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THE RELATIONSHIP OF ACADEMIC PERFORMANCE TO DEPRESSION AND PERCEIVED HOME ENVIRONMENT AMONG GIFTED HIGH SCHOOL STUDENTS

by

ROBIN B. SHAW

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1/5/2000
Date

Carol Kehr Tittle
Chair of Examining Committee

1/5/2000
Date

Executive Officer

Dr. Marian Fish

Dr. Georgiana Tryon

Dr. Shirley Feldman

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

ABSTRACT

The Relationship of Academic Performance to Depression and Perceived Home Environment Among Gifted High School Students

By

Robin B. Shaw

Adviser: Carol Tittle

The purpose of the study was to investigate the relationship between depression, home environment, and school performance among gifted high school students. A Divergent Etiology approach to underachievement was proposed. It was hypothesized that underachievement is a multidimensional and multidetermined phenomenon and that underachievement is a symptom of underlying conflicts. Depression and perceived family environment were the underlying variables investigated. Two self-report instruments were employed: Reynolds Adolescent Depression Scale (RADS), and the Family Environment Scale (FES). Male and female adolescents (n=357) from a specialized New York City Public High School for gifted students completed the RADS, FES, and a demographic questionnaire.

A correlational design was employed to examine the relationship between academic performance and depression and perceived family environment. Spring semester grade point average (GPA) was used to measure academic performance. The RADS and three scales of the FES - cohesion, conflict and expressiveness - were utilized in correlation and multiple regression analyses. Depression, perceived family cohesion, conflict, and expressiveness were all significantly related to academic performance.

Family cohesion had the highest correlation with GPA among the four variables. In the regression analysis, cohesion and depression significantly predicted GPA. However, when each variable was examined separately, only cohesion significantly predicted GPA. In addition, those students who scored high on depression and high on cohesion had significantly higher GPA scores than those who scored high on depression and low on cohesion. Depression was significantly related to students' perception of family cohesion, conflict and expressiveness. Supplemental analyses were conducted for ethnicity, gender, and extreme scoring groups in which significant differences were observed in the relative contribution of cohesion and depression in predicting GPA.

The present study provides information on the nature of the relationships between depression, family environment variables and GPA, their ability to predict GPA, and the potential to identify students at risk for poor academic performance. This study thus supports the hypothesis that depression and perceived family environment are related to academic performance and that family environment appears to moderate the effects of depression on academic performance.

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INTRODUCTION

Each year an increasing number of bright adolescents perform poorly in school (Rimm, 1995). This is a confusing and frustrating situation, and an area of concern for all involved - students, parents, and educators. It has perplexed educators and researchers for years that among intellectually gifted students - those who score in the 95th percentile and above on standardized tests such as IQ tests, the SAT, and achievement tests - a percentage do not realize their potential (Emerick, 1992). It has been estimated that between 6% and 15% of the intellectually gifted in this country are underachievers (Colangelo, Kerr, Christensen, & Maxey, 1993; Wolfe, 1991). Because these particular students score high on standardized tests, it is predicted that they will perform well in the classroom. Yet despite their well-above average scores, some of these students do not meet achievement expectations. Exceptional giftedness does not guarantee high levels of achievement. Rather, gifted intelligence is a potential facilitator. In and of itself, it does not necessarily lead to high achievement behavior. This puzzling phenomenon needs to be better understood. Based on that understanding, appropriate interventions can be designed and implemented (Mandel & Marcus, 1988). According to Dowdall and Colangelo (1982), "...the last twenty years of research on underachieving gifted students has produced more confusion and circularity than clarity and direction" (p.179). This lack of clarity has characterized research on underachievement as well as on research on treatment approaches.

Studies have explored personality traits of children with high IQs (Terman & Oden, 1959), examined nonintellectual factors associated with high-level achievement

(Clark, 1979), clarified certain conditions in the home, school and community that foster or inhibit achievement (Conoley, 1987; Moos & Moos, 1986), and have evaluated educational influences on the development of gifted children (Rimm, 1995; Whitmore, 1980). Among the factors that have been identified as influencing academic performance of gifted children and adolescents are family dynamics (Moss & Moss, 1986), depression (Hodges, & Plow, 1990; Kovacs, 1996), emotional and developmental problems (Emerick, 1992; Mandel & Marcus, 1988), study skills (Whitmore, 1980), social relationships (Olsen, Russell, & Sprenkle, 1983), socioeconomic status (White, 1982), and gender, race, and family composition (Finn & Owings, 1994).

The primary purpose of this investigation is to study the relationship between depression, home environment, and academic performance among gifted students. The theoretical model applied in this research – referred to as the Divergent Etiology model - is a synthesis of four theories of underachievement which have similar hypotheses concerning the nature of this phenomenon. Mandel's and Marcus's Differential Diagnostic model (1988), Rimm's Syndrome and Trifocal model (1995), Tannenbaum's Symptom model (1983), and Roth's and Meyersburg's Non-Achievement Syndrome model (1963), all hypothesize that underachievement is multideterminded, and that as a group, students who underachieve are heterogeneous. Underachievement is hypothesized by these researchers and by the present author to be a symptom or syndrome that has various, divergent etiologies. As in Mandel's and Marcus's model, the approach taken in this research is based on a dual assumption: a) underachievement is a symptom of underlying issues and/or problems, and b) antecedents of underachievement are varied and the

etiology of underachievement should reflect this. As Mandel and Marcus state, "A symptom may have a variety of causes and meanings, and therefore the symptom may not be equivalent to the disease that causes it" (1988, p.4). This dual assumption is based on a medical model which leads to a treatment approach that has as its focus two areas: a) relief of the symptom, and b) cure of the underlying disease causing the symptom.

In psychology, problems are often identified by their symptoms, and it is then assumed that each individual evidences a particular symptom for the same reasons. Research studies are then designed to identify commonalties among people with the same symptom. This has been a common practice in the research on underachievement, and may explain the inconsistencies in the literature on underachievement and the failure of various programs that have been designed to treat underachievement. The shared perspective of Roth and Meyersburg (1963), Tannenbaum (1983), Mandel and Marcus (1988), and Rimm (1995), and the perspective taken in this research, is that there are several different types of underachievers, and that therefore a differential diagnosis of the type of underachiever is essential for an understanding of this phenomenon.

An approach that takes into account the several different types of underachievers is used in the present study. This approach - the Divergent Etiology approach - represents the understanding that underachievement is a multidimensional and multidetermined phenomenon and that underachievement is a symptom that reflects underlying conflicts and/or problems. The Divergent Etiology approach was used in this study to focus on two factors that were hypothesized to contribute to underachievement - depression and family environment. It was hoped that the information gathered from this research would lead to

the identification of a certain type of underachiever who is at risk as a result of depression, or non-cohesive and conflictual family environment, and/or a combination of the two.

The profile of the gifted underachiever includes onset, duration, severity, and etiology (Davis & Rimm, 1994). Onset may occur at various times during a student's academic career: elementary school, junior high school, high school or college. This research study focused on students who underachieve during high school. All of the students in this study have been previously tested on the Specialized Scholastic High School Admissions Test (SSHSAT) and scored at the 95th percentile in comparison with other students their age in the New York City area. A score of this magnitude indicates that these students have mastered the necessary subject areas for meeting the demands of a rigorous academic curriculum, and are capable of performing well academically. However, not all of these students perform on the level that is predicted by their SSHSAT scores. This research proposes that within this group of students who are struggling academically are students who are also struggling with depression and family environment issues.

Depression is a serious problem for many children and adolescents, one that can affect learning and academic success (Drozd, Tobinson, & Saarnio, 1994; Hodges and Plow, 1990). In fact, depression has been found to be inversely correlated with academic performance (Haines, Norris & Kashy, 1996; Kaslow, Rehm, & Siegel, 1984; Nolen-Hoedsema, Girgus, & Seligman, 1992; Strauss, Lahey, & Jacobsen, 1982). However, several studies have found inconsistencies in this relationship (McGee, Anderson, Williams, & Silva, 1986; Strauss, Lahey, & Jacobsen, 1982). These inconsistencies may

result from the omission of a mediating variable. It was hypothesized in this research that the effects of depression on academic performance are mediated by one's family experience. In other words, not all students who are depressed underachieve. The family environment may be a factor that in combination with depression is associated with poor academic performance.

Families are critically important as influencing agents in the lifelong success of children, both academically and emotionally (VanTassel-Baska & Olszewski-Kubilius, 1989). The relationship between the family environment and depression has been documented (Beck, 1991; Cole & Rehm, 1986; Kovacs, 1996), as well as the relationship between the family environment and academic performance (Christenson, Rounds, & Garney, 1992; Dolan, 1983; Dornbusch & Ritter, 1992; Moss & Moss, 1986). The perspective taken in this research was that family environment must be taken into account when examining depression and academic performance in children and adolescents. Children and adolescents who are depressed are a heterogeneous group who function at various levels in school, perhaps as a result of their family environment (Billings & Moss, 1983; Birmaher, Ryan, Williamson, Brent, Kaufman, Dahl, Perel, & Nelson, 1996). It was hypothesized that gifted adolescents who are depressed and who come from families where there is a supportive, cohesive, and understanding environment will continue to perform well academically. However, academic performance will be compromised among those gifted adolescents who are depressed and in addition who come from family environments that are not supportive, non-cohesive, and not understanding. Despite a need for research in this area, we find very little in the literature examining these

relationships.

This research was conducted to: a) more accurately identify those students who may be at risk for poor academic performance as a result of depression and a non-supportive family environment, and b) increase our understanding of the relationship between academic performance and two risk factors - depression and perceived family environment.

LITERATURE REVIEW

Underachievement

Background

Unrealized potential is a tragedy at both the personal and political levels and represents a loss to society (Gallagher, 1985). The underachieving gifted child embodies this tragedy; a child who has the potential for high achievement and the ability to make important contributions, but does not actualize his/her potential in productive ways. Researchers have estimated that anywhere between 6% and 50% of gifted children underachieve (National Commission on Excellence in Education, 1983; Richert, 1991). Falling below expected levels of performance is extremely frustrating for all involved - parents, teachers, and the child. Poor academic achievement among gifted students is a complex and poorly understood phenomenon.

Historically, the study of gifted underachievement began with Terman's longitudinal study of 1528 highly gifted individuals (as cited in Davis & Rimm, 1994). It was in this study that characteristic traits of gifted children and adults were first examined. Terman reported that successful children were better adjusted psychologically and socially, and were healthier than their peers. Terman (1959) also conducted a follow-up study of these individuals as adults to determine which factors distinguished those who were successful in adult life from those who were not. Most of these individuals as adults were reported to have greater personal adjustment, emotional stability, self-esteem, and personal contentment than their peers (Terman & Oden, 1947,1959 as cited in Davis & Rimm, 1994). Terman's group also exhibited below-average incidence of suicide and mental

illness. For the most part this cohort group's superior mental and physical characteristics continued into adulthood. However, Terman also found that within a group of underachieving gifted adults, there were individuals who had no strong interest in pursuing a particular vocation, were less goal-oriented, less socially adjusted, had lower aspirations, and changed jobs more often than did the more successful adults in this cohort group. Terman noted that more of the underachieving adults than the achieving adults had been the only child in their family. He also noted that a significantly fewer number of the underachievers had fathers who were college graduates. Oden (1968) wrote that, "all the evidence indicates that with few exceptions the superior child becomes the superior adult" (p.50). Unfortunately, the more recent research on underachieving gifted individuals does not always support this finding.

There have been many approaches to the study of the gifted underachiever. Some educational researchers question whether underachievement actually exists. Thorndike (1963) and Anastasi (1982) explain most underachievement as test error and an inability to make accurate predictions. The position of both these researchers is that accurate predictions cannot be made from test results. Thorndike believes that instruments that are used to measure a particular entity such as ability and/or intellect are not precise or exact enough to assess the entity accurately, or to be used to make predictions. According to Thorndike, if predictions were accurate and discrepancies could be eliminated, the concept of underachievement would be eliminated. As he states, "As we are able to extend our understanding of the relevant factors, increase the accuracy of our forecasts, and so reduce over prediction, we will automatically reduce underachievement" (Thorndike,

1963, p. 5). Thorndike also believes that prediction involves forecast over time, during which any number of personal experiences can intervene either to foster or diminish the chances of success.

