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# Bullying and victimization in middle school: The role of individual characteristics, family functioning, and school contexts

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Bullying and Victimization in Middle School: The Role of Individual Characteristics,  
Family Functioning, and School Contexts

by

Christine Marie Wienke Totura

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
Department of Psychology  
College of Arts and Sciences  
University of South Florida

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## Table of Contents

List of Tables	iii
List of Figures	iv
Abstract	v
Chapter One Introduction	1
Prevalence of Bullying and Victimization	1
Categorizing Children and Correlates of Bullying and Victimization	2
Bullies	2
Victims	4
Bully/Victims	5
Age and Gender Differences	6
Summary	7
Hypothesis 1	8
Hypothesis 2	8
Hypothesis 3	9
Hypothesis 4	9
Hypothesis 5	9
Chapter Two Method	10
Participants	10
Measures	10
Child Report Surveys	10
Teacher Report Surveys	12
Records Data	13
Procedure	13
Data Reduction	14
Chapter Three Results and Discussion	15
Results	15
Individual Domain Variables	16
Anxiety, Depression, Anger, and	

Behavioral Misconduct	16
Family Domain Variables	16
Family Cohesion and Adaptability	16
School Domain Variables	17
School Adjustment	17
School Environment	17
Achievement	18
Teacher Report Domain Variables	18
Acting-Out, Moodiness, and Learning	18
Discriminant Function Analysis	19
Discussion	27
References	34
Appendices	47
Appendix A: Definitions of Bullying Behaviors	48
Appendix B: Assessment of Bullying Behaviors	51
Appendix C: Hypothesis 1	54
Appendix D: Hypothesis 2	55
Appendix E: Hypothesis 3	56
Appendix F: Hypothesis 4	57
Appendix G: Olweus Bully/Victim Questionnaire-Revised	58
Appendix H: Center for Epidemiological Studies-Depression Scale (CES-D)	67
Appendix I: State-Trait Anxiety Inventory for Children (STAIC)	69
Appendix J: State-Trait Anger Expression Inventory for Children and Adolescents (STAXI-C/A)	70
Appendix K: School Adjustment Survey (SAS)	72
Appendix L: Middle School/High School Student Survey (MS/HS Student Survey)	75
Appendix M: Adult Supervision at School (ASAS)	77
Appendix N: Family Adaptability and Cohesion Evaluation Scales (FACES-II)	78
Appendix O: Acting-Out, Moodiness, and Learning Scale-Revised (AML-R)	81
Appendix P: Florida Comprehensive Achievement Tests (FCAT)	83
Appendix Q: Multivariate and Follow-Up Univariate Analysis Tables	84
Appendix R: Discriminant Function Analysis Matrices	111
Appendix S: Multivariate, Univariate, and Post Hoc Study Findings by Domain and Hypotheses	123
Appendix T: Number (and Percentage) of Categorized Students per School	124

## List of Tables

Table 1: Group Frequencies (and Percentages) by Grade and Gender	42
Table 2: Intercorrelations between Scales for Total Sample	43
Table 3: Group Means (and Standard Deviations) for Survey Data with MANOVA, ANOVA, and Group Post Hoc Findings	44
Table 4: Means (and Standard Deviations) by Gender and Grade for Significant Interactions	45
Table 5: Means (and Standard Deviations) by Grade for Significant Interactions	46

## List of Figures

Figure 1: Group Centroids by Function for Total Sample	20
Figure 2: Group Centroids by Function for Males	21
Figure 3: Group Centroids by Function for Females	22
Figure 4: Group Centroids by Function for 6 <sup>th</sup> Graders	23
Figure 5: Group Centroids by Function for 7 <sup>th</sup> Graders	24
Figure 6: Group Centroids by Function for 8 <sup>th</sup> Graders	25

# Bullying and Victimization in Middle School: The Role of Individual Characteristics, Family Functioning, and School Contexts

Christine Marie Wienke Totura

## ABSTRACT

The present study examined the relationship between individual, family, and school variables and both bullying and victimization. Approximately equal numbers of males and females (N = 1185 and 1174, respectively) were randomly selected from classrooms in 11 middle schools across 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades. Students completed questionnaires including items from each domain. Questionnaires assessed bullying and victimization, internalizing and externalizing behaviors, family factors, and school variables. In addition, teachers of the selected classrooms completed a brief rating scale on each of the students, which assessed student moodiness, behavioral difficulties, and learning problems. Achievement and discipline records data were obtained. Based on their responses to critical items, participants were categorized into Bully, Victim, Bully/Victim, and comparison Control groups. Multivariate analyses, with follow-up univariate and discriminant function analyses, tested the association of variables within the individual, family, teacher report, and school domains with bullying group membership. Analyses were examined by grade and gender effects as well. Results indicated that variables within each of the domains significantly contributed to differences between bullying groups, by grade and gender. Specifically, bullies and bully/victims appeared to have the poorest reported adjustment in terms of behavioral difficulties, family functioning, and school variables, while both victims and bully/victims experienced greater internalizing difficulties. Bullies and bully/victims



tended to have the poorest outcomes; however, victims reported poorer peer relationships and perceptions of school. Overall, depression, anxiety, and the expression of anger accounted for the majority of group differences. School variables, particularly peer relationships, a sense of school spirit, and perceptions of climate and adult availability at school, played a secondary role in explaining differences among groups. These findings varied by gender and grade. Illustratively, bullying intervention programs could, in part, focus on those characteristics that are more strongly related to certain groups of students (i.e., anger expression for females and school conditions for younger students).

## Chapter One

### Introduction

#### *Prevalence of Bullying and Victimization*

Bullying behaviors and their contexts have been assessed in several countries demonstrating that exposure to and involvement in bullying behaviors are significant risk factors to healthy psychological and physical development (Haynie, Nansel, Eitel, Crump, Saylor, Yu, & Simons-Morton, 2001; Olweus, 1997; Roland, 2000). Multiple variables influence the frequency of bullying behaviors, and the likelihood of a student becoming a bully and/or victim of bullying (Haynie et al., 2001; Nansel, Overpeck, Pilla, Ruan, Simons-Morton, and Schiedt, 2001). Studies have identified variables in three general domains-- individual, family relationships, and school-- which contribute to students' involvement in and experience of bullying behavior. Research, however, has generally focused on a few variables from each domain, and most examine variables in a single domain (Haynie et al., 2001; Kumpulainen et al., 1998; Nansel et al., 2001; Rigby, 1993).

Estimates of bullying problems, either experienced as the perpetrator or the victim, vary across nations and studies. Percentages range from 15% in Norway (Olweus, 1997) to 18%-20% in England (Boulton & Underwood, 1992) to 25% in Australia (Slee, 1994). Within the United States, studies report differing frequencies of victimization, with 15% to 20% of students in the U.S. reporting being bullied (Batsche & Knoff, 1994). More current estimates of bullying frequency report higher levels than those in past studies, suggesting that bullying and victimization are on the rise in certain populations. A recent study, using somewhat different criteria, found much different

proportions of middle school population involvement in bullying situations. Seven percent of students were categorized as bullies, bullied others three or more times in the past year, while 31% of 6<sup>th</sup> through 8<sup>th</sup> grade students were considered victims, bullied three or more times in the past year (Haynie et al., 2001). Nansel and associates (2001) found that 30% of 6<sup>th</sup> through 10<sup>th</sup> grade students were involved in moderate to frequent bullying. Of those students, 13% were classified as bullies, 11% were classified as victims, and 6% were classified as both bullies and victims.

#### *Categorizing Children and Correlates of Bullying and Victimization*

When assessing bullying behaviors, students were traditionally classified into three major groups: bully, victim, and uninvolved. More recent literature suggests the inclusion of an additional category, bully/victims, who are both perpetrators and victims of bullying (Haynie et al., 2001; Nansel et al., 2001).

#### *Bullies*

At the individual level, bullies tend to have more impaired psychosocial functioning (with regard to problem behavior, attitudes toward deviancy, and competency) compared with victims and students uninvolved in bullying behavior (Haynie et al., 2001). They exhibit more hostile intentions and little anxiety in general (Olweus, 1995). A common misconception is that bullies are inadequate or anxious, and that their behavior is an attempt to compensate for these feelings. In fact, bullies do not have above average levels of anxiety regarding their bullying behavior, and moreover, view their interactions with peers as reasonable and not “wrong” in some sense (Boulton & Underwood, 1992).

Also, bullies tend to have higher levels of depressive symptoms than students not involved in bullying, and lower levels than victims (Haynie et al., 2001; Nansel et al., 2001, Slee, 1995). Similarly, bullies report more externalizing behaviors and victims report more internalizing difficulties (Kumpulainen et al., 1998). In fact, greater feelings of anger were found to be a powerful predictor of high levels of bullying (Bosworth, Espelage, & Simon, 1999). In addition, bullies and their friends engage in more deviant and problem behaviors and have greater acceptance for misconduct than victims and

students uninvolved in bullying (Haynie et al., 2001, Nansel et al., 2001). Perhaps surprisingly, bullies often have a greater ability to make friends than students who are victimized (Nansel et al., 2001). While in earlier grades bullies tend to be somewhat popular amongst their classmates, as they progress through school bullies become less popular (Olweus, 1997).

Many bullies demonstrate social cognitive information processing deficits, such that they believe the actions of potential victims are hostile in nature (Dodge & Crick, 1990). In addition, many may exhibit an information processing deficit in which they are not as likely to identify prosocial alternatives to what are perceived as threatening situations. Bullies are generally more easily angered than other students and are more likely to use force in response to their anger (Bosworth, et al., 1999; Edmonson, 1988).

Researchers have found that students who bully others at school are more likely to have difficult family environments (Rigby, 1993). Bullies usually come from families where parents prefer physical and harsh discipline, are more authoritarian, are less warm and involved, are inconsistent in their parenting practices, and advocate aggressive behaviors from their children. Bullies' families tend to be less cohesive and characterized by disengagement and conflict. Supervision of child activity is minimal and parents typically lack empathy and problem-solving skills (Batsche & Knoff, 1994; Bowers, Smith, & Binney, 1992; Carney, 2000; Hazler, 1996; Oliver, Oaks, & Hoover, 1994; Olweus, 1978; Olweus, 1991a, 1991b). It is suspected that these students learn poor coping and socialization skills from their home environment, and use them in social settings (Carney & Merrell, 2001). Parents do not present as good role models for learning how to get along with others and solve problems (Hazler, 1996). Parental maltreatment places children at-risk for both bullying and victimization (Shields & Cicchetti, 2001).

In school, bullies are less likely to be bonded and engaged in education and the school environment than victims and students uninvolved in bullying. Bullies tend to dislike school, are less popular with peers and teachers than those uninvolved in bullying, and have higher levels of behavioral misconduct (Rigby & Slee, 1991; Slee & Rigby,

1993). Academically, students recognized as bullies are usually disengaged with schoolwork, even though they present with average intellectual abilities (Lagerspetz, 1982). Engagement in bullying behaviors is further associated with poorer academic outcomes for students (Nansel et al., 2001). Bullies generally have poorer perceptions of their school climate (Nansel et al., 2001). Bullies are more likely to take part in delinquent behaviors both in and outside school, such as vandalism, truancy, substance use, and stealing (Olweus, Limber, & Mihalic, 1999).

### *Victims*

Victims usually have exploitable individual characteristics (Carney & Merrell, 2001). Physically, these students tend to be younger, smaller, and weaker than their counterparts. Psychologically, they are more anxious, depressed, withdrawn, and have lower self-esteem (Craig, 1998; Haynie et al., 2001; Olweus, 1995; Rigby & Slee, 1991). Male victims are generally exploitable due to their physical stature, while female victims are typically exploited by peers due to their style of dress and attractiveness (Hoover, Oliver, & Hazler, 1992). Student victims tend to have more interpersonal difficulties and poorer social skills than other students (Besag, 1989; Haynie et al., 2001). Victims are less popular in school than other students, including bullies (Smith, 1991). Compared to students uninvolved in bullying, victims bond and adjust more poorly to school and classmates, although more positively than bullies (Haynie et al., 2001). Students who are victims often are isolated, shy, and uninvolved or uninterested in others (Besag, 1989; Hazler, 1996). Victims also report more behavioral misconduct of themselves and acceptance of misconduct than students uninvolved in bullying, although not to the degree as bullies (Haynie et al., 2001).

Victims may experience inconsistent parenting, abuse, and overprotectiveness of family members (Oliver, Oaks, & Hoover, 1994; Stephenson & Smith, 1989). However, some victims could also have parents who are more involved and supportive than other students, but their parents are not as appropriately involved and supportive as the parents of students uninvolved in bullying situations (Haynie et al., 2001). In particular, an association has been found between male victimization and maternal overprotectiveness

(Olweus, 1991a). This pattern of familial support could prevent children from building adaptive interpersonal skills and becoming independent individuals, consequently increasing the potential for victimization by others (Baldry & Farrington, 1998).

### *Bully/Victims*

Recent studies have found that the bully/victim represents a distinct group of children, although typically much smaller in size and frequency (Haynie et al., 2001; Nansel et al., 2001). Bully/victims are students who frequently engage in bullying behaviors as well as regularly experience victimization and were found to have greater behavioral misconduct, poorer social and emotional functioning, and less parental support than bullies, victims, and uninvolved students (Haynie et al., 2001; Nansel et al., 2001; Solberg & Olweus, 2002).

Bully/victims have lower scholastic competency, behavioral conduct, social acceptance, and self-worth than bullies, victims, and students uninvolved in bullying. Academically, bully/victims also have the poorest functioning (Nansel et al., 2001). Bully/victims have poor adjustment and bonding with school, teachers, and classmates (Austin & Joseph, 1996; Haynie et al., 2001; Nansel et al., 2001). Similar to bullies, bully/victims were found to demonstrate greater levels of aggression, both verbally and physically, compared with noninvolved children and victims (Craig, 1998). However, bully/victims are involved in more problem behaviors and misconduct, such as cigarette and alcohol use and cutting classes, and have more deviant peer influences and acceptance of involvement in deviant behaviors than bullies, victims, and uninvolved students (Haynie et al., 2001). They also report increased levels of depressive symptoms and loneliness and tend to feel more saddened and moody than other students (Austin & Joseph, 1996; Nansel et al., 2001).

Bully/victims experience the least parental support and involvement in their daily lives and increased difficulties with their parents (Bowers, Smith, & Binney, 1994; Haynie et al., 2001). In fact, bully/victims report higher frequency of overprotective as well as neglectful parents who display lower warmth, involvement, and supervision than other students' parents (Smith & Myron-Wilson, 1998). Other researchers have found

that bully/victims receive more parental involvement in school issues, although the nature of the involvement is unclear, whether due to positive or negative events (Nansel et al., 2001). The parental involvement experienced by these students may be in response to their negative behaviors at school. Overall, bully/victims are believed to have the poorest reported family functioning compared with their peers (Rigby, 1993).

Overall, much less is known about the psychosocial, school, and familial factors related to bully/victims compared with the magnitude, diversity, and importance of correlates found for bullies and victims. Children who are identified as both bullies and victimized may seemingly be the most at-risk group for future maladjustment, especially considering their increased likelihood to befriend others who engage in deviant behaviors (Haynie et al., 2001).

#### *Age and Gender Differences*

Bullying occurs at all age levels, but peaks in late childhood to middle adolescence, ages 9-15, and begins to decrease after these peak periods (Hazler, 1996). Usually, younger students are victimized by older students (Carney & Merrell, 2001; Pellegrini & Long, 2002). Bullying and victimization are more prevalent among boys (Haynie et al., 2001).

Bullying behavior varies across gender as well as by age and grade. Baldry & Farrington (1998) found that victims were primarily girls, bullies were primarily boys, and bully/victims and uninvolved students were evenly distributed between boys and girls. Haynie et al. (2001) suggest that boys and girls may engage in and experience different types of bullying behavior. Girls tend to organize their bullying in a more social manner, around rumor spreading and manipulation of friendships, while boys exhibit more physically aggressive activities (verbal abuse, physical attacks, and threats). The only form of bullying that is more prevalent among girls is that of social intimidation (Batsche & Knoff, 1994; Carney & Merrell, 2001). Additionally, female victims are more concerned with being ignored at school and negatively evaluated by peers than male victims (Slee, 1995). In general though, less is known about the characteristics of female bullies (Baldry & Farrington, 2000).

Several studies examined the correlation between bullying and victimization and other adjustment variables, both by gender and age. Mood, family environment, and social interactions were found to differ by gender and grade for students in various bullying groups. Middle school males showed a greater positive relationship between loneliness and bullying (Nansel et al., 2001). High school girls did not demonstrate a relationship between being bullied and inability to make friendships; however, students in other grades did demonstrate this relationship (Nansel et al., 2001). For both middle and high school boys, parental involvement was related to victimization and concurrent bullying/victimization, but not for females. More specifically, lower levels of parental involvement were related to being a bully for high school males (Nansel et al., 2001). A greater correlation between poor family functioning and the experience of victimization existed for female than for male experience of victimization (Rigby, 1993). In families with low warmth and support, boys are likely to become bullies and girls are likely to become bullies or victims (Rigby, 1996). Bullies and bully/victims, who were mostly boys, differed from non-bullies in being less pro-social, having more authoritarian and punitive parents, and having parents who were less supportive and more disagreeable with each other (Baldry & Farrington, 1998). Pure bullies differed from non-bullies by being male and less prosocial in their actions. Victims and bully/victims differed from non-victims in being younger (in first year of middle school), having low self-esteem, and having authoritarian parents. Pure victims compared to non-victims were more likely to be female and have low self-esteem and authoritarian parents (Baldry & Farrington, 1998). Bully/victims compared to uninvolved students were more likely to be in the first year of middle school, to be less pro-social, and to have low self-esteem and parents who are authoritarian, punitive, and unsupportive (Baldry & Farrington, 1998). Some risk-taking behaviors are also associated with bullying involvement, depending on grade. Smoking is related to being bully or bully/victim for middle school students, while alcohol use is related to being a high school bully/victim (Nansel et al., 2001).

#### *Summary*

This study examined behavioral, academic, and psychosocial variables in the



individual, family, and school domains and determined variables or combinations of variables most relevant to bullying and victimization (see Appendices A and B for more information). Within the individual domain, variables were examined that measured specific child internalizing and externalizing difficulties. Variables related to family support, bonding, and cohesion were assessed within the family domain. Of particular importance was the addition of the school environment variables, many of which have not been assessed in combination with individual and family variables to determine their contribution to bullying and victimization. Within the school domain, variables were also examined that were directly related to academic achievement and the quality of the learning environment. Finally, teacher ratings were obtained as an additional measure of child internalizing, externalizing, and learning difficulties (Gellespie & Durlak, 1995). For the present study, student reports may be more useful in assessing emotionality and psychosocial dysfunction, while teacher report is a valid measure of externalizing problems. A unique aspect of the present study is the inclusion of differential sources of data that assess several dimensions, a method which past studies have suggested is ideal (Holmbeck, Westhoven, Shapera Phillips, Bowers, Gruse, Nikolopoulos, Wienke Totura, & Davison, 2003; Pellegrini & Long, 2002). Additionally, the present study built on past research by identifying those variables which discriminate bullies and victims from bully/victims (Haynie et al., 2001; Nansel et al., 2001).

#### *Hypothesis 1*

A main effect for bullying groups (Bully, Victim, Bully/Victim, and uninvolved students/comparison Control) was expected on domain combinations of the dependent variables (Individual, Family, School, and Teacher Report) and on separate dependent variables in each domain (see Appendix C).

#### *Hypothesis 2*

An interaction between gender and bullying group membership was hypothesized for domain combinations of dependent variables and for separate dependent variables within each domain (see Appendix D).

### *Hypothesis 3*

An interaction between grade and bullying group was expected on domain combinations of the dependent variables and on separate dependent variables in each domain. Research has often examined differences across middle school and high school on few of the dependent variables presented in the current study; therefore, the nature of grade effects on several individual, family, and school variables as a function of bullying group membership was unclear for students in 6<sup>th</sup> through 8<sup>th</sup> grade. Some effects could be hypothesized, although analyses were generally exploratory for most of the individual, family, school, and teacher report variables (see Appendix E).

### *Hypothesis 4*

A three-way interaction was expected among bullying group, gender, and grade on domain combinations of the dependent variables and on separate dependent variables in each domain. As an expansion of Hypotheses 2 and 3, the nature of the three-way interaction for specific dependent variables was uncertain and explored in the current study (see Appendix F).

### *Hypothesis 5*

A distinct linear combination of the dependent variables (Individual, Family, School, and Teacher Report ratings) was expected to describe differences among bullying groups. It was expected that the linear combination of dependent variables may differ by gender and grade.

## Chapter Two

### Method

#### *Participants*

Each of the eleven middle schools in a large school district (approximately 55,000 students), which included urban, suburban, and rural areas, was recruited for participation. The total number of participants (N = 2509) was divided into bullying group, gender, and grade subgroups. Participants were deleted from analyses if they had missing grade and/or gender data. The resulting number of participants (N = 2359) included 6<sup>th</sup> (N = 760, 32.2%), 7<sup>th</sup> (N = 899, 38.1%), and 8<sup>th</sup> (N = 701, 29.7%) grade students and their teachers. There were approximately equal numbers of males and females (N = 1174, 1185). Within each school, four classes per grade, with approximately 30 students each, were randomly selected to complete student and teacher surveys. Teachers provided completed behavior surveys on a subgroup of 1474 students. The majority of the sample was White/Caucasian (N = 1751, 74.3%), while 11.1% was Latino/Latina/Hispanic (N = 261), 3.9% Black/African-American (N = 93), 2.0% Asian/Indian (N = 48), and 8.6% as other (N = 203).

