvement. All estimated marginal means were created with family differentiation being evaluated at 250.08.

The main effect for core family leisure involvement accounted for 2.1% of the variance in family differentiation (partial $\eta^2 = .021$). The relationship was positive, with higher levels of core family leisure activity associated with higher levels of family differentiation ($B = 0.756$, $p < .05$). This finding further supports the assertion that more time spent with family members is associated with positive family interactions. Spending

time together may create opportunities for positive communication and for practicing and negotiating changing roles in non-threatening environment.

The main effect for balance leisure family involvement cannot be interpreted without considering the significant interaction between parental income and balance family leisure involvement. The slope estimate for the main effects for balance family leisure involvement was negative and non-significant (B = -.166, p = .577), indicating that there is not a significant relationship between balance family leisure involvement and family differentiation when parental income is greater than $100,000. The estimated marginal means for parental income increased with increasing levels of parental income, suggesting that, all other things being equal, lower family income is associated with lower levels of family differentiation. This relationship, however, depends on the level of balance family leisure involvement. The slopes for both balance family leisure involvement by family income less than $50,000 (B = 2.012, $p < .05$) and for balance family leisure involvement by family income $50,000 to $100,000 (B = .241, p = .491) were both positive, although only the first was significant. In other words, at lower levels of income, balance family leisure involvement had a significant positive relationship with family differentiation which is not evident at higher levels of income.

These findings suggest that for families with incomes lower than $50,000, balance family leisure involvement may be particularly important since lower income was related to lower levels of differentiation, but the presence of higher levels of balance family activity eliminated the gap between income levels. This may be a result of balance family leisure involvement having different meanings, depending on income. For families with

lower incomes, balance family leisure activities may be less common since many of the activities in this category require greater investments of money. Related to this, for families with lower incomes, the choice to spend money on balance family leisure involvement may reflect parental priorities which value time spent with their children above material possessions such as new cars or larger houses. For those with higher incomes, balance activities may be neither as rare nor as meaningful, and hence may have less of an impact on family differentiation.

The estimated marginal means for the interaction between university attended and parental income suggested that there was a linear trend for participants attending the eastern university and a non-linear trend for participants attending the western university. In other words, at the eastern university there appeared to be an increase in family differentiation associated with higher levels of income. In contrast, for the western university, differences in family differentiation occurred between the lowest level of income and the other two groups, while the higher two groups were virtually indistinguishable from one another.

The finding that higher levels of family leisure involvement was related to better family differentiation is consistent with previous research that has found positive associations between family recreation and family cohesion (Orthner & Mancini, 1991; West & Merriam, 1970; Zabriskie & McCormick, 2001). Tolerance for intimacy and family cohesion are related constructs, both of which are associated with feelings of emotional closeness. The relationship of tolerance for individuality, which is also a component of differentiation, and family leisure involvement has not, however, been

previously explored. Findings from this study suggest that this may be another area of family functioning related to family leisure involvement.

Lower levels of family differentiation have been linked to a number of negative child and adolescent outcomes including academic problems, psychological adjustment, and conduct problems (Gavazzi, 1993). While this study is correlational and therefore does not allow statements to be made regarding causation, a positive relationship was found between family leisure involvement and family differentiation. One might, therefore, hypothesize that higher levels of family leisure involvement may reduce negative outcomes for children and adolescents.

Symptoms of eating disorders. All three of the variables, school, parental marital status, and differentiation, for which significant main effects were found in the model predicting symptoms of eating disorders were also part of significant interactions. There was a significant interaction between school and parental marital status and parental marital status and family differentiation. The significant main effects for school and parental marital status cannot be interpreted without considering the significant interaction between them. The estimated marginal means for participants whose parents were in their first marriage were virtually identical for the two schools. In contrast, the estimated marginal means for individuals whose parents were not in their first marriage showed very different patterns for the two universities. For the western university, when controlling for level of family differentiation, the group whose parents were not in their first marriage reported significantly lower levels of symptoms of eating disorders than did those whose parents were in their first marriage. The reverse was true for the eastern

university. Participants whose parents were not in their first marriage reported significantly higher levels of symptoms of eating disorders than those whose parents were in their first marriage. These results should, however, be interpreted with caution since there were only 15 individuals in the western university whose parents were not in their first marriage.

For participants from the eastern school, higher levels of eating disorders were associated with having parents who are not in their first marriage. This finding is consistent with research from several decades that suggests that children from divorced families score lower than children from continuously married families on a number of variables including psychological adjustment, self-concept, and long-term health (Amato, 2001). Lower scores on these variables have also been found to be associated with lower levels of family differentiation (Gavazzi, 1993). The finding that for students at the western school, the group whose parents were in their first marriage reported higher levels of symptoms of eating disorders than those whose parents were not, was unexpected. Due to the small group sizes for individuals whose parents were not in their first marriage, these results should be replicated with a larger sample.

While the main effect for family differentiation was significant in the ANCOVA model, the slope estimate for differentiation for the group whose parents were in their first marriage was not ($B < .001$, $p = .78$). The slope was significant and negative for the group whose parents were not in their first marriage ($B = -.004$, $p < .05$) This indicates that differentiation is significantly related to symptoms of eating disorders for those whose parents are not in their first marriage, but is not for those whose parents are in their

first marriage. Higher levels of family differentiation predict lower levels of eating disorders for those participants whose parents are not married to each other. Given the finding from this study that higher levels of family differentiation predict lower levels of symptoms of eating disorders for individuals whose parents are not in their first marriage, it seems reasonable to suggest that family differentiation may moderate the relationship between divorce and subsequent negative outcomes for children.

Although exploratory, findings from this study support the hypothesis that there is a positive relationship between family leisure involvement and family differentiation. Therefore, family recreation would be a cost effective and enjoyable way to reduce the negative child and adolescent outcomes associated with low levels of family differentiation. Identifying and funding the creation of opportunities for families to recreate together may allow family service providers and local, state, and federal governments to prevent, rather than react to, adolescent problems including academic failure, mental illness, and eating disorders.