Despite the controversy, faults, and problems associated with testing - measurement error, unreliability, biases in testing, and validity issues - test scores are the chief index used to measure one's actual ability. Intelligence and achievement tests are traditionally used to measure ability, but on occasion creativity tests are also employed (Davis & Rimm, 1994). The high scores achieved by gifted students on intelligence, achievement, or creativity tests do indicate special abilities or skills and do not necessarily reflect errors in measurement (Davis & Rimm, 1994). Although there are some children whose abilities are probably overestimated, there are many others whose abilities are not, and whose scores truly reflect those abilities. Underachievement can only partially be explained in terms of measurement error. Children who are assessed by standardized measures cannot score extraordinarily high on tests (two or more standard deviations above the mean) purely by chance, measurement error, or test-taking skill (Davis & Rimm, 1994). The predicted abilities and expected high quality work of underachieving students are not reflected in their schoolwork or other productions. The gifted underachiever performs poorly in school even after we take into account the difficulties in estimating his/her potential (Kerr, 1991).

Definition and Identification of Underachievement

The term underachievement is defined in various ways, some more technical than others. In an attempt to clarify the concept, Dowdall and Colangelo (1982) reviewed and analyzed the research of the previous twenty years. They discovered that there was considerable debate among researchers as to how the term should be defined as well as measured. These researchers found numerous and inconsistent definitions of underachievement. Table 1 lists some of the definitions of underachievement for gifted students. These various definitions have led to problems in investigating the phenomenon and to contradictory and inconsistent findings in the literature. Problems in defining underachievement appear to be the result of variability in several factors including a) definition of the term gifted, b) magnitude of the discrepancy between a standardized test score and actual school performance, c) variations in statistical procedures, d) different instruments used to establish potential and actual performance, and f) expectations of performance.

The first factor is the discrepancy among researchers regarding the definition of the term "gifted." There is no one definition of "gifted" that is universally accepted. Some researchers define giftedness as a continuum (Cox & Daniel, 1983). Therefore, groups of gifted students will include those who barely meet the established criteria along with those who are on the higher end of the continuum. Another definition is one in which a score on the IQ scale is selected and those who score above that point are classified as gifted (Terman, 1947 as cited in Davis & Rimm, 1994). A commonly used criterion IQ score of 130 is employed by the Board of Education of the City of New York. In yet another

TABLE 1
Sample Definitions of Underachievement Among Gifted Students

Author	Definition
Bricklin & Bricklin, 1967	A child whose daily efficiency in school is much poorer than would be expected on the basis of intelligence.
Davis & Rimm, 1989	A discrepancy between the child's school performance and some index of his/her actual ability.
Fine, B., 1967	Students who rank in the top third of intellectual ability, but whose performance is dramatically below that level.
Fine, & Pitts, 1980	One who evidences a long-standing pattern of academic underachievement not accounted for by learning disabilities: and fidgetiness only appears through intellectual testing or room remarkable discrepancy in reading and math.
Finney & Van Dalsem, 1969	Students who were in the top 25% of the DAT (Differential Aptitude Battery) in verbal-numerical and whose GPA was below the mean for all students at that DAT level.
Ford,199. Ford,1992a, 1992b	A child who, based on multidimensional assessment procedures, has a high capacity for achievement, but who (consistently) exerts low levels of effort on most school-related tasks.
Gallagher, 1979	Students for whom a gap exists between achievement test scores and intelligence test scores or between academic grades and intelligence test scores.
Gowan, 1957	A student who performs a full standard deviation or more below his/her ability level.
Kowitz & Armstrong, 1961	Basically, one whose achievement score is lower than his/her ability score.
Newman, Dember, & Krug, 1973	A child achieving significantly below the level statistically predicted by his/her IQ.
Ohlsen & Gazda, 1965	A student whose language or non-language IQ scores were 116 or above and whose achievement scores were at least one grade level below the achievement expected and whose grades were B or less.
Sauerman & Michael, 1980	Stanford-Binet 132 IQ or above and percentile ranking of 75 or below on CTBS (California Test of Basic Skills)
Shaw & McCuen, 1980	Upper 25% of the population on the Pinter General Ability Test (IQ greater than 110) and who had earned a GPA below the mean of his /her class in grades 9 through 11.
Thorndike, 1963	Traditionally, underachievement is measured in relation to some standard or expected or predicted achievement.
Whitmore, 1980	Students who demonstrate exceptionally high capacity for academic achievement and are not performing satisfactorily for their levels in daily academic performance and on achievement test.

Note. From "Underachieving gifted students: Review and implications." By C. B. Dowdall & N. Colangelo, 1982. Gifted Child Quarterly, 26, (4), p.180.

definition, a percentage definition is sometimes employed whereby a fixed proportion of a school or district is considered gifted based on students' grade-point average, intelligence test scores, or achievement scores. The U.S. Office of Education defines "gifted and talented students" as "children and youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities" (Educational Amendment of 1988, P.L. 100-297, Sec. 4103.)

Another problem in defining underachievement among gifted students is in defining the magnitude of the discrepancy between a standardized test score and actual school performance. The size of this discrepancy varies from study to study, ranging from one to two standard deviations. This can be a problem because a child who is labeled an underachiever on the basis of one score discrepancy will not be identified as an underachiever based on a different discrepancy score.

The third area affecting the definition of underachievement refers to the wide variations in the statistical procedures and methods used to assess the discrepancy between ability and achievement (Rimm, 1998). Some researchers use a simple difference method in which discrepancies between two standardized test scores are evaluated by directly subtracting one from the other. The difference between these two scores is then tested for statistical significance (WIAT III Manual, 1992). Other researchers use an arbitrary absolute split definition, identifying students who have above a minimum score on one measure of ability or achievement, and a score below a maximum score on another

measure of ability or achievement (Morrow & Wilson, 1961). For example, students who have an IQ score above 130 and a grade point average of 2.75 or lower would be considered underachievers using this method. Other researchers use a regression method, also referred to as the predicted-achievement method of identification. With this method, the ability score is used in a regression equation to calculate a predicted achievement value. Using the regression method, underachievement is defined as "a discrepancy of actual achievement, based on achievement scores or grade point averages, from the predicted value, predicted on the basis of a regression equation between aptitude and achievement" (WIAT III Manual, 1992). Therefore, underachievement is determined by achievement scores or grade point averages that are one or more standard deviations below the scores predicted by an intelligence test score or another achievement score (McClelland, Yewchuk, & Mulcahy, 1991).

The fourth area of difficulty in defining underachievement is in the use of different instruments used to establish potential and actual performance. Discrepancy between potential and actual performance has been established by using one of the following sets of instruments: a) the difference between two standardized measures such as an intelligence test and an achievement test, b) the difference between a standardized measure and performance, such as an intelligence or achievement test and grade point average, c) the difference between two non standardized measures, such as teacher expectation and daily assignments. The use of different instruments creates different criteria for defining and thereby identifying underachieving students.

Another problem in identifying gifted underachievers lies in the fact that

underachievement may or may not exist according to the expectations of a student's level of functioning. Many gifted underachievers may not be identified as underachievers because their grades are acceptable or considered passable by some general standard. Farquhar and Payne (1964, as cited in Mandel & Marcus, 1988) suggest that gifted children be labeled as underachievers if the difference between their predicted and actual achievement equals or exceeds one standard deviation.

The methods used to define and identify underachievers are so varied that the child who is labeled an underachiever on the basis of one method would not necessarily be identified an underachiever on the basis of another. Despite these continuing difficulties involved in defining and identifying underachievement, most definitions share a similar underlying theme. The underlying theme of most definitions is that of a discrepancy between potential - what a student ought to be able to do - and actual performance - what a student actually demonstrates (Dowdall & Colangelo, 1982; Gallagher, 1985; Richert, 1991). All the definitions also employ the concept of discrepancy scores to identify underachievers (Rimm, 1995; Ross, 1995). Rimm (1995) suggests the following definition -Underachievement is a discrepancy between the child's school performance and some index of his or her actual ability, such as intelligence, achievement, creativity scores or observational data.

When psychologists work with individual students, they usually calculate a discrepancy score based on the difference between the individual's IQ score and his/her standardized achievement score. In addition, they evaluate academic performance through class work, class tests, grade point average or some standardized measure of reading or

mathematics, to arrive at a determination of underachievement (Telzrow, 1990). Because most schools do not routinely administer intelligence tests, this method of assessment is impossible to apply to the majority of underachieving gifted students. However, since practically all schools administer standardized and/or teacher-made achievement tests, they are all able to identify underachievers. Achievement tests can be used as an objective basis for determining the level of information and skill that a child has mastered (Davis & Rimm 1994). To evaluate underachievement, the psychologist or teacher can compare the child's performance score on an achievement test with his/her performance on class tests, projects, homework, class participation or grade point average. When using achievement tests to determine underachievement, a pattern of continuous decline in achievement test scores can also be used as an indicator of underachievement.

Thus, the loose definitions of giftedness and underachievement, imprecise methods of measurement, the use of different measuring instruments, the different calculating methods for discrepancy, and the different levels of expected performance all contribute to the difficulty in identifying gifted underachievers. These same problems have also led to difficulty in comparing results from various research studies.

Commonalties Approach to Underachievement

Most researchers assume that personal, social, and emotional influences explain the gaps found between ability and performance of gifted underachievers. In this approach to the study of gifted underachievement, the attempt is to identify specific characteristics of the gifted underachiever (Colangelo, Kerr, Christensen & Maxy, 1993; Dowdall &

Colangelo, 1982; Emerick, 1992; Peterson & Colangelo, 1996; Raph & Tannenbaum, 1961; Rimm, 1986; Whitmore, 1980). However, finding a consensus of opinions as to what traits are considered characteristic of the gifted underachiever has not been without controversy. In their review of more than ninety empirical studies conducted between 1931 and 1961, Raph and Tannenbaum (1961) could find no definitive way of explaining why some "gifted" children do not measure up to their potential. They reported that some traits that seem to inhibit scholastic success in one report fail to do so in another. Despite the many studies conducted during that thirty-year period, Raph and Tannenbaum could not identify a clear profile of attributes to distinguish underachievers from achievers. Asbury (1974) reviewed the research on underachievement and also noted that the results tended to be conflicting and inconclusive.

Whitmore (1980), a leading researcher in the area of gifted underachievement defines the term "gifted" as individuals with high IQ's. She built her theory of gifted underachievement on the premise that children with extremely high IQ's may be more susceptible to difficulties in the interpersonal realm which may lead to underachievement in traditional school settings. She hypothesized that the traditional classroom environment helps to create and maintain underachievement. Whitmore viewed the development of the gifted underachiever as the result of a conflict between the psychosocial and cognitive developmental needs of the high ability child, and the rigidity and conformity of the traditional classroom. Whitmore ascribed some of the personality characteristics and behavioral patterns that she associated with underachievement as resulting from unsatisfactory school/student interaction. Whitmore created a checklist of some of the

most important characteristic traits of the gifted underachiever.

TABLE 2.

A Checklist to Identify Gifted Underachievers

___poor test performance
___achieving at or below grade-level expectations in one or all of the basic skill areas: reading, language arts, mathematics
___ daily work frequently incomplete or poorly done
___ superior comprehension and retention of concepts when interested
___ vast gap between qualitative level of oral and written work
___ exceptionally large repertoire of factual knowledge
___ vitality of imagination, creative
___ persistent dissatisfaction with work accomplished, even in art
___ seems to avoid trying new activities to prevent imperfect performance: evidences perfectionism, self-criticism
___ show initiative in pursuing self-selected projects at home
___ has a wide range of interests and possible special expertise in an area of investigation and research
___ evidences low self-esteem in tendencies to withdraw or be aggressive in the classroom
___ does not function comfortably or constructively in a group of any size
___ shows acute sensitivity and perceptions related to self, others, and life in general
___ tends to set unrealistic self-expectations: goals too high or too low
___ dislikes practice work or drill for memorization and mastery
___ easily distracted, unable to focus attention and concentrate efforts on tasks
___ has an indifferent or negative attitude toward school
___ resists teacher efforts to motivate or discipline behavior in class
___ has difficulty in peer relationships: maintains few friendships

Note. From Giftedness, Conflict, and Underachievement (p. 237), by J. Whitmore, 1980, Boston, MA: Allyn & Bacon.

Whitmore recommended that if ten or more items on the checklist were endorsed, an evaluation was to be conducted on that student to determine whether he or she is a gifted underachiever. She believed that early identification of gifted students was important.

Whitmore also stressed interventions that included appropriate educational programs for gifted students. She believed that early intervention and appropriate educational programs could reverse or prevent patterns of low and failing achievement.

Other researchers emphasize the lack of self-confidence and low self-esteem of these students (Clark 1979; Fine & Pitts, 1980; Kerr, 1991; Purkey, 1970; Rimm, 1995). Some gifted underachievers do not believe or feel that they are capable of performing at the level that teachers and parents expect of them. They often feel like a fraud, and that they have fooled everyone around them. Their low self-esteem leads to avoidance behaviors in order to protect themselves from their own perceived lack of ability. (Fine & Pitts, 1980; Rimm, 1995). Related to the feeling of low self-esteem that underachievers experience is the feeling of having little control over their own lives (Rimm, 1995). These students tend to attribute failure and success to luck and/or ability, but not to effort (Seligman, Nolen-Hoeksema, & Girgus, 1986; Weiner 1990).