#### *Measures*

##### *Child Report Surveys*

The *Revised Olweus Bully/Victim Questionnaire* (Olweus, 1996) is a 39-item scale covering aspects of bully/victim problems (see Appendix G). Following convention, two items were used from the questionnaire to determine bullying group membership (i.e., “How often have you been bullied at school in the past couple of months,” and “How often have you taken part in bullying other students at school in the

past couple of months”). Bullies indicated that they have taken part in bullying “2 to 3 times a month” or more, without indicating having been bullied. Victims indicated that they have been bullied at school “2 or 3 times a month” or more, without indicating having bullied others. Bully/victims indicated that they have taken part in bullying others “2 to 3 times a month” or more and that they have been bullied “2 to 3 times a month” or more. Comparison control, or uninvolved, students are those students who responded that they have been bullied/bullied others “only once or twice” or less. Cronbach’s alpha for the victimization items scale from this sample is .87, while alpha for the bullying items scale is .71.

The *Center for Epidemiological Studies-Depression Scale* (Radloff, 1977) is a 20-item scale (Cronbach’s alpha = .86) used to measure self-reported depressive symptomatology (see Appendix H).

The *State/Trait Anxiety Inventory for Children (STAIC)* (Spielberger, 1973) is a 40-item questionnaire that assesses self-reported anxiety (see Appendix I). Two 20-item scales comprise the questionnaire: State, related to current estimated levels of anxiety, and Trait, related to consistent and cross-situational levels of anxiety. Only the Trait Anxiety subscale was used in order to remain consistent with past literature’s assessment of child mood in relation to behavior (Cronbach’s alpha = .93).

The *State/Trait Anger Expression Inventory for Children and Adolescents (STAXI-C/A)* (Spielberger, Jacobs, Brunner, & Lunsford, 2002) is a 53-item survey that assesses self-reported anger (see Appendix J). The STAXI-C/A was developed based on the adult version of the Revised State/Trait Anger Expression Inventory (STAXI-2), which contains six major scales: State Anger, Trait Anger, Anger Out, Anger In, Anger Control/Out, and Anger-Control/In (Spielberger, 1998). For this study, the Trait Anger (Cronbach’s alpha = .86) and Anger Expression (Cronbach’s alpha = .77) scales were used.

The *School Adjustment Survey (SAS)* (Santa Lucia & Gesten, 2000) is a 34-item scale assessing self-reported student bonding and adjustment to school, classmates, and teachers (see Appendix K). The scale consists of five scales: School Spirit (Cronbach’s

alpha = .85), Goal-Orientation (Cronbach's alpha = .79), Child-Peer Relations (Cronbach's alpha = .63), Child-Teacher Relations (Cronbach's alpha = .84), and Alienation (Cronbach's alpha = .63).

The *Middle School/High School Student Survey* (Safe Community-Safe School Project, 2002) is a 131-item questionnaire that measures various components of parental influences, peer relationships, exposure to school violence, teacher relations, beliefs about aggression and substance use, risk taking behaviors, and school bonding (see Appendix L). The 22 items used for the present study were grouped into scales assessing Diversity, Condition of Campus, Knowledge of Fairness and Discipline Policies, Presence of Gangs, Witnessing Fighting at School, Staff Response to Bullying, and Witnessing Other Problem Behaviors. Some of the above scales were further aggregated into the factors used: School Climate (Diversity, Presence of Gangs, Witnessing Fighting, and Witnessing Other Problem Behaviors; Cronbach's alpha = .53) and Adult Intervention (Knowledge of Fairness and Discipline Policies and Staff Response to Bullying; Cronbach's alpha = .64). Condition of Campus remained its own factor (Cronbach's alpha = .56).

The *Adult Supervision in School* scale (see Appendix M) is comprised of six items (Cronbach's alpha = .49) developed for this study, and added to assess adult supervision within schools (e.g., "in my school teachers are in the hall when we change classes,").

The *Family Adaptability and Cohesion Evaluation Scales (FACES-II)* (Olson, Russell, & Sprenkle, 1983) is a 30-item measure assessing familial bonding, support, involvement, and environment (see Appendix N). Two scales comprise the FACES-II: Adaptability, a family's adaptive capacity and flexibility during times of stress, and Cohesion, the degree of emotional bonding and individuality within a family unit. This study's Cronbach's alpha for the Cohesion scale was .80, while alpha for the Adaptability scale was .83.

#### *Teacher Report Surveys*

The *AML Behavior Rating Scale – Revised (AML-R)* is a 12-item survey, revised from the original 11-item scale (Cowen et al., 1973) used to assess elementary school

student maladjustment (see Appendix O). Three scales comprise the AML-R: Acting-out (A), Moodiness (M), and Learning (L). Cronbach's alpha for the scales are as follows: .91 for Acting-Out, .87 for Moodiness, and .93 for Learning.

#### *Records Data*

The standardized *Florida Comprehensive Achievement Tests (FCAT)* were included in the present study as a measure of academic achievement in reading, writing, and mathematics (see Appendix P). Internal reliabilities for the total test battery range from .86 to .91 for grades 4 through 10 (Florida Department of Education, 2000). The Developmental Scale Scores for reading comprehension and math problem solving tests were used as an assessment of academic achievement that could be compared across school years. The range of FCAT Developmental Scale Scores is 86-3008.

Total number of *Discipline Referrals* was obtained for each participant as a measure of student behavioral misconduct. Referrals are an indicator of misbehavior in schools by means of a disciplinary report for individual students sent to school administration and aggregated by the district.

#### *Procedure*

This study was developed in collaboration with the school district as part of a broader assessment of school environment. Students were administered survey packets by teachers with the help of school psychologists, guidance counselors, and study research assistants in a group format within randomly selected classes during the second half of the school year. The following definition of bullying was read to guide responses: “We define or explain the word bullying. We say a student is being bullied when another student, or several other students

- Say mean and hurtful things or make fun of him or her or call him or her mean and hurtful names
- Completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose
- Hit, kick, push, shove around, or lock him or her inside a room

- Tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her
- And other hurtful things like that.

When we talk about bullying, these things happen repeatedly, and it is difficult for the student being bullied to defend himself or herself. We also call it bullying, when a student is teased repeatedly in a mean and hurtful way.

But we don't call it bullying when the teasing is done in a friendly and playful way. Also, it is not bullying when two students of about equal strength or power argue or fight (Olweus, 1991, pg. 7).”

This definition was also included in written format in the student survey packets.

Student and teacher surveys were coded to maintain child confidentiality. Since this survey was part of a district mandated needs assessment, consent procedures were determined by the school administration consistent with district policy. A letter was sent to their parent or guardian informing them that their child will be involved in a survey to improve school climate. Those who chose to decline participation in the study were asked to contact the school.

#### *Data Reduction*

Prior to conducting any analyses, the data was verified and cleaned. Impossible scores outside of scale ranges were corrected. Participants with missing data were eliminated from analyses on a case-wise basis. Participants were classified into groups: Bullies (N = 164, 6.7%), Victims (N = 295, 12.0%), Bully/Victims (N = 44, 1.8%), Controls (N = 2006, 81.4%). Table 1 presents frequencies for group membership by grade and gender. Older students and males were more likely categorized as bullies, younger males as victims, and roughly equal numbers of males and females across grades as bully/victims. Middle school of attendance was entered into preliminary multivariate analyses of variance (MANOVAs) to test the data's adherence to the assumption of independence of observations and assess dependence of student responses on school of attendance. Each follow-up univariate design was nested within school.

## Chapter Three

### Results and Discussion

#### *Results*

Pearson Product-Moment correlation analyses were conducted between dependent variables in order to assess the degree of association among the individual, family, school environment, school adjustment, achievement, and teacher report variables. Several associations among variables were noted (see Table 2). Generally, each domain was significantly related to each other. More specifically, individual mood and externalizing factors were highly correlated with all measured aspects of students' lives, family functioning, perceptions of school, and teacher perceptions of student adjustment. Achievement data had fewer associations with the other domain variables.

Factorial Multivariate Analyses of Variance (MANOVA) were used to test for differences among the Bully, Victim, Bully/Victim and comparison Control groups by gender and grade on subsets of the dependent variables. This included by domain: Individual (Depression, Anxiety, Anger, and Discipline Referrals), Family (Cohesion and Adaptability), School Environment (School Climate, Condition of Campus, Adult Intervention, and Adult Supervision in School), adjustment toward school (Goal-Orientation, School Spirit, Child-Peer Relations, Child-Teacher Relations, and Alienation), Achievement (FCAT standardized test scores), and Teacher Report (Acting-Out, Moodiness, and Learning difficulties). In order to correct for heterogeneous covariance matrices, a robust statistic, Pillai-Bartlett Trace was used. Due to extreme sample size differences, harmonic means were used for follow-up analyses. Table 3 presents the multivariate and follow-up univariate results.



### *Individual Domain Variables*

*Anxiety, depression, anger, and behavioral misconduct.* A main effect for bullying group membership occurred on the combination of the Individual variables,  $F(15, 5601) = 23.45, p = .000$ , as well as the gender by group interaction,  $F(15, 5601) = 2.57, p = .001$ . A follow-up main effect for bullying group resulted on Depression,  $F(33, 1936) = 6.60, p = .000$ , Anxiety,  $F(33, 1734) = 4.44, p = .000$ , Trait Anger,  $F(33, 2101) = 4.98, p = .000$ , Anger Expression,  $F(33, 2107) = 3.26, p = .000$ , and Discipline Referrals,  $F(33, 2134) = 2.25, p = .000$ . The Control group had lower Depression than the Bully, Victim, and Bully/Victim groups. The Bully group also had lower levels of Depression than those in the Victim group. For Anxiety, the Bully, Victim, and Bully/Victim groups reported significantly higher levels of anxiety than the Control group. The Victim and Bully/Victim groups also had greater Anxiety levels than the Bully group. For Trait Anger, the Control group reported significantly lower levels of anger than the Bully, Victim, and Bully/Victim groups. Both the Control and Victim groups had significantly lower levels of reported Anger Expression than those in the Bully and Bully/Victim groups. Bully/Victims have lower reported levels of Anger Expression than Bullies, although these findings are not significant. For Discipline Referrals, the Control group had lower levels of behavioral misconduct than Bullies and Bully/Victims. Bullies and Bully/Victims have higher levels of referrals than Victims.

### *Family Domain Variables*

*Family cohesion and adaptability.* A main effect for bullying group membership occurred on the combination of the Cohesion and Adaptability variables,  $F(6, 3890) = 7.44, p = .000$ . The two-way interaction of gender and bullying group membership was also significant,  $F(6, 3890) = 4.19, p = .000$ . On each variable, bullying group membership had significant main effects,  $F(43, 1864) = 2.01, p = .000$  for Cohesion and  $F(43, 1777) = 1.44, p < .05$  for Adaptability. The gender by bullying group two-way interaction was significant for Adaptability,  $F(33, 1777) = 1.68, p = .01$ . For Cohesion, those in the Control group reported greater levels of Cohesion compared with those in the

Victim group. Members of the Control and Victim groups reported higher levels of connectedness, or Cohesion, within families than those in the Bully group. Overall, the Control group reported higher levels of Adaptability than the Bully group. More specifically, male Controls (see Table 4) had greater Adaptability in their families, while female Bullies reported the least.

#### *School Domain Variables*

*School adjustment.* A main effect for bullying group membership occurred on the combination of the School Adjustment variables,  $F(15, 6480) = 17.23, p = .000$ . The two-way interaction of bullying group membership and gender was significant,  $F(15, 6480) = 2.10, p < .01$ . A bullying group main effect occurred for School Spirit,  $F(43, 2026) = 2.79, p = .000$ , Goal-Orientation,  $F(43, 1987) = 2.37, p = .000$ , Child-Peer Relations,  $F(43, 2051) = 5.13, p = .000$ , Child-Teacher Relations,  $F(43, 2046) = 2.74, p = .000$ , and Alienation,  $F(43, 2050) = 2.38, p = .000$ . The interaction between bullying group and gender was significant for Goal-Orientation,  $F(38, 1987) = 1.54, p < .05$ , and Child-Teacher Relations,  $F(38, 2046) = 1.44, p < .05$ . For School Spirit, members of the Control group reported greater means than those in the other groups. Those in the Victim group reported significantly greater levels of school spirit compared with those in the Bully group. Overall for Goal-Orientation, the Control and Victim groups reported greater levels compared with Bullies. Female Control students (see Table 4) had the highest Goal-Orientation, while male Bullies had the lowest. For Child-Peer Relations, those in the Victim group reported the lowest levels compared with the Bully, Control, and Bully/Victim groups. Bullies reported lower levels of Child-Teacher Relations compared with Control and Victim group members. Female Controls had the highest levels of Child-Teacher Relations (see Table 4), while female Bullies have the lowest levels. For Alienation, those in the Bully, Victim, and Bully/Victim groups reported greater levels compared with those in the Control group.

*School environment.* A main effect for bullying group membership occurred on the combination of the Condition of Campus, School Climate, Adult Intervention, and Adult Supervision at School variables,  $F(12, 5421) = 10.66, p = .000$ . The two-way

interaction of bullying group membership and grade was significant,  $F(24, 7232) = 1.53$ ,  $p < .05$ . Finally, the three-way interaction of bullying group membership, grade, and gender was also significant,  $F(24, 7232) = 1.94$ ,  $p < .01$ . Significant main effects for the nested group variable occurred for several variables: Condition of Campus,  $F(32, 1660) = 1.66$ ,  $p < .05$ ; School Climate,  $F(33, 1674) = 3.08$ ,  $p = .000$ ; Adult Intervention,  $F(32, 1680) = 1.97$ ,  $p = .001$ ; and Adult Supervision,  $F(33, 2054) = 1.75$ ,  $p < .01$ . The two-way interaction between bullying group and grade was significant for Condition of Campus,  $F(44, 1660) = 1.76$ ,  $p = .002$ , and Adult Supervision,  $F(50, 2054) = 1.43$ ,  $p < .05$ . For School Climate, those in the Control group reported fewer difficulties with diversity, gang presence, and other problem behaviors compared with members of the other groups. Overall for Condition of Campus, Control students reported higher levels of Condition of Campus compared with other students. Sixth grade students in the Control group (see Table 5) reported the most positive Condition of Campus, while sixth grade Bully/Victims reported the lowest. For Adult Intervention, the Control group reported greater levels of adult intervention compared with all of the other groups. For Adult Supervision, the Control group reported greater levels of supervision at school compared with the other groups. The Bully and Victim group members reported significantly greater levels of supervision compared with those in the Bully/Victim group. For the two-way interaction, 8<sup>th</sup> grade Bully/Victims reported the lowest levels of supervision, while 8<sup>th</sup> grade Control students reported the highest levels.

*Achievement.* No significant hypothesized multivariate effects occurred.

#### *Teacher Report Domain Variables*

*Acting-out, moodiness, and learning.* A main effect for bullying group membership occurred on the combination of the AML-R variables,  $F(9, 4110) = 3.29$ ,  $p = .001$ . The three-way interaction of bullying group membership, grade, and gender was significant,  $F(18, 4110) = 1.67$ ,  $p < .05$ . For Acting-Out, a main effects for bullying group,  $F(33, 1220) = 1.82$ ,  $p < .01$ , as well as a three-way interaction among group, grade, and gender,  $F(11, 1220) = 2.72$ ,  $p < .01$ , occurred. For Moodiness, a main effect occurred for group,  $F(33, 1220) = 2.38$ ,  $p = .000$ . For the Learning variable, only the

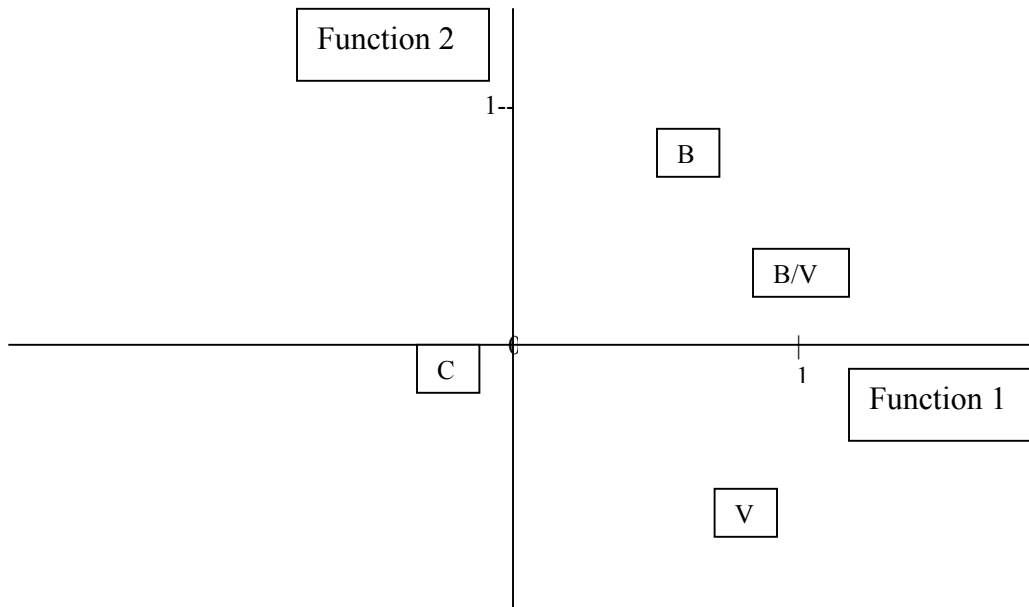
three-way interaction was significant,  $F(11, 1220) = 2.31, p < .01$ . Teachers reported greater levels of Acting-Out behaviors for students in the Bully group compared with those in the Control and Victim group. Bully/Victims had greater levels of Acting-Out behaviors than Control students. Male Bullies in the 7<sup>th</sup> grade (see Table 4) were reported to have the greatest levels of acting-out behaviors, while 8<sup>th</sup> grade female Bully/Victims had the lowest levels. For Moodiness, the Bully group had greater levels of reported mood disruptions compared with the Control and Victim students. For Learning, 8<sup>th</sup> grade female Bully/Victims had the lowest reported levels of Learning problems. Seventh grade male Bullies had the highest reported levels of Learning difficulties.

#### *Discriminant Function Analysis*

A descriptive Discriminant Function Analysis revealed that three function equations explained the difference among bullying groups on the combination of Individual domain, Family domain, School domain, and Teacher Report domain variables for the total sample. The canonical correlation that assessed the relationship between the first discriminant function and the set of dependent variables is .388, while the canonical correlation between the second discriminant function and the set of dependent variables is .324 (Wilk's Lambda = .741,  $p = .000$  for the test of functions 1 through 3). The first function accounted for the majority of the variance, specifically 55.3%, while the second function accounted for 36.7%. Examination of the first function structure matrix revealed that Depression ( $r = .668$ ), Trait Anger ( $r = .632$ ), Anxiety ( $r = .614$ ), Child-Peer Relations ( $r = -.540$ ), School Climate ( $r = .499$ ), School Spirit ( $r = -.469$ ), Adult Intervention ( $r = -.459$ ), Cohesion ( $r = -.387$ ), Adult Supervision ( $r = -.386$ ), Alienation ( $r = .359$ ), Child-Teacher Relations ( $r = -.353$ ), and Moodiness ( $r = .273$ ) had significant associations with the discriminant function (see Appendix R). Examination of the structure matrix for function 2 revealed that Anger Expression ( $r = .634$ ), Referrals ( $r = .372$ ), Acting-Out ( $r = .321$ ), Goal-Oriented ( $r = -.263$ ), and Learning ( $r = .193$ ) had significant associations with the function (see Appendix R). Group centroids were graphed on both Function 1 (Control = -.201, Bully = .784, Victim = .872, and

Bully/Victim = 1.18) and 2 (Control = -.0037, Bully = .947, Victim = -.705, and Bully/Victim = .491).

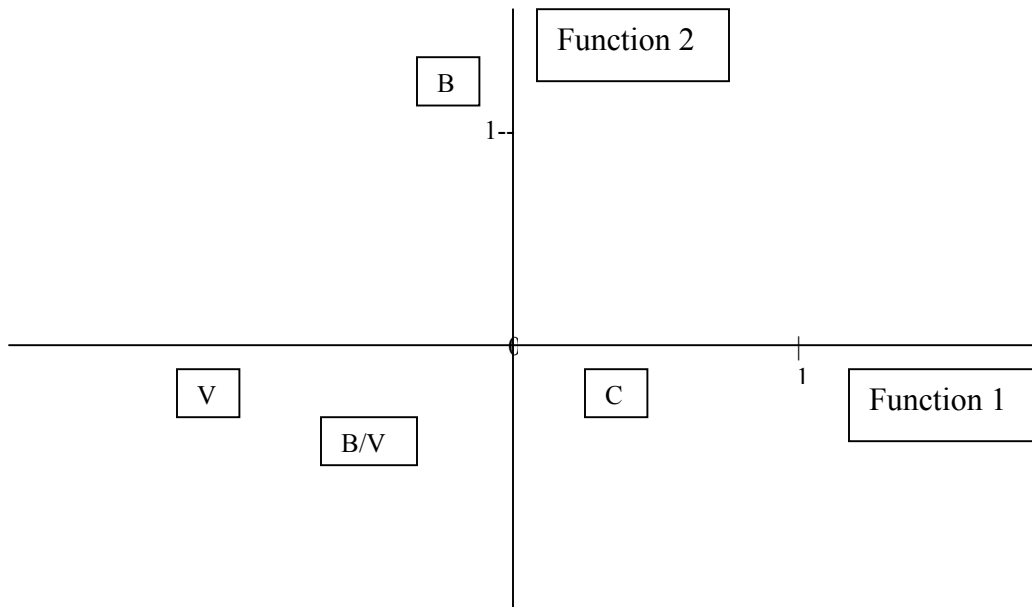
Figure 1: Group Centroids by Function for Total Sample



For males, three discriminant functions resulted, the first two as significant. The canonical correlation that assessed the relationship between the first discriminant function and the set of dependent variables was .447, while the canonical correlation between the second discriminant function and the set of dependent variables was .344 (Wilk's Lambda = .674,  $p = .000$  for the test of functions 1 through 3). The first function accounted for the majority of the variance (58.2%) and the second accounted for 31.2% of the variance. Examination of the first function structure matrix revealed that Depression ( $r = -.666$ ), Child-Peer Relations ( $r = -.665$ ), Anxiety ( $r = .629$ ), Child-Teacher Relations ( $r = .397$ ), Adult Supervision ( $r = .305$ ), and School Spirit ( $r = -.263$ ) had the largest correlations with the discriminant function. Examination of the second function revealed that Goal-Orientation ( $r = .629$ ), Cohesion ( $r = .579$ ), Adaptability ( $r = .461$ ), Adult Intervention ( $r = .416$ ), Condition of Campus ( $r = .383$ ), FCAT Math ( $r = -.368$ ), FCAT Reading ( $r = .358$ ), Trait Anger ( $r = -.305$ ), Moodiness ( $r = -.235$ ), and

Anger Expression ( $r = .168$ ) had the greatest association with the function. Group centroids were graphed on both Function 1 (Control = .219, Bully = -.038, Victim = -1.298, and Bully/Victim = -.772) and 2 (Control = -.106, Bully = 1.224, Victim = -.172, and Bully/Victim = .305).