In addition, a negative relationship between family differentiation and symptoms of eating disorders for individuals whose parents are not in their first marriage was indicated by the results. While neither family differentiation nor parental marital status predicted symptoms of eating disorders independently, the combination of the two did. These findings highlight the complexity of the causation of eating disorders. Furthermore, they suggest that interventions targeting the family system would be more effective in the treatment and prevention of eating disorders than those focused only on the individual.

Limitations

Care should be taken in generalizing the results of this study to other populations since the sample is not a random sample of either the general population or the two universities that the participants attended. This study is also subject to the limitations of recall data. Although data in this study were collected from a single source, differentiation is a family construct and is best measured from multiple perspectives. In addition, small sample sizes for several of the combinations of categorical variables require caution when interpreting the results because it is not clear whether some of the significant interaction effects are a result of patterning genuine between-group variations or a result of patterning individual variance that should be included in the random error structure.

Suggestions for Future Research

Future research should both address the limitations and extend the findings of this study. Random and more representative samples would enable generalizations to populations other than those in this study. Specifically, findings regarding parental marital status should be replicated using larger numbers of individuals whose parents are not in their first marriage. Longitudinal data collection would eliminate concern regarding recall errors and may also allow statements regarding direction of influence and causation to be made. Data should also be collected from multiple family members to gain a more detailed picture of family relationships. Measurement of symptoms of eating disorders using an instrument that distinguishes between anorexia and bulimia would allow the relationships between family leisure involvement, family interaction patterns,

and the development of specific types of eating disorders to be explored. Studies should also be done comparing groups of individuals diagnosed with eating disorders with groups of individuals without eating disorders.

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Table 1

Bivariate Correlations Male Participants

	FLAP	cFLAP	bFLAP	EAT	FIS	PSS	DIFF
AGE	.022	.160	-.068	.069	.044	-.127	-.041
FLAP	1	.769**	.921**	.017	.249*	.409**	.409**
cFLAP	.769**	1	.461**	-.020	.197	.302**	.306**
bFLAP	.921**	.461**	1	.035	.226*	.385**	.382**
EAT	.017	-.020	.035	1	-.025	-.042	-.053
FIS	.249*	.197	.226*	-.025	1	.256*	.741**
PSS	.409**	.302**	.385**	-.042	.256*	1	.824**
DIFF	.409**	.306**	.382**	-.053	.741**	.824**	1

Note. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 2

Bivariate Correlations Female Participants

	AGE	FLAP	cFLAP	bFLAP	EAT	FIS	PSS	DIFF
AGE	1	-.084	-.020	-.111	.017	-.106	-.275**	-.224**
FLAP	-.084	1	.828**	.921**	-.120*	.003	.315**	.222**
cFLAP	-.020	.828**	1	.543**	-.139*	.043	.315**	.245**
bFLAP	-.111	.921**	.543**	1	-.082	-.025	.252**	.162**
EAT	.017	-.120*	-.139*	-.082	1	-.154*	-.076	-.126*
FIS	-.106	.003	.043	-.025	-.154*	1	.360**	.761**
PSS	-.275**	.315**	.315**	.252**	-.076	.360**	1	.862**
DIFF	-.224**	.222**	.245**	.162**	-.126*	.761**	.862**	1

Note. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 3

Tests of Between-Subjects Effects for ANCOVA Predicting Family Differentiation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial η^2
Corrected Model	409592.640(a)	10	40959.264	6.544	.000	.173
Intercept	176685.664	1	176685.664	28.227	.000	.083
SCHOOL	193.007	1	193.007	.031	.861	.000
pINC	145110.404	2	72555.202	11.591	.000	.069
AGE	18725.818	1	18725.818	2.992	.085	.009
cFLAP	42731.494	1	42731.494	6.827	.009	.021
bFLAP	43465.586	1	43465.586	6.944	.009	.022
SCHOOL *X* pINC	43713.983	2	21856.991	3.492	.032	.022
pINC *X* bFLAP	88094.399	2	44047.200	7.037	.001	.043
Error	1959192.699	313	6259.402			
Total	21999094.747	324				
Corrected Total	2368785.339	323				

R^2 = .173 (Adjusted R^2 = .146)

pINC =Parental Income

Table 4

Slopes and Estimated Marginal Means for ANCOVA Predicting Family Differentiation

	Slope	Least Squares Mean	*t*	Sig.
West School		247.73		
East School		249.69		
pINC <50K		235.56		
pINC 50-100K		250.58		
pINC >100K		259.98		
Age	-.3691		-1.73	.085
cFLAP	.756		2.61	.009
bFLAP	-.166		-.558	.577
West School *X* pINC <50K		236.06		
West School *X* pINC 50-100K		261.97		
West School *X* pINC >100K		245.15		
East School *X* pINC <50K		235.06		
East School *X* pINC 50-100K		239.18		
East School *X* pINC >100K		274.81		
pINC <50K *X* bFLAP	2.012		3.661	< .001
pINC 50-100K *X* bFLAP	.241		.690	.491
pINC >100K *X* bFLAP	-.166		-.558	.577

Note. Means with the same letter are significantly different from each other ($p < .05$).

Covariates appearing in the model are evaluated at the following values: age = 20.86, cFLAP = 44.85, bFLAP = 59.42.

pINC =Parental Income

Table 5

Tests of Between-Subjects Effects for ANCOVA Predicting Symptoms of eating disorders

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial η^2
Corrected Model	1985.774(a)	7	283.682	2.784	.008	.072
Intercept	10201.894	1	10201.894	100.130	.000	.284
School	655.108	1	655.108	6.430	.012	.025
pMSTAT	670.696	1	670.696	6.583	.011	.025
pINC	395.207	2	197.603	1.939	.146	.015
DIFF	835.538	1	835.538	8.201	.005	.031
School *X* pMSTAT	575.973	1	575.973	5.653	.018	.022
pMSTAT *X* DIFF	690.479	1	690.479	6.777	.010	.026
Error	25777.222	253	101.886			
Total	86458.000	261				
Corrected Total	27762.996	260				

Note. $R^2 = .072$ (Adjusted $R^2 = .046$)

pMSTAT= Parental Marital Status; pINC =Parental Income; DIFF = Family Differentiation

Table 6

Slopes and Estimated Marginal Means for ANCOVA Predicting Symptoms of Eating Disorders

	Slope	Mean	Significance	*t*
West school		11.86[a]		
East school		16.32 [a]		
Parents in first Marriage		14.27		
Parents not in first marriage		13.91		
pINC <50 K		12.82		
pINC 50-100K		13.48		
pINC >100K		15.97		
West school *X* Parents in first Marriage		14.14[b]		
East school *X* Parents in first Marriage		14.39[c]		
West school *X* Parents not in first marriage		9.58[bd]		
East school *X* Parents not in first marriage		18.25[cd]		
DIFF	-.002		.783	-.275
DIFF *X* Parents in first marriage	-.002		.783	-.275
DIFF *X* Parents NOT in first marriage	-.043		.01	-2.603

Note. Means with the same superscript letter are significantly different from each other ($p < .05$).