Perfectionism is another characteristic attributed to gifted underachievers by researchers (Adderholdt-Elliot, 1989; Hostettler, 1989). Since perfection is unattainable, the student is left with an impossible task. According to Hostettler (1989), the perfectionistic student does well in elementary school where the curriculum is easy enough to be "perfect." However, these students become disillusioned when the work becomes difficult in secondary school and they can no longer achieve perfect scores on all tests and assignments. Adderholdt-Elliot (1989) described five characteristics of perfectionistic students which leads to underachievement: procrastination, fear of failure, an all-or-nothing mindset, paralyzed perfectionism (if there is a risk of failure, do nothing), and

workaholism (which leads to burnout, depression and an imbalance among school, family and friends).

In a comparison of many studies, Dowdall and Colangelo (1982) found that the characteristics of gifted underachievers were much more similar to underachievers in general than to gifted students in general. They reported that gifted underachievers resemble gifted students only in their high scores on IQ tests, achievement test, or earlier grades. Compared to achievers, gifted underachievers seem to have lower self-concepts, be more socially immature, engage in more antisocial behavior, and have more emotional problems. (Kerr, 1991). On personality tests, gifted underachievers evidence emotional problems such as anger and depression which tend to be more long-term than situational (Pringle, 1970). Researchers have found that students of all abilities who underachieve seem to be more passive aggressive and resistant than students who do not underachieve. Morrison (1969) found that underachieving students demonstrated more hostility toward authority figures than achievers. These same underachieving students were judged by their teachers to be more passive aggressive than their achieving peers. It was reported by McCall, Evahn, and Kratzer (1992) that male underachievers often respond to overly involved parents by withdrawing or rebelling. They also reported that the more their parents supervise their schoolwork, the more passive these children became. Rimm and Lowe (1988) reported that underachieving gifted children tend to be dependent upon their parents for the completion of their homework. Passive and resistant behavior by underachieving students was noted by Bruns (1992). Behaviors such as oversleeping and procrastinating were indicative of these children. In school these underachievers often

don't complete assignments or do not turn them in on time.

Other researchers have attempted to isolate specific factors related to underachievement such as the family (Baumrind, 1971; Bradley & Caldwell, 1984; Dolan, 1983; Zill, 1992), depression (Drozd, Robinson, & Saarnio, 1994; Haines, Norris & Kashy, 1996), and school/social involvement (Kressman, 1989; Wolfe, 1991). Yet despite the large number of studies, the picture of the gifted underachiever remains inconclusive as a result of contradictory findings. The conflicting data in the underachievement literature may be due to inconsistencies and limitations in the conceptualization of underachievement.

Symptom Approach to Underachievement

A greater understanding of the nature of underachievement among gifted students which may provide a clearer picture of the phenomenon has been proposed by the following researchers: Roth and Meyersburg (1963), Tannenbaum (1983), Mandel and Marcus(1988), and Rimm (1995). This section summarizes their theories and is the basis for the theoretical position taken in this research.

Roth and Meyersburg (1963) developed a theory of underachievement, which they called the Non-Achievement Syndrome (NAS). The NAS theory describes the underachiever, speculates as to his/her etiology, and recommends a counseling approach. Roth and Meyersburg described the characteristics of the non-achieving student as: "poor academic achievement; general self-depreciation; lack of recognition of pleasure at 'being'; no clear system of personal goals or values; vulnerability to disparagement by others;

immature relations with parents; frequent depressions; lack of insight about self and others; and free-floating anxiety"(p.538). Roth and Meyersburg focused on depression in their model. They conceptualized the depression that these students experience as mild but persistent. They stated that underachievers for the most part do not suffer from an incapacitating clinical depression, but from a general malaise and a sense of dissatisfaction with their present situation. Roth and Meyersburg believed that the etiology of the NAS could be found in the family dynamics of these students. The parents of these students were described as non-supportive, devaluing, and focusing on failures rather than successes.

Raph and Tannenbaum (1961) reviewed more than ninety studies that were conducted between 1931 and 1961 on underachievement (as cited in Tannenbaum, 1983). They could not find a consistent or definitive way of explaining underachievement among gifted students, or a clear picture that distinguished underachievers from achievers. Tannenbaum interpreted their results to suggest that underachievement is a "single symptom representing diverse etiologies" (Tannenbaum, 1983 p.224).

Tannenbaum (1983) conceptualized underachievement in the same way a physician conceptualizes a skin rash. Symptoms or surface appearances may look the same but the underlying causes can vary widely. Tannenbaum (1983) hypothesized that underachievement as a symptom is a behavioral manifestation of any number of underlying disturbances. He described five different types of underachievers who: a) lack proper nurturance at home, at school and in the community, b) do not have the drive, mental health, study habits, or any other personality supports, c) suffer from a series of

misfortunes or distractions beyond anybody's control, d) have inadequate special aptitudes of any kind, e) have general abilities that have been overestimated. According to Tannenbaum (1983), each one of these obstacles can by themselves make the difference between success and failure. Therefore, underachievement may be considered an indication or evidence that any number of underlying disturbances exist. Tannenbaum as well as other researchers state that the different types of underachievement require different types of interventions (Khatena, 1986; Mandel & Marcus, 1988).

Mandel and Marcus (1988) have adopted and expanded on Roth's and Meyersburg's Non-Achievement Syndrome. Mandel and Marcus have added a formalized statistical method in an attempt to validate the syndrome. They have also attempted to differentiate underachievement from other disorders, and have placed it in a diagnostic or developmental context with other syndromes. They follow a medical model, which emphasizes two components: a) symptom relief, and b) cure of the underlying problem that has caused the symptom. They hypothesize that underachievement is the outcome of various underlying problems. Mandel and Marcus focus on differential diagnosis as an essential and necessary component in determining the type of underachiever and the course of treatment. This differential diagnosis provides three functions: a) an understanding of psychological problems and their interrelationships, b) a way of communicating that understanding in a standardized way to others, and c) a way of providing a guide to treatment.

Mandel and Marcus believe that different personality styles produce different types of underachievers, and that therefore underachievers as a group are heterogeneous. They

divide underachievement into four major categories: temporary, permanent, internal and external. These four factors are grouped in pairs that interact. Temporary and permanent factors refer to a time element and to chronicity. External factors refer to variables such as academic standards, friends, and family interactions. Internal factors include variables such as the underachiever's intelligence, personality, and mood. Mandel and Marcus focus on the internal-permanent factors of personality. Both internal and external factors can be temporary or permanent. They use a differential diagnosis schema of psychopathology found in the Diagnostic and Statistical Manual of Mental Disorders (DSM III-R) as a basis for a description of different personality styles or types of underachievers. They identify the following groups of underachievers: the overanxious disorder underachiever, the conduct disorder underachiever, the academic problem underachiever, the identity disorder underachiever, and the oppositional defiant disorder underachiever.

Mandel and Marcus focus on an accurate differential diagnosis of underlying causes as a prerequisite to designing an appropriate course of treatment. A semi-structured diagnostic interview is used to make a differential diagnosis. The interviewer investigates five major areas: a) the nature of school performance and related issues, b) the nature of the student's perceptions of family relationships, c) the nature of social relationships, d) the nature of the student's self-perceptions and affect, e) the student's perceptions of and plans for the future. Mandel and Marcus provide a list of questions in each area so that the interviewer may elicit the necessary information for an accurate differential diagnosis.

Rimm (1986, 1995) describes underachievement as a syndrome and has developed

a Trifocal counseling intervention approach to treat gifted underachievers. This approach is three-pronged and involves the student, the parent, and the school all working together. Rimm's theoretical model is cognitive-behavioral. Interventions are based on the identification of problems, the understanding of causes and solutions, and the learning of new attitudes and behaviors while unlearning old, self-defeating ones. Rimm hypothesized that underachievers have learned to underachieve from families, schools and cultures, and that therefore they can also learn to achieve. She focuses on rituals and reinforcements that maintain the behavioral patterns of underachievement. Rimm has observed that many underachievers don't listen in class, nor do they read, study, or complete assignments in school or after school. She reports that underachievers are bright and verbal children with an enthusiasm for learning. However, either gradually or suddenly their performance in school declines. She attributes this decline to the students' learned response to avoid competitive environments. Although Rimm describes the family as the root of the students' problems in school, she states that only through an understanding of the causes, reinforcers, and supports for this behavior can underachievement be changed.

Although Rimm believes that each underachiever has individual characteristics, she has developed 13 different prototypes which fit into four broad categories of underachievers. The four broad categories are dependent conformer, dominant conformer, dependent non-conformer, and dominant non-conformer. The dependent conformer is a student who constantly seeks help and doesn't challenge him/herself. The dominant conformer is social and achieves in sports or arts but doesn't achieve academically. The dependent non-conformer is chronically ill, depressed, or constantly victimized by other

students. The dominant non-conformer is a rebellious bully who is manipulative and uses his or her creativity as an excuse for avoiding schoolwork. According to Rimm, parents and teachers inadvertently reinforce these behaviors.

Rimm states that gifted children are at greater risk for underachievement than the average child. She claims that the risk for gifted children "results from both attention addiction and too much power" (Rimm, 1995, p.41). Gifted children are "enthroned early, and relative to the special attention and power they've received, later school years feel like a dethroning."(Davis & Rimm, 1994, p.287) Her trifocal model for reversing underachievement stresses the collaboration of the school, the family and the underachiever. Rimm's theory of underachievement and Trifocal Model were developed from her own prior research as well from leading theorists in other areas such as gifted education (Whitmore, 1980), psychology (Fine & Pitts, 1980; Seligman et al., 1992), and family dynamics (Zilli, 1971),

Because the behavioral manifestations of underachievement look very similar in most instances, the assumption of previous researchers may have been that all underachievers suffer from the same problems. As stated earlier, this assumption may have been the source of the many contradictory research findings and the reason that this complex, multifaceted phenomenon remains elusive.

Inconsistent and incongruous findings in the underachievement literature over the past 50 years are understandable according to Mandel and Marcus. The findings are understandable if one considers that the conflicting results may be based on the idea that underachievers are a heterogeneous group and not the homogeneous group previous

researchers assumed they were.

Roth and Meyersburg (1963), Tannenbaum (1983), Mandel and Marcus (1988), and Rimm (1995) have all developed models of underachievement that take into account the idea that underachievement may have many sources. These researchers consider underachievement to be a symptom with various etiologies, and that not all underachievers suffer from the same problem. These four researchers describe various different underachievers with etiologies that they then cluster into different categories. They stress the diagnosis and identification of the underachiever by type and factors.

Although Mandel and Marcus (1988) and Rimm (1995) have designed comprehensive models of underachievement, they do not include depression as an important factor in their models. Depression, however, is an important theme in the model developed by Roth and Meyersburg (1963), and discussed in the model developed by Tannenbaum (1983). The perspective taken in this research is that depression may be a key factor and should not be omitted from Mandel's and Marcus's and Rimm's theoretical models. This researcher proposes that depression is an important factor in the theory of underachievement, and that it will be part of the focus of this study.

The researchers mentioned above consider the family environment an important element in the theory of underachievement, a position shared by this researcher. However, they do not consider the combined effect of family environment and depression in the theory of underachievement. It is the purpose of this research to examine the relationship between depression and family environment on academic performance and to examine the interaction of depression and family environment and its effects on academic performance.

This approach aims to identify more clearly the etiology of a particular type of underachiever. When the etiology of the individual symptoms is determined, more effective treatment approaches to underachievement can be designed.

The research on underachievement has evolved from a commonalty approach to a symptom approach. The symptom approach seems to be a more appropriate model for understanding this phenomenon and one that will possibly generate more effective treatment approaches.

Depressive Disorders in Childhood and Adolescence

Depression

The perspective taken in this research is that depression, family environment, and their interaction are important factors in the etiology of underachievement. The following section will focus on depression, the prevalence and impact on children and adolescents, the symptoms of depression in these age groups, and the effect of depression on academic performance.

It is only within the past twenty years that the existence of depressive disorders in children and adolescents has been recognized (Kazden, 1990; Kovacs, 1996). It was previously believed that children and adolescents could not suffer from depression. Converging evidence from both clinical and community settings indicates that children and adolescents do suffer from a variety of depressive disorders and from depressive symptoms (Kazden, 1990; Kovacs, 1996; Kovacs, Feinberg, Crouse-Novak, Paulauskas, & Finkelstein, 1984; Stark, Laurent, Roase, & Prentz, 1990). In fact, various symptoms of depression are more prevalent in the general child and adolescent population than was previously suspected (Henderson & Pollard, 1992).