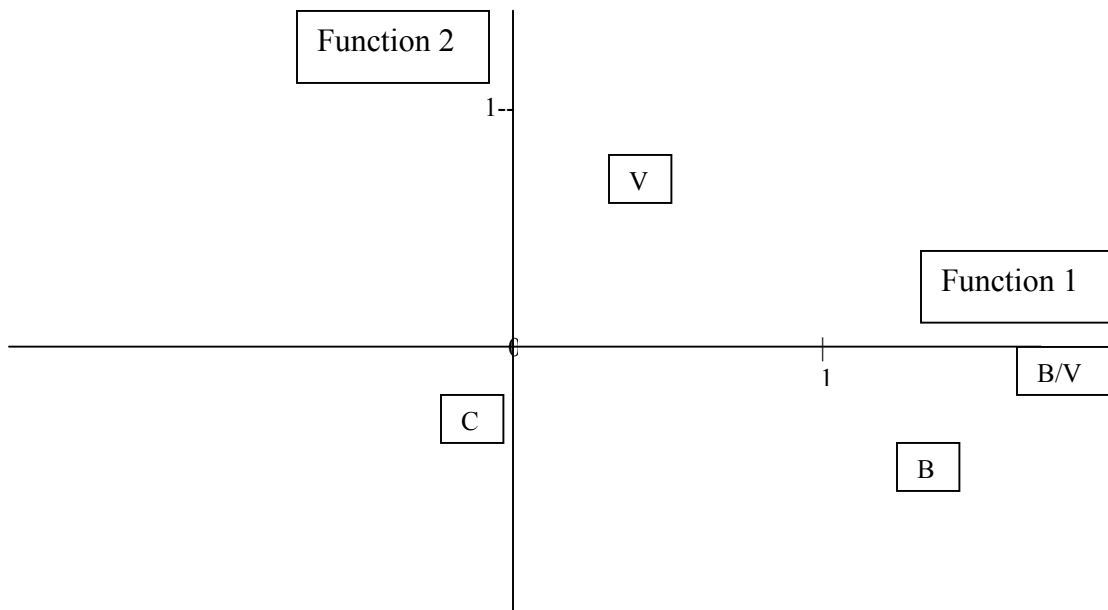
Figure 2: Group Centroids by Function for Males



For females, three discriminant functions explained group differences with the first two functions being significant. The canonical correlation that assessed the relationship between the first discriminant function and the set of dependent variables is .439, while the canonical correlation between the second discriminant function and the set of dependent variables is .319 (Wilk's Lambda = .683,  $p = .000$  for the test of functions 1 through 3). The first function accounted for 57.6% of the variance, while the second function accounted for 27.3%. Examination of the first function structure matrix revealed that Anger Expression ( $r = .716$ ), Cohesion ( $r = .621$ ), School Spirit ( $r = .525$ ), Goal-Orientation ( $r = .518$ ), Trait Anger ( $r = -.518$ ), Adaptability ( $r = .516$ ), Acting-Out ( $r = -.490$ ), Alienation ( $r = -.457$ ), Adult Intervention ( $r = -.416$ ), Adult Supervision ( $r = -.408$ ), Child-Teacher Relations ( $r = .390$ ), Learning ( $r = -.336$ ), Condition of

Campus ( $r = .325$ ), Depression ( $r = .269$ ), and Anxiety ( $r = .228$ ) had the largest associations with the discriminant function (see Appendix S). The structure matrix for function 2 revealed that Child-Peer Relations ( $r = -.551$ ), School Climate ( $r = .470$ ), Discipline Referrals ( $r = .298$ ), and Moodiness ( $r = .173$ ) had the largest significant associations with the function. Group centroids were graphed on both Function 1 (Control =  $-.180$ , Bully =  $1.458$ , Victim =  $.332$ , and Bully/Victim =  $2.053$ ) and 2 (Control =  $-.074$ , Bully =  $-.435$ , Victim =  $1.076$ , and Bully/Victim =  $-.055$ ).

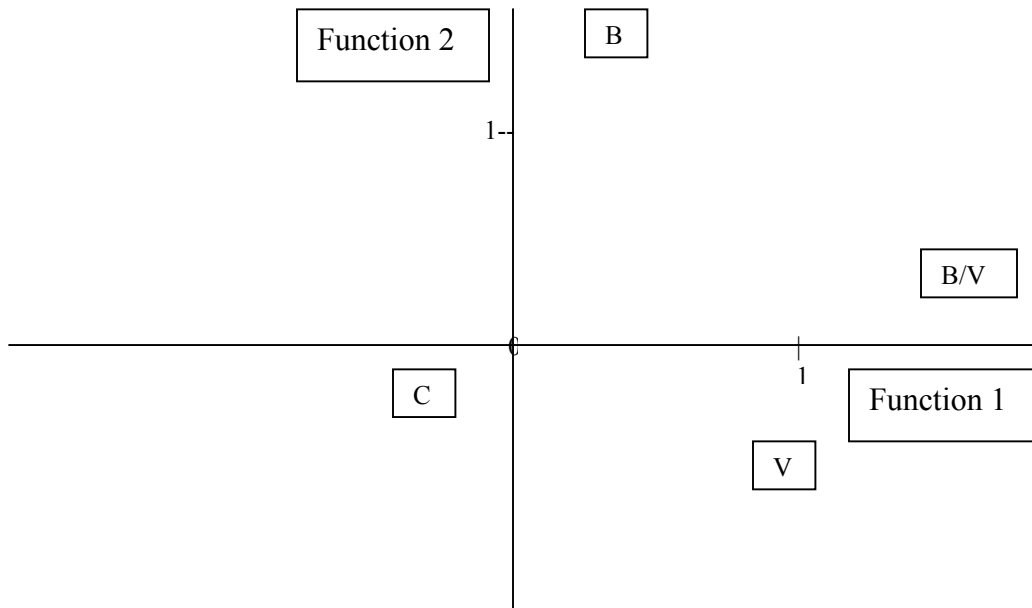
Figure 3: Group Centroids by Function for Females



For 6<sup>th</sup> graders, the first and second discriminant functions were significant in explaining group differences. The canonical correlation that assessed the relationship between the first discriminant function and the set of dependent variables was  $.428$  and the canonical correlation for the second function was  $.301$  (Wilk's Lambda =  $.683$ ,  $p = .000$  for the test of functions 1 through 3). The first function accounted for the majority of the variance, specifically  $59.0\%$ . Examination of the first function structure matrix revealed that Depression ( $r = .727$ ), Anxiety ( $r = .571$ ), Cohesion ( $r = -.503$ ), Condition

of Campus ( $r = .478$ ), FCAT Reading ( $r = -.447$ ), Adult Intervention ( $r = .418$ ), Child-Peer Relations ( $r = -.276$ ), Goal-Orientation ( $r = -.276$ ), Child-Teacher Relations ( $r = .219$ ), and Moodiness ( $r = -.169$ ) had the largest correlations with the discriminant function. Examination of the second function revealed that Adult Supervision at School ( $r = -.542$ ), Anger Expression ( $r = .491$ ), Acting-Out ( $r = -.411$ ), Trait Anger ( $r = .400$ ), Alienation ( $r = .302$ ), and School Climate ( $r = -.195$ ) had a significant relationship with the function. Group centroids were graphed on both Function 1 (Control =  $-.202$ , Bully =  $.294$ , Victim =  $1.073$ , and Bully/Victim =  $1.600$ ) and 2 (Control =  $-.0372$ , Bully =  $1.701$ , Victim =  $-.222$ , and Bully/Victim =  $.230$ ).

Figure 4: Group Centroids by Function for 6<sup>th</sup> Graders

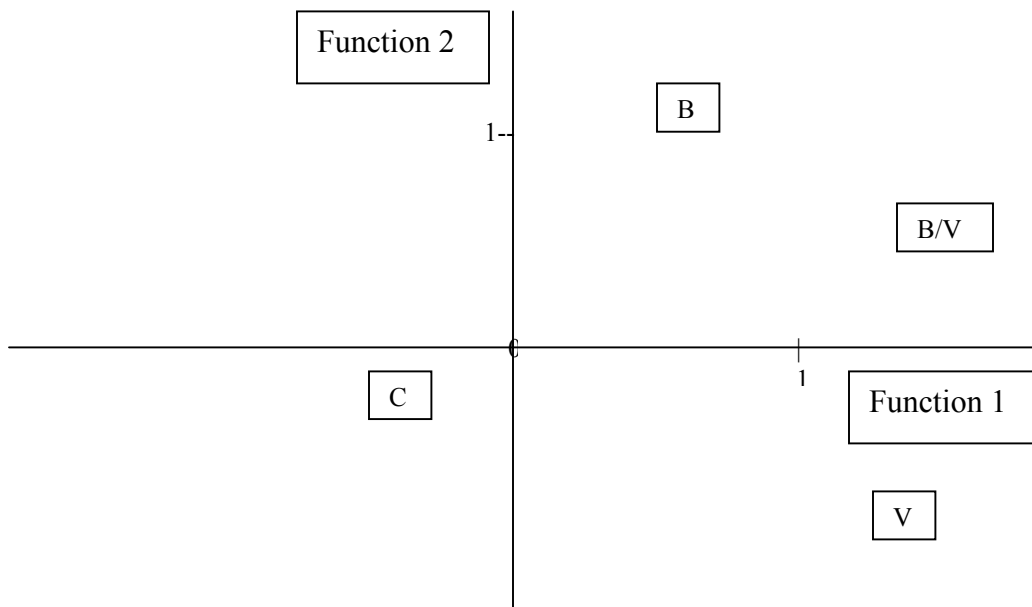


For the 7<sup>th</sup> grade sample, three discriminant functions resulted. The first and second discriminant functions were significant in explaining group differences. The canonical correlation that assesses the relationship between the first discriminant function and the set of dependent variables was  $.495$  and the canonical correlation for the second function was  $.421$  (Wilk's Lambda =  $.586$ ,  $p = .000$  for the test of functions 1 through 3). The first function accounted for the majority of the variance, specifically  $54.2\%$ , while



the second accounted for 35.8% of the variance. Examination of the first function structure matrix revealed that Anxiety ( $r = .682$ ), Depression ( $r = .474$ ), Child-Peer Relations ( $r = -.499$ ), Trait Anger ( $r = .472$ ), Adult Intervention ( $r = -.390$ ), Adult Supervision ( $r = -.320$ ), Alienation ( $r = .318$ ), Moodiness ( $r = .286$ ), and Acting-Out ( $r = .266$ ) had the largest correlations with the discriminant function. Examination of the second function revealed that Anger Expression ( $r = .546$ ), Cohesion ( $r = -.357$ ), FCAT Math ( $r = -.323$ ), FCAT Reading ( $r = -.250$ ), and Learning ( $r = .242$ ) had significant relationships with the function. Group centroids were graphed on both Function 1 (Control =  $-.287$ , Bully =  $.772$ , Victim =  $1.216$ , and Bully/Victim =  $1.695$ ) and 2 (Control =  $-.0347$ , Bully =  $1.061$ , Victim =  $-.994$ , and Bully/Victim =  $.604$ ).

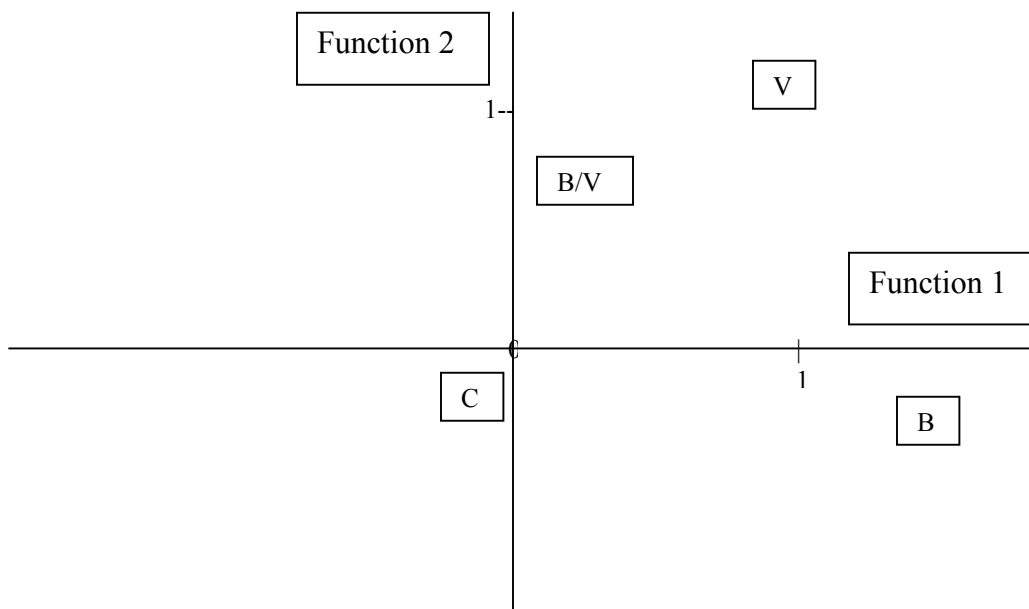
Figure 5: Group Centroids by Function for 7<sup>th</sup> Graders



For the 8<sup>th</sup> grade sample, the canonical correlation that assesses the relationship between the first discriminant function and the set of dependent variables was .417 and the canonical correlation between the second function and the set of dependent variables was .305 (Wilk's Lambda = .692,  $p = .000$  for the test of functions 1 through 3). The first function accounted for the majority of the variance, specifically 53.3%, while the second

accounted for 26.0%. Examination of the first function structure matrix revealed that Child-Peer Relations ( $r = .744$ ), Depression ( $r = .517$ ), School Climate ( $r = -.422$ ), Adult Supervision at School ( $r = -.385$ ), School Spirit ( $r = -.370$ ), Anxiety ( $r = .360$ ), Child-Teacher Relations ( $r = .358$ ), Cohesion ( $r = .353$ ), Adaptability ( $r = .340$ ), Learning ( $r = .331$ ), Anger Expression ( $r = -.319$ ), and Alienation ( $r = .127$ ) had the largest associations with the discriminant function. Examination of the second function revealed that Trait Anger ( $r = -.628$ ), Goal-Orientedness ( $r = .642$ ), and Adult Intervention ( $r = .558$ ) had significant relationships with the function. Group centroids were graphed on both Function 1 (Control =  $-0.181$ , Bully =  $1.465$ , Victim =  $0.300$ , and Bully/Victim =  $0.295$ ) and 2 (Control =  $-0.0762$ , Bully =  $-0.320$ , Victim =  $1.014$ , and Bully/Victim =  $0.0614$ ).

Figure 6: Group Centroids by Functions for 8<sup>th</sup> Graders



In summary, the combination of variables for the whole sample appeared to pull the Control group apart from the Bully, Victim, and Bully/Victim groups. Those variables that had the most influence in describing differences among the Bully, Victim, Bully/Victim, and Control groups were internalizing (depression and anxiety) and

externalizing (anger and referrals) factors, primarily, followed by relationships with peers, bonding with school (school spirit, relationships with teachers, and feelings of belonging at school), school environmental factors (adult intervention and supervision and perception of school climate), and connectedness with family members. Linear combinations were then created by gender and group. The profile for female varied from that of the total sample, Bullies and Bully/Victims differentiated from Control and Victim students. While similar individual (depression, anxiety, and mostly expression of anger) and school variables continued to be primarily responsible for defining the group differences, family flexibility, and appearance of school campuses also emerged as important in explaining group differences. For males, Bullies were strikingly discriminated from the other groups, which appeared to be due to mainly depression, anxiety, family connectedness and flexibility, orientation toward educational goals, quality of peer and teacher relationships, teacher reported mood difficulties, and performance on standardized tests. Functions that resulted for 6<sup>th</sup> and 8<sup>th</sup> grade students presented a patterns of group differences in which Bullies were separated from Controls, Victims, and Bully/Victims. Functions for 7<sup>th</sup> grade participants appeared to separate Bullies, Victims, and Bully/Victims from Control students. Depression, anger, and anxiety continued to play a primary role in differentiating among groups, while familial adaptability became important for 8<sup>th</sup> grade students. Academic achievement emerged as responsible for discrimination among groups for both 6<sup>th</sup> and 7<sup>th</sup> grade students. School adjustment variables appeared to be less important for 7<sup>th</sup> grade students, while the condition of school campus played a significant role for 6<sup>th</sup> graders. The presence of and intervention on the part of adults at school were important in describing group differences across the board. Interestingly, while anger and teacher reported behavioral difficulties were significant in describing bullying group differences at all grade levels, discipline referrals were not. However, referral data was significant for female and total sample group differences.

## *Discussion*

The present study examined variables related to bullying and victimization in middle school. Several factors within the individual, family, and school domains were related to bullying and victimization. Group effects accounted for the majority of the associations. As expected, the participants who were categorized as comparison Control had the best outcomes with respect to individual characteristics, family functioning, and school adjustment. Contrary to past research, those categorized as bully/victims did not consistently have the poorest psychosocial and academic adjustment in comparison with bullies and victims (Haynie et al., 2001; Nansel et al., 2001).

Specifically, within the Individual domain, group differences generally did not vary as a function of grade or gender. Overall, the multivariate tests of significance revealed group differences, as well as gender by group interaction, for the combination of individual variables (Depression, Anxiety, Trait Anger, Anger Expression, and Discipline Referrals). However, the gender by group interactions did not reach significance in follow-up univariate analyses. Bullies, victims, bully/victims, and comparison control participants differed on each individual variable, with the comparison controls generally having the best adjustment. Victims were more likely to report symptoms of depression and anxiety compared with bullies, while bullies and bully/victims presented with externalizing profiles (trait anger, anger expression, and referrals). In part, these findings are supported by past research, with the unique addition of anger variables (Bosworth et al., 1999; Haynie et al., 2001; Kumpulainen, et al., 1998; Nansel et al., 2001, Olweus, 1995). While statistical significance was not achieved for all hypothesized findings, a trend in bully/victim reports emerged. Bully/victims appeared similar to victims with respect to depression and anxiety reports. However, bully/victim externalizing reports were more similar to that of bullies. Bully/victims presented the same individual characteristics as both victims and bullies. Interestingly, anger was reported by each group; however, bullies and bully/victims were more likely to express it. Research should further examine the specific function of anger with bullying and victimization.

With respect to family functioning, the group effects were significant on the Cohesion and Adaptability variables. Victims reported lower connectedness in their families compared with comparison control participants; however, victims felt their families were more cohesive than bullies' families. These findings are consistent with literature that suggests victims have more involved, even overprotective, parents (Haynie et al., 2001). For Adaptability, the trends of student reports suggested poorer family functioning for bullies compared with victims and bully/victims. Female bullies reported the least flexibility within their families. Overall, victims and bully/victims reported similar levels of connectedness and adaptability within their families. The specific constructs of Cohesion and Adaptability have not previously been studied in relation to bullying and victimization; yet, parental involvement, support, and practices have been found to be associated with bullying and victimization (Bowers et al., 1992; Carney, 2000; Hazler, 1996; Oliver et al., 1994; Olweus, 1991a; 1991b). These results suggest that the degree of intimacy, connection, and flexibility among family members may be important in explaining differences among groups of students involved in bullying situations.

A number of significant findings resulted in the school domain. Specifically, control participants reported greater adjustment toward school than other students. Victims, too, tended to report more bonding with school, except for quality of peer relationships. Consistent with the literature, victims had increased difficulty with peer interactions, yet relationships with teachers appeared positive (Besag, 1998; Nansel et al., 2001). Bullies, as expected, were less bonded to school and reported more difficulties with teachers. Overall, female comparison control students typically had positive goal directed perceptions and relationships with teachers, while male bullies generally had poor perceptions of each. Interestingly, both bullies and victims reported feeling alienated from school. This finding is contrary to past research that suggests victims may bond less successfully to school than control students, but do adjust to school more readily than bullies (Haynie et al., 2001). The Alienation factor in this study, however, includes a number of items salient to bullies and victims. While Alienation is defined on

the one hand by student-teacher relationships, on the other hand, the factor also includes a perception of safety and belonging at school. Bullies may report feeling alienated at school due to poorer teacher relationships, and victims may report feeling alienated due to safety and peer group issues at school. Bully/victims also had similar alienation scores with bullies and victims indicating considerable teacher, peer, and safety concerns.