Covariate appearing in the model is evaluated at the following value: DIFF = 250.08

DIFF = Family Differentiation, pINC = Parental Income

Appendix A

Prospectus

Chapter 1

INTRODUCTION

Eating disorders have been reported to have the highest mortality rate of any psychiatric illness (Pipher, 1994) and the incidence of eating disorders has risen significantly during the last few decades (Bailey, 1991; Meyer & Russell, 1998). A variety of family characteristics have been associated with the development of eating disorders (Haworth-Hoeppner, 2000; Holston & Cashwell, 2000; Levy & Hadley, 1998). The construct of family differentiation, defined as the family's tolerance for individuality and intimacy in its members (Gavazzi, 1993), may provide a paradigm for examining the family characteristics related to eating disorders. Family recreation may be related to family differentiation through its hypothesized influence on family cohesion and adaptability (Zabriskie & McCormick, 2001). This study will examine the relationship between the variables of family recreation, family differentiation, and eating disorder attitudes and behaviors.

Statement of the Problem

The focus of this study is to investigate the relationships among family differentiation, family recreation involvement, and eating disorder attitudes and behaviors.

Purpose of the Study

The purpose of the study is to provide insights into the relationships among family differentiation, family recreation, and eating disorders, enabling family and

recreation therapists to be more effective in the prevention and treatment of eating disorders.

Need for Study

A high mortality rate (Pipher, 1994) and an increasing incidence (Bailey, 1991; Meyer & Russel, 1998) have led researchers to describe eating disorders as reaching epidemic levels (Thombs, Rosenberg, Mahoney, & Daniel, 1996). A variety of characteristics including social, familial, and interpersonal factors have been associated with eating disorders (Bailey, 1991; Haworth-Hoeppner, 2000). It has been suggested that family influences play both a direct and an indirect role in the development of eating disorders (Haworth-Hoeppner, 2000; Holston & Cashwell, 2000; Levy & Hadley, 1998).

Families of persons with eating disorders have been described as emotionally dependent (Holston & Cashwell, 2000), or as lacking emotional connection (Bailey, 1991), as highly cohesive (Holston & Cashwell, 2000) or lacking cohesion (Killian, 1994), and as overcontrolled or undercontrolled (Bailey, 1991). The family process of differentiation may provide a paradigm for examining these apparently contradictory findings.

Differentiation is a systemic construct (Anderson & Fleming, 1986; Anderson & Sabatelli, 1990; Bomar & Sabatelli, 1996; Sabatelli & Mazor, 1985) that is defined as the family system's tolerance of both intimacy and individuality (Gavazzi, 1993). Well-differentiated families result from distance regulation patterns that promote both individuality and intimacy among family members, while poorly-differentiated families lack tolerance for either individuality or intimacy (Day, Gavazzi, & Alcock, 2001). Well

differentiated families are characterized by cohesion and adaptability (Sabatelli & Mazor, 1985). There are two types of poorly differentiated families (Bomar & Sabatelli, 1996). Those low in intimacy and high in individuality are identified as being disengaged, while families with high levels of intimacy and low levels of individuality are described as fused or enmeshed.

Strong associations between enmeshed patterns of family differentiation and anorexic symptoms may exist (Killian, 1994; Meyer & Russell, 1998). In other words, these families have created emotional closeness at the expense of autonomy. Women with bulimia have identified their families as detached and lacking in cohesion (Killian, 1994), low in communication and affective expression (Casper & Troiani, 2001), and emotionally unresponsive (Meyer & Russell, 1998). Paradoxically, families of individuals with bulimia have also been described as fused (Levy & Hadley, 1998), overprotective (Levy & Hadley, 1998), and controlling (Killian, 1994). Both patterns appear consistent with a poorly differentiated family system.

The combination of cohesion and adaptability found in well differentiated families (Sabatelli & Mazor, 1985) may be facilitated by appropriate levels of family recreation. It has been suggested that family recreation can create and solidify emotional bonds between family members (Orthner & Mancini, 1991; Zabriskie & McCormick, 2001) and foster adaptability in the family system (Zabriskie & McCormick, 2001). Appropriate levels of family recreation may promote the balance of intimacy and autonomy granting characteristics of well differentiated families. Therefore, family differentiation levels may be reflected by and affected by family recreation patterns. The

Core and Balance Model of family leisure functioning (Zabriskie, 2001) provides an explanation for the relationship between family leisure and family functioning.

The relationships between family differentiation, family recreation, and eating disorders have not been investigated in previous research. Given the prevalence and severity of eating disorders, these are important relationships. It is hoped that results from this study may provide guidance in both the prevention and treatment of eating disorders.

Delimitations

The scope of the study will be delimited to:

1. A group of 180 students attending Brigham Young University (BYU) between September 2002 and December 2002 and 200 students attending the Pennsylvania State University (Penn State) between September 2003 and December 2003.

2. Operationalized definitions of family differentiation (including tolerance for individuality and tolerance for intimacy), family leisure involvement, and eating disorders.

3. The use of the Perceived Social Support from the Family Scale (PSS-Fa) to measure tolerance for intimacy. The use of the Family Intrusiveness Scale (FIS) reverse scored to measure tolerance for individuality. The use of the Family Leisure Activity Profile (FLAP) to measure family leisure involvement. The use of the Eating Attitudes Test (EAT) to measure eating disorder behaviors and attitudes.