The three most common depressive disorders are major depressive disorder (MDD), dysthymic disorder (DD), and depressive disorder not otherwise specified (DDNOS) (DSM IV, 1994). All three disorders are characterized by a depressed mood for most of the day, nearly everyday for a specified period of time (DSM IV, 1994). The basic differences between the three disorders are the number, severity, and duration of the

symptoms (Stark, et al., 1990; DSM IV, 1994). Major depressive disorder is considered an acute condition whereas dysthymic disorder is considered a chronic condition.

Affective disorders such as MDD, DD, and DDNOS are not considered normal developmental phenomena, nor are they transient problems that children will eventually outgrow. Depression is a serious disorder that has a profound impact on a youngster's life. If left untreated, these disorders could last for months or years (Reynolds, 1987). The longer the duration of the depressive episode, the more pervasive the impact on the life of a child or adolescent. Evidence indicates that not only are depressive disorders long lasting, but that there is a high incidence of recurrence (Kovacs & Lohr, 1995; DSM IV, 1994). In a study that tracked 65 depressed children, 54% had a recurrence of depression (McCauley, Myers, Mitchell, Calderon, Scholoredt, & Treder, 1993). The high risk of recurrent depression has been shown to continue into adulthood. In a study, by Roa, of 26 depressed adolescents, 69% had recurrent depressive disorder seven years later (as cited in Kovacs & Devlin, 1998). The DSM IV reports recurrence rates of 50-60% for individuals with a first episode of MDD to have a second episode, and up to 90% of individuals with a third episode to have a fourth.

Epidemiology

Prevalence rates of depression for children and adolescents are hard to determine. There are wide discrepancies due to the variety in which rates are determined. Within the literature, rates have varied as a function of methodology, type of assessment, nature of population, training of interviewers, stringency with which diagnostic criteria are applied,

and whether current rates or lifetime rates are being used (Stark, Laurent, Rouse, & Prentz (1991).

Stark and colleagues (1991) reviewed the prevalence of depression among children and adolescents from 1970 to 1985. He reported rates that ranged from as low as 1.9% in the general population to as high as 49% for children who were referred to an educational diagnostic clinic. Kashani and colleagues conducted many epidemiological studies and found a prevalence rate for all depressive disorders that ranged from 1.9% to 4.3% for a general school population (Kashani, Burk, & Reed, 1985). Stark (1990) found a prevalence figure very similar to Kashani's - of 4% - when all three diagnostic groups were considered simultaneously. Of the three main depressive disorders, dysthymic disorder appears to be more prevalent among a general school population (Stark et al., 1991). Prevalence rates for special populations such as children referred for educational and/or psychological help or children with medical problems are much higher than rates for the general population. Rates for these special populations have been reported to range from 22% to 49% (Weinberg, Rutman, Sullivan, Penich & Dietz , 1973).

Anderson and McGee (1994) and Kovacs and Devlin (1998) found that prevalence rates of depression in children and adolescents are different and are a function of development. Rates for adolescents are higher than those reported for children. Adolescent rates are reported to range between .4% to 8.3%, whereas rates for children range between .4% and 2.5%. In one study, a cohort group that was repeatedly evaluated for depression was found to have prevalence rates of 1.8% for 11 year olds, 4.2% for 15 year olds, 18% for 18 year olds, and 18.6 % for 21 year olds (Anderson, Williams, McGee,

& Silva, 1987). Prevalence rates are found to differ across gender. Childhood rates of depression are equal for females and males, whereas among adolescents, the ratio of females to males is approximately two to one (Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, Wittchen, & Kendler, 1994).

In their study, Reynolds and Bartell (1984) concluded that, "dysthymic disorder, which is less severe in terms of symptom distress but typically of greater duration than major depression, may be especially relevant to the study of depression in school-based populations of adolescents" (as cited in Reynolds, 1986, p. 2). Prevalence of scholastic failure, school-related problems, and poor past adjustment highlight the developmental cost of these depressive disorders (Kovacs, & Devlin, 1998). It has been estimated that of those who suffer from depression, only one-fifth are either diagnosed and/ or treated (National Alliance For The Mentally Ill, 1997-98).

Symptomatology

Depression in children and adolescents, as in adults, is a syndrome which consists of a group of symptoms that co-occur (Carlson & Cantwell, 1980). The symptomatology is similar to that seen in adults (Carlson & Kashani, 1988; Kovacs, 1995). However, there are additional developmentally appropriate symptoms that children and adolescents suffer from which are somewhat different from those of adults. These include poor school performance, negativistic and irritable behavior, stomachaches, and enuresis (Birmaher, Ryan, Williamson, Brent, Kaufman, Dahl, Perel, and Nelson, 1996; Kaslow, Rehm & Siegel, 1984). Although the principal symptom involves mood, the manner in which

depressive symptoms cluster may vary as a function of development (Kazdin, 1990). Some symptoms increase with age and other symptoms decrease with age. Unfortunately, depression affects more than just mood - it affects all areas of functioning (Reynolds, 1987). Other affected areas of functioning in children and adolescents include the cognitive, motivational/behavioral, and physical domains (Kovacs, Feinberg, Crouse-Novak, Paulauskas, Finkelstein, 1984).

Affective Symptoms

The overriding symptom of depression for adults, children, and adolescents is dysphoria (sad) mood. It is the severity and duration that distinguishes dysphoric mood of depression from the sad mood in other disorders. Whereas a sad mood may be a short-lived component in other disorders, the sad mood lasts for most of the day, everyday for at least two weeks in major depressive disorder and for one year in dysthymic disorder. For children and adolescents, anger and irritable mood are common, and are sometimes evidenced in place of dysphoric mood (DSM IV, 1994; Stark, Dempsey & Fisher, 1993). Anger and irritability vary in both severity and duration, as does sad mood.

Another primary affective symptom of depression is anhedonia - loss of the ability to take pleasure in activities. The symptom of anhedonia is used to reliably differentiate depression from other childhood disorders. It appears that adolescents suffer from anhedonia and hopelessness more than younger children do (Kazdin, 1990). Low self-esteem as well as feelings of worthlessness are seen in approximately 90% of depressed youths (Stark, Dempsey, & Fisher, 1993). Kovacs (1996) and Berndt and Zinn (1983)

report additional affective symptoms that occur with early onset of depressive disorders: feelings of being unloved, pessimism, guilt, hopelessness, and an accompanied attitude of self-depreciation.

Cognitive Symptoms

Depression affects more than just mood; other areas of functioning are also affected (Reynolds, 1987). Depressive symptoms in children and adolescents have been associated with specific deficits in cognitive processing (Cole & Turner, 1993; Ostrander, Nay, Anderson & Jensen, 1996). The most common cognitive symptoms of depression are diminished ability to think or concentrate, negative cognitions, negative self-evaluation, a sense of hopelessness, morbid ideation (Stark, Schmidft, & Joiner, 1996), and indecisiveness (DSM IV, 1994). These overt symptoms are recognized by parents at home and by teachers in the classroom. Children with negative cognitions and negative self-evaluations tend to interpret their world with a negative bias. Thoughts about loss, defeat, and deprivation are the most common (Beck, 1991). This is evidenced by what children say about themselves; for example, "I stink at that" and "I'll never win." A sense of hopelessness is evidenced in the unwillingness to try: "Why should I even try - I won't be able to do it anyway."

Diminished ability to think or poor concentration can be reflected in a student's short attention span, low frustration tolerance, daydreaming, and an overall lack of effort. Morbid ideation involves recurrent thoughts of death and suicidal ideation, either in written work or in one's choice of reading material. The literature on cognitive factors

indicates that children and adolescents with clinical depression frequently evidence an impairment in their academic performance (Blechman, McEnroe, Carella, & Audette, 1986; Seligman, Nolen-Hoeksema, Girgus, 1992; Tesiny, Lefkowitz & Gordon, 1980;). Numerous studies have assessed nonclinical, school-based samples and have found that depressive symptomatology is negatively correlated with grade point average (Slotkin, Forehand, Fauber, McCombs, & Long, 1988). In a study on intellectual ability and achievement, Hodges, and Plow (1990) found that depressed children were characterized by underachievement and scored significantly lower on math and general knowledge than children in control groups. This finding was explained by the fact that math involves learning completely new concepts and one cannot rely on previously learned material. Math also requires more unbroken concentration than that of other academic tasks. Hodges' and Plow's study supports the theory that depressed children have diminished concentration ability.

Motivational/Behavioral Symptoms

Depressed children and adolescents are often unmotivated to participate in a wide range of activities, from physical endeavors to personal hygiene. A notable symptom is the inclination toward social withdrawal and decreased academic performance (Stark et al., 1993). Adolescent girls who are depressed are prone to withdrawal, to being secretive, shy, and timid. In fact, they enjoy being alone. Children and adolescents who are depressed tend to retreat into themselves, watch television, listen to music, sleep, or just stare out of a window. Withdrawal might manifest itself as hyperactivity - the child or

adolescent can't settle him/herself and moves quickly from one activity to another. Suicidal ideation and attempts at suicide are the most extreme and dangerous behavioral symptoms for which depressed adolescents are at risk. Cutting classes and/or absenteeism from school, drug experimentation, rebelliousness, and difficulty with social adjustment are considered symptoms of depression and/or symptoms which mask depression (Reinherz, Frost, & Pakiz, 1991).

Physical Symptoms

There are several physical symptoms of depression. The most common are fatigue and change in sleep patterns - either insomnia or hypersomnia. Kovacs and Gatsomes (1989) found that adolescents were seven times more likely to suffer from hypersomnia than younger children (as cited in Kovacs, 1996). Less common are disturbances in appetite, extreme changes in weight, and psychomotor retardation. Psychosomatic symptoms such as dizziness, stomach problems, and back pain often seen in young children are also considered to be indicators of depression (NAMI, 1997-98).

Depression and Academic Performance

High intelligence is no guarantee of high academic performance. IQ scores are usually considered good predictors of academic performance; but in fact they account for only approximately 25% of the variance in academic performance (Matarazzo, 1972). High school records and scholastic aptitude test scores which are often used as predictors of success in college account for less than half of the variance in college freshman grades (Angoff, 1971). In a study conducted by Haines and colleagues (1996), academic performance was better predicted by self-report measures of affect than by measures of intellect (Haines, Norris & Kashy, 1996).

The relationship between depression and academic performance has been studied by several researchers (Drozd, Robinson, & Saarnio, 1994; Haines et al., 1995; Hodges & Plow, 1990; McCauley et al., 1988; Nolen-Hoeksema, Girgus, & Seligman, 1992, 1985; Raskin, Frieedman, & DiMascio,1982; Strauss, Lahey, & Jacobsen, 1982). These authors have found depressive symptomatology to be negatively related to academic performance in clinic and non-clinic school-based samples of children and adolescents. Depression is a serious problem for many children and adolescents, one which may affect their learning skills and reduce their chances for academic success (Drozd et al., 1994). The Diagnostic and Statistical Manual of Mental Disorder, (DSM-IV) (American Psychiatric Association, 1994) includes the following as criteria for depression: alterations in memory, diminished ability to think or concentrate, and impairment in occupational or other important areas of functioning.

Haines, Norris, & Kashy (1996) studied the relationship between depression,

concentration, and academic performance among college students. They hypothesized that mild depression had a detrimental effect on cognitive tasks that required sustained attention, and that time pressure added to the difficulty of cognitive tasks. These researchers also examined academic performance - as measured by grade point average (GPA) - to determine whether a relationship between depressed mood and a measure of global cognitive performance existed over an extended period of time. Grade point average was chosen in this study because it taps a broad range of cognitive functions - elaborate processing, retention, and reading comprehension - that require sustained attention skills and occur over an extended period of time. The results of their study indicate that a negative relationship exists between depression and prolonged cognitive functioning as evidenced by GPA. Depression has a greater effect on global academic performance - when performance has to be sustained for an extended period of time - than on an immediate measure of sustained attention on an isolated, brief task. The study also suggested that depressed mood was not a reaction to grades, but rather the inverse; that grades were a reaction to depressed mood.

Vincenzi (1987) conducted a study examining the relationship between depression and reading achievement of 6th grade non-clinic school-based children. The results indicated that depression scores were negatively correlated with three different measures of achievement: general ability to learn, reading achievement, and GPA. Vincenzi proposed two theories to account for his findings; a) depression reduces one's effective means of coping and diminishes one's cognitive capacity for effortful and sustained thinking, and b) children become depressed because of the lack of problem-solving skills.