The comprehensive assessment of school environment relationships within a multivariate design was another unique contribution of this study to the current body of literature. A main effect for group, as well as a two-way interaction between group and grade and the group by gender by grade three-way interaction, resulted for the combination of environmental factors (Condition of Campus, School Climate, Adult Intervention, and Adult Supervision). In univariate follow-up analyses, control participants reported the most positive school climates with regard to witnessing problem behaviors, gang activity, or diversity tensions, and reported to experience the greatest frequency of supervision and intervention by adults at school. In addition, both bullies and victims indicated that adults are more readily available and actively supervising their school campuses than bully/victims. Bully/victims in the sixth grade reported the most negative conditions in their schools. This finding, as well as the finding for adult supervision, is consistent with past research, which indicates that bully/victims, and younger students, may have the poorest perceptions of their schools (Haynie et al., 2001).

Interestingly, no significant findings resulted for academic achievement, although bully/victims tended to have the lowest standardized test scores. This contradicts past studies that have typically reported considerable differences in achievement within this type of sample. Notably, the present study used statewide composite achievement test scores as the academic achievement construct. Course grades were not used due to their dependence on school and teacher factors, and their far less standardized application. Past studies have reported the importance of scholastic differences among bullies, victims, and bully/victims (Austin & Joseph, 1996; Lagerspetz, 1982; Nansel et al., 2001). However, many of these studies examined academic achievement in terms of students' perceptions of ability in, competency in, or engagement toward academics. The

current findings suggest that when an alternate method for measuring academic achievement is used (i.e., standardized test scores), the associations with bullies, victims, and bully/victims may not hold up. In fact, it may be students' perceptions of their ability that differs, while their actual performance remains equivalent. This implies that all students, regardless of their bullying status, can succeed in school (Lagerspetz, 1982). Yet, when examined in combination with other variables, FCAT scores became important in describing group differences for males and 6<sup>th</sup> and 7<sup>th</sup> grade students.

Another significant contribution of the present study was the use of cross-informant data, specifically from teachers. Bullies were reported to have greater externalizing behavior difficulties than victims and controls, although they did not differ from the reported behavior of bully/victims. As for internalizing problems, bullies were reported to have more than controls and victims, yet were not significant when compared with bully/victims. Overall, group differences varied by gender and grade for reported Acting-Out behaviors. Not surprising, females had the lowest levels of teacher reported behavior difficulties and males had the greatest. Specifically, 8<sup>th</sup> grade female bully/victims had the lowest levels of problem behaviors, while 7<sup>th</sup> grade males had the highest levels. For learning difficulties, a gender by grade by group interaction also occurred. Seventh grade male bullies were reported to have the greatest problems, while female bully/victims had the least. As was suggested by the achievement results, perceptions of behavior can diverge vastly from each other. While bully/victims appeared like victims in terms of self-reported internalizing and mood, teacher reports suggested that bully/victims looked much more like bullies in both internalizing and externalizing behavioral realms. This may speak to teachers' difficulties in adequately identifying mood related characteristics, especially with respect to those students who engage in behavioral misconduct (Gillespie & Durlak, 1995; Green et al., 1980). These findings did not generally hold up when teacher reports were examined by gender and grade given that older female bully/victims had the lowest levels of behavioral and learning problems. However, female bully/victims constituted a considerably small portion of the total sample of students, at times only 2-3 students.

Examination of the linear combinations of the dependent variables from the discriminant function analyses identified the domains and variables most responsible for group differences. Generally, individual factors were most responsible for differentiating among groups, independent of gender and grade, followed by certain school factors. Anger and expression of anger, as well as school adjustment and environmental factors, emerged as significantly associated with group differences. Both anger and school environment variables have not previously been examined in the literature in this type of design (Bosworth et al., 1999; Boulton & Smith, 1994; Haynie et al., 2001; Nansel et al., 2001; Pellegrini et al., 1999; Pellegrini & Long, 2002; Simon-Morton et al., 1999). However, achievement, family flexibility, and the quality of campus conditions minimally related to group differences overall, but did contribute when special groups were examined (i.e., females and younger students). These contributions to understanding the differences among students involved in bullying and victimization are considerable. The addition of family factors added another facet of student life for the purpose of further evaluation and intervention. The inclusion of family connectedness and flexibility has shown the important secondary relationships between child adjustment and functioning at home and at school, and suggests that child experiences at home have an impact on experiences at school. Other studies have further suggested that both gender and grade may play an important role in the understanding of bullying and victimization (Haynie et al., 2001). The present study found that, depending on gender and grade, the importance of significant constructs in describing group profiles varies. Male and older student, primarily 8<sup>th</sup> grade, group differences were driven more by mood, peer relationships, and achievement variables. Female group differences were described primarily by anger, discipline referrals, and teacher reported behavior and mood problems. The experience of behavior difficulties appeared to distinguish among students involved in bullying, while mood difficulties and relationships with peers drove differences for males and older students. Both 6<sup>th</sup> and 8<sup>th</sup> grade student group differences were described best by school climate and condition.

The present study has several strengths and represents a compilation of unique



assessments that help further the field of bullying and school violence research. Several previous studies examined a single factor in separate studies where the contributions of each factor could not be measured with each other (Baldry & Farrington, 1998; 2000; Craig, 1998; Rigby, 1993; Simons-Morton et al., 1999). Those studies that have included various domains of child development still failed to examine the impact of school environment on child behavior (Boulton & Smith, 1994; Haynie et al., 2001; Nansel et al., 2001, Pellegrini & Long, 2002). Sample sizes within this study were larger than most clinical studies, which indicated adequate representation of both district and national phenomena as well as allowed the feasibility of assessing numerous variable associations. Group frequencies for bullies, victims, and bully/victims, in particular, were representative of national levels (Olweus et al., 1999; Solberg & Olweus, 2002).

Of most importance, this study assessed a number of factors in children's lives in multiple dimensions with separate raters and data collected in various formats (Holmbeck et al., 2003; Pellegrini & Long, 2003). Typically, past research has focused on obtaining student self-report for individual, family, and school factors (Haynie et al., 2001; Nansel et al., 2001). Within the present study's comprehensive design, variables that were not previously examined were included and resulted in significant relationships in describing group differences. Specifically, trait anger, anger expression, and school environment were among those that emerged in unique patterns of prediction. Additionally, teacher report and records data were collected to strengthen the study design. Both teacher report and records data resulted in associations contrary to the literature, suggesting that obtaining information from other sources can produce an alternate pattern of influences, thus emphasizing the need for a multi-informant evaluation. Analyses were conducted by grade and gender, which added further understanding to the profiles of bullies, victims, and bully/victims.

Just as the examination of grade and gender was a strength, it also presented as a limitation. The percentage of students categorized as bully/victims was small, given the strict Olweus Bully/Victim Questionnaire criteria for forming groups, and became even further reduced when broken down into six grade by gender categories (Olweus, 1996).

The difference among group sample sizes within analyses was large, which could have negative implications in examination of group comparisons and especially interaction effects. In addition, the study was limited in terms by its cross-sectional nature. While several significant relationships were found in understanding bullying and victimization, causality could not be assumed. The present study could not answer the question of which comes first, child adjustment variables or bullying involvement. Recent literature has begun to examine longitudinal aspects of bullying and victimization, suggesting the importance of examining trends of behavior across time (Pellegrini & Long, 2002). The present study only assessed behavior and perceptions from in middle school children, while other studies have looked at transitions from grad school to middle school or middle school to high school (Nansel et al., 2001; Pellegrini & Long, 2002).

The results in this study have important implications in terms of understanding school violence, specifically bullying and victimization, and speculating the direction of preventive interventions. The most fundamental finding is that of group differences, by gender and grade, for associations of variables. This speaks to the need to tailor intervention and prevention programming in order to address the specific characteristics of each category of students. For example, programs should be developed to focus on those individual, family, and school factors that are related to being categorized as a middle school male victim of bullying. This type of focus has the potential to bring school violence intervention programming outside the school and into students' homes. This method of intervention can improve communication and support between families and school personnel and emphasize the continuity of care among each system children encounter. Several results speak to the importance of maintaining positive home and school environments. Although some unique findings emerged, the contradictions of few associations with results previously reported in the literature begs further examination of multi-informant and multi-method data that would provide additional explanations to several of these conflicting findings. Future research should explore the assessment of various constructs by rater to further comprehend differential associations.

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Table 1  
 Group Frequencies (and Percentages) by Grade and Gender

Group	Gender		6 <sup>th</sup>	Grade	
	Males	Females		7 <sup>th</sup>	8 <sup>th</sup>
Bully	87(7.4)	64(5.4)	28(3.7)	68(7.6)	55(7.8)
Victim	169(14.4)	106(8.9)	98(12.9)	119(13.2)	59(8.4)
Bully/Victim	20(1.7)	22(1.9)	13(1.7)	16(1.8)	13(1.9)
Control	898(76.5)	993(83.8)	621(81.7)	696(77.4)	574(81.9)

Note. Total N = 2359.

Table 2  
Intercorrelations between Scales for Total Sample

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
<b>Individual Domain</b>																					
1. Depression	1.0	<b>.57</b>																			
2. Anxiety		1.0	<b>.49</b>																		
3. Trait Anger			1.0	<b>.35</b>																	
4. Anger Expression				1.0	<b>.18</b>	<b>-.16</b>	<b>-.17</b>	<b>-.16</b>	<b>.26</b>	<b>-.21</b>	<b>-.22</b>	<b>-.37</b>	<b>-.39</b>	<b>-.33</b>	<b>-.19</b>	<b>.23</b>	<b>-.31</b>	<b>-.25</b>	<b>.26</b>	<b>.21</b>	<b>.21</b>
5. Referrals					1.0	<b>-.13</b>	<b>-.14</b>	<b>-.08</b>	<b>.16</b>	<b>-.10</b>	<b>-.11</b>	<b>-.18</b>	<b>-.17</b>	<b>-.16</b>	<b>-.06</b>	<b>.11</b>	<b>-.11</b>	<b>-.07</b>	<b>.38</b>	<b>.27</b>	<b>.32</b>
<b>School Domain</b>																					
6. FCAT-Math						1.0	<b>.72</b>	<b>-.03</b>	<b>-.06</b>	<b>-.08</b>	<b>.03</b>	<b>-.17</b>	<b>.00</b>	<b>.03</b>	<b>-.10</b>	<b>-.10</b>	<b>.11</b>	<b>.08</b>	<b>-.21</b>	<b>-.19</b>	<b>-.41</b>
7. FCAT-Reading							1.0	<b>.01</b>	<b>-.10</b>	<b>-.06</b>	<b>.03</b>	<b>.20</b>	<b>.03</b>	<b>.05</b>	<b>-.10</b>	<b>-.13</b>	<b>.13</b>	<b>.09</b>	<b>-.21</b>	<b>-.18</b>	<b>-.42</b>
8. Condition of Campus								1.0	<b>.50</b>	<b>.26</b>	<b>.24</b>	<b>.41</b>	<b>.38</b>	<b>.26</b>	<b>-.29</b>	<b>.27</b>	<b>.27</b>	<b>.18</b>	<b>-.04</b>	<b>-.06</b>	<b>-.06</b>
9. School Climate									1.0	<b>-.44</b>	<b>-.32</b>	<b>-.30</b>	<b>-.40</b>	<b>-.40</b>	<b>-.27</b>	<b>.33</b>	<b>-.31</b>	<b>-.16</b>	<b>.24</b>	<b>.18</b>	<b>.17</b>
10. Adult Intervention										1.0	<b>.34</b>	<b>.23</b>	<b>.43</b>	<b>.43</b>	<b>.24</b>	<b>-.29</b>	<b>.29</b>	<b>.20</b>	<b>-.09</b>	<b>-.08</b>	<b>-.04</b>
11. Adult Supervision											1.0	<b>.33</b>	<b>.45</b>	<b>.42</b>	<b>.27</b>	<b>-.21</b>	<b>.23</b>	<b>.18</b>	<b>-.08</b>	<b>-.08</b>	<b>-.04</b>
12. Goal-Orientation												1.0	<b>.61</b>	<b>.54</b>	<b>.34</b>	<b>-.35</b>	<b>.41</b>	<b>.33</b>	<b>-.21</b>	<b>-.20</b>	<b>-.23</b>
13. School Spirit													1.0	<b>.76</b>	<b>.36</b>	<b>-.38</b>	<b>.40</b>	<b>.33</b>	<b>-.21</b>	<b>-.15</b>	<b>-.16</b>
14. Child-Teacher Relations														1.0	<b>.37</b>	<b>-.41</b>	<b>.38</b>	<b>.31</b>	<b>-.20</b>	<b>-.17</b>	<b>-.20</b>
15. Child-Peer Relations															1.0	<b>-.39</b>	<b>.29</b>	<b>.24</b>	<b>-.05</b>	<b>-.11</b>	<b>-.10</b>
16. Alienation																1.0	<b>-.34</b>	<b>-.19</b>	<b>.14</b>	<b>.16</b>	<b>.17</b>
<b>Family Domain</b>																					
17. Cohesion																	1.0	<b>.71</b>	<b>-.13</b>	<b>-.16</b>	<b>-.16</b>
18. Adaptability																		1.0	<b>-.07</b>	<b>-.12</b>	<b>-.10</b>
<b>Teacher Report Domain</b>																					
19. Acting-Out																			1.0	<b>-.68</b>	<b>.67</b>
20. Moodiness																				1.0	<b>.67</b>
21. Learning																					1.0

Note. Underlined correlations are significant at the  $p = .05$  level. Bolded correlations are significant at the  $p = .01$  level. N's range from 1245 to 2473 for analyses (N for Total Sample = 2509).

Table 3  
Group Means (Standard Deviations) for Survey Data with MANOVA, ANOVA, and Group Post Hoc Findings

Variable	Group				Statistical Test	
	B	V	B/V	C	Multi	Uni
Individual Domain					G***, GxS***	
Depression	17.83 (11.25) <sup>C,V</sup>	22.30 (12.99) <sup>C,B</sup>	19.84 (10.17) <sup>C</sup>	13.09 (9.35)		G***
Anxiety	33.53 (9.40) <sup>C,V</sup>	37.96 (10.32) <sup>C,B</sup>	38.68 (10.39) <sup>C,B</sup>	31.19 (8.84)		G***
Trait Anger	25.14 (5.43) <sup>C</sup>	23.92 (5.56) <sup>C</sup>	25.90 (5.29) <sup>C</sup>	20.75 (5.30)		G***
Anger Expression	52.73 (8.31) <sup>C,V</sup>	44.09 (9.06) <sup>B,BV</sup>	52.58 (8.86) <sup>C,V</sup>	44.16 (8.69)		G***
Referrals	4.27 (3.92) <sup>C,V</sup>	2.10 (3.49) <sup>B,BV</sup>	4.73 (3.88) <sup>C,V</sup>	2.01 (3.48)		G***
Family Domain					G***, GxS***	
Cohesion	48.73 (9.67) <sup>V,C</sup>	52.59 (11.15) <sup>B,C</sup>	52.16 (8.49)	54.74 (10.49)		G***
Adaptability	38.99 (10.28) <sup>C</sup>	40.94 (11.55)	41.78 (9.86)	42.54 (10.09)		G*, GxS***†
Achievement					<i>ns</i>	
FCAT Reading DSS	1762.0 (285.2)	1733.5 (327.4)	1701.0 (337.2)	1743.0 (285.2)		
FCAT Math DSS	1770.5 (206.0)	1756.2 (229.6)	1699.4 (250.4)	1768.1 (214.3)		
School Adjustment					G***, GxS**	
School Spirit	2.72 (0.83) <sup>C,V</sup>	3.13 (0.85) <sup>C,B</sup>	2.90 (0.98) <sup>C</sup>	3.38 (0.81)		G***
Goal-Orientation	3.47 (0.84) <sup>C,V</sup>	3.82 (0.88) <sup>B</sup>	3.68 (1.00)	3.96 (0.77)		G***, GxS*†
Child-Peer Relations	3.51 (0.51) <sup>V</sup>	3.04 (0.61) <sup>B,BV,C</sup>	3.39 (0.74) <sup>V</sup>	3.58 (0.57)		G***
Child-Teacher Relations	2.92 (0.74) <sup>V,C</sup>	3.24 (0.74) <sup>B</sup>	3.13 (0.76)	3.38 (0.72)		G***, GxS*†
Alienation	2.57 (0.62) <sup>C</sup>	2.51 (0.65) <sup>C</sup>	2.57 (0.66) <sup>C</sup>	2.27 (0.65)		G***
School Environment					G***, GxY*, GxYxS**	
Condition of Campus	2.64 (0.65) <sup>C</sup>	2.67 (0.72) <sup>C</sup>	2.39 (0.92) <sup>C</sup>	2.83 (0.69)		G*,GxY*†
School Climate	1.70 (0.53) <sup>C</sup>	1.62 (0.52) <sup>C</sup>	1.81 (0.61) <sup>C</sup>	1.37 (0.47)		G***
Adult Intervention	2.66 (0.63) <sup>C</sup>	2.72 (0.67) <sup>C</sup>	2.53 (0.60) <sup>C</sup>	2.95 (0.61)		G***
Adult Supervision	3.06 (0.55) <sup>C,BV</sup>	3.09 (0.56) <sup>C,BV</sup>	2.66 (0.61) <sup>C,BV</sup>	3.23 (0.55)		G**, GxY*†
Teacher Report Domain					G***, GxYxS*	
Acting-Out	9.27 (4.64) <sup>V,C</sup>	7.78 (4.00) <sup>B</sup>	9.20 (3.30) <sup>C</sup>	7.01 (3.50)		G**, GxSxY***†
Moodiness	8.56 (4.04) <sup>C,V</sup>	7.43 (3.42) <sup>B</sup>	8.24 (3.88)	6.91 (3.04)		G**
Learning	9.85 (4.52)	8.93 (4.30)	9.68 (4.20)	8.23 (3.95)		GxSxY***†

Note. B = Bully; V = Victim; B/V = Bully/Victim; C = Control; Multi = Multivariate; Uni/Post = Univariate/Post Hoc; G = group; Y = grade/year; S = gender/sex; FCAT = Florida Comprehensive Achievement Tests; DSS = Developmental Scale Score. Superscripts indicate Post Hoc group differences. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . N's range from 1394 to 2202 for analyses.

† See text and Tables 4 and 5 for Post Hoc interactions.