4. Data for the group from BYU collected between September 2002 and November 2002 and data for the group from Penn State collected between September 2003 and December 2003.

5. Analysis of data using correlation and ANOVA.

Limitations

The study will be limited by the following:

1. The correlational nature of the study prevents the determination of causation.

2. The study was not comprised of a random sample of students at each university nor of the general public. As a result, caution should be used when generalizing results to the general population.

3. Systems constructs such as family differentiation are best measured from multiple perspectives. This study relied on the perspective of only one member of the family.

4. The operationalization of tolerance for intimacy as perceived social support from family and tolerance for individuality as low levels of family intrusiveness is unlikely to fully capture the complexity of these constructs.

5. The instrument used to measure family recreation provides an estimate of involvement in family leisure by creating an index of frequency and duration, but does not assess the quality of the experiences.

6. The inaccuracies inherent in recall and self-report data.

Assumptions

The assumptions of the study will be:

1. Participant responses to the questionnaires will not be influenced by social desirability.

2. Participants will be able to understand and respond appropriately to questions.

3. Participants will be able to accurately recall their experiences in their families of origin.

Hypotheses

The study will be designed to test the following hypotheses:

H1: Total differentiation scores (TDS) are negatively correlated with symptoms of eating disorders as measured by Eating Attitudes Test (EAT) scores. The two components of differentiation are also correlated with EAT scores. Tolerance for intimacy, as measured by the PSS-Fa and tolerance for individuality, as measured by the reverse scored FIS, are negatively correlated with EAT scores.

H0: There is no correlation between differentiation and eating disorder behaviors and attitudes nor between tolerance for intimacy or tolerance for individuality and eating disorder behaviors and attitudes.

H2: Family differentiation is positively correlated with Family Leisure Activity Profile (FLAP) scores.

H0: There is no correlation between family differentiation and family leisure patterns.

H3: The family system's tolerance for intimacy as measured by the Perceived Social Support from Family (PSS-Fa) is positively correlated with core family activity patterns as measured by the core family leisure index (core) subscale FLAP.

H0: There is no correlation between tolerance for intimacy and core family leisure activities.

H4: The family system's tolerance for individuality as measured by the reverse scored Family Intrusiveness Scale is positively correlated with balance family activity patterns as measured by the balance family leisure index subscale of the FLAP.

H0: There is no correlation between tolerance for individuality and balance family leisure activities.

H5: Parental income, parental marital status, religion, ethnicity, family leisure activity patterns as measured by FLAP scores, core family leisure index scores, and balance leisure index scores, are significant predictors of differentiation for both male and female data and the entire sample.

H0: Parental income, parental marital status, religion, ethnicity, family leisure activity patterns as measured by FLAP scores, core family leisure index scores, and balance leisure index scores, are not significant predictors of differentiation for both male and female data and the entire sample.

H6: Parental income, religion, ethnicity, parental marital status, and total family differentiation are significant predictors of eating disordered behaviors for both male and female data and the entire sample.

H0: Parental income, religion, ethnicity, parental marital status, and total family differentiation are not significant predictors of eating disordered behaviors for both male and female data and the entire sample.

Definition of Terms

Anorexia. A mental disorder characterized by a "refusal to maintain a minimally normal body weight, an intense fear of gaining weight, and a significant disturbance in the perception of the shape or size of his or her body" (APA, APA, 1994).

Bulimia. A mental disorder characterized by "binge eating and compensatory methods to prevent weight gain and . . . self evaluation excessively influenced by body shape and weight" (APA, APA, 1994).

Balance Family Leisure Activities. Recreation activities in which at least two family members participate together that are planned and often require significant investments of money, time and energy. These recreation activities often contain elements of unfamiliarity or unpredictability (Zabriskie & McCormick, 2001).

Core Family Leisure Activities. Recreation activities in which at least two family members participate together that are relatively low-cost, spontaneous, often home-based, and accessible (Zabriskie & McCormick, 2001).

Eating Disorders. A group of mental disorders characterized by an obsession with weight and a negative body image (Killian, 1994; Wiederman, 1996).

Family Differentiation. The family system's tolerance for both individuality and intimacy in its members (Gavazzi, 1993).

Family Recreation: Leisure activities participated in together by one or more family members.

Tolerance for Individuality: The ability of the family as a whole to promote age appropriate separation (Day, Gavazzi, & Acock, 2001).

Tolerance for Intimacy: The ability of the family as a whole to facilitate emotional bonds (Day, Gavazzi, & Acock, 2001).

Total Family Leisure. All leisure activities in which two or more family members participate together.

Chapter 2

REVIEW OF RELATED LITERATURE

The following section will summarize relevant literature in the areas of eating disorders, family differentiation, and family recreation. Potential relationships among these will be discussed and connections will be drawn.

Eating Disorders

Eating disorders are characterized by an obsession with weight and a negative body image (Killian, 1994; Wiederman, 1996). They have been equated with addictions and are very difficult to treat (Pipher, 1994). Anorexia nervosa and bulimia nervosa are the primary types of eating disorders (Killian, 1994; Wiederman, 1996).

Anorexia. Anorexia is an intricate emotional syndrome (Killian, 1994) characterized by an intense fear of becoming fat (American Psychiatric Association (APA), 1994; Wiederman, 1996) and a fixation regarding food and weight (Killian, 1994). Two subtypes of anorexia, restricting and binging, have been identified (APA, Diagnostic and Statistical Manual (DSM) IV, 1994). Persons with restricting subtype anorexia severely limit their caloric intake and starve themselves to the point of emaciation (APA, 1994; Killian, 1994; Wiederman, 1996), while those with binge-eating/purging subtype maintain their low weight by purging through vomiting or the use of laxatives following "binges" (APA, 1994). Despite being at least 15% below their expected weight, persons with anorexia see themselves as overweight and continue to restrict their food consumption (APA, 1994; Wiederman, 1996). Physical conditions resulting from anorexia include hypothermia, dehydration, amenhorrhea, and heart failure

(APA, 1994; Killian, 1994; Pipher, 1994; Wiederman, 1996). Anorexia has the highest fatality rate of any psychiatric illness (Pipher, 1994) with mortality rates of over 10% of hospitalized patients being reported (APA, 1994). The women quite literally starve themselves to death. Depression, compulsiveness, rigidity, and perfectionism characterize anorectic personalities. These traits may be intensified by or the result of self-imposed starvation (APA, 1994; Wiederman, 1996). A link between anorexia and a lack of autonomy or control has been suggested (Killian, 1994; Wechselblatt, Gurnick, & Simon) and difficulties in developing a sense of identity and independence have been expressed by anorectics (Wechselblatt, Gurnick, & Simon, 2000).