Berndt and Berndt (1980) conducted a discriminant validity analysis to distinguish depressed from non-depressed college students on six measures of psychological deficit. The purpose of this study was to investigate the nature of psychological deficits associated with mild depression. Four of the six measures - digit symbol, writing speed, Neckar cube reversals, and paired easy associates - identified 92% of the mildly depressed group. The remaining two measures – short term memory and paired hard associates - did not identify the mildly depressed group. The results suggested possible deficit in energy used for both initial perceptual processing and for the organization and execution of simple and complex tasks.

In a study conducted by Drozd et al. (1994), the relationship of depressive symptoms and study habits was explored. The results confirmed that students who reported more depressive symptoms also exhibited poorer study skills than did students with less depression. The results indicated that students with depressive symptoms (poor concentration, feelings of hopelessness, and restless sleep) had high off-task behaviors (skipping class, daydreaming during study times). The study also reported that these students had a harder time preparing to study and focusing on studying than non-depressed students.

Looking at cognitive performance deficits in moderate to severe depression, Raskin, Friedman, and DiMascio (1982) found compelling evidence that depression does have a negative effect on psychomotor and cognitive skills. They found that deficits were more pronounced in tasks requiring sustained effort and concentration, abstract thinking, accuracy, and motivation. There were greater deficits for older patients over forty than for

younger patients, and greater for males than for females.

Not all studies have found a relationship between depression and academic performance. Strauss, Lahey and Jacobsen (1982) investigated the relationship between academic achievement -as measured by the Peabody Individual Achievement Test and the Stanford Achievement Test -and depression as measured by the Children's Depressive Inventory (CDI), Peer Nominations Inventory for Depression (PNID) and an ad hoc teacher rating. Their findings overall did not support the hypothesis that depression is related to academic underachievement in non-clinic populations. However, when the sample was divided into groups by sex and age, some significant correlations were found. Scores on the PNID for depressed males were negatively correlated with reading achievement scores. The researchers also found significant negative correlations between PNID and SAT reading achievement for children in grades two through four. It appears that the non-significant findings between depression and underachievement need to be further evaluated by considering the subjects used in this study. The participants for this study were attending a parochial elementary school in Georgia. It is possible that the religious and moral family orientation of these children and their attendance in a religious school may have had an intervening effect on their academic achievement, which may have outweighed the effects of depression. In a study conducted by Wood, Chapin, and Hannah (1988), moral and religious family orientations were found to be positively correlated with academic achievement in children who attended a religiously oriented school.

In a study by McGee, Anderson, Williams, and Silva (1986), depressive symptomatology in children was hypothesized to be associated with cognitive tasks. They

examined self-report measures of depression and inattention with performance on the Wechsler Intelligence Scale for Children-Revised (WISC-R). Only the arithmetic and block design subtests revealed small but significant negative correlations with depression. Overall, the results of this study did not support the hypothesis that depression selectively impairs performance on complex cognitive tasks like the kind found on the WISC- R. However, these findings suggest that depressive symtomotology may be associated with distortions of self-perception regarding ability and performance. The findings also suggest that poor concentration may be associated with impaired performance. However, the impaired performance is not evidenced on a short task such as an IQ test.

Depression is not considered to be a normal developmental phenomenon but a serious disorder that has an enormous impact on the life of a child and adolescent. The research during the past twenty years indicates that it is more prevalent than previously expected and when left untreated lingers for long periods of time. The symptoms of depression vary and change with development but the areas that are affected remain the same: mood, cognition, behavior, physical, and performance. It is hypothesized that poor school performance is one of the symptoms of and is related to depression.

Relationship between Family Environment and Academic Achievement

The focus of this section is family environment, its importance, and its impact on child and adolescent development and on academic performance.

Background

It has been acknowledged that the family, as the primary socializing agent, has a substantial impact on the lives of children and their school achievements (Henderson, 1987; Zill, 1992). The critical importance of parents and families as influencing agents in the lifelong success of children cannot be overstated. Researchers investigating the role of the home environment in academic performance have studied the effect of parents' involvement in their child's learning (Dolan, 1983; Finn & Owings, 1994), conflicts within the family (Smetana, 1988; Wood, et al., 1988), differing perceptions of family members (Moos & Moos, 1987), family interaction patterns (Olson, Russell, & Sprenkle, 1983), and differences in parenting styles (Baumrind, 1971). The specific family factors that determine achievement and academic success are not always clear. Thus, the relationship between family and academic achievement is a very complex one.

Historically, there have been three different approaches to the study of the family/achievement relationship (Bronfenbrenner, 1980; Clark, 1983; Conoley, 1987; Finn & Owings, 1994; White,1982). Each approach uses different variables to investigate how families influence the scholastic achievement of children. The first perspective focuses on family status variables such as demographics, socioeconomic status, family size, and family

constellation (Clark, 1983). The second perspective focuses on family process variables such as parenting style, communication, attitude of family toward school and interaction patterns (Baumrind, 1972; Moos & Moos, 1986). The third perspective focuses on context or ecological variables such as the interaction between school and the home or community (Bronfenbrenner, 1970). Each perspective sheds light on different family characteristics that influence academic success. This section will review the process variables since these can be effectively changed through intervention. This section will focus on the role that families and the home environment play in affecting scholastic achievement and underachievement in children and adolescents.

Family Environment

Parental influence and the impact of the home environment on academic achievement has been investigated and documented by several researchers (Dolan, 1983; Finn & Owings, 1994; Goertzel & Goertzel, 1962, 1978). A fundamental assumption of most theories of personality is that the behavior patterns of parents affect children. In two studies conducted by Goertzel and Goertzel (1962, 1978), family background and personal lives of some 700 successful adults were studied. In these studies two consistent family characteristics were revealed. First, the parents were highly energetic and goal-directed, and second, they displayed an intense and intrinsic love for learning and achievement. Parental attitudes toward themselves, each other and their children had powerful effects on their children's attitudes. In these families parental expectations for their children were high.

The specific family factors that determine achievement and academic success are not always identifiable. However, factors that have been shown to affect academic success are: cohesion, relationships with one's parents, expressiveness, achievement orientation, parental control (Moos & Moos, 1986), parenting style (Baumrind, 1972), parent-child relationship, and the overall quality of a family's lifestyle (Clark, 1983). These factors are also believed to determine childrens' preparedness to perform academic functions (Clark, 1983; Williams, 1994).

In a study of high school students and their families, Dornbusch and Ritter (1988) examined the contributions of family structure and social status versus behaviors and interactions to academic performance. Four family process variables were identified: parental reaction to grades, family decision making, parenting styles, and parental participation in school activities. The results suggested that family processes are more important than social status in influencing school success. In reference to parental reaction to grades, the only parental reaction that was associated with improved academic performance was praise for good grades, encouragement to try harder, and offers to help with poor grades. "Such responses help the student to internalize the values of the parents without exercising sufficient constraint or pressure to reduce internal motivation" (Dornbush & Ritter, 1988, p. 123). Changes in grades were negatively associated with the use of extrinsic rewards and punishments. In fact, the researchers found that the amount of time spent on homework decreases for both male and female students as parents use higher levels of extrinsic reinforcers. The results of family decision making indicated that too early autonomy in decision making increased the probability that youngsters will

engage in deviant acts, and increased the probability of poor school performance. Joint decision making in which there is good communication between children and their parents was consistently associated with higher grades and good adjustment. The only parenting style associated with higher grades was the authoritative style. Authoritarian and permissive styles were both associated with lower grades.

In a paper presented at the National Conference of the National Black Child Development Institute, Williams (1994) described her own research and that of Clark (1983) on families' contribution to childrens' success in school. The parent-child relationship and the overall quality of a family's lifestyle are believed to determine childrens' preparedness to function academically. A list of the family lifestyles that contribute to academic success is provided in the Williams study. Some of the family lifestyle factors are: responsibility for guiding, nursing and protecting; interpersonal communication which consists of frequent dialogue, and a strong encouragement; clear and consistent limits; warm and nurturing interaction; monitoring childrens' use of their time; clearly defined role boundaries, diligent and direct supervision; clearly stated expectations; family rituals such as conversation at the dinner table, reading and telling stories to each other; clear rules for acceptable behavior outside of the home; spending a good deal of time in their home with family members, monitoring TV watching; exercise and authoritative child-rearing style; and modeling of acceptable behavior by parents.

White (1982) analyzed 101 studies pertaining to within home variables that may contribute to the success of children in school. The results of the review indicated that the home environment had a greater impact on student outcomes than socioeconomic status.

Parents' attitudes, guidance, and expectations for their children, quality of verbal interaction, participation in cultural and learning-related activities and overall stability in the home were the specific home environment factors identified in White's review.

A review of the literature of family influences on student achievement was conducted by Christenson, Rounds, and Garney (1992). They identified the following five family and home environmental factors that affect student achievement: a) realistically high expectations for school performance and the use of effort attributions for results, b) parental structure and support for learning in the home, c) positive emotional interaction between parents and children or parent's emotional responsiveness to children's developmental needs, d) parents' use of an authoritative parenting style and e) parent involvement in education at school and home. One of the benefits of this broad list is that families who are experiencing difficulties in these areas may be aided by practitioners working with students and families. These factors are easily altered through interventions.

The home environment of highly successful talented teenagers, regardless of socioeconomic status, has been characterized as being stable and stimulating, with parents modeling the work ethic and creating a feeling of security while encouraging independence, curiosity, and intellectual risk-taking (Bloom, 1985: Waugh, Bireley, Webb & Graham, 1993). Parents in these homes spend a lot of time and energy meeting the intellectual, social, emotional, and creative needs of their children, have high achievable expectations in their children's talent areas, emphasize productive work and goal directedness, and applaud their children's successes. Yet these parents also expect that their children will accept challenges and they seem to convey the message that if no

intellectual challenges exist in school, the children are to use their curiosity and love of learning to create their own challenges.

Wood, Chapin, and Hannah (1988) explored the role of the child's perception of his or her family environment and its relationship to academic underachievement. The Family Environment Scale (FES) was administered to a matched group of average ability underachievers and achievers. The results indicated that four variables were able to distinguish achievers from underachievers: cohesiveness within the family, an emphasis on acting autonomously, achievement orientation, and a moral-religious orientation. The study suggested that those students who perceived the family environment as cohesive, open to expression, and emphasizing cultural and religious values, achieved adequately. However, students who perceived their family environment as conflicted, non-cohesive and demanding to achieve, were underachievers. This study lends empirical support for the relationship between family functioning and academic achievement.

The perspective taken by family systems theorists - Ackerman, Haley, and Minuchin (as cited in Nichols, 1995) - is that childrens' behaviors are not only an expression of intrapsychic dynamics, but a part of a complex web of interactions within the family environment as well. From this perspective, problems that children are experiencing in school may be a reflection of problems within the family. Ackerman (as cited in Nichols, 1995) proposed that children who have school-related difficulties may be performing an important function for the family system. He suggests that the child's school difficulties may be a symptom of marital difficulties. The child's difficulties may function as a means to distract the parents from their own discord.

Parenting Styles

Researchers have examined the relationship between parenting styles and academic achievement. Baumrind (1971) describes three parenting styles: authoritarian, permissive, and authoritative. Authoritarian childrearing practices are exemplified by rigid enforcement of rules without explanation, harsh punitive discipline, and low warmth and acceptance. This style of parenting, according to Baumrind results in children who are conflicted, unhappy, aggressive, low in self-esteem, and often rejected by peers. Permissive childrearing is described as parents' explaining rules but not enforcing them, having little control or discipline, and making few demands on children. Children from this environment were found to be impulsive, aggressive, and unpopular. Families that practice authoritative childrearing, which encompasses firm enforcement of rules with explanation and joint decision making, are high in warmth and acceptance. This kind of environment leads to positive social, emotional, and cognitive development. Children are reported to have high self-esteem and social competence, and to be popular with their peers. Some studies have found that the authoritarian and the permissive parenting styles were negatively correlated with grades and that the authoritative parenting style was positively correlated with grades (Dornbush, Ritter, Leiderman, Roberts, & Fraleigh, 1987). Causality between parenting style and grades has been hard to prove. However, a study conducted by Hein and Lewko (1994) reported that there are only a few high-performing youngsters from permissive families. They interpret this finding to indicate that control and firm guidance - such as that provided by the authoritative parenting style - is an important

element in achieving high performance. One exception to these findings is found among Asian-American families in which parents are often authoritarian. Despite this parenting style children in these families tend to do well academically (Dornbusch et al., 1987). As a result of the findings of Asian-American students, Dornbusch and colleagues (1987) concluded that perhaps the level of parental involvement with their children is as important or more so than parenting style.