Table 4  
Means (and Standard Deviations) by Gender and Grade for Significant Interactions

Grd	Males					Females					Grand M
	B	V	B/V	C	Male M	B	V	B/V	C	Female M	
	Adaptability										
6 <sup>th</sup>	46.47(10.58)	42.75(15.51)	40.50(17.74)	43.37(10.62)	43.39(11.56)	31.43(8.64)	41.39(9.26)	39.33(4.93)	43.37(9.97)	42.87(9.98)	43.12(10.78)
7 <sup>th</sup>	40.48(7.80)	39.98(9.69)	42.00(8.08)	42.27(10.74)	41.79(10.33)	34.07(10.33)	43.14(11.86)	41.86(6.18)	42.22(9.87)	41.67(10.26)	41.73(10.29)
8 <sup>th</sup>	41.71(9.75)	39.66(10.25)	43.00(15.49)	41.88(9.99)	41.65(10.09)	36.80(9.84)	36.45(8.65)	42.40(6.35)	42.13(9.35)	41.44(9.45)	41.54(9.76)
M	42.19(9.36)	40.92(12.27)	42.00(12.63)	42.51(10.47)	42.26(10.69)	34.71(9.96)	40.97(10.47)	41.53(5.72)	42.57(9.75)	41.98(9.93)	42.12(10.31)
	Goal-Orientation										
6 <sup>th</sup>	3.83(.739)	3.82(.834)	4.15(.526)	3.92(.784)	3.91(.786)	3.47(1.02)	4.16(.639)	3.60(1.48)	4.19(.688)	4.16(.717)	4.04(.762)
7 <sup>th</sup>	3.21(.848)	3.50(1.02)	4.17(1.01)	3.68(.922)	3.62(.942)	3.66(.827)	3.97(.726)	3.60(.812)	4.05(.669)	4.00(.698)	3.82(.847)
8 <sup>th</sup>	3.42(.722)	3.71(1.02)	3.33(1.26)	3.82(.764)	3.76(.812)	3.46(.952)	4.07(.671)	3.43(.533)	4.08(.679)	4.03(.713)	3.90(.775)
M	3.41(.804)	3.67(.960)	3.81(1.09)	3.80(.835)	3.76(.862)	3.56(.891)	4.06(.681)	3.56(.920)	4.11(.681)	4.06(.712)	3.91(.804)
	Child-Teacher Relations										
6 <sup>th</sup>	2.94(.801)	3.26(.613)	3.28(1.39)	3.35(.741)	3.32(.736)	2.36(.807)	3.46(.699)	3.56(.850)	3.56(.693)	3.52(.720)	3.42(.734)
7 <sup>th</sup>	2.91(.587)	3.12(.714)	3.46(.603)	3.19(.734)	3.16(.720)	2.99(.722)	3.40(.741)	3.01(.529)	3.46(.694)	3.41(.708)	3.29(.725)
8 <sup>th</sup>	3.00(.715)	2.97(.836)	2.71(.730)	3.26(.656)	3.19(.693)	2.92(.899)	3.29(.892)	3.04(.525)	3.43(.715)	3.39(.746)	3.29(.726)
M	2.95(.674)	3.14(.715)	3.11(.880)	3.26(.715)	3.22(.720)	2.87(.815)	3.40(.756)	3.16(.636)	3.48(.701)	3.44(.725)	3.33(.730)
	Condition of Campus										
6 <sup>th</sup>	2.78(.783)	2.68(.704)	2.08(1.32)	2.89(.718)	2.84(.733)	2.07(.863)	3.14(.612)	1.67(.577)	2.97(.687)	2.96(.703)	2.90(.720)
7 <sup>th</sup>	2.60(.629)	2.59(.766)	2.62(.821)	2.79(.701)	2.74(.708)	2.58(.655)	2.41(.650)	2.94(.905)	2.83(.662)	2.77(.676)	2.76(.691)
8 <sup>th</sup>	2.73(.595)	2.67(.684)	2.48(.900)	2.76(.661)	2.74(.662)	2.72(.614)	2.53(.661)	1.83(.577)	2.75(.667)	2.72(.670)	2.73(.665)
M	2.68(.639)	2.64(.717)	2.44(.934)	2.81(.695)	2.77(.703)	2.57(.674)	2.71(.715)	2.31(.928)	2.85(.677)	2.82(.690)	2.79(.696)
	Adult Supervision										
6 <sup>th</sup>	3.04(.611)	2.95(.551)	2.78(.786)	3.11(.691)	3.07(.669)	3.15(.693)	3.26(.597)	2.79(1.16)	3.34(.514)	3.32(.535)	3.20(.616)
7 <sup>th</sup>	2.92(.496)	3.03(.559)	2.66(.644)	3.04(.533)	3.02(.537)	3.08(.567)	3.07(.539)	2.90(.348)	3.29(.480)	3.25(.498)	3.14(.529)
8 <sup>th</sup>	3.17(.591)	3.00(.531)	2.41(.619)	3.19(.527)	3.15(.549)	3.06(.512)	3.37(.513)	2.50(.270)	3.34(.473)	3.32(.487)	3.24(.524)
M	3.04(.561)	2.99(.546)	2.59(.644)	3.11(.589)	3.08(.587)	3.08(.551)	3.21(.563)	2.75(.571)	3.33(.489)	3.29(.507)	3.19(.558)
	Acting-Out										
6 <sup>th</sup>	10.00(4.11)	7.97(3.70)	7.25(2.50)	7.86(3.85)	7.97(3.83)	6.40(4.83)	6.79(2.72)	11.20(3.35)	6.03(2.63)	6.22(2.79)	7.09(3.46)
7 <sup>th</sup>	11.57(.511)	7.50(4.11)	9.33(1.53)	7.95(4.01)	8.25(4.24)	7.08(3.55)	9.04(5.15)	10.86(3.13)	6.43(2.93)	6.85(3.40)	7.50(3.87)
8 <sup>th</sup>	9.33(4.28)	8.42(4.44)	9.33(2.08)	7.78(3.90)	8.02(3.98)	10.00(5.06)	6.75(3.44)	4.33(.577)	6.41(3.17)	6.60(3.38)	7.28(3.74)
M	10.35(4.62)	7.90(4.00)	8.50(2.17)	7.86(.391)	8.08(4.01)	7.85(4.32)	7.63(4.05)	9.67(3.89)	6.28(2.91)	6.56(3.21)	7.29(3.69)
	Learning										
6 <sup>th</sup>	10.75(4.99)	9.61(4.36)	10.50(1.29)	9.00(3.91)	9.20(4.01)	9.40(6.50)	8.46(4.05)	10.80(6.06)	7.64(3.66)	7.82(3.83)	8.51(3.98)
7 <sup>th</sup>	11.05(4.88)	8.00(3.87)	9.33(2.08)	8.83(4.14)	8.93(4.20)	9.00(4.09)	10.21(4.92)	10.71(4.96)	7.89(3.92)	8.39(4.12)	8.58(4.17)
8 <sup>th</sup>	9.05(4.44)	9.42(4.60)	9.00(4.36)	8.81(4.24)	8.89(4.27)	10.17(3.64)	7.44(3.67)	5.33(1.15)	7.47(3.70)	7.59(3.71)	8.21(4.04)
M	10.20(4.74)	8.98(4.26)	9.70(2.50)	8.89(4.08)	9.02(4.15)	9.39(4.21)	8.86(4.39)	9.67(5.12)	7.67(3.76)	7.91(3.91)	8.44(4.06)

Note. B = Bullies, V = Victims, B/V = Bully/Victims, C = Control, Grd = Grade, M = Mean.

Table 5  
Means (and Standard Deviations) by Grade for Significant Interactions

Grade	B	V	B/V	C
Adaptability				
6 <sup>th</sup>	41.68 (12.14)	42.20 (13.27)	40.00 (12.88)	43.37 (10.26)
7 <sup>th</sup>	37.28 (9.64)	41.28 (10.69)	41.93 (6.91)	42.24 (10.27)
8 <sup>th</sup>	39.78 (9.98)	38.42 (9.71)	42.73 (11.67)	42.02 (9.65)
<i>M</i>	38.99 (10.28)	40.94 (11.55)	41.78 (9.86)	42.54 (10.09)
Goal-Orientation				
6 <sup>th</sup>	3.69 (.854)	3.96 (.777)	3.84 (1.13)	4.07 (.747)
7 <sup>th</sup>	3.42 (.862)	3.69 (.937)	3.85 (.919)	3.88 (.818)
8 <sup>th</sup>	3.44 (.814)	3.85 (.914)	3.37 (1.01)	3.96 (.732)
<i>M</i>	3.47 (.843)	3.82 (.881)	3.68 (1.00)	3.97 (.772)
Child-Teacher Relations				
6 <sup>th</sup>	2.94 (.801)	3.26 (.613)	3.28 (1.39)	3.46 (.723)
7 <sup>th</sup>	2.91 (.587)	3.12 (.714)	3.46 (.603)	3.33 (.725)
8 <sup>th</sup>	3.00 (.715)	2.97 (.836)	2.71 (.730)	3.35 (.693)
<i>M</i>	2.95 (.673)	3.14 (.715)	3.11 (.880)	3.38 (.716)
Condition of Campus				
6 <sup>th</sup>	2.57 (.848)	2.87 (.702)	1.90 (1.01)	2.94 (.702)
7 <sup>th</sup>	2.59 (.636)	2.51 (.719)	2.77 (.840)	2.81 (.681)
8 <sup>th</sup>	2.72 (.595)	2.61 (.671)	2.24 (.831)	2.76 (.663)
<i>M</i>	2.64 (.653)	2.67 (.717)	2.39 (.918)	2.83 (.686)
Adult Supervision				
6 <sup>th</sup>	3.07 (.616)	3.08 (.587)	2.79 (.871)	3.23 (.614)
7 <sup>th</sup>	3.00 (.534)	3.05 (.547)	2.77 (.523)	3.18 (.521)
8 <sup>th</sup>	3.13 (.560)	3.15 (.550)	2.44 (.504)	3.27 (.503)
<i>M</i>	3.06 (.554)	3.09 (.562)	2.66 (.610)	3.23 (.548)
Acting-Out				
6 <sup>th</sup>	8.94 (4.51)	7.50 (3.37)	9.44 (3.50)	6.89 (3.38)
7 <sup>th</sup>	9.18 (4.86)	8.16 (4.61)	10.40 (2.76)	7.11 (3.54)
8 <sup>th</sup>	9.58 (4.51)	7.66 (4.04)	6.83 (3.06)	7.03 (3.58)
<i>M</i>	9.27 (4.64)	7.78 (4.00)	9.20 (3.30)	7.01 (3.50)
Learning				
6 <sup>th</sup>	10.35 (5.30)	9.15 (4.25)	10.67 (4.36)	8.28 (3.84)
7 <sup>th</sup>	9.96 (4.54)	8.95 (4.44)	10.30 (4.22)	8.31 (4.04)
8 <sup>th</sup>	9.45 (4.15)	8.51 (4.26)	7.17 (3.49)	8.08 (4.00)
<i>M</i>	9.85 (4.52)	8.93 (4.30)	9.68 (4.20)	8.23 (3.95)

Note. B = Bullies, V = Victims, B/V = Bully/Victims, C = Control, and *M* = Mean.

## Appendices



## Appendix A

### Definitions of Bullying Behavior

Several studies have focused primarily on defining behaviors that constitute bullying. Early definitions concentrate on individual or group violence toward an unpopular individual that begins and ends suddenly. One of the field's prominent researchers initially suggested that bullies are males who physically and emotionally harass their victims, whether the victims are males or females (Olweus, 1978). Olweus was the first to introduce the notion of emotional, or "mental" bullying, making it considerably more difficult to observe and agree upon all forms of definable bullying behaviors. Since his early definition, several other definitions of bullying also have included the notion of mental or psychological attacks in addition to physical behaviors.

Besag (1989) stressed the importance of long-term and systematic violence as integral in considering bullying behaviors. However, other researchers have not always found this element to be necessary. Arora (1996) argues that a single event of a physical or psychological attack or threat delivered to a less powerful individual for the purpose of frightening and upsetting that individual is no less bullying than long-term and sustained attacks or threats. This definition also builds upon others by introducing a power differential between perpetrator and victim.

Scandinavian researchers Bjorkvist, Ekman, and Lagerspetz (1982) emphasize that the long-term nature of bullying behaviors is indicative of the social system occurring amongst students, which tends to be resistant to change. They suggest that bullying is a social form of aggression that occurs among individuals who encounter each other regularly. The emphasis in this definition is on the ongoing interaction between members in the group of students within which the bullying takes place. Other researchers, however, continue to consider the long-term aspect to be an important characteristic of bullying behaviors while also emphasizing the social and psychological aspects. For instance, Hazler (1996) defined bullying as repeated behaviors that affect individuals physically, emotionally, and psychologically through words, attacks, or social isolation. Some of the literature discusses the effect of the long-term element of bullying on the victims, in addition to the severity and duration of the single bullying act. Perhaps the accumulation of bullying behaviors over time may be as relevant as or more relevant to the experience of victimization than the impact of each individual bullying behavior.

Besag (1989) introduced the concept of intentionality to bullying, which suggests a moral dimension to the behavior. Bullying by this definition is intended to cause distress to others for the purpose of gratifying the aggressor. This definition suggests that it is not just the nature of the behavior that is important in determining what is bullying; the physical, psychological, and emotional impact of the behavior on others is of particular concern as well.

Olweus (1996) recently developed a more comprehensive definition of bullying and victimization that has been widely used in international studies. This definition identifies several concepts established in earlier definitions and reads as follows: "We define or explain the word bullying. We say a student is being bullied when another student,

## Appendix A (Continued)

or several other students

- Say mean and hurtful things or make fun of him or her or call him or her mean and hurtful names
- Completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose
- Hit, kick, push, shove around, or lock him or her inside a room
- Tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her
- And other hurtful things like that.

When we talk about bullying, these things happen repeatedly, and it is difficult for the student being bullied to defend himself or herself. We also call it bullying, when a student is teased repeatedly in a mean and hurtful way.

But we don't call it bullying when the teasing is done in a friendly and playful way. Also, it is not bullying when two students of about equal strength or power argue or fight (Olweus, 1991, pg. 7)"

Smith and Sharp (1994) adapted and translated Olweus's definition of bullying into English as a preface to their self-report evaluation of bullying and victimization (Olweus, 1996) for the Sheffield/DES Bullying Project in the United Kingdom, an intervention program that takes a whole school approach to student behavior and adjustment.

Olweus (1996) emphasizes that behavior is considered bullying if it (1) occurs frequently either one-on-one or in a group, (2) involves a range of behaviors from physical aggressiveness to spreading rumors, and (3) involves a power differential between aggressor and victim. The gender of perpetrators is not specified by Olweus, as it had been in previous definitions, suggesting that both girls and boys can be bullies. Olweus's current definition has been used to guide self-report of behaviors for the U.S. National Blueprints Model Bullying Prevention Program, which aims at decreasing bully and victim problems among primary and secondary school children through techniques to increase awareness of students, school administrators, and parents of difficulties within the school environment (Olweus, Limber, & Mihalic, 1999).

Of note, Olweus's definition considers teasing a form of bullying behavior as well. He indicates that repeated teasing, name-calling, or generally saying unpleasant things to others constitutes a form of bullying. Pearce (1991) also developed a definition for bullying that incorporates teasing behavior. Teasing could be considered bullying if it includes methods of intimidation that lead to distress in victims. Therefore, it is appropriate to suggest that racist and sexist attacks would be considered bullying behaviors, as long as they have deliberate intent to harm others, are unprovoked, and are

## Appendix A (Continued)

frequent (Swain, 1998). In other words, victims are not believed to induce bullying behavior against them.

No single definition has been clearly established as the gold standard for determining bullying behavior. However, several common elements emerge: physical, verbal or psychological aggression intended to hurt others and cause distress in a victim, the existence of a power differential between bully and victim, and that the bullying typically is not provoked by aggressive acts (Swain, 1998). Each definition is ultimately based on individual researchers' opinions of what constitutes bullying behavior, thus confounding the interpretation of results between studies. In searching for a more complete definition, types of behaviors have been further categorized as direct and indirect forms of bullying (Olweus, 1996). Direct bullying behaviors are considered those overtly focused at a victim, and which tend to be easily observed. These behaviors include hitting, pushing, verbal abuse, stealing, and threats. Indirect bullying behaviors are those that are covert in their focus on the victim. These behaviors include spreading rumors, ostracizing students, and purposefully ignoring or excluding students (Olweus, 1996). This distinction between direct and indirect behaviors has implications for how behavior is reported and observed as bullying.

## Appendix B

### Assessment of Bullying Behaviors

In addition to the numerous ways bullying and victimization have been defined, researchers have developed various methods to assess bullying behavior. In general, four methodologies have been employed by past bullying studies: self-report surveys, interview, observation, and peer nomination. Most commonly used, the self-report survey technique has become the method of choice for many studies. Surveys are relatively simple to administer to large numbers of students and the interpretation of responses is straightforward (Solberg & Olweus, 2002). Some studies have assessed bullying behaviors using two or three global items that require students to respond whether they generally bully students or have been bullied by students (Nansel et al., 2001; Haynie et al., 2001). For these studies, the range of bullying behavior types was not assessed to the same extent that the Olweus survey had measured them. The Revised Olweus Bully/Victim Questionnaire (Olweus, 1996) specifies two global items to classify general bullying and victimization with the addition of several items that identify various types of bullying behaviors that are engaged in and/or experienced (e.g., hitting, pushing, verbal abuse, teasing, social exclusion, spreading rumors, etc.). Bullying and victimization can be computed using the two global items and further explained using responses on the specific bullying type items. Because it is a brief and accurate scale, many more researchers chose to use the Olweus measure, or direct variations of the measure, to estimate bullying prevalence and identify students with difficulties (Solberg & Olweus, 2002).

As an alternate to survey techniques, Wolke, Woods, Bloomfield, & Karstadt (2000) used an interview method for students in order to estimate bullying in classmates. The interview items were structured similarly to the Olweus Bully/Victim Questionnaire and allowed students to elaborate on their experiences rather than simply respond to items on a Likert scale. However, this method is time consuming making it difficult to recruit large numbers of participants. While interviews may be based on an established measure and can provide a wealth of qualitative information, the responses obtained from interview items are typically not scaled and less standardized. Using this method and considering its limitations, prevalence estimates of bullying behaviors may not be comparable across schools. In addition, the information gained regarding bullying behaviors may not have equivalent meaning across studies.

Boulton (1993) employed a playground observation technique to measure bullying behaviors. This method requires independent observers to record classmate interactions and code behaviors in accordance with Olweus's definition of bullying behaviors. An advantage of this technique is the recording of actual behavior, rather than having to rely on the accuracy, interpretation, or validity of child report. Disadvantages include inadequate observation of indirect bullying and teasing and the costliness of employing independent observers to assess what may be relatively low base-rate behavior. However, if the emphasis of a study is not on estimating the prevalence of

## Appendix B (Continued)

bullying, but on identification within a school of at-risk students, interview and observation methods may be useful (Solberg & Olweus, 2002).

In addition to the survey, interview, and observation methods, The Peer Nomination Inventory, developed by Perry, Kusel, and Perry (1988), requires respondents to nominate which of their classmates are bullies or victims. A benefit of this method is that students will be more likely to validly report bullying if they have to report about others' behavior. A disadvantage is that direct behaviors will be observed more readily than indirect, making those students who are physically aggressive more likely to be identified as bullies. Other students may not observe those who engage in such indirect bullying behaviors as isolation or rumor spreading, unless the reporting student experiences the bullying him or herself. In addition, the procedures one researcher uses to categorize student ratings resulting from peer nominations are usually complex and difficult to reproduce (Solberg & Olweus, 2002). Further, the prevalence estimates obtained through peer nomination depend on factors within the school (e.g., number of students in the classroom, problem levels in the classroom, standardization method of nominations, etc.), increasing the difficulty for other researchers to duplicate the procedures of others and extract similar meaning from prevalence estimates (Solberg & Olweus, 2002).

Olweus's paradigm for assessing bullying has been used in several international and national intervention strategies, including the National Model Blueprints Bullying Prevention Program in the United States (Olweus, Limber, & Mihalic, 1999). The definition of bullying behaviors accompanying the Revised Olweus Bully/Victim Questionnaire incorporates most components of bullying behavior that have been found important in past research. Assessment techniques have been developed as a result of several author-formulated definitions, as previously discussed. Additionally, these assessment tools have been created to accomplish the goal of gathering information on child behaviors via varying methods and each has pros and cons. Many have found self-report survey techniques to be among the easiest to administer and comprehend. The Olweus Bully/Victim Questionnaire is an example of a comprehensive self-report survey that provides distinct criteria for reporting one's behavior. This survey has been used in several studies in which information was obtained from students regarding their own behavior.

### *Using Teacher Reports to Identify At-Risk Children*

Assessment of child behavior can incorporate information from several sources. Ideally, a comprehensive assessment of child adjustment within the schools should utilize multiple informants. Oftentimes, obtaining reliable information from several raters in a single environment proves too costly and time consuming. Many studies, therefore, rely on a single rater, commonly, teacher report. Such assessment of large student populations is more cost effective and efficient method for obtaining information on school environments and individual students.

## Appendix B (Continued)

Past research has shown the stability of teacher report of behavioral difficulties in school aged children. For example, moderate stability was found for the Achenbach Teacher Report Form (TRF), specifically for scales related to externalizing behaviors (Achenbach, 1991; Verhulst & Van der Ende, 1991). Of specific interest for the current study, the AML-R measure has displayed high reliability and validity for screening and evaluation purposes (Cowen, Dorr, Clarfield, Kreling, McWilliams, Pokracki, Pratt, Terrell, & Wilson, 1973). Multiple studies have confirmed the AML-R's ability to identify children at-risk for subsequent adjustment and academic problems (Carberry & Handal, 1980; Durlak & Jason, 1984). In addition, teacher completed AML-R scores were consistent with independent observation of disruptive behaviors and psychological and attention difficulties (Durlak, Stein, & Mannarino, 1980).

While studies have shown teacher report to be a stable and effective method of assessment, reliability of teacher reports may differ between externalizing and internalizing difficulties (Green, Beck, Forehand, & Vosk, 1980). In situations with large numbers of students, teachers may have more difficulty identifying internalizing behaviors, such as anxiety, depression, and withdrawal, than externalizing behaviors, such as aggression and inattention (Gillespie & Durlak, 1995). In reporting troublesome behaviors in the classroom, teachers are likely more concerned with students who present with very overt and aggressive behaviors rather than the students who are exceedingly quiet and withdrawn. Therefore, it is important to consider teacher report surveys as a part of a larger constellation of measurement tools in order to explain child behaviors.

## Hypothesis 1

Specifically, in the individual variable domain, it is hypothesized that bullies will have greater depressive symptom levels than the noninvolved students (Haynie et al., 2001; Nansel et al., 2001), greater levels of trait anger and anger expression than victims and uninvolved students (Bosworth et al., 1999), lower levels of anxiety than victims and bully/victims (Boulton & Underwood, 1992; Olweus, 1995), and greater discipline referrals than victims and uninvolved students (Haynie et al., 2001; Nansel et al., 2001). Generally, bully/victims are expected to have the highest levels of depression, anxiety, trait anger, anger expression, and discipline referrals compared with other groups of students, while the comparison control group will have the lowest levels of each.

In the family domain, bullies will have lower familial cohesion and adaptability than the victims and uninvolved students (Batsche & Knoff, 1994; Carney, 2000; Hazler, 1996; Olweus, 1978; 1991; Oliver, Oaks, & Hoover, 1994). Victims will have the greatest levels of adaptability and cohesion compared with other groups of students, while bully/victims are expected to have the lowest levels.

Within the school domain, bullies will have lower academic achievement, as measured by Grade Point Averages and standardized test scores (Nansel et al., 2001), lower school spirit (Rigby & Slee, 1991; Slee & Rigby, 1993), poorer child-teacher relationships (Rigby & Slee, 1991; Slee & Rigby, 1993), lower goal orientation than victims and uninvolved students (Lagerspetz, 1982), lower alienation than victims and bully/victims, and poorer child-peer relationships than uninvolved students (Olweus, 1997). Bullies are expected to report having school environments with an unpleasant condition of school campus (i.e., the presence of graffiti, building cleanliness, and likeability of school appearance), a poorer climate (e.g., presence of gangs, witnessing fighting at school, lower diversity, and witnessing other problem behaviors), low levels of adult supervision, and low levels of adult intervention (e.g., fairness of discipline for aggressive acts and staff response to bullying) compared with the environmental reports of victims and uninvolved students (Olweus, 1992; 1994). However, bully/victims are expected to have the poorest academic achievement, school spirit, child-teacher and child-peer relations, and goal orientation and the greatest levels of alienation compared with other groups of students. In addition, bully/victims will report having school environments with the most unpleasant condition of campus, the poorest school climate, and the lowest levels of adult intervention and supervision in school.