Bulimia. Like anorexia, bulimia is characterized by a focus on food and weight (APA, 1994; Wiederman, 1996). However, unlike persons with anorexia, persons with bulimia are generally at or slightly above a normal body weight (APA, 1994; Wiederman, 1996). Bulimia is characterized by a binge-purge cycle in which the consumption of large amounts of food in a relatively short period of time is followed by fasting or purging (APA, 1987; Killian, 1994; Levy & Hadley, 1998; Wiederman, 1996). During a binge, a person with bulimia may consume three to 27 times the recommended daily food intake (Killian, 1994). Binging is accompanied by a sense of losing control (APA, 1994; Levy & Hadley, 1998; Wiederman, 1996) and is followed by "feelings of acute guilt, depression, or self-disgust" (Killian, 1994, p. 312). Following a binge, a person with bulimia uses self-induced vomiting, laxatives, or intense exercise to rid the body of the excess calories (APA, 1994; Killian, 1994; Levy & Hadley, 1998). Health problems

including menstrual irregularities, dental enamel erosion, electrolyte imbalances, and dehydration result from bulimia (Killian, 1994; Pipher, 1994).

Family Variables and Eating Disorders

Researchers agree that the family is central in the development, maintenance, and treatment of eating disorders (Bailey, 1991). A variety of family-of-origin patterns including shared family beliefs (Haworth-Hoeppner, 2000; Wechselblatt, Gurnick, & Simon, 2000), parenting types (Haworth-Hoeppner, 2000; Killian, 1994), and distance regulation patterns (Haworth-Hoeppner, 2000; Holston & Cashwell, 2000; Killian, 1994; Meyer & Russell, 1998; Wechselblatt, Gurnick, & Simon, 2000), have been linked to anorectic and bulimic symptoms.

Shared beliefs. It has been suggested that the role of cultural expectations and ideals in the development of eating disorders may be mediated through the family (Haworth-Hoeppner, 2000). Shared family beliefs may be one factor that determines the effect of societal influences. A focus on appearance and weight in the family-of-origin appears to correlate with eating disordered symptoms (Haworth-Hoeppner, 2000) and may reinforce the cultural focus on thinness and appearance. This value can be stated directly in the form of critical comments regarding the daughter, modeled by the mother's preoccupation with weight and dieting, or expressed indirectly through negative comments about over-weight people (Haworth-Hoeppner, 2000). Regardless of the form, the meaning is clear; the family system confirms cultural values and expects its members to conform. Family members share a belief that weight is a determinant of worth. The family's support of society's expectations of physical appearance may be fundamental to

the obsession with food and weight that characterizes eating disorders (Haworth-Hoeppner, 2000; Killian 1994).

Parenting characteristics. Although research on shared family values seems to lead to convergent views, contradictory parenting practices have been associated with eating disorders. Mothers of women with eating disorders have been described as judgmental and overinvolved or as ineffective and unresponsive (Haworth-Hoeppner, 2000). Fathers have been identified as strict and overprotective or as withdrawn and uncaring (Haworth-Hoeppner, 2000; Killian, 1994; Wechselblatt, Gurnick, & Simon, 2000). Whether over or underinvolved, parents of daughters with eating disorders appear to meet their own needs at the expense of responding to their daughter's needs.

Distance regulation. The dichotomy present in the parenting styles exhibited in families with a member with an eating disorder is also present in their distance regulation. These families have been described as emotionally dependent (Holston & Cashwell, 2000), or alternatively as lacking emotional connection (Bailey, 1991), as highly cohesive (Holston & Cashwell, 2000) or lacking cohesion (Killian, 1994), and as overcontrolled or undercontrolled (Bailey, 1991). The family process of differentiation may provide a paradigm for examining these apparently contradictory findings.

Differentiation

Differentiation is a systemic construct (Anderson & Fleming, 1986; Anderson & Sabatelli, 1990; Bomar & Sabatelli, 1996; Sabatelli & Mazor, 1985) that is defined as the family system's tolerance of both intimacy and individuality (Gavazzi, 1993). In other words, it is the ability of the family as a whole to facilitate emotional bonds while

allowing members to maintain their individual identity within the system. The family differentiation construct is closely related to distance regulation (Day, Gavazzi, & Alcock, 2001).

Distance regulation patterns have been described as the primary indicator of family differentiation (Anderson & Sabatelli, 1990). Sabatelli and Mazor (1985) conceptualize differentiation as being focused on transactional and adaptational processes. It reflects the ability of the family to negotiate levels of both interpersonal closeness and individuality and to react to members' changing needs for independence. The result of this negotiation is reflected in family distance regulation. Well-differentiated families result from distance regulation patterns that promote both individuality and intimacy among family members, while poorly-differentiated families lack tolerance for either individuality or intimacy (Day, Gavazzi, & Alcock, 2001).

Well-differentiated. A well-differentiated family system is characterized by high tolerance for both individuality and intimacy (Gavazzi, 1993). Members have feelings of closeness and belonging while maintaining their individuality and agency. Family relationships are not sacrificed to attain individuality nor are emotional bonds maintained at the expense of individuation (Bomar & Sabatelli, 1996). High levels of family differentiation result in an age appropriate balance of connectedness and separateness (Gavazzi, 1993; Sabatelli & Mazor, 1985) and facilitate family cohesion and adaptability (Sabatelli & Mazor, 1985). The sensitivity of the system to the changing needs of family members may enable the family to adapt readily to variations in both internal and external conditions. According to Anderson and Sabatelli (1990), family differentiation

plays a significant role in the family's ability to adapt to social and environmental changes. The system's tolerance for individuality allows members of well-differentiated families to engage in developmentally appropriate tasks (Kerr, 1984).