Macoby and Martin (1983) describe a neglectful parenting style. These parents are often depressed and emotionally uninvolved, inconsistent, and indifferent to their children. They are cool, unaccepting and are more focused on themselves and their own needs than the needs of their children. Children from these environments are usually found to be impulsive, moody, aggressive, and low academic achievers. The Dornbusch (1987) study also indicated that the students coming from families with inconsistent parenting styles performed poorly in school. In fact, they performed the lowest of all the parenting style groups. Macoby and Martin classify warmth and control as two very important dimensions in childrearing. These dimensions are related to childrens' acceptance by their peers, their demonstration of prosocial behavior, and cooperative behavior.

Relationship with Parents

Family conflict is one of the most problematic of all family interactions and one of the most common with adolescents. Smetana (1988) proposes that conflict is inherent in families and that it is an outgrowth of parental authority and the differing conceptions that adolescents and parents have of this authority. Normal conflict occurs as parents and

adolescents go through the transition period during which the balance of authority changes and is passed from the parent to the adolescent. Both parent and child recognize the need for this transfer. However, conflict is a function of the rate and form that this transfer takes. According to Smetana, the intensity, source, and type of interfamilial conflict and interaction all vary and determine the outcome of the family conflicts.

Family interaction has also been described in terms of family cohesion. The Circumplex Model of Marital and Family Systems recognizes the integral part cohesion plays in the family system (Olson, Russell, & Sprenkle, 1983). Cohesion is defined by Olson and colleagues as "the emotional bonding that family members have toward one another" (1983, p.70). The Circumplex Model describes four dimensions of cohesion: emotional bonding, boundaries, coalitions, and interests and decision-making. The model describes levels of cohesion, which range from enmeshment - where there exists too much closeness - to disengagement - where there is too little closeness. Extremes in either direction are considered problematic for families. It is believed that a balance in cohesion is important for adequate family functioning. Fowler (1982) identified a relationship between problems with behavioral displays of aggression and hostility, and low cohesive family environments. Moos & Moos (1986) defined cohesion as the degree of commitment, help, and support family members provide for one another. They found that families that were less cohesive had more conflict and that this was characteristic of the families which had parents who were depressed.

Parental involvement, however, is not always a positive factor in student achievement. Parents from high socioeconomic groups may spend too much time

fostering their gifted child's interests, leading to an over-identification with the child and a loss of boundaries between parents and child (Cornell, 1984). Fine (1967) described many of the parents who send their children to his private school as "inadvertently and unknowingly preparing the child for underachievement" (p.42) by being over-involved, over ambitious, or perfectionists. He identified children whose extreme perfectionism prevented them from attempting any difficult schoolwork. Fine also believed that parents' high ambition for their child can place too great a responsibility on that child. The child may stop working in school due to the fear of not attaining his/her parent's expectations.

Parental control is another element in the dynamics of family interactions. It plays an important role in the climate of the home and in children's behavior. Moos and Moos (1986) define it as the extent to which set rules and procedures are used to run family life. Control can be seen as a negative factor when it is perceived as restrictive, dominating, and interfering with development and growth (Lau, Lew, Hau, Cheung, & Berndt, 1990). However, control is viewed as constructive when it is in the form of order and organization. It is found to be functional and positively correlated with adolescent self-esteem (Lau et al, 1990). Organization is defined by Moos and Moos (1986) as the degree of importance of clear organization and structure in planning the family activities.

Strained relationships and interactions between some underachieving students and their parents have been documented. Parents of gifted underachieving students were more likely to: a) be overanxious or over solicitous (Barrett, 1957); and b) demonstrate less approval and trust of their child (Morrow & Wilson, 1961). These findings suggest that underachievement, especially in gifted students, may be related to conflict within the home

environment. It is difficult to determine, however, whether interpersonal problems found in the home environment of underachieving students lead to underachievement, or whether the interpersonal problems are the result of the child's underachievement.

Underachievers and their parents not only perceive problems differently, but are unable to understand each other's perspective. These may be important components of family conflict within those families. For instance, when underachieving male students of average ability and their parents participated in group interviews, both the parent group and the student group expressed different beliefs and feelings about family interactions (Gurman, 1970). The students believed that their parents were more concerned with grades than with their children's growth and development. The sons also believed that their parents were not supportive, and reported feelings of rejection or parental indifference. These boys also felt that their fathers didn't spend enough time with them. The parents stated that they needed to monitor their sons and that they could not trust them to behave appropriately. Both the parents and the boys felt that the other was unwilling or unable to communicate effectively about important issues.

In another study involving perception, gifted underachievers could not predict their mothers' attitudes as well as high achievers could (Davids & Hainsworth, 1967). Although the underachieving gifted students perceived their mothers as being more controlling and more negative than the mothers saw themselves, there were no significant differences in expressed attitudes of the mothers of the high achieving and underachieving gifted students. Research findings that demonstrate differing perceptions are important because people are affected by what they believe to be true rather than what is actually

true (Davids & Hainsworth, 1967).

This section focused on the family environment and its relationship to academic performance. As the primary socializing agent and role model for children, the family is of critical importance and the impact of the family environment on the development and academic performance of children cannot be stressed enough. Research has indicated that the following factors are highly correlated with academic orientation and success: parenting style, family decision making, parental reaction to grades, (Dornbusch & Ritter, 1988); family environment (Moos & Moos, 1986; Wood, Chapin, & Hannah, 1988); the parent-child relationship, communication, quality of parent-child interactions, the monitoring of childrens' use of time, the extent of stated goals and expectations (Christenson, Rounds & Garny, 1992; White, 1982) and the degree of stability and stimulation within the environment (Bloom, 1985). This research also revealed that family conflict and family cohesion are negatively correlated with each other and that both of these factors are correlated with academic performance. Family conflict has been shown to be destructive and to impede family functioning and is negatively correlated with academic performance. Family cohesion was identified as an essential factor for good family functioning and therefore for good academic performance as long as boundaries between family members are clear, distinct and respected (Cornell, 1984; Fine, 1967; Moos & Moos, 1986). In addition, the research indicates that the child's subjective perception of his/her family environment is as important a factor in the child's behavior as is the objectively measured family environment. (Davids & Hainsworth, 1967).

Relationship between Family Environment and Depression

The relationship between depression and the family environment has been well established by many researchers (e.g., Beck, 1991; Cole & Rehm, 1986; Kovacs, 1995; Weissman, 1997). The family environment and family relationships are significant factors in the development of depressive illnesses in children and adolescents (Birmaher et al., 1996). Family life is an integral part of adolescence and therefore profoundly influences the adolescents' self-image. The homes of depressed adolescents have been "characterized by more conflict, more rejection, more problems with communication, less expression of warm loving affect, less support, and more abuse" than families of non-depressed adolescents (Birmaher et al., 1996, p. 1432). Billings and Moos (1983) found that less cohesion and more conflict were evidenced in and characteristic of families with depression. Clinical descriptions of the families of depressed children depict these families as chaotic, rejecting, and as exhibiting hostile interaction patterns (McConville & Bruce, 1985). Stressful life events such as loss, divorce, and bereavement have also been shown to be associated with childhood depression (Brown & Harris, 1989).

Twin and adoption studies provide evidence that genetic factors account for 50% of the variance in depressive disorders. However, these same studies emphasize the importance and the impact of environmental factors that account for a substantial portion of the variance in depressive disorders. These studies examine non-shared experiences of family members. An example would be the way parents treat each of their children and the personal experience of each child (Birmaher et al., 1996).

There is a growing body of evidence that indicates that in addition to genetics, parental behavior is related to the development of childhood depression (Elder, Caspi, & Downey, 1986; Whitbeck, Hoyt, Simons, Conger, Elder, Lorenz, & Huck, 1992). Prospective studies conducted by Whitbeck and colleagues (1992) indicated that depressed affect in mothers hinders critical parenting processes. In addition, depressed parents were often found to be preoccupied, passive, and providing less attention, affection and communication with their children than non-depressed parents. As a result, a transmission of depressed mood to the children of these mothers occurred, creating a pattern of "intergenerational transmission" of depression. The personality traits of these parents affected the parent-child interaction, creating a propensity for developmental problems in their children. This study provides evidence for the negative consequences of parental depressed mood on parenting and suggests a created cycle of intergenerational depression. Whitbeck and his colleagues have concluded that "a history of rejection by parents increases the likelihood of depressed affect and in turn, increases the likelihood of rejecting parenting behaviors" in the next generation (Whitbeck et al., 1992, p.1042). Depression is transmitted by both ineffective parenting and through modeling of parental depressed behaviors.

Other studies found that depressed mothers tend to be more critical, less spontaneous, and less involved with their children than non-depressed mothers (Beardslee, Keller, Seifer, Lavori, Staley, & Podorefsky, 1996). Family interactions with depressed parents are characterized by more conflict, more rejection, more problems with communication, less expression of affect, less support, and more abuse than in families of

normal controls (Birmaher et al., 1996).

Cole and Rehm (1986) examined family interaction patterns that may contribute to the etiology or maintenance of depression in children that go beyond genetic factors. Their study indicated that parents of depressed children have different patterns and criteria for giving children attention than do parents of non-depressed children. Parents of depressed children were more likely to pay attention to their child's failures rather than to their successes and gave less positive reinforcement than non-depressed parents. The examiners' interpretation of these results was that children developed a depressive cognitive style through the internalization of parental attitudes and control. The child adopts the standards and contingencies set by parents and treat themselves the same way their parents did.

In a study which directly observed the interaction patterns of families with depressed children, during evening meals, Dadds, Sanders, Morreson, and Rebgetz (1992) focused on positive and aversive behaviors and the affective expression of the parents. Dadds and colleagues reported that children with depression were exposed to parental aversiveness, but that the children do not necessarily reciprocate with aversive behavior or anger towards their parents. They also concluded that depression and aggression are interrelated in distressed families. Cognitively depressed children tended to exhibit both internal and external negative cognitions about their interactions.

In retrospective studies, adults who are depressed have reported that they received less love, affection, tolerance, and more rejection from parents, and had unsatisfactory relationships with their parents, than non-depressed adults (Coyne & Downey, 1991). In a

study examining the intergenerational continuity of depressed mood and rejecting parenting, Whitbeck and his colleagues (1992) provide evidence for a process of intergenerational influence. This is a process whereby the inclination for depressed affect is transmitted across generations through its impact on the parent-child relationship.

When researchers examined depressed youths' perception of their families, the depressed youths were found to have differences in perceived symptomatology in the family and general dysfunction in the family as compared to non-depressed youth (Kaslow, Rehm & Siegel, 1984). Several studies using the Family Environment Scale (FES) reported the following results: diagnostic status of children could be predicted based on knowledge of their perceived family environment (Stark, Humphrey, Crook & Lewis, 1990); lack of cohesion was related to greater life stresses and higher depressed mood (Roehl & Okun, 1984); high levels of support were associated with less concurrent and future depression (Holahan & Moos, 1987); cohesion, expressiveness and intellectual-cultural orientation were closely associated with young childrens' cognitive and social development and with adolescents' academic motivation and success (Moos & Moos, 1986); children of depressed parents had more psychological symptoms and behavioral problems and were lower on support, orientation toward independence, social integration, and organization than controls (Billings & Moos, 1983).

This section focused on the relationship between family environment and depression. Research has established that a strong relationship exists between depression in children/adolescence and their family environment (Birmaher et al., 1996). The family environment of depressed children is often chaotic, rejecting, hostile, non-supportive,

conflictual and non-cohesive (Billings & Moos, 1983). Parental behavior - as well as genetic components - creates an intergenerational transmission of depression that affects parent-child interactions and creates a propensity for childhood problems (Whitbeck et al., 1992). In a non-supportive and non-cohesive family atmosphere, some children develop depressive cognitive styles, depressed affect, and experience rejection from and conflict with parents. In addition to being related to depression, the above mentioned factors are also correlated with poor academic performance.

Summary

Underachievement is an experience that appears to be all too common for a number of gifted students. It seems to be an elusive, poorly understood phenomenon that can be explained only partially in terms of measurement error. Some childrens' abilities are overestimated, but there are others who perform inadequately in school even after accounting for the difficulties in estimating their potential. Any number of personality and environmental factors can thwart childrens' performance, leading to lowered academic achievement.

Attempts have been made to identify those elements that are common to all underachievers. However, there have been many contradictory and inconsistent findings in the underachievement literature. The assumption of previous researchers that underachievers are a homogenous group who suffer from the same problems may have been one of the sources of these inconsistencies. It is unlikely, however, that all underachievers suffer from the same problem. In addition, the contradictory findings in

underachievement research may be the result of inconsistent definitions, measurement tools, and measurement procedures.