Teachers will report bullies to have greater acting-out behaviors and greater learning difficulties than victims and uninvolved students, and lower moodiness than victims (Carberry & Handal, 1980; Durlak, Stein, & Mannarino, 1980; Haynie et al., 2001; Nansel et al., 2001). Greater levels of moodiness are expected to be reported by teachers for bullies compared with uninvolved students (Haynie et al., 2001; Nansel et al., 2001). Bully/victims are expected to have the greatest levels of acting-out behavior, moodiness, and learning difficulties compared with other groups of students, as reported by teachers.

## Appendix D

### Hypothesis 2

Specifically, it is expected that male bullies will report the lowest levels of depression and anxiety compared with male bully/victims, male victims, female bully/victims, and female victims. However, males in the comparison control group are expected to have the lowest levels of depression, anger, anxiety, and discipline referrals compared with other group. Male bully/victims are expected to have the greatest levels of trait anger, anger expression, and discipline referrals. Within the family domain, female bully/victims are expected to report the lowest levels of cohesion and adaptability compared with other groups of students. Family adaptability and cohesion are expected to decrease from greatest to lowest levels by group and gender in the following order: uninvolved students, male victims, female victims, male bullies, male bully/victims, and female bully/victims. Essentially, uninvolved students will have the greatest family adaptability and cohesion, while female bully/victims will have the poorest family functioning. In the school setting, male bully/victims are expected to report the lowest levels of school spirit, child-teacher relationships, child-peer relationships, academic achievement, and goal orientation, the poorest perception of school climate, adult intervention and supervision in schools, condition of school campus, and the greatest levels of alienation compared with other groups of students (Santa Lucia & Gesten, 2000). Male bully/victims are expected to have the highest teacher ratings of acting-out and learning difficulties and female bully/victims are expected to have the highest moodiness ratings compared with other students.



## Appendix E

### Hypothesis 3

Specifically, 8<sup>th</sup> grade bully/victims are expected to experience the highest levels of depression, anxiety, behavioral misconduct, and anger compared with other groups of students. Uninvolved 6<sup>th</sup> grade students are expected to have the lowest levels of anxiety, depression, anger, and discipline referrals. For family factors, adaptability and cohesion are hypothesized to be the poorest for bully/victims in 8<sup>th</sup> grade compared with other groups of students. In school, some effects can be hypothesized based on past research, while others will be further explored through results from the present study. Child-peer relations, child-teacher relations, goal orientation, and school spirit are expected to be the lowest for bullies and bully/victims in 8<sup>th</sup> grade. Alienation is likely to be the greatest for victims and bully/victims in 8<sup>th</sup> grade. Teachers are expected to report the greatest levels of acting-out, learning difficulties, and moodiness for 8<sup>th</sup> grade bully/victims.

Hypothesis 4

Some effects can be hypothesized based on past research. Levels of depression and anxiety are expected to increase for female victims and bully/victims from 6<sup>th</sup> to 8<sup>th</sup> grade compared with male victims and bully victims, in that 8<sup>th</sup> grade female bully/victims will have the greatest reports of depression and anxiety. Anger and discipline referrals are expected to increase more for male bullies and bully/victims from 6<sup>th</sup> to 8<sup>th</sup> grade than for other groups of students such that 8<sup>th</sup> grade male bully/victims will have the highest levels of anger, anger expression, and behavioral misconduct. Family levels of cohesion and adaptability are expected to decrease more so for male bullies and bully/victims from 6<sup>th</sup> to 8<sup>th</sup> grade than for other groups of students. However, 8<sup>th</sup> grade female bully/victims will overall have the lowest reported levels of family functioning. Child-peer relations are expected to increase for female victims from 6<sup>th</sup> to 8<sup>th</sup> grade, but decrease for other groups of students across grades. Eighth grade male bully/victims will have the greatest teacher reported levels of acting-out and learning difficulties, and 8<sup>th</sup> grade female bully/victims will have the greatest reports of moodiness.

## Appendix G

### Olweus Bully/Victim Questionnaire-Revised

Along with assessing general involvement in bullying behaviors, the Bully/Victim Questionnaire assesses exposure to and engagement in different types of bullying (direct and indirect methods), the location of bullying, student attitudes toward bullying, and the perceived reactions of classmates and school administrators to bullying and victimization (Olweus, 1991a). Each of the global bullying and victimization items are followed by a series of eight items asking students to indicate participation in or experience of various types of bullying behaviors (name calling, teasing, social exclusion, physical aggression, spreading rumors, stealing, and threatening). Each of the 18 items is rated on a 5-point scale: 1 = "I haven't been bullied at school in the past couple of months," 2 = "it has only happened once or twice," 3 = "2 or 3 times a month," 4 = "about once a week," and 5 = "several times a week."

#### Olweus Bully/Victim Questionnaire Items:

You will find questions about your life in school. There are several answers next to each question. Each answer has a number by it. Darken in the circle on the scantron form that matches the answer that best describes you for each statement.

Here are some questions about being bullied by other students. First, we define or explain the word bullying. We say a student is being bullied when another student, or several other students:

- Say mean and hurtful things or make fun of him or her or call him or her hurtful names
- Completely ignore or exclude him or her from their group of friends or leave him or her out of things on purpose
- Hit, kick, push, shove around, or lock him or her inside a room
- Tell lies or spread false rumors about him or her or send mean notes and try to make other students dislike him or her
- And other hurtful things like that, including being teased in a mean and hurtful way.

When we talk about bullying, these things happen repeatedly, and it is difficult for the student being bullied to defend himself or herself. Note that we also call it bullying when a student is teased repeatedly in a mean and hurtful way.

Appendix G (Continued)

But, we don't call it bullying when the teasing is done in a friendly and playful way. Also, it is not bullying when students of about equal strength or power argue or fight.

**ABOUT BEING BULLIED BY OTHER STUDENTS**

Have you been bullied at school in the past couple of months in one or more of the following ways? Please answer all of the questions.

	<b>I haven't been bullied in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
4. How often have you been bullied at school in the past couple of months?	1	2	3	4	5
5. I was called mean names, was made fun of, or teased in a hurtful way.	1	2	3	4	5
6. Other students left me out of things on purpose, excluded me from their group of friends, or completely ignored me.	1	2	3	4	5
7. I was hit, kicked, pushed, shoved around, or locked indoors.	1	2	3	4	5
8. Other students told lies or spread false rumors about me and tried to make others dislike me.	1	2	3	4	5
9. I had money or other things taken away from me or damaged.	1	2	3	4	5
10. I was threatened or forced to do things I didn't want to do.	1	2	3	4	5

Appendix G (Continued)

	<b>I haven't been bullied in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
11. I was bullied with mean names or comments about my race or color.	1	2	3	4	5
12. I was bullied with mean names, comments, or gestures with a sexual meaning.	1	2	3	4	5
13. I was bullied in another way. In this case, please write where: _____	1	2	3	4	5

14. In which classes is the student or students who bully you?

<b>I haven't been bullied in the last couple of months</b>	<b>In my class</b>	<b>In a different class but same grade</b>	<b>In a higher grade</b>	<b>In a lower grade</b>	<b>In different grades</b>
1	2	3	4	5	6

15. Have you been bullied by boys or girls?

<b>I haven't been bullied in the last couple of months</b>	<b>Mainly by one girl</b>	<b>By several girls</b>	<b>Mainly by one boy</b>	<b>By several boys</b>	<b>By both boys and girls</b>
1	2	3	4	5	6

16. By how many students have you usually been bullied?

<b>I haven't been bullied in the last couple of months</b>	<b>Mainly by one student</b>	<b>By a group of 2-3 students</b>	<b>By a group of 4-9 students</b>	<b>By a group of more than 9 students</b>	<b>By several different students of groups</b>
1	2	3	4	5	6

Appendix G (Continued)

17. How long has the bullying lasted?

<b>I haven't been bullied in the last couple of months</b>	<b>It lasted one or two weeks</b>	<b>It lasted about a month</b>	<b>It has lasted about 6 months</b>	<b>It has lasted about a year</b>	<b>It has gone on for several years</b>
1	2	3	4	5	6

**I haven't been bullied in the last couple of months**      **I have been bullied in one or more of the following places in the past couple of months**

18. Where have you been bullied?      1      2

Continue here if you have been bullied in the past couple of months:

**Have you been bullied:**

	<u>No</u>	<u>Yes</u>
18a. on the playground/athletic field (during recess or break times)?	1	2
18b. in the hallways/stairwells?	1	2
18c. in class (with the teacher present)?	1	2
18d. in the classroom (without the teacher present)?	1	2
18e. in the bathroom?	1	2
18f. in gym class or the gym locker room/shower?	1	2
18g. in the lunch room?	1	2
18h. on the way to and from school?	1	2
18i. at the school bus stop?	1	2
18j. on the school bus?	1	2
18k. somewhere else in school?		
In this case, please write where: _____	1	2

Appendix G (Continued)

	<b>I haven't been bullied in the last couple of months (skip the next 6 questions)</b>	<b>I have been bullied but I have not told anyone (skip the next 6 questions)</b>	<b>I have been bullied and I have told somebody</b>
19. Have you told anyone that you have been bullied at school in the past couple of months?	1	2	3

Have you told (that you have been bullied):

	<u><b>No</b></u>	<u><b>Yes</b></u>
19a. your class (homeroom) teacher?	1	2
19b. another adult at school (a different teacher, the principal, the school nurse, the custodian, the school psychologist, etc.)?	1	2
19c. your parents/guardians?	1	2
19d. your brothers or sisters?	1	2
19e. your friends?	1	2
19f. somebody else?	1	2
In this case, please write who: _____	1	2

	<u><b>Almost Never</b></u>	<u><b>Once in a while</b></u>	<u><b>Some- times</b></u>	<u><b>Often</b></u>	<u><b>Almost Always</b></u>
20. How often do the teachers or other adults try to put a stop to it when a student is being bullied at school?	1	2	3	4	5
21. How often do other students try to put a stop to it when a student is being bullied at school?	1	2	3	4	5

	<b>I haven't been bullied in the last couple of months</b>	<b>No, they haven't contacted the school</b>	<b>Yes, they have contacted the school once</b>	<b>Yes they have contacted the school several times</b>
22. Has any adult at home contacted the school to try to stop your being bullied at school in the past couple of months?	1	2	3	4

Appendix G (Continued)

	<b>That is probably what he or she deserves</b>	<b>I don't feel much</b>	<b>I feel a bit sorry for him or her</b>	<b>I feel sorry for him or her and want to help him or her</b>
23. When you see a student your age being bullied at school, what do you feel or think?	1	2	3	4

**ABOUT BULLYING OTHER STUDENTS**

	<b>I haven't bullied another student(s) in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
24. How often have you taken part in bullying another student(s) at school in the past couple of months?	1	2	3	4	5

**Have you bullied another student(s) at school in the past couple of months in one or more of the following ways? Please answer all of the questions.**

	<b>I haven't bullied another student(s) in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
25. I called another student mean names, made fun of or teased him or her in a hurtful way.	1	2	3	4	5



Appendix G (Continued)

	<b>I haven't bullied another student(s) in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
26. I kept him or her out of things on purpose, excluded him or her from their group of friends, or completely ignored him or her.	1	2	3	4	5
27. I hit, kicked, pushed, shoved him or her around or locked him or her indoors.	1	2	3	4	5
28. I spread false rumors about him or her and tried to make others dislike him or her.	1	2	3	4	5
29. I took money or other things from him or her or damaged his or her belongings.	1	2	3	4	5
30. I threatened or forced him or her to do things he or she didn't want to do.	1	2	3	4	5
31. I bullied him or her with mean names or comments about his or her race or color.	1	2	3	4	5
32. I bullied him or her with mean names, comments, or gestures with a sexual meaning.	1	2	3	4	5
33. I bullied him or her in another way.					
In this case, please write in what way: _____	1	2	3	4	5

Appendix G (Continued)

	<b>I haven't bullied other student(s) at school in the past couple of months</b>	<b>No, they haven't walked with me about it</b>	<b>Yes, they have talked with me about it once</b>	<b>Yes, they have talked with me about it several times</b>		
34. Has your class (homeroom) teacher talked with you about your bullying other students at school in the past couple of months?	1	2	3	4		
35. Has any adult at home talked with you about your bullying other students at school in the past couple of months?	1	2	3	4		
	<b>Yes</b>	<b>Yes, maybe</b>	<b>I don't know</b>	<b>No, I don't think so</b>	<b>No</b>	<b>Definitely No</b>
36. Do you think you could join in bullying a student whom you didn't like?	1	2	3	4	5	6
	<b>I have never noticed that students my age are bullied</b>	<b>I take part in the bullying</b>	<b>I don't do anything but I think the bullying is OK</b>	<b>I just watch what goes on</b>	<b>I don't do anything but I think I ought to help the bullied student</b>	<b>I try to help the bullied student in one way or another</b>
37. How do you usually react if you see or understand that a student your age is being bullied by other students?	1	2	3	4	5	6
	<b>Never</b>	<b>Seldom</b>	<b>Sometimes</b>	<b>Fairly Often</b>	<b>Often</b>	<b>Very Often</b>
38. How often are you afraid of being bullied by other students in your school?	1	2	3	4	5	6

Appendix G (Continued)

	<b>Little or Nothing</b>	<b>Fairly Little</b>	<b>Some- what</b>	<b>A good deal</b>	<b>Much</b>
39. Overall, how much do you think your class teacher has done to counteract bullying in the past couple of months?	1	2	3	4	5

Appendix H

Center for Epidemiological Studies-Depression Scale (CES-D)

Items are rated on a 4-point scale, 0 = Never to 3 = Most of the time and the reference period is within the last week. The scale has been shown to have adequate internal consistency reliability, Cronbach's alpha = .88 (Robert, Lewinsohn, & Seeley, 1991). Additionally, the CES-D scale showed concordant validity in identifying depressive symptomatology compared with the Beck Depression Inventory, with an 88% agreement between the two scales (Robert, Lewinsohn, & Seeley, 1991).

**DIRECTIONS:** For each statement below, darken in the circle on the scantron form for the number that best describes how often you felt or behaved this way for each following statement-**DURING THE PAST WEEK.**

	Rarely or none of the time (Less than 1 day)	Some or a little of the time (1-2 Days)	Occasionally or a moderate amount of time (3-4 Days)	Most or all of the time (5-7 Days)
<b>DURING THE PAST WEEK:</b>				
1. I was bothered by things that usually don't bother me	0	1	2	3
2. I did not feel like eating; my appetite was poor	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends	0	1	2	3
4. I felt that I was just as good as other people	0	1	2	3
5. I had trouble keeping my mind on what I was doing	0	1	2	3
6. I felt depressed	0	1	2	3
7. I felt that everything I did was an effort	0	1	2	3
8. I felt hopeful about the future	0	1	2	3
9. I thought my life had been a failure	0	1	2	3
10. I felt fearful	0	1	2	3
11. My sleep was restless	0	1	2	3
12. I was happy	0	1	2	3
13. I talked less than usual	0	1	2	3
14. I felt lonely	0	1	2	3

Appendix H (Continued)

	<b>Rarely or none of the time (Less than 1 day)</b>	<b>Some or a little of the time (1-2 Days)</b>	<b>Occasionally or a moderate amount of time (3-4 Days)</b>	<b>Most or all of the time (5-7 Days)</b>
15. People were unfriendly	0	1	2	3
16. I enjoyed life	0	1	2	3
17. I had crying spells	0	1	2	3
18. I felt sad	0	1	2	3
19. I felt that people disliked me	0	1	2	3
20. I could not get "going"	0	1	2	3

## Appendix I

### State-Trait Anxiety Inventory for Children (STAIC)

The Trait Anxiety subscale is rated on a 3-point scale, 1 = Hardly ever to 3 = Often. The STAIC evidenced adequate internal consistencies for the State Anxiety scale,  $\alpha = .87$  for females and  $\alpha = .82$  for males, and for the Trait Anxiety scale,  $\alpha = .81$  for females and  $\alpha = .78$  for males (Spielberger, 1973).

Trait Anxiety Scale items:

***DIRECTIONS:*** A number of statements that boys and girls use to describe themselves are given below. Read each statement carefully and decide if it is hardly ever, sometimes, or often true for you. Then darken the scantron circle with the same number as the statement that describes you best. There are no right or wrong answers. Do not spend too much time on any one statement. Remember to darken the circle for each statement that best describes how you *usually feel*.

	<u>Hardly</u> <u>Ever</u>	<u>Sometimes</u>	<u>Often</u>
1. I worry about making mistakes.	1	2	3
2. I feel like crying.	1	2	3
3. I feel unhappy.	1	2	3
4. I have trouble making up my mind.	1	2	3
5. It is difficult for me to face my problems.	1	2	3
6. I worry too much.	1	2	3
7. I get upset at home.	1	2	3
8. I am shy.	1	2	3
9. I feel troubled.	1	2	3
10. Unimportant thoughts run through my mind and bother me.	1	2	3
11. I worry about school.	1	2	3
12. I have trouble deciding what to do.	1	2	3
13. I notice my heart beats fast.	1	2	3
14. I am secretly afraid.	1	2	3
15. I worry about my parents.	1	2	3
16. My hands get sweaty.	1	2	3
17. I worry about things that may happen.	1	2	3
18. It is hard for me to fall asleep at night.	1	2	3
19. I get a funny feeling in my stomach.	1	2	3
20. I worry about what others think of me.	1	2	3

## Appendix J

### State-Trait Anger Expression Inventory for Children and Adolescents (STAXI-C/A)

Pilot data is current being collected on this scale and further information regarding reliability and validity must be obtained. Items are rated on a 3-point scale (1 = Hardly Ever, 2 = Sometimes, and 3 = Often).

Trait Anger items:

**DIRECTIONS:** A number of statements that boys and girls use to describe themselves are given below. Read each statement carefully and decide if it is hardly ever, sometimes, or often true for you. Then darken the scantron circle with the same number as the statement that describes you best. There are no right or wrong answers. Do not spend too much time on any one statement. Remember to darken the circle for each statement that best describes how you *usually feel*.

	<u>Hardly Ever</u>	<u>Sometimes</u>	<u>Often</u>
1. I am annoyed.	1	2	3
2. I feel annoyed when I do a good job and no one notices me.	1	2	3
3. I get mad when I am punished unfairly.	1	2	3
4. I feel grouchy.	1	2	3
5. I get mad.	1	2	3
6. I get angry when I do well and am told I did something wrong.	1	2	3
7. I feel angry when I'm blamed for something I did not do.	1	2	3
8. I am hotheaded.	1	2	3
9. I get angry quickly.	1	2	3
10. I feel like yelling when I do something good and someone says I did bad.	1	2	3
11. I get furious when scolded in front of others.	1	2	3
12. I feel angry.	1	2	3

Anger Expression items:

**DIRECTIONS:** A number of statements that boys and girls use to describe themselves are given below. Read each statement carefully and decide if it is hardly ever, sometimes, or often true for you. Then darken the scantron circle with the same number as the statement which describes how you respond or behave when you are angry or very angry. There are no right or wrong answers. Do not spend too much time on any one

Appendix J (Continued)

statement. Remember to darken the circle on the scantron form for the answer that best describes how you *usually respond or behave* when angry or very angry.

	<u>Hardly</u> <u>Ever</u>	<u>Sometimes</u>	<u>Often</u>
13. I am patient with others.	1	2	3
14. I show my anger.	1	2	3
15. If I don't like someone, I keep it a secret.	1	2	3
16. I try to calm my angry feelings.	1	2	3
17. I keep cool.	1	2	3
18. I say mean things.	1	2	3
19. I hide my anger.	1	2	3
20. I try to relax.	1	2	3
21. I don't tell anyone I am angry.	1	2	3
22. I lose my temper.	1	2	3
23. I keep my anger in.	1	2	3
24. I try to calm down.	1	2	3
25. I control my temper.	1	2	3
26. I get into arguments.	1	2	3
27. I have more anger than I show.	1	2	3
28. I take a deep breath.	1	2	3
29. I control my angry feelings.	1	2	3
30. I get into fights.	1	2	3
31. I am afraid to show my anger.	1	2	3
32. I try to reduce my anger.	1	2	3
33. I stop myself from losing my temper.	1	2	3
34. I do things like slam doors.	1	2	3
35. I get mad inside, but don't show it.	1	2	3
36. I do something to relax and calm down.	1	2	3



Appendix K

School Adjustment Survey (SAS)

Each item is rated on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree). The domains assessed are school spirit (alpha = .85), alienation (alpha = .62), goal orientation (alpha = .69), child-teacher relations (alpha = .86), and child-peer relations (alpha = .69), which each presented with adequate reliability when administered to a 6<sup>th</sup> grade sample.

**DIRECTIONS:** Read each sentence carefully and darken the circle on the scantron form for the number that sounds most like you for each statement.