Poorly differentiated. In contrast to well-differentiated families, poorly differentiated families are characterized by low tolerance for intimacy and/or individuality (Anderson & Sabatelli, 1990). Low levels of differentiation may prevent appropriate developmental progress of the family or the individuals comprising the family (Gavazzi, 1993). There are two types of poorly differentiated families (Bomar and Sabatelli, 1996). Those low in intimacy and high in individuality are identified as being disengaged, while families with high levels of intimacy and low levels of individuality are described as fused or enmeshed.

Disengaged families display a lack of external boundaries and rigid within-system boundaries. There is no clear separation of the family unit from the outside world. They are characterized by a lack of "emotional support, empathy, integration, and cohesion" (Bomar & Sabatelli, 1996). Family members may lack a sense of connectedness since individuality is attained at the expense of emotional bonds as family patterns of distance regulation discourage intimacy. Family members have an implicit understanding that emotional closeness is not acceptable within the family.

In contrast to disengaged families, enmeshed or fused families are characterized by rigid external boundaries and internal boundaries that are vague and permeable (Bomar & Sabatelli, 1996). In a highly fused family the separation between the family and the outside world is distinct, while between family members, emotional separation is

almost non-existent. A fused system inhibits autonomy and individuality (Anderson & Sabatelli, 1990) and may lead to family members being unable to make decisions independently. Members of fused families are reactive and high levels of unexpressed conflict may exist within the family (Sabatelli & Mazor, 1985). Suppressed conflict may manifest itself in the form of triangles. Triangulation occurs when, in response to interpersonal tension, two family members involve a third person in their relationship in order to avoid dealing directly with their issues (Butler & Harper, 1994; Kerr & Bowen, 1988). This third person may take the role of an ally of one of the individuals (a coalition triangle), a shared enemy (a displacement triangle), or a "common cause" (substitutive triangle). Regardless of the role the third person assumes, the relationship of the family dyad is routed through the third family member (Butler & Harper, 1994). Triangulation enables the dyad involved to maintain a semblance of a relationship, while avoiding addressing underlying issues. Low levels of differentiation promote the development of interpersonal triangles, and higher levels of fusion result in more entrenched triangulation (Bomar & Sabatelli, 1996).

Family distance regulation patterns that may reflect poor differentiation have been correlated with eating disorders. Families of persons with anorexia appear to display enmeshed patterns while families of persons with bulimia exhibit both enmeshed and disengaged patterns. The ability of a family system to successfully negotiate intimacy and individuality may influence the development of eating disorders in its members. A poorly differentiated family may facilitate the occurrence of eating disorders.

Anorexia and Family Differentiation

Strong associations between enmeshed patterns of family differentiation and anorexic symptoms may exist (Killian, 1994; Meyer & Russell, 1998). Repressed conflict, elevated amounts of fusion, and extremely high levels of cohesion characterize families of persons with anorexia (Killian, 1994; Meyer & Russell, 1998). These families exhibit an absence of clear interpersonal boundaries and a lack of autonomy granting (Meyer & Russell, 1998) that reflect poor differentiation. Rather than encouraging age appropriate individuation, parents of persons with anorexia are overprotective and appear unresponsive to their daughter's efforts at identity development (Meyer & Russell, 1998). Within a system such as this, family members may lack a sense of separate identity. It has been suggested that refusal to eat is an attempt by the person with anorexia to distinguish herself from the family system (Wechselblatt, Gurnick, & Simon, 2000) and to gain a sense of personal power and individual identity (Meyer & Russell, 1998).

Typically, parents of persons with anorexia do not express marital conflict openly (Killian, 1994; Meyer & Russell, 1998). Instead, it is manifested primarily through triangulation involving the anorectic daughter (Killian, 1994; Wechselblatt, Gurnick, & Simon, 2000). Substitution triangles often involve the parents relying on the daughter for emotional support and validation, and result in a blurring of intergenerational boundaries (Butler & Harper, 1994; Killian, 1994; Wechselblatt, Gurnick, & Simon, 2000). There appears to be a relationship between the strength of the coalitions within the triangles and the severity of anorexic symptoms (Meyer & Russell, 1998).

Some researchers have suggested that the development of anorexia is a rebellion against lack of autonomy (Haworth-Hoeppner, 2000; Meyer & Russell, 1998), while others have suggested it is the ultimate surrender to family expectations of self-denial and other-orientation (Killian, 1994; Wechselblatt, Gurnick, & Simon, 2000). While the psychological paths differ in these two explanations, both identify a link between enmeshed family systems and anorexia. The high tolerance for intimacy and low tolerance for individuality could result in either of these patterns.

The individual who feels a need to express her uniqueness in a system in which she has little autonomy may chose to resist in a way that will allow her, at least initially, to maintain the close emotional ties she has with her family. Alternatively, the lack of individuation resulting from the emotional closeness and blurring of interpersonal boundaries in an enmeshed system may create a high level of compliance. In response to shared values which encourage both thinness and other-orientation, a family member without an identity separate from the system may engage in food limiting behaviors. Both of these mechanisms, either an assertion of personal control or a surrender to the values of the system, may lead to anorexic behaviors.

Bulimia and Family Differentiation

Research on families of women with bulimia appears to present a paradox. They have been described using characteristics that would suggest both enmeshment and disengagement. Bulimic women have identified their families as detached and lacking in cohesion (Killian, 1994), low in communication and affective expression (Casper & Troiani, 2001), and emotionally unresponsive (Meyer & Russell, 1998). This pattern of

low intimacy and high individuality would seem to reflect a disengaged pattern of differentiation. It has been suggested that eating is a method of self-soothing used in response to a lack of emotional support (Meyer & Russell, 1998). In other words, bingeing is an attempt to fill the emptiness created by a lack of intimacy.

Paradoxically, families of women with bulimia have also been described as fused (Levy & Hadley, 1998), overprotective (Levy & Hadley, 1998), and controlling (Killian, 1994). Like families of a person with anorexia, these families display enmeshed patterns of distance regulation. Bulimia may be a rebellion against the lack of individuation tolerated by the system. As Killian (1994) states, "no one can force a bulimic to stop bingeing and purging …bulimia allows women a degree of power" (p. 314). Like the refusal of a person with anorexia to eat, the cycle of bulimia may be a statement of autonomy.