Other researchers have developed models of underachievement which have helped to clarify the picture of the underachiever. These researchers have hypothesized that underachievement is multidetermined, and that it needs to be conceptualized as a symptom with diverse etiologies. Several elements have been identified that appear to be significantly related to the etiology of underachievement. Depression and home environment appear to be two important variables that may be significantly related to underachievement among gifted students. The research on depression and academic achievement has been inconsistent. Most studies indicate that there is a relationship between depression and academic achievement, but the strength of this relationship varies with the different studies. Other studies reveal that is no relationship between depression and academic performance, or at best a weak one. The research on home environment and academic achievement has shown consistently that several factors in the home environment are highly correlated with academic achievement. The inconsistencies in the home environment literature reveal that there are several different variables that are related to academic performance and not all studies implicate the same factors. Studies have examined the effects of these factors on underachievement separately, but have not investigated the interaction of these two factors in relation to underachievement.

The Divergent Etiology approach in this study proposes that underachievement is a multidimensional and multidetermined phenomenon. It is hypothesized that underachievement is a symptom of other underlying conflicts and/or problems. This study

focuses on two of the problems/conflicts that may be associated with this symptom, namely depression and family environment. Research has demonstrated that within a population of gifted students, a certain percentage will underachieve. It is also hypothesized that of those who underachieve, a significant number suffer from depression and also experience problems in their family environment.

Rationale

Each year a number of gifted adolescents fail or perform poorly in school. Although numerous research studies examine underachievement, very few focus on gifted adolescents. Because these adolescents are very bright and do not demonstrate many behavior or attitude problems, their underachievement is more subtle.

The purpose of this study is to investigate the relationship of depression, perceived family environment, and academic performance among gifted students. This research will examine students' academic performance as measured by their semester grade point average (GPA) to determine whether a relationship between depression, family environment, and a measure of global cognitive performance exists for a period of one semester. This relationship will be determined by examining the direct effect that depression and family environment have on GPA. In addition, this relationship will be examined further by investigating the effects of the interaction between depression and family environment on GPA. This will be accomplished by examining the interaction between depression and the following three subscales on the Family Environment Scale: Cohesion, Expressiveness, and Conflict.

The approach taken in this research is based on a dual assumption: a) underachievement is a symptom of underlying issues and/or problems, and b) antecedents of underachievement are varied and the etiology of underachievement needs to take this into account. This view is supported by Mandel & Marcus (1988) who state, "A symptom may have a variety of causes and meanings, and therefore the symptom may not be

equivalent to the disease that causes it" (p.4).

Participants for the study will be adolescents drawn from a specialized New York City Public High School for gifted students. These students have scored in the top 5% on the Specialized Scholastic High School Admissions Test (SSHSAT).

Two self-report instruments will be employed: Reynolds Child Depression Scale (RCDS), and the Family Environment Scale (FES). Academic performance as reflected by GPA was chosen because it is a measure of global cognitive functioning and it reflects a wide range of cognitive functioning such as elaborate processing, retention, and reading comprehension over an extended period of time (Haines, Norris & Kashy, 1996). Depressed students may be able to concentrate on an isolated task for a short period of time, but the literature indicates that sustained attention is generally interfered with. It is believed that deficits may not show up unless one examines a measure of global cognitive functioning over an extended period of time such as GPA (Smith, Brebion, Banquet, & Allelaire, 1994).

This research was conducted to: a) increase our understanding of the relationship between academic performance and two risk factors: depression and perceived family environment; b)more accurately identify a particular type of student who may be at risk for poor academic performance; and c) identify specific factors that are related to underachievement so that specific and appropriate treatment methods can be implemented for these students.

HYPOTHESES

The purpose of this study is to examine the relationship of academic performance to depression and perceived family environment among gifted high school students. This study utilized a sample of students, grades 9-12, from one of the special high schools for the gifted in the New York City Board of Education. Specific hypotheses investigated are listed below. These hypotheses were also invested separately by ethnic group and by gender

The depression scale referred to below is scored such that the higher the score the greater the depressive symptomatology. The family measures referred to below are scored such that higher scores indicate greater cohesion, more family conflict, and increased family expressiveness. Definitions of all variables are found in Appendix A.

The specific hypotheses are listed below.

H. I For the total sample, depression scores will be positively related to family conflict scores.

H. II For the total sample, depression will be negatively related to family cohesion.

H. III For the total sample, depression and family conflict will be negatively related to GPA.

H. IV For the total sample, family cohesion will be positively related to GPA.

H. Va. For the total sample, family expressiveness will have a positive relationship with GPA.

Vb. For the total sample, family expressiveness will have a negative relationship with depression.

H. VI It is hypothesized that depression and cohesion will predict GPA. In addition to these two variables, it is theorized that the strength of the relationship of GPA to depression will increase as cohesion is reduced. Therefore it is also hypothesized that the cross product of cohesion with depression will be a significant predictor of GPA.

H. VII It is hypothesized that the GPA of students who score high on depression and high on cohesion will be significantly higher than the GPA of students who score high on depression and low on cohesion.

METHOD

Participants

The participants in this study consisted of 357 high school students (males n=174; females n= 183), grades 9-12, ages 13-18. All of the 357 students attended the same special public high school for gifted students in New York City. Approximately 450 consent forms were distributed; the return rate was approximately 80%. Complete data were available for 357 students. Three students were dropped from the study due to incomplete measures.

These students are representative of the top 5% of the gifted population in the New York City public school system. The ethnic mix of the school sample consisted of 43.1 % (n=154) Caucasian, 42.9 % (n=153) Asian, 2.2 % (n=8) African American, 4.2 % (n=15) Hispanic and Puerto Rican, 4.5 % (n=16) multiracial, .3 % (n= 1) American Indian, and 2.8 % (n=10) other. Socioeconomic status varied widely, as did parent occupations. Fifteen classes participated in the study; one 12th grade art class, four 9th grade art classes, two 9th grade music classes, and eight 11th grade health education classes. Student names were used only to collate information. Thereafter, student identification numbers designated by the school were used to differentiate students.

Instruments

The two instruments used in this study were self-report inventories. The first was the Reynolds Adolescent Depression Scale (RADS), which assesses depressive symptomatology in adolescents. The second instrument was the Family Environment Scale (FES), which measures perceived social-environmental characteristics of families. These two instruments were chosen because the self-report format assesses the subjects' cognitive self-perceptions (RADS) and family environment perceptions (FES), and the scales have satisfactory validity and reliability data. In addition a demographic questionnaire was also distributed (see Appendix C).

Reynolds Adolescent Depression Scale (RADS)

The RADS is a 30-item self-report instrument designed specifically to assess depression in adolescents. Each item is a statement about a feeling, and the subject indicates how often he or she feels that way. The adolescent marks one of four statements following each item: "almost never," "hardly ever," "sometimes," or "most of the time." Scoring is on a four-point scale, with the most severe symptom endorsements receiving four points, the next three points, etc. Points are totaled to give an overall depression score that can range from 30 to 120. A score of 77 and above indicates a level of symptom endorsement associated with clinical depression. The RADS is a continuous score measure; therefore, the higher the score on the scale, the greater the level of depressive symptomatology and distress (Reynolds, 1987). The RADS contains items which assess the cognitive correlates of depression. Negative self-perceptions are reflected in several

items: "I feel I am no good, I feel I am bad, I feel that no one cares about me." Other items assess negative interpretations of experience and negative expectations for the future: "I feel that nothing I do helps anymore, I feel life is unfair".

The standardization sample for the RADS consisted of 2,460 adolescents aged 12 through 18 years. The sample was comprised of a fairly equal distribution of males to females and was well stratified with regard to race and socioeconomic level. The mean score was 60.18 for the entire sample and a gender difference was noted, with females scoring 5 to 7 points higher than males. No significant ethnic differences were found. The RADS manual provides raw score conversion tables for gender, grade, and gender by grade. The proposed study used raw scores without the conversion for gender. The mean score for the present study was 60.32 with a Standard Deviation of 6.96 for the entire sample. A significant difference was found between males and females with female scoring 3.4 points higher than males.

Reynolds (1987) has summarized data from over 10,000 adolescents to provide evidence for the reliability and validity of the scale. Internal consistency reliability coefficients ranged from .909 to .939 with a total sample alpha of .922. Split-half reliability was computed using odd-even item forms and correcting for scale length with the Spearman Brown formula. For the total standardization sample, the split-half reliability coefficient was .91. Independent researchers from various geographic areas have also reported high internal consistency of the RADS (Lapsley, Flanner, McGinnis, & Krug, 1984). Three studies were conducted to examine the test-retest reliability of the RADS. The first study involved a retest six-weeks after a pre-test. In the retest, a reliability

coefficient of .80 was evidenced. In the second study, which retested 415 adolescents after a three-month period, a reliability coefficient of .79 was evidenced. This demonstrated stability of the instrument over longer periods of time. In the third study which employed a one-year interval between pre-test and retest, a reliability coefficient of .63 was evidenced (Reynolds, 1987). Overall, the results indicate that the RADS is a reliable measure.

To demonstrate the content validity of the RADS, the basic and associated symptomatology that is characteristic of depression in adolescents must be measured. The 30 items of the RADS relate to specific symptoms defined in the DSM-III and in the Research Diagnostic Criteria (RDC) (Carlson & Strober, 1979). The item content of the RADS does not reflect a specific theory of depression; rather it includes symptoms of cognitive, somatic, psychomotor, and interpersonal deficits. Concurrent validity was demonstrated by administering the Hamilton Rating Scale along with the RADS in a counterbalanced order of presentation. The correlation between scores was .83 ($p<.001$). The RADS also demonstrates significant correlations with other depression measures including the Children's Depression Inventory, the Self-Rating Depression Scale, and the Beck Depression Inventory (Reynolds, 1987). An item analysis suggests that the RADS measures the descriptive components of depression: cognitive, internalized despondency, externalized somatic-vegetative, and mood-anhedonia characteristics (Reynolds, 1987). A study (Evert & Reynolds, 1986) demonstrated the clinical efficacy of the RADS in distinguishing depressed from nondepressed adolescents. The findings indicated that 82 percent of adolescents were correctly identified as depressed when compared to diagnoses based on psychiatric interviews.

Although a relatively new instrument, the RADS had particular utility for this study. First, it is the only self-report depression inventory that was designed and developed specifically for use with adolescents. Second, it is non-threatening in its format and therefore subjects seem to respond positively to it. In addition, there is no mention of depression throughout the test itself; rather it asks subjects about their feelings.

Family Environment Scale - Form R (FES)

The FES is a 90 item self-report instrument which measures the social-environmental characteristics of families. The Real Form (Form R) measures the subject's perceptions of his or her nuclear family environment. The FES contains 10 subscales which assess relationship dimensions, personal growth, and system maintenance dimensions. The 10 subscales are: cohesion, expressiveness, conflict, independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, organization, and control.

This study focused on family relationship dimensions that are measured by the cohesion, expressiveness, and conflict subscales. These subscales assess the degree of commitment, help and support that family members provide for one another. These subscales also measure the extent to which family members are encouraged to act openly and to express their feelings directly, and the amount of openly expressed anger, aggression, and conflict among family members.

The Personal Growth dimension is measured by the Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, and Moral-

Religious Emphasis subscales. These subscales assess the extent to which family members are assertive, self-sufficient, and make their own decisions. They also assess the extent to which activities are cast into an achievement-oriented or competitive framework. Other areas that are assessed include the degree of interest in political, social, intellectual, and cultural activities, the extent of participation in social and recreational activities, and the degree of emphasis on ethical and religious issues and values.

The System Maintenance dimension is measured by the Organization and Control subscales. These subscales assess the degree of importance of clear organization and structure in planning family activities and responsibilities, and the extent to which set rules and procedures are used to run family life (Moos & Moos, 1986).

Subjects are asked to respond to statements about family life by indicating whether the statement is "true" or "false" for their family. For the purposes of this study, "family" was defined as the immediate family with whom the student lives. The scale is scored using a template that produces a raw score for each subscale. These scores can then be converted into standard scores (Moos & Moss, 1986).

Normative data on the Form R subscales were obtained from 1,125 normal and 500 distressed families from many geographic locations. The sample included single-parent families, multi-generational families, ethnic minority families, and families of all age groups. In comparing distressed families to normal families, the distressed families scored lower on cohesion, expressiveness, independence, and intellectual and recreational orientation and higher on conflict and control. These differences exist even after statistical controls are instituted for group differences on socioeconomic and family background

characteristics (Moos & Moos, 1986).

The FES has demonstrated reliability and validity as a self-report instrument. Internal consistencies for each of the ten FES subscales are within the acceptable range. The intercorrelations between the subscales indicate that the subscales measure distinct though related aspects of family environments. Negative correlations exist between cohesion and conflict and between independence and control (Fowler, 1982). Test-retest reliability was calculated for 46 family members after an eight-week testing interval. The reliability coefficients varied from .68 for Independence to .86 for Cohesion. Profile stability correlations were obtained for families tested four and twelve months apart. The mean for the 4 month testing was .78 and the 12 month mean was .71, indicating that the Form R profiles are stable for as long as a year (Moos & Moos, 1986).