	Strongly Disagree	Disagree	I don't know	Agree	Strongly Agree
1. Students usually get along well with each other in this school.	1	2	3	4	5
2. Making friends is very difficult in this school.	1	2	3	4	5
3. I am in the wrong group to feel a part of this school.	1	2	3	4	5
4. A student can be himself/herself and still be accepted by other students in this school.	1	2	3	4	5
5. Most students at school like to include me in their activities.	1	2	3	4	5
6. I always seem to be left out of important school activities.	1	2	3	4	5
7. I think my teachers care about me.	1	2	3	4	5
8. Teachers are not usually available before class to talk with students.	1	2	3	4	5
9. My teachers often get to know me well.	1	2	3	4	5
10. Most teachers like my friends and me.	1	2	3	4	5
11. I care what most of my teachers think about me.	1	2	3	4	5
12. Some teachers would choose me as one of their favorite students.	1	2	3	4	5
13. I like school.	1	2	3	4	5

Appendix K (Continued)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>I don't know</b>	<b>Agree</b>	<b>Strongly Agree</b>
14. My teachers don't pay much attention to me.	1	2	3	4	5
15. I get a lot of encouragement at my school.	1	2	3	4	5
16. Other kids in my class have more friends than I do.	1	2	3	4	5
17. I feel a sense of school spirit.	1	2	3	4	5
18. I don't feel safe at this school.	1	2	3	4	5
19. I have friends who are of different racial and ethnic backgrounds at this school.	1	2	3	4	5
20. Discipline is fair at this school.	1	2	3	4	5
21. I feel like I'm learning a lot in school.	1	2	3	4	5
22. School is important to me.	1	2	3	4	5
23. I believe that I'm learning important things in school.	1	2	3	4	5
24. I liked school more last year than I do this year.	1	2	3	4	5
25. I feel that I can go to my teacher for advice or help with schoolwork.	1	2	3	4	5
26. I feel that I can go to my teacher for advice or help with non-school related problems.	1	2	3	4	5
27. Most of my teachers don't really expect very good work from me.	1	2	3	4	5
28. I don't care how well I do in school.	1	2	3	4	5
29. I try as hard as I can to do my best at school.	1	2	3	4	5
30. I am an important member of this school.	1	2	3	4	5
31. It bothers me when I don't do something well.	1	2	3	4	5
32. Education is important for success in life.	1	2	3	4	5
33. I feel prepared for middle school.	1	2	3	4	5

Appendix K (Continued)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>I don't know</b>	<b>Agree</b>	<b>Strongly Agree</b>
34. I think I will go to college.	1	2	3	4	5

Appendix L

Middle School/High School Student Survey (MS/HS Student Survey)

Several factors from the original MS/HS Student Survey were combined for the present study's analyses. Witnessing other Problem Behaviors, Witnessing Fighting at School, Presence of Gangs, and Diversity were aggregated to comprise the School Climate factor. Knowledge of Fairness and Discipline Policies and Staff Response to Bullying comprise the Adult Intervention factor. Condition of Campus is its own factor.

**These questions ask you how you feel about your school and people in your school.**

Please fill in the circle for the answer that most closely matches the way you feel. **YES!** indicates that the statement is **always or almost always** true for you, **yes** indicates that it is **usually true** for you, **no** indicates that the statement is **not usually true** for you, and **NO!** indicates the statement is **never or almost never true** for you.

	YES!	yes	no	NO!
1. Adults at my school teach us not to pick on other students.	4	3	2	1
2. Adults at my school try hard to keep students from bullying or picking on each other.	4	3	2	1
3. People in my school respect students of all races.	4	3	2	1
4. People of my race can succeed in my school.	4	3	2	1
5. There is graffiti at my school.	4	3	2	1
6. There is pressure to join gangs at my school.	4	3	2	1
7. My school building is clean.	4	3	2	1
8. I like the way my school looks.	4	3	2	1
9. Students in my school obey the rules.	4	3	2	1
10. There are gang fights at my school.	4	3	2	1
11. All students at my school who break the rules are treated the same, no matter who they are.	4	3	2	1
12. When someone breaks the rules here, administrators take appropriate action.	4	3	2	1
13. There is gang activity at my school.	4	3	2	1

**These questions ask you about things that go on at your school.**

Please fill in the circles to answer whether or not the following things have happened **in the past month.**

Appendix L (Continued)

**These questions ask you about things that you saw at your school in the past month.**

	No	1 to 3 times	<u>4 to 6 times</u>	<u>More than 6 times</u>
14. I saw other students in a fight.	0	1	2	3
15. I saw another student get pushed, shoved, slapped, or kicked.	0	1	2	3
17. I saw another student get harassed.	0	1	2	3
18. I saw a student threaten to hit or hurt another student at school.	0	1	2	3

**These questions ask you about drug/alcohol use at your school.**

Please fill in the circles on this form to answer whether or not the following things have happened **in the past month**.

	No	1 to 3 times	<u>4 to 6 times</u>	<u>More than 6 times</u>
19. I saw a student smoking on school grounds.	0	1	2	3
20. I saw a student using alcohol at school.	0	1	2	3
21. I saw a student using illegal drugs at school.	0	1	2	3
22. I saw another student selling drugs at school.	0	1	2	3

Appendix M

Adult Supervision at School (ASAS)

**DIRECTIONS:** Read each sentence carefully and darken the circle on the scantron form for the number that sounds most like you for each statement.

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>I don't know</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. In my school, teachers and administrators are in the hall when we change classes.	1	2	3	4	5
2. In my school, teachers and administrators are in the halls when we are in class.	1	2	3	4	5
3. In my school, there are lots of places where teachers and administrators cannot see what is going on.	1	2	3	4	5
4. In my classroom, teachers walk around while students are working.	1	2	3	4	5
5. In my school, there are a lot of open areas where teachers and administrators can supervise students.	1	2	3	4	5
6. In my school there are a lot of walls and barriers that make it hard for adults to supervise students.	1	2	3	4	5

## Appendix N

### Family Adaptability and Cohesion Evaluation Scales (FACES-II)

Each item is rated on a 5-point scale (1 = Almost Never, 2 = Once in a While, 3 = Sometimes, 4 = Frequently, 5 = Almost Always). Internal consistencies for each scale are good, alpha = .87 for Cohesion, alpha = .78 for Adaptability, and alpha = .90 for the whole scale. Edman, Cole, & Howard (1990) found convergent and discriminant validity between the FACES-II subscales and other measures of family functioning.

**DIRECTIONS:** Describe your family. How often does each behavior happen in your family according to the following scale?

	<b>Almost Never</b>	<b>Once in a while</b>	<b>Sometimes</b>	<b>Frequently</b>	<b>Almost Always</b>
1. Family members are supportive of each other during difficult times.	1	2	3	4	5
2. In our family, it is easy for everyone to express his/her opinion.	1	2	3	4	5
3. It is easier to discuss problems with people outside the family than with other family members.	1	2	3	4	5
4. Each family member has input regarding major family decisions.	1	2	3	4	5
5. Our family gathers together in the same room.	1	2	3	4	5
6. Children have a say in their discipline.	1	2	3	4	5
7. Our family does things together.	1	2	3	4	5
8. Family members discuss problems and feel good about the solutions.	1	2	3	4	5
9. In our family, everyone gets his/her own way.	1	2	3	4	5
10. We shift household responsibilities from person to person.	1	2	3	4	5

Appendix N (Continued)

	<b>Almost Never</b>	<b>Once in a while</b>	<b>Sometimes</b>	<b>Frequently</b>	<b>Almost Always</b>
11. Family members know each other's close friends.	1	2	3	4	5
12. It is hard to know what the rules are in our family.	1	2	3	4	5
13. Family members consult other family members on personal decisions.	1	2	3	4	5
14. Family members say what they want.	1	2	3	4	5
15. We have difficulty thinking of things to do as a family.	1	2	3	4	5
16. In solving problems, the children's suggestions are followed.	1	2	3	4	5
17. Family members feel very close to each other.	1	2	3	4	5
18. Discipline is fair in our family.	1	2	3	4	5
19. Family members feel closer to people outside the family than to other family members.	1	2	3	4	5
20. Our family tries new ways of dealing with problems.	1	2	3	4	5
21. Family members go along with what the family decides to do.	1	2	3	4	5
22. In our family, everyone shares responsibilities.	1	2	3	4	5
23. Family members like to spend their free time with each other.	1	2	3	4	5
24. It is difficult to get a rule changed in our family.	1	2	3	4	5
25. Family members avoid each other at home.	1	2	3	4	5



Appendix N (Continued)

	<b>Almost Never</b>	<b>Once in a while</b>	<b>Sometimes</b>	<b>Frequently</b>	<b>Almost Always</b>
26. When problems arise, we compromise.	1	2	3	4	5
27. We approve of each other's friends.	1	2	3	4	5
28. Family members are afraid to say what is on their minds.	1	2	3	4	5
29. Family members pair up rather than do things as a total family.	1	2	3	4	5
30. Family members share interests and hobbies with each other.	1	2	3	4	5

Appendix O

Acting-Out, Moodiness, and Learning Scale-Revised (AML-R)

Each item is rated on a 5-point scale, 1 = Never to 5 = Most or all of the time. Higher scores on the scales indicate significant disturbance. The AML-R has adequate validity and test-retest reliabilities ranges over a two week period, alpha = .80 to alpha = .86 (Carberry & Handal, 1980; Cowen et al., 1973; Durlak et al., 1980; Gillespie & Durlak, 1995). Internal consistency is high (alpha = .93) (Santa Lucia, Gesten, Rendina-Gobioff, Epstein, Kaufmann, Salcedo, & Gadd, 2000). This screening device has demonstrated good concurrent and discriminant validity (Cowen et al., 1973; Gillespie & Durlak, 1995). Scores on the AML-R have been correlated with personality and academic achievement (Dorr, Stephens, Pozner, & Klodt, 1980) and have distinguished between children who were referred for mental health services and those who were not (Cowen et al., 1973). In addition, Gillespie and Durlak (1995) report a 93% true positive hit rate for the AML-R in identifying children who are at-risk. The AML-R had been developed for use with primary grade children, but has been administered to students in 6<sup>th</sup> grade with good results (Dorr, et al., 1980). Two items were added to the AML-R to assess student bullying and victimization.

**Child's Name:** \_\_\_\_\_ **D.O.B.:** \_\_\_\_\_

**Child's Gender:** \_\_\_ Male \_\_\_ Female

**Is this child in Exceptional Education? :** \_\_\_ Yes \_\_\_ No  
If yes, please specify

**This child is in a:** \_\_\_ Self-Contained \_\_\_ Continuous Progress **-classroom.**

**Instructions:** Please rate the child's behavior, as you have observed and experienced it since the beginning of school according to the following scale, by circling the appropriate number:

**(1) Never** - You have literally never observed this behavior in this child.

**(2) Seldom** - You have observed this behavior once or twice.

**(3) Moderately often** - You have seen this behavior more often than once a month but less often than once a week.

**(4) Often** - You have seen this behavior more often than once a week but less often than daily.

Appendix O (Continued)

**(5) Most or all of the time** - You have seen this behavior with great frequency, averaging once a day or more often.

**This child:**

1. gets into fights or quarrels with classmates	1	2	3	4	5
2. has to be coaxed to play or work with peers	1	2	3	4	5
3. is confused with school work	1	2	3	4	5
4. is restless	1	2	3	4	5
5. is unhappy	1	2	3	4	5
6. gets off-task	1	2	3	4	5
7. disrupts class discipline	1	2	3	4	5
8. feels hurt when criticized	1	2	3	4	5
9. needs help with school work	1	2	3	4	5
10. is impulsive	1	2	3	4	5
11. is moody	1	2	3	4	5
12. has difficulty learning	1	2	3	4	5

This Child:

	<b>Not in the past couple of months</b>	<b>It has only happened once or twice</b>	<b>2 or 3 times a month</b>	<b>About once a week</b>	<b>Several times a week</b>
13. has been bullied at school in the past couple of months?	1	2	3	4	5
14. has taken part in bullying another student(s) at school in the past couple of months?	1	2	3	4	5

## Appendix P

### Florida Comprehensive Achievement Tests (FCAT)

Students' scores are compared with benchmarks defined by the state of Florida (Florida Department of Education, 2000). In addition, Florida students' performance on the FCAT is compared with the performance of students across the nation using a norm-referenced test. The FCAT is comprised of the reading comprehension and mathematics problem-solving portions of the Stanford Achievement Test battery, 9<sup>th</sup> Edition (Stanford 9; "Stanford Achievement Test Series", 1999). The Stanford Achievement Tests are national tests that measure students' achievement in based reading, language arts, mathematics, science, and social science curriculum. These tests are administered to 3<sup>rd</sup> through 10<sup>th</sup> grade students in Florida school districts. The reading comprehension and math problem solving achievement tests provide a scale score and a national percentile rank. Students who receive a national percentile rank (NPR) of 50 perform at the national average. All students in grades 3 through 10 take the Norm-Referenced Test section of the FCAT and receive scale scores that range from 424-863 across all grades (Florida Department of Education, 2000). Reading and Math Developmental Scale Scores were examined for the present study since they are used to determine student achievement level. The range of Developmental Scale Scores is 86-3008.

Appendix Q

Multivariate and Follow-Up Univariate Analysis Tables

Table 1

Multivariate Tests for Individual Domain Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.885	2878.12	5	1865	.000
Group	Pillai's Trace	.177	23.446	15	5601	.000
Gender	Pillai's Trace	.016	5.953	5	1865	.000
Grade	Pillai's Trace	.009	1.594	10	3732	.102
Gender * Group	Pillai's Trace	.021	2.575	15	5601	.001
Grade * Group	Pillai's Trace	.019	1.158	30	9345	.252
Gender * Grade	Pillai's Trace	.004	.703	10	3732	.722
Gender * Grade * Group	Pillai's Trace	.021	1.288	30	9345	.135

Note. Alpha level = .05.

Appendix Q (Continued)

Table 2

Multivariate Tests for Family Domain Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.807	4054.50	2	1944	.000
Group	Pillai's Trace	.023	7.437	6	3890	.000
Gender	Pillai's Trace	.002	2.434	2	1944	.088
Grade	Pillai's Trace	.000	.195	4	3890	.941
Gender * Group	Pillai's Trace	.013	4.190	6	3890	.000
Grade * Group	Pillai's Trace	.004	.721	12	3890	.733
Gender * Grade	Pillai's Trace	.002	.741	4	3890	.564
Gender * Grade * Group	Pillai's Trace	.005	.886	12	3890	.561

Note. Alpha level = .05.

Appendix Q (Continued)

Table 3

Multivariate Tests for School Adjustment Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.951	8310.94	5	2158	.000
Group	Pillai's Trace	.115	17.234	15	6480	.000
Gender	Pillai's Trace	.004	1.912	5	2158	.089
Grade	Pillai's Trace	.007	1.516	10	4318	.127
Gender * Group	Pillai's Trace	.015	2.103	15	6480	.008
Grade * Group	Pillai's Trace	.015	1.061	30	10810	.376
Gender * Grade	Pillai's Trace	.006	1.269	10	4318	.242
Gender * Grade * Group	Pillai's Trace	.019	1.350	30	10810	.096

Note. Alpha level = .05.

Appendix Q (Continued)

Table 4

Multivariate Tests of School Environment Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.937	6753.29	4	1805	.000
Group	Pillai's Trace	.069	10.662	12	5421	.000
Gender	Pillai's Trace	.007	3.190	4	1805	.013
Grade	Pillai's Trace	.007	1.671	8	3612	.100
Group * Gender	Pillai's Trace	.006	.965	12	5421	.481
Group * Grade	Pillai's Trace	.020	1.531	24	7232	.047
Grade * Gender	Pillai's Trace	.010	2.218	8	3612	.023
Group * Grade * Gender	Pillai's Trace	.026	1.943	24	7232	.004

Note. Alpha level = .05.



Appendix Q (Continued)

Table 5

Multivariate Tests for Achievement Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.934	15303.3	2	2177	.000
Group	Pillai's Trace	.004	1.371	6	4356	.222
Gender	Pillai's Trace	.003	2.730	2	2177	.065
Grade	Pillai's Trace	.050	27.793	4	4356	.000
Gender * Group	Pillai's Trace	.000	.158	6	4356	.987
Grade * Group	Pillai's Trace	.007	1.233	12	4356	.253
Gender * Grade	Pillai's Trace	.000	.222	4	4356	.926
Gender * Group * Grade	Pillai's Trace	.004	.777	12	4356	.675

Note. Alpha level = .05.

Appendix Q (Continued)

Table 6

Multivariate Tests for Teacher Report Variables

<u>Effect</u>		<u>Value</u>	<u>F</u>	<u>Hypothesis df</u>	<u>Error df</u>	<u>Sig.</u>
Intercept	Pillai's Trace	.555	569.094	3	1368	.000
Group	Pillai's Trace	.021	3.285	9	4110	.001
Gender	Pillai's Trace	.004	1.918	3	1368	.125
Grade	Pillai's Trace	.020	4.607	6	2738	.000
Group * Gender	Pillai's Trace	.012	1.872	9	4110	.052
Group * Grade	Pillai's Trace	.021	1.578	18	4110	.057
Gender * Grade	Pillai's Trace	.003	.668	6	2738	.675
Group * Gender * Grade	Pillai's Trace	.022	1.667	18	4110	.038

Note. Alpha level = .05.

Appendix Q (Continued)

Table 7

Nested Analysis of Variance for Trait Anxiety

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1734	4824.728	.000
Group (school)	33	1734	4.438	.000
Gender (school)	11	1734	2.077	.019
Grade	2	1734	.570	.566
Group * Gender (school)	23	1734	.604	.929
Group * Grade (school)	43	1734	1.040	.401
Grade * Gender (school)	21	1734	1.097	.343
Group * Gender * Grade (school)	24	1734	1.308	.145

Note. Alpha level = .05.

Appendix Q (Continued)

Table 8

Nested Analysis of Variance for Depression

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1936	1102.204	.000
Group (school)	33	1936	6.603	.000
Gender (school)	11	1936	1.766	.055
Grade	2	1936	1.718	.180
Group * Gender (school)	28	1936	1.442	.063
Group * Grade (school)	46	1936	1.404	.039
Grade * Gender (school)	21	1936	1.334	.142
Group * Grade * Gender (school)	26	1936	1.229	.197

Note. Alpha level = .05.

Appendix Q (Continued)

Table 9

Nested Analysis of Variance for Trait Anger

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	2101	6860.031	.000
Group (school)	33	2101	4.984	.000
Gender (school)	11	2101	.249	.994
Grade	2	2101	1.355	.258
Group * Gender (school)	28	2101	.650	.920
Group * Grade (school)	51	2101	.823	.809
Grade * Gender (school)	21	2101	.944	.533
Group * Gender * Grade (school)	26	2101	.799	.753

Note. Alpha level = .05.

Appendix Q (Continued)

Table 10

Nested Analysis of Variance for Anger Expression

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2107	9940.040	.000
Group (school)	33	2107	3.257	.000
Gender (school)	11	2107	.692	.747
Grade	2	2107	2.823	.060
Group * Gender (school)	28	2107	.629	.934
Group * Grade (school)	50	2107	.894	.683
Grade * Gender (school)	21	2107	.882	.616
Group * Gender * Grade (school)	26	2107	1.328	.124

Note. Alpha level = .05.

Appendix Q (Continued)

Table 11

Nested Analysis of Variance for Discipline Referrals

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2134	314.220	.000
Group (school)	33	2134	2.245	.000
Gender (school)	11	2134	2.836	.001
Grade	2	2134	2.229	.108
Group * Gender (school)	28	2134	.924	.580
Group * Grade (school)	51	2134	1.019	.438
Grade * Gender (school)	21	2134	1.035	.416
Group * Gender * Grade (school)	26	2134	1.366	.103

Note. Alpha level = .05.

Appendix Q (Continued)

Table 12

Nested Analysis of Variance for Cohesion

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1864	7707.704	.000
Group (school)	43	1864	2.013	.000
Gender	1	1864	.560	.454
Grade	2	1864	2.733	.065
Group * Gender (school)	33	1864	1.437	.052
Group * Grade (school)	62	1864	1.205	.133
Grade * Gender	2	1864	1.725	.178
Group * Gender * Grade (school)	43	1864	.841	.759

Note. Alpha level = .05.



Appendix Q (Continued)

Table 13

Nested Analysis of Variance for Adaptability

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1777	4988.346	.000
Group(school)	43	1777	1.444	.032
Gender	1	1777	.767	.381
Grade	2	1777	.372	.690
Group * Gender (school)	33	1777	1.677	.010
Group * Grade (school)	62	1777	1.224	.115
Grade * Gender	2	1777	3.137	.044
Group * Gender * Grade (school)	43	1777	1.148	.237

Note. Alpha level = .05.

Appendix Q (Continued)

Table 14

Nested Analysis of Variance for School Spirit

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2026	5431.284	.000
Group(school)	43	2026	2.787	.000
Gender	1	2026	11.470	.001
Grade	2	2026	8.486	.000
Group * Gender (school)	38	2026	1.217	.171
Group * Grade (school)	68	2026	1.706	.000
Grade * Gender	2	2026	.461	.630
Group * Grade * Gender (school)	45	2026	.929	.607

Note. Alpha level = .05.

Appendix Q (Continued)

Table 15

Nested Analysis of Variance for Goal-Orientation

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1987	8292.502	.000
Group(school)	43	1987	2.368	.000
Gender	1	1987	10.121	.001
Grade	2	1987	6.765	.001
Group * Gender (school)	38	1987	1.535	.020
Group * Grade (school)	66	1987	2.185	.000
Grade * Gender	2	1987	1.617	.199
Group * Gender * Grade (school)	45	1987	.604	.983

Note. Alpha level = .05.

Appendix Q (Continued)

Table 16

Nested Analysis of Variance for Child-Peer Relations

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2051	12503.80 4	.000
Group(school)	43	2051	5.125	.000
Gender	1	2051	12.774	.000
Grade	2	2051	1.332	.264
Group * Gender (school)	38	2051	.992	.484
Group * Grade (school)	68	2051	1.329	.039
Grade * Gender	2	2051	.651	.522
Group * Gender * Grade (school)	45	2051	.905	.652

Note. Alpha level = .05.