Family Recreation

The relationship between family recreation and a number of family variables has been explored. Marital stability (Hill, 1988), marital satisfaction (Holman & Jacquart, 1988), family bonding (Orthner & Mancini, 1991), and cohesion (West & Merriam, 1970, Zabriskie & McCormick, 2001) have all been linked with family leisure. An association between emotional closeness among family members and family leisure is a common thread is all these studies.

Several of these studies focused on the marital dyad rather than the entire family. Hill (1988) suggested that shared leisure time may create a history of positive shared experiences that may reinforce marital bonds and increase marital stability. Patterns of

individual and joint leisure may be closely related to marital interaction and impact marital quality (Orthner, 1976).

Studies incorporating children as well as the marital dyad have also suggested positive relationships between family leisure and family bonding and cohesion. Drawing explanations from a number of family theories including exchange, family development, symbolic interaction, and systems frameworks, Orthner and Mancini (1991) have suggested that family recreation may be a primary source of family bonds (West & Merriam, 1970; Zabriskie & McCormick, 2001). According to parents, promoting family togetherness is an important outcome of family recreation (Shaw, 2001).

However, as Olsen (1993) has suggested, too much cohesion may not be positive. This may reflect an enmeshed family which has a low tolerance for individuality in its members. A family that recreates constantly together and in which family members have no individual interests may reflect an unhealthy system.

Unlike intimacy, autonomy development has not been studied in the context of family recreation. A relationship between adolescent identity and individual leisure choices has been demonstrated (Shaw, Caldwell, & Kleiber, 1996; Shaw, Caldwell, & Kleiber, 1995); however, this has not been extended to family leisure choices.

One model which has attempted to explain the relationship between family recreation and family processes is the Core and Balance Model of Family Leisure Functioning (Zabriskie & McCormick, 2001). According to the model, family recreation can be divided in to core and balance activities. Core activities are relatively low-cost, spontaneous, and accessible. They often occur frequently and are shorter in duration.

These familiar interactive activities are hypothesized to facilitate family cohesion. Balance activities are less frequent, but are often of longer duration than core activities. They are generally planned and often require greater investments of money and energy. These recreation activities often contain elements of unfamiliarity or unpredictability which may facilitate adaptability in the family system. Optimal family functioning will be facilitated by a combination of core and balance activities that promote both cohesion and adaptability.

A combination of core and balance family activities may facilitate and reflect family differentiation. Core activities may promote tolerance of intimacy in the family system and a family with a high tolerance for intimacy may in turn choose to engage in a large number of core activities. The proposed link between balance activities and adaptability (Zabriskie & McCormick, 2001) may influence a family's tolerance for individuality. Flexibility generated and practiced in family leisure settings may facilitate the granting of age appropriate autonomy that characterizes well-differentiated families.

Summary

The apparent paradox of families of persons with eating disorders being described as emotionally dependent (Holston & Cashwell, 2000), or alternatively, as lacking emotional connection (Bailey, 1991), as highly cohesive (Holston & Cashwell, 2000) or lacking cohesion (Killian, 1994), and as overcontrolled or undercontrolled (Bailey, 1991) may be resolved through the construct of differentiation. The lack of tolerance for intimacy and/or autonomy found in poorly differentiated families (Day, Gavazzi, & Acock, 2001) accurately describes the contradictory research findings regarding families

of persons with eating disorders. What all these descriptions have in common is an absence of the high levels of both cohesion and autonomy granting found in well differentiated families. The cohesion and adaptability found in well differentiated families (Sabatelli & Mazor, 1985) may be created through an appropriate balance of core and balance family recreation activities (Zabriskie & McCormick, 2001). Therefore, the purpose of this study is to examine the relationships among family differentiation, family recreation and symptoms of eating disorders.

Chapter 3

METHODS

The focus of this study is to investigate the relationships among family differentiation, family recreation involvement, and eating disorder attitudes and behaviors. The organizational steps which will be taken in conducting this study include: sample selection, instrumentation, data collection, and treatment of data.

Sample Selection

The sample used for this study will be Pennsylvania State University students and Brigham Young University Students. Data were already collected from Brigham Young University students as part of a pilot study for this project. The combination of Penn State and BYU students will enable religion and ethnicity to be used as variables.

The general increase in the prevalence of eating disorders has been particularly marked among college women (Holston & Cashwell, 2000; Meyer & Russell, 1998) and has been described as reaching epidemic levels (Thombs, Rosenberg, Mahoney, & Daniel, 1996). College students have demonstrated a higher prevalence rate of eating disorders than other samples (Vohs, Heatherton, & Herrin, 2001) and researchers have suggested that because of the stress associated with the transition to college, this may a preferred sample (Cooley & Toray, 2001).

Subjects will be recruited from undergraduate classes with the instructor's support. All participants will be informed that their participation is voluntary and they may stop participating at any point in the questionnaire. Subject anonymity will be

maintained because their names will not appear on the questionnaire. The target sample size to be obtained from the Pennsylvania State University will be 200.

Instrumentation

Four instruments will be used in this study: the Eating Attitudes Test (EAT;Garner, Olmsted, Bohr, & Garfinkel, 1982), the Family Intrusiveness Scale (FIS; Gavazzi & Sabatelli, 1990), the Perceived Social Support from Family Scale (PSS-Fa; Procidano & Heller, 1983), and the Family Leisure Activity Profile (FLAP; Zabriskie & McCormick, 2001). In addition, each participant will complete a demographic questionnaire.