Construct validity has been demonstrated for the FES subscales in several studies. Cohesion was positively related to the Locke-Wallace Marital Adjustment Scale (Waring et al., 1981). In another study, cohesion, expressiveness and conflict were related to the Spanier Dyadic Adjustment Scale (Abbott & Brody, 1985). In his review of the FES, Mitchell (1982) stated that the instrument is one of the best measures available for assessing families.

The Family Environment Scale has particular utility for this study because it has been used in a number of research studies with adolescents. A study by Billings and Moos (1983) found that adolescents whose parents are depressed scored lower on cohesion and expressiveness and higher on conflict than did controls. The adolescents of depressed parents also perceived their families as placing less emphasis on the development of family

members' independence (Billings & Moos, 1983). The FES is also appropriate for use with the present sample because it was developed for use with single-parent and step-families as well as two-parent families. The FES was normed on over 1,100 normal families and 500 "distressed" families (Moos, 1987).

Procedure

This study was conducted with permission from the following sources. Permission was granted in February and March 1999 by the Institutional Review Board of The Graduate School and University Center - The City University of New York, and by the Board of Education of the City of New York. Permission was then obtained from the Principal of the targeted school. After permission was granted by the Principal, the Assistant Principal of Guidance was notified to coordinate the efforts of the other staff members of the school. The data collection process was designed in collaboration with the Assistant Principal of Guidance to insure the minimum of school disruption and to provide maximum student anonymity. The Assistant Principal of Guidance obtained permission from the Assistant Principal of the Music and Art, and Physical Education departments to use those classes in the study. Music, art, and physical education were targeted for two reasons. First, they are non-major subject courses and therefore classes in major subjects would not be disrupted. Secondly, since depression and family dynamics are topics that are covered in the curriculum of the health education classes, it was believed that these were appropriate classes in which to conduct this study. The Assistant Principals of Music and Art and of Physical Education obtained permission from the classroom teachers to use one of their class periods for data collection. Once permission was granted from all of the above mentioned parties, dates were determined for data collection.

The study was conducted over a four-day period and involved 15 classes. Seven of the classes were introduced to the study and given consent forms (see Appendix A) on day one, and eight classes were introduced to the study and given consent forms on day three.

Data collection and collection of consent forms took place on day two for seven of the classes and took place on day four for the remaining eight classes. The researcher addressed the health education, music, and art classes during the first five minutes of the respective class periods. The researcher introduced herself to the classroom teacher and then introduced the study to the class by saying, "Good morning, I am conducting a research study and your teacher has been kind enough to give me permission to use this time period to do so. I am looking for volunteers to participate in this research study. The study is being conducted to increase our understanding of gifted students. It will entail the filling out of two questionnaires and a demographic form. This will take approximately 30 minutes of class time and will be conducted on Monday (Friday) of next week during this class period. Those who choose not to participate may use the class time to study or to do homework. In no way will your participation or non-participation affect your grades in this class. To show my appreciation to those who participate in the study, there will be six cash prizes awarded to randomly chosen students. The cash prizes consist of $50. Your returned signed consent form is your ticket to the drawing for the cash prizes."

The researcher distributed copies of the consent form that described the purpose of the study to all those students who indicated that they wanted to participate in the study. The students were then told, "Bring the consent form home, have your parents sign it, and sign it yourself. Bring it back with you on Monday (Friday). You must bring back a signed consent form to participate in this study." The researcher thanked the students for their time and attention and thanked the teacher for her/his class time to participate in the study.

In exchange for the use of the class time, the researcher offered to teach a lesson on the topics of depression and family dynamics to the classes that participated in the study after data collection was completed. None of the 15 classroom teachers accepted the researcher's offer.

Administering Questionnaires

After the distribution of the consent forms on day one and three, the researcher returned to each of the classes on days two and four to collect the data and the consent forms. The researcher followed a standard procedure in each class. First the researcher asked, "how many students brought in their consent forms?" Approximately 80% of the students who took consent forms returned them. The researcher then distributed a folder containing the two self-report measures and the demographic questionnaire to those students who brought back signed consent forms. The researcher told the students to read the directions on each measure and to answer all the questions as honestly as possible. The researcher assured the students that all the information would be kept confidential and that all of their questions would be answered after they finished filling out the questionnaires. The participants were told that they could fill out the questionnaires in any order they wished. Only one class period was needed for the entire data collection procedure – filling out the measures and debriefing the students. The participants required approximately 20-25 minutes to fill out the three forms. Upon completion of the questionnaires, the students were told to put their consent forms into the folder with the questionnaires and the researcher then collected them. After the questionnaires were collected, a debriefing

session was conducted. During the debriefing, the researcher provided the participants with information about the nature of the study and attempted to remove any misconceptions that the participants may have had. The freshman classes had very few questions, most of which pertained to the issue of confidentiality. However, the 11th grade health education classes asked questions about depression and discussed their impressions of the questions asked on the RADS and the FES. Most of the classes wanted to know how many participants there were in the study so they could figure out the odds of winning the prize money.

The cash prizes were awarded one month after data collection. The researcher randomly drew six names from all of the participants' names. The researcher faxed a list of names to the school to inform them which participants won the prizes. Six checks in the amount of $50 each were mailed to the school. The Assistant Principal of Guidance mailed the prize money to the homes of the winning students.

At the end of the semester on June 28, 1999, the researcher supplied the school with a list of all the participants in the study. The school supplied the researcher with a copy of all the students' identification numbers. The student identification numbers were typed into the school computer, which was used to generate report cards. The researcher received a report card for every participant in the study, which revealed the students' GPA. This information was collated with the information from the other measures. Upon completing the collation of information, the researcher removed the students' names from their respective files and only the identification numbers were retained. This was done in order to maintain anonymity of the participating students. Due to ethical and legal

guidelines, parents of students who scored at or above the clinical cut of score of 77 on the RADS were notified by mail. They were advised that further assessments may be warranted and a list of qualified referral agencies was provided.

Data Analysis

The hypotheses generated were based on the relationship between depression and other family and academic variables such as family conflict, family expressiveness, family cohesion, and GPA. Hypotheses I, II, III, IV and V were addressed by using Pearson correlation coefficients. Hypotheses III was further addressed using multiple regression. The unique variance accounted for by these variables was examined.

For Hypothesis VI, a multiple regression analysis was performed - GPA was the dependent variable and depression, cohesion and the cross products of the two were the predictor variables - to look at the contribution of these variables individually and together.

For Hypothesis VII, two groups were formed: a group of depressed students with high family cohesion scores, and a group of depressed students with low family cohesion scores. The clinical cut off score of 77 on the RADS was used to identify students who were depressed. Only those students at or above 77 were included. The upper and lower quartiles of the distribution of family cohesion scores were employed to identify those students with high and low family cohesion. The two groups – depressed students with high family cohesion scores and depressed students with low family cohesion scores - were compared on GPA using a t-test.

RESULTS

Demographic survey: Characteristics of Participants

Eighty-four percent (84%) of the 357 students who participated in this study came from intact families. The majority of students were either the only child in their family (19.6%) or had one other sibling (55.2%). Most of the students (81.5%) reported that they felt stress as a result of attending high school, and 61.9% said they would seek professional help for personal problems. Seventy-eight percent (78%) of the students reported that they had many friends and saw them frequently. A majority of the students (81.2%) felt that they could compete with their peers academically. The average GPA for the sample was 89.82 with a median of 91.67. The GPA ranged from 56.36 to 98.5 with 13.2% scoring 1 standard deviation below the average GPA. These data are in agreement with the research by Colangelo et al. (1993) and Wolfe (1991) who reported that 6-12% of all gifted students underachieve.

Depression Scores

The results revealed that the mean Reynolds Adolescent Depression Scale (RADS) raw score for the total sample was M= 60.32, (SD=12.7), which approximates the mean score of 60.18 (SD=14.29) reported by Reynolds (1986). Female endorsement of depressive (M=61.96, SD=12.68) symptomatology was significantly higher than that of the males (M=58.60, SD=12.56) (t=2.51, p=.012). This finding is in agreement with research examined by Reynolds (1986). Of the total sample, 9.5% (N=33) scored at or above the 77 cutoff score on the RADS. The distribution of participants above the clinical cut-off for depression can been found in Appendix C, Table 8. A score at or above this cutoff score represents a level of symptom endorsement associated with clinical depression. This percentage of the sample population is lower than the 12-18% found in the average adolescent population (Reynolds, 1986).

Statistical Analysis

The results of the statistical analyses performed and a discussion of these results are presented for each research hypothesis. The hypotheses of this study are based on previous research, most notably that of Moos and Moos (1986), Reynolds (1986), Rimm (1995), Tannenbaum (1983), Marcus and Mandel (1988), and Roth and Meyersburg (1963). Additional analyses for each hypothesis were conducted for gender, ethnicity, differences, extreme scores, and for the information generated from the demographic questionnaire. The correlations for predictor and criterion variables can be found in Table 3.

Table 3

Correlations for Predictor and Criterion Variables

Variable	1	2	3	4	5	6	7	8	9	10
					Students (n=357)					
1. GPA	---									
2. RADS (Dep.)	-.243*	---								
3. Cohesion	.348*	-.473*	---							
4. Expressiveness	.132*	-.296*	.400*	---						
5. Conflict	-.212*	.436*	-.537*	-.242*	---					
6. Independence	.095	-.253*	.242*	.279*	-.216*	---				
7. Control	-.051	.143*	-.184*	-.395*	.246*	-.330*	---			
8. Ach. Orient	.012	.043	.056	-.192*	.175*	-.085	.451*	---		
9. Act. Cult. Orient.	.226*	-.210*	.454*	.261*	-.151*	.181*	-.019	-.041	---	
10. Organization	.127*	-.235*	.331*	-.089	-.248*	-.036	.358*	.290*	.052	
Mean	89.8	60.3	6.1	4.8	3.9	5.9	4.5	6.3	6.0	5.1
SD	6.9	2.7	2.4	2.1	2.3	1.7	2.3	1.8	2.3	2.3

Note. * $p < .05$.

Hypothesis I: For the total sample, depression will be related to family conflict.

Hypothesis I predicted that depression would be positively related to family conflict for the total sample. It was expected that the higher the level of student depression, the higher the level of perceived family conflict. In order to examine this hypothesis, a Pearson correlation was calculated. This relationship was supported in this study. It was found that depression and family conflict were significantly related ($r(357)=.436$, $p<.001$).

Hypothesis II: For the total sample, depression will be negatively related to family cohesion.

Hypothesis II predicted that depression would be negatively correlated with family cohesion for the entire sample. It was expected that the less family cohesion perceived by the adolescent the greater the number of depressive symptoms experienced by the adolescent. A Pearson correlation was calculated to determine the relation between depression and family cohesion for the total sample. A significant negative correlation was found, ($r(357)= -.473$, $p<.001$). This relationship was supported in this study.

Hypothesis III: For the total sample, depression and family conflict will be negatively related to GPA.

Hypothesis III predicted that both depression and family conflict would be negatively correlated with GPA. The higher the level of adolescent depression and the

higher the level of family conflict, the lower the GPA. This hypothesis was supported in this study. Pearson correlations revealed that both depression ($r(357) = -.232$, $p < .001$) and family conflict ($r(357) = -.206$, $p < .001$) were significantly and negatively related to GPA. These variables were further examined for their joint predictive ability in a multiple regression analysis. This analysis revealed that both conflict and depression were significant predictors of GPA ($R = .26$ $F(2,355) = 13.90$, $p < .001$). Each variable contributed a significant amount of unique variance. For depression, there was a significant amount of variance in predicting GPA ($b = -.102$, $t(355) = 3.26$, $p = .001$). Likewise, conflict contributed a significant amount of variance in predicting GPA ($b = -.393$, $t(355) = 2.31$, $p = .022$). It should be noted that the amount of variance for each variable was low.

Hypothesis IV: For the total sample, family cohesion will be positively related to GPA.

Hypothesis IV predicted that cohesion would be positively related to GPA. The more cohesiveness in the family the higher the student's grade point average. A Pearson correlation was calculated to determine the relationship between family cohesion and GPA for the total sample. This hypothesis was supported by the present study. There was a significant relationship between family cohesion and GPA ($r(357) = .342$, $p < .001$).

Hypothesis Va: For the total sample, family expressiveness will be positively related to GPA.

Hypothesis Va predicted that family expressiveness will have a positive

relationship with GPA. This hypothesis was supported in this study. A Pearson correlation revealed that there was a low but significant linear relationship between family expressiveness and GPA ($r(357)=.130$, $p=.014$).

Hypothesis Vb. For the