Appendix Q (Continued)

Table 17

Nested Analysis of Variance for Child-Teacher Relations

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2046	7063.004	.000
Group (school)	43	2046	2.736	.000
Gender	1	2046	7.983	.005
Grade	2	2046	1.498	.224
Group * Gender (school)	38	2046	1.439	.041
Group * Grade (school)	68	2046	1.425	.014
Grade * Gender	2	2046	.825	.438
Group * Gender * Grade (school)	45	2046	1.010	.454

Note. Alpha level = .05.

Appendix Q (Continued)

Table 18

Nested Analysis of Variance for Alienation

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2050	4984.920	.000
Group(school)	43	2050	2.376	.000
Gender	1	2050	11.379	.001
Grade	2	2050	1.214	.297
Group * Gender (school)	38	2050	.779	.831
Group * Grade (school)	68	2050	1.046	.377
Grade * Gender	2	2050	1.677	.187
Group * Grade * Gender (school)	45	2050	1.135	.250

Note. Alpha level = .05.

Appendix Q (Continued)

Table 19

Nested Analysis of Variance for Condition of Campus

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1660	4923.446	.000
Group(school)	32	1660	1.662	.012
Gender(school)	11	1660	.816	.624
Grade	2	1660	1.018	.362
Group * Grade (school)	44	1660	1.761	.002
Group * Gender (school)	25	1660	1.246	.186
Gender * Grade (school)	21	1660	1.174	.264
Group * Grade * Gender (school)	23	1660	1.211	.224

Note. Alpha level = .05.

Appendix Q (Continued)

Table 20

Nested Analysis of Variance for School Climate

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1674	3378.845	.000
Group(school)	33	1674	3.079	.000
Gender(school)	11	1674	1.529	.115
Grade	2	1674	2.118	.121
Group * Grade (school)	44	1674	1.329	.074
Group * Gender (school)	25	1674	1.146	.281
Gender * Grade (school)	21	1674	.814	.705
Group * Grade * Gender (school)	24	1674	1.138	.292

Note. Alpha level = .05.



Appendix Q (Continued)

Table 21

Nested Analysis of Variance for Adult Intervention

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1680	6122.675	.000
Group (school)	32	1680	1.968	.001
Gender(school)	11	1680	.992	.451
Grade	2	1680	3.403	.033
Group * Grade (school)	44	1680	.641	.968
Group * Gender (school)	25	1680	1.222	.207
Gender * Grade (school)	21	1680	.998	.462
Group * Gender * Grade (school)	24	1680	1.193	.237

Note. Alpha level = .05.

Appendix Q (Continued)

Table 22

Nested Analysis of Variance for Adult Supervision

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	2054	11530.19	.000
Group(school)	33	2054	1.747	.005
Gender(school)	11	2054	2.552	.003
Grade	2	2054	3.819	.022
Group * Grade (school)	50	2054	1.433	.026
Group * Gender (school)	28	2054	1.154	.264
Gender * Grade (school)	21	2054	.958	.514
Group * Grade * Gender (school)	25	2054	.921	.576

Note. Alpha level = .05.

Appendix Q (Continued)

Table 23

Nested Analysis of Variance for FCAT Developmental Reading Scale Scores

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	2005	12672.511	.000
Group	3	2005	1.064	.363
Gender	1	2005	1.965	.161
Grade(school)	31	2005	4.875	.000
Group * Grade (school)	83	2005	1.293	.041
Group * Gender	3	2005	.562	.640
Gender * Grade (school)	31	2005	.808	.765
Group * Gender * Grade (school)	51	2005	.957	.560

Note. Alpha level = .05.

Appendix Q (Continued)

Table 24

Nested Analysis of Variance for FCAT Developmental Math Scale Scores

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	2005	24141.245	.000
Group	3	2005	2.382	.068
Gender	1	2005	.036	.849
Grade(school)	31	2005	5.856	.000
Group * Grade (school)	83	2005	.903	.721
Group * Gender	3	2005	.504	.679
Gender * Grade (school)	31	2005	.799	.777
Group * Gender * Grade (school)	50	2005	1.050	.379

Note. Alpha level = .05.

Appendix Q (Continued)

Table 25

Nested Analysis of Variance for Acting-Out

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1220	1505.511	.000
Group(school)	33	1220	1.823	.003
Grade(school)	21	1220	2.136	.002
Gender	1	1220	20.044	.000
Group * Gender (school)	23	1220	1.194	.240
Group * Grade (school)	40	1220	1.038	.408
Gender * Grade (school)	20	1220	1.355	.135
Group * Grade * Gender (school)	11	1220	2.716	.002

Note. Alpha level = .05.

Appendix Q (Continued)

Table 26

Nested Analysis of Variance for Moodiness

<u>Source</u>	<u>Numerator df</u>	<u>Denominator df</u>	<u>F</u>	<u>Sig.</u>
Intercept	1	1220	1725.853	.000
Group (school)	33	1220	2.381	.000
Grade(school)	21	1220	2.899	.000
Gender(school)	1	1220	5.879	.015
Group * Gender (school)	23	1220	1.778	.013
Group * Grade (school)	40	1220	1.107	.299
Gender * Grade (school)	20	1220	1.319	.156
Group * Grade * Gender (school)	11	1220	1.574	.101

Note. Alpha level = .05.

Appendix Q (Continued)

Table 27

Nested Analysis of Variance for Learning

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	1220	1446.454	.000
Group (school)	33	1220	.942	.563
Grade(school)	21	1220	2.808	.000
Gender	1	1220	7.882	.005
Group * Gender (school)	23	1220	.791	.746
Group * Grade (school)	40	1220	1.099	.312
Gender * Grade (school)	20	1220	1.371	.127
Group * Grade * Gender (school)	11	1220	2.311	.008

Note. Alpha level = .05.

Appendix R

Discriminant Function Analysis Matrices

Table 28

Standardized Canonical Discriminant Function Coefficients for Total Sample

Scale	Function		
	1	2	3
Condition of Campus	.216	-.148	-.693
Adult Supervision at School	-.166	.043	-.519
Adult Intervention	-.253	-.005	.019
School Climate	.168	.008	-.217
Trait Anger	.169	.202	-.150
Anger Expression	.165	.572	.096
Depression	.255	-.304	.174
Anxiety	.304	-.165	.018
Discipline Referrals	.166	.239	.197
School Spirit	-.197	.044	.234
Child-Teacher Relations	.175	-.172	.488
Goal-Orientation	.031	-.085	.052
Alienation	-.035	.057	.264
Child-Peer Relations	-.294	.622	.021
Cohesion	.071	-.232	.097
Adaptability	-.004	.066	.407
Acting-Out	.123	.037	.137
Moodiness	.030	.147	-.066
Learning	-.008	-.151	-.099
FCAT Reading Developmental Scaled Score	.201	.048	.051
FCAT Math Developmental Scaled Score	-.015	-.102	-.332



Appendix R (Continued)

Table 29

Structure Matrix for Total Sample Discriminant Function Analysis

Scale	Function		
	1	2	3
Depression	.668*	-.200	.037
Trait Anger	.632*	.170	-.047
Anxiety	.614*	-.228	.028
Child-Peer Relations	-.540*	.437	.045
School Climate	.499*	.192	.002
School Spirit	-.469*	-.234	.212
Adult Intervention	-.459*	-.143	-.060
Cohesion	-.387*	-.207	.268
Adult Supervision at School	-.386*	-.071	-.286
Alienation	.359*	.069	.128
Child-Teacher Relations	-.353*	-.233	.298
Moodiness	.273*	.233	-.034
Anger Expression	.429	.634*	-.044
Discipline Referrals	.273	.372*	.186
Acting-Out	.310	.321*	.028
Goal-Orientation	-.262	-.263*	.162
Learning Scale	.182	.193*	.032
Condition of Campus	-.205	-.153	-.410
Adaptability	-.288	-.077	.410
FCAT Math Developmental Scaled Score	-.012	-.101	-.288
FCAT Reading Developmental Scaled Score	.067	-.103	-.149

Appendix R (Continued)

Table 30

Standardized Canonical Discriminant Function Coefficients for Males

Scale	Function		
	1	2	3
Condition of Campus	-.249	.196	-.580
Adult Supervision at School	.253	.104	-.272
Adult Intervention	.352	-.100	-.074
School Climate	-.009	.137	-.069
Trait Anger	.009	.250	.050
Anger Expression	.175	.439	.315
Depression	-.364	-.107	-.118
Anxiety	-.439	-.045	-.072
Discipline Referrals	.118	.540	-.130
School Spirit	.228	-.211	.337
Child-Teacher Relations	-.154	.017	.107
SAS Goal-Orientation Scale	-.099	-.144	.500
Alienation	.013	.060	.028
Child-Peer Relations	.433	.099	-.053
Cohesion	-.078	-.049	-.277
Adaptability	.005	.161	.454
AML-R Acting-Out	.039	.107	-.270
AML-R Moodiness	-.036	.412	.553
AML-R Learning	.052	-.464	-.084
FCAT Reading Developmental Scaled Score	-.040	.146	.210
FCAT Math Developmental Scaled Score	.077	-.113	-.513

Appendix R (Continued)

Table 31

Structure Matrix for Male Discriminant Function Analysis

Scale	Function		
	1	2	3
Depression	-.666*	.130	-.055
Child-Peer Relations	-.665*	.094	.024
Anxiety	.629*	-.024	.032
Child-Teacher Relations	.397*	-.224	-.138
Adult Supervision at School	.305*	-.102	-.161
School Spirit	-.263*	.176	.132
Goal-Orientation	.054	.629*	-.055
Cohesion	-.011	.579*	.102
Adaptability	.024	.461*	.016
Adult Intervention	-.050	.416*	.271
Condition of Campus	-.365	.383*	.136
FCAT Math Developmental Scaled Score	.284	-.368*	.303
FCAT Reading Developmental Scaled Score	-.210	.358*	.054
Trait Anger	.223	-.305*	.232
Moodiness	.214	-.235*	.095
Anger Expression	.001	.168*	.140
Discipline Referrals	.082	-.298	.379
School Climate	.152	-.040	-.343
Acting-Out	.045	-.069	-.326
Alienation	.200	-.088	.276
Learning	-.025	.029	-.088

Appendix R (Continued)

Table 32

Standardized Canonical Discriminant Function Coefficients for Females

Scale	Function		
	1	2	3
Condition of Campus	-.026	.288	-.383
Adult Supervision at School	-.154	.107	-.366
Adult Intervention	-.219	.106	.176
School Climate	.112	.253	-.080
Trait Anger	.147	.003	-.200
Anger Expression	.445	-.168	-.109
Depression	.109	.401	.155
Anxiety	.186	.186	.020
Discipline Referrals	.124	-.005	.543
School Spirit	.027	.019	-.013
Child-Teacher Relations	.039	.166	.452
Goal-Orientation	-.192	.209	-.180
Alienation	-.128	.000	.219
Child-Peer Relations	.149	-.663	-.135
Cohesion	-.129	.204	.231
Adaptability	-.022	-.033	.322
AML-R Acting-Out	.377	.076	.529
AML-R Moodiness	-.332	.191	-.491
AML-R Learning Scale	.139	-.053	-.253
FCAT Reading Developmental Scaled Score	.146	.408	-.049
FCAT Math Developmental Scaled Score	.010	-.001	-.080

Appendix R (Continued)

Table 33

Structure Matrix for Female Discriminant Function Analysis

Scale	Function		
	1	2	3
Anger Expression	.716*	-.190	-.133
Cohesion	.621*	.274	-.179
School Spirit	-.525*	-.028	.389
Goal-Orientation	.518*	.496	-.031
Trait Anger	-.518*	.080	.032
Adaptability	.516*	.181	-.004
Acting-Out	-.490*	.063	.141
Alienation	-.457*	.199	-.064
Adult Intervention	-.416*	.044	-.193
Adult Supervision at School	-.408*	.100	.240
Child-Teacher Relations	.390*	.136	.164
Learning	-.336*	.113	-.132
Condition of Campus	.325*	.085	.051
Depression	.269*	-.006	-.078
Anxiety	.228*	.191	-.134
Child-Peer Relations	-.165	-.551*	-.005
School Climate	.466	.470*	-.087
Discipline Referrals	-.028	.298*	-.081
Moodiness	-.056	.173*	-.102
FCAT Math Developmental Scaled Score	.306	-.040	.515
FCAT Reading Developmental Scaled Score	-.360	-.047	.388

Appendix R (Continued)

Table 34

Standardized Canonical Discriminant Function Coefficients for  
6<sup>th</sup> Graders

Scale	Function		
	1	2	3
Condition of Campus	.128	.100	.726
Adult Supervision at School	-.142	.152	.098
Adult Intervention	-.395	-.023	-.057
School Climate	.157	.352	-.095
Trait Anger	.271	.028	-.007
Anger Expression	-.124	.388	-.369
Depression	.616	-.418	-.031
Anxiety	.007	.028	.262
Discipline Referrals	.001	.185	-.306
School Spirit	-.295	-.113	.055
Child-Teacher Relations	.463	-.562	-.459
Goal-Orientation	.097	.136	.002
Alienation	-.313	-.344	.112
Child-Peer Relations	-.372	-.089	-.319
Cohesion	-.057	.199	.170
Adaptability	.156	-.146	-.135
AML-R Acting-Out	.145	.402	.366
AML-R Moodiness	-.099	-.703	-.526
AML-R Learning	.138	.411	.457
FCAT Reading Developmental Scaled Score	.134	.223	.086
FCAT Math Developmental Scaled Score	-.098	-.146	.325

Appendix R (Continued)

Table 35

Structure Matrix for 6<sup>th</sup> Grade Discriminant Function Analysis

Scale	Function		
	1	2	3
Depression	.727*	-.154	.012
Anxiety	.571*	.204	.005
Cohesion	-.503*	-.019	-.233
Condition of Campus	.478*	-.091	.099
FCAT Reading Developmental Scaled Score	-.447*	-.243	.139
Adult Intervention	.418*	.345	-.245
Goal-Orientation	-.276*	-.050	.099
Child-Peer Relations	-.276*	-.185	.112
Child-Teacher Relations	.219*	.007	.072
Moodiness	-.169*	-.089	-.004
Adult Supervision at School	-.143	-.542*	-.125
Anger Expression	.194	.491*	-.285
Acting-Out	-.332	-.411*	.056
Trait Anger	.179	.400*	-.046
Alienation	.152	.302*	-.038
School Climate	-.083	-.195*	.114
Learning	-.279	-.193	.504
FCAT Math Developmental Scaled Score	.101	.321	-.375
Adaptability	-.074	-.090	.339
School Spirit	.001	-.026	.232
Discipline Referrals	.138	.022	-.200

Appendix R (Continued)

Table 36

Standardized Canonical Discriminant Function Coefficients for  
7<sup>th</sup> Graders

Scale	Function		
	1	2	3
Condition of Campus	.205	-.001	-.080
Adult Supervision at School	-.130	-.011	-.371
Adult Intervention	-.199	-.016	.225
School Climate	.122	.077	-.376
Trait Anger	.037	.364	-.224
Anger Expression	.151	.457	.324
Depression	-.171	-.320	.152
Anxiety	.757	-.073	.074
Discipline Referrals	.134	.200	.491
School Spirit	-.234	.069	.496
Child-Teacher Relations	.134	-.281	.040
Goal-Orientation	-.030	.082	.324
Alienation	.077	.036	.368
Child-Peer Relations	-.296	.693	-.092
Cohesion	.105	-.446	.020
Adaptability	-.127	.086	.355
AML-R Acting-Out	.282	.035	.281
AML-R Moodiness	.166	-.123	.015
AML-R Learning	-.194	-.007	-.129
FCAT Reading Developmental Scaled Score	.186	.068	-.086
FCAT Math Developmental Scaled Score	.081	-.351	-.068



Appendix R (Continued)

Table 37

Structure Matrix for 7<sup>th</sup> Grade Discriminant Function Analysis

Scale	Function		
	1	2	3
Anxiety	.682*	-.093	.055
Child-Peer Relations	-.499*	.411	.045
Depression	.474*	-.044	-.063
Trait Anger	.472*	.302	-.001
Adult Intervention	-.390*	-.138	.350
Adult Supervision at School	-.320*	-.073	.009
Alienation	.318*	.063	.116
AML-R Moodiness	.286*	.181	.147
AML-R Acting-Out	.266*	.250	.228
Anger Expression	.329	.546*	.088
Cohesion	-.322	-.357*	.313
FCAT Math Developmental Scaled Score	.041	-.323*	-.113
FCAT Reading Developmental Scaled Score	.094	-.250*	-.128
AML-R Learning	.138	.242*	.105
School Spirit	-.364	-.203	.458
Discipline Referrals	.262	.318	.401
Adaptability	-.304	-.172	.387
Child-Teacher Relations	-.313	-.178	.386
School Climate	.338	.244	-.348
Goal-Orientation	-.240	-.181	.291
Condition of Campus	-.205	-.086	.213

Appendix R (Continued)

Table 38

Standardized Canonical Discriminant Function Coefficients for  
8<sup>th</sup> Graders

Scale	Function		
	1	2	3
Condition of Campus	.205	.190	-.366
Adult Supervision at School	-.135	-.097	-.570
Adult Intervention	-.186	.055	-.154
School Climate	.027	.216	-.004
Trait Anger	.243	-.047	-.086
Anger Expression	.604	-.220	-.040
Depression	.215	.436	.231
Anxiety	-.136	.174	-.138
Discipline Referrals	.235	-.182	-.328
School Spirit	.089	.023	.028
Child-Teacher Relations	.075	-.273	.266
Goal-Orientation	-.277	.473	-.017
Alienation	.108	-.148	.464
Child-Peer Relations	.232	-.562	.190
Cohesion	-.134	-.036	.144
Adaptability	.098	-.129	.372
AML-R Acting-Out	.023	-.096	.248
AML-R Moodiness	.416	.041	-.352
AML-R Learning	-.390	.136	.207
FCAT Reading Developmental Scaled Score	.138	.163	.357
FCAT Math Developmental Scaled Score	.034	-.085	-.001

Appendix R (Continued)

Table 39

Structure Matrix for 8<sup>th</sup> Grade Discriminant Function Analysis

Scale	Function		
	1	2	3
Child-Peer Relations	.744*	-.103	-.091
Depression	.517*	.360	.015
School Climate	-.422*	.081	-.084
Adult Supervision at School	-.385*	-.349	.192
School Spirit	-.370*	-.209	-.197
Anxiety	.360*	-.128	-.187
Child-Teacher Relations	.358*	.141	.344
Cohesion	.353*	-.018	-.023
Adaptability	.340*	.317	.224
Learning	.331*	.086	-.190
Anger Expression	-.319*	-.220	-.164
Alienation	.127*	.040	-.033
Goal-Orientation	.417	.642*	.040
Trait Anger	-.149	-.628*	-.028
Adult Intervention	.240	.558*	-.084
FCAT Math Developmental Scaled Score	-.264	-.241	-.515
Condition of Campus	-.021	-.001	-.383
Moodiness	-.169	-.292	.361
Discipline Referrals	-.247	-.150	-.339
Acting-Out	.018	.167	.302
FCAT Reading Developmental Scaled Score	-.045	.046	.161

Appendix S

Table 40

Multivariate, Univariate, and Post Hoc Study Findings by Domain and Hypothesis

Domain	Hypothesis 1: Group Main Effect	Hypothesis 2: Group x Gender Interaction	Hypothesis 3: Group x Grade Interaction	Hypothesis 4: Group x Gender x Grade Interaction	Hypothesis 5: Distinct Variable Associations					
					T	M	F	6	7	8
<b>Individual Domain</b>										
Depression										
Anxiety										
Anger										
Anger Expression										
Referrals										
<b>Family Domain</b>										
Cohesion										
Adaptability										
<b>School Domain</b>										
<i>School Adjustment</i>										
School Spirit										
Goal-Orientation										
Child-Peer Relations										
Child-Teacher Relations										
Alienation										
<i>School Environment</i>										
Condition of Campus										
School Climate										
Adult Intervention										
Adult Supervision										
<i>Achievement</i>										
FCAT Reading										
FCAT Math										
<b>Teacher Report Domain</b>										
Acting-Out										
Moodiness										
Learning										

Note. Shaded areas indicate significant findings. T = Total sample, M = Males, F = Females, 6 = 6<sup>th</sup> Graders, 7 = 7<sup>th</sup> Graders, 8 = 8<sup>th</sup> Graders.

Appendix T

Table 41

Number (and Percentage) of Categorized Students per School

School	N Sampled (%)	Bullies N (%)	Victims N (%)	Bully/Victims N (%)	Control N (%)
1	260 (10.4)	24 (14.6)	34 (11.5)	5 (11.4)	197 (9.8)
2	166 (6.6)	7 (4.3)	19 (6.4)	3 (6.8)	137 (16.7)
3	191 (7.6)	7 (4.3)	24 (8.1)	2 (4.5)	158 (7.9)
4	266 (10.6)	23 (14.0)	33 (11.2)	8 (18.2)	202 (10.1)
5	206 (8.2)	17 (10.4)	23 (7.8)	2 (4.5)	164 (8.2)
6	164 (6.5)	6 (3.7)	16 (5.4)	3 (6.8)	138 (6.9)
7	228 (9.1)	10 (6.1)	27 (9.2)	5 (11.4)	186 (9.3)
8	196 (7.8)	17 (10.4)	19 (6.4)	1 (2.3)	159 (7.9)
9	216 (8.6)	16 (9.8)	25 (8.5)	6 (13.6)	169 (8.4)
10	283 (11.3)	23 (14.0)	33 (11.2)	3 (6.8)	224 (11.2)
11	334 (13.3)	14 (8.5)	42 (14.2)	6 (13.6)	272 (13.6)
Total	2509 (100)	164 (100)	295 (100)	44 (100)	2006 (100)