Symptoms of eating disorders. The Eating Attitudes Test (EAT; Garner, Olmsted, Bohr, & Garfinkel, 1982) will be used to evaluate symptoms of eating disorders. The EAT contains 40 items measured on a six point Lickert scale. Items 1, 18, 19, 23, and 39 are scored 6=3, 5=2, 4=1 and 3, 2 and 1=0. When marked 'never' (6) these items indicate anorexia. The remaining items are scored 1=3, 2=2, 3=1, and 4, 5, and 6=0. When scored always (1) these items indicate anorexia. Item values are summed to determine a total score which can range from 0 to 120. This instrument has an established ability to differentiate between persons diagnosed with eating disorders and those without eating disorders. A mean of 15.6 (SD=9.3) has been reported for a normative sample of non-eating disordered individuals (Fischer & Corcoran, 1994). Scores above 30 indicate serious eating-disorder concerns. This measure has demonstrated adequate reliability and validity. An alpha coefficient of .94, indicating good internal consistency, has been reported for the EAT (Fischer & Corcoran, 1994).

System tolerance for individuality. The Family Intrusiveness Scale (FIS; Gavazzi & Sabatelli, 1990) will be used to evaluate the family's tolerance for individuality. The FIS is a 13 item scale that measures the participant's perception of parental intrusiveness (Gavazzi, 1993). Participants respond using a Lickert scale from 1 (strongly disagree) to 7 (strongly agree). Total scores are the sum of the item scores and range from 13 to 91. A high score on the FIS will be used to indicate a low tolerance for individuality. This will be achieved by reverse scoring the measure. This instrument has been used in previous research to measure tolerance for individuality (Gavazzi, 1993). An alpha level of .90, indicating acceptable internal consistency, has been reported for the FIS (Gavazzi, 1993). Evidence for construct validity has been reported in a number of studies using the FIS (Gavazzi, 1993; Gavazzi, Reese, & Sabatelli, 1998).

System tolerance for intimacy. The Perceived Social Support from Family Scale (PSS-Fa; Procidano & Heller, 1983) will be used to measure the family's tolerance for intimacy. The PSS-Fa is a 20 item scale. Respondents are asked to indicate, by selecting 'yes', 'no', or 'don't know', how well each item describes their family. 'Don't know' responses are scored 0. 'No' responses to items 3, 4, 16, 19, and 20 are scored 1. 'Yes' responses to all other items are scored 1. Item scores are totaled to create scale scores that range from 0 to 20 (Fischer & Corcoran, 1994). This scale has been used in previous research to measure this construct in a differentiation context (Gavazzi, 1993). The PSS-FA demonstrates adequate internal consistency, with reported alpha coefficients of .90 (Procidano & Heller, 1983). A normative mean of 15.5 (SD= 5.08) has been reported for college students (Fischer & Corcoran, 1994).

Differentiation. A total differentiation score (TDS) will be calculated for each participant by multiplying a reverse scored FIS score with the PSS-FA score. This method has been used previously to measure differentiation (Gavazzi, 1993).

Family recreation patterns. The Family Leisure Activity Profile (FLAP; Zabriskie & McCormick, 2001) will be used to assess family recreation involvement. Respondents are asked to identify whether or not they engage in 16 activity categories with family members. They are also asked to indicate the frequency and duration of their participation and their level of satisfaction with the amount of participation. This instrument contains two eight item subscales; a core family leisure index (cFLAP) and a balance family leisure index (bFLAP). Each activity is scored by multiplying frequency and duration of participation. The eight activity scores in each subscale are then summed to create a core family leisure index and a balance family leisure index. A total family leisure index is determined by summing the two indices (Zabriskie, 2000). These subscales have yielded test-retest reliability estimates of .74 and .78 ($p \leq .001$) respectively (Zabriskie, 2001). Content validity of this instrument was supported by a panel of experts (Zabriskie, 2001).

Means of 42.95 (SD=13.22) for the core family leisure index and 60.15 (SD=24.80) for the balance family leisure index have been reported (Zabriskie, 2000). Previous data from college populations has reported a mean of 58.8 (SD= 29.1) for the balance activity index (Zabriskie & McCormick, 2001). Because two additional items were included in the core subscale for the study involving college students, the means for the core subscale and total FLAP scores are not useful for this study. Total Family

Leisure Activity Profile (FLAP) scores have yielded a mean of 102.52 (SD=33.37) in previous research using a non-college sample.

Data Collection Procedures

Data for the comparison group will come from questionnaires already collected as part of a previous study. Packets containing the Eating Attitudes Test, the Family Intrusiveness Scale, the Perceived Social Support from Family Scale, the Family Leisure Activity Profile, a Demographic Information sheet, and a letter of consent were distributed in Pedagogy, Nursing, Religion and Marriage, Family, and Human Development classes at Brigham Young University with permission from the instructor. Some instructors allowed students to complete the questionnaires in class, while other instructors asked the students to complete them outside of class time. Some instructors chose to give class credit for completion of the questionnaire. Both males and females in the classes completed the questionnaires.

Data for the Penn State group will be collected in the same manner as the BYU group. Because a consent form would be the only item linking participants with their questionnaires, an application will be made to the Institutional Review Board to have the consent form requirement waived and replaced with a letter of consent which states that the return of the questionnaire indicates consent to participate in the research project.

Treatment of Data

Data will be analyzed using the statistical software package SAS.

Hypotheses one, two, three, and four. A correlation matrix of gender, EAT scores, FIS scores, PSS-Fa scores, FLAP scores, cFLAP scores, and bFLAP scores will be examined to determine if significant ($p<.05$) bivariate correlations exist.

Hypothesis five. Analysis of covariance ($p<.05$) will be used to test the hypothesis that parental income, parental marital status, religion, ethnicity, and family leisure involvement are significant predictors of differentiation. Covariates (continuous variables) will include differentiation, cFLAP, and bFLAP scores. Categorical variables will be gender, parent's income, religion, ethnicity, and parent's marital status. Two other models will also be run with PSS-Fa scores and FIS scores replacing differentiation scores as the dependent variable. To examine possible gender differences, the models will be run again using male and female data separately.

Hypothesis six. Analysis of covariance ($p<.05$) will be used to test the hypothesis that parental income, parental marital status, religion, ethnicity, family leisure involvement, and total family differentiation are significant predictors of eating disorder behaviors and attitudes. Covariates (continuous variables) will include EAT, differentiation, cFLAP, and bFLAP scores. Categorical variables will be gender, parent's income, religion, ethnicity, and parent's marital status. To examine possible gender differences, the models will be run again using male and female data separately.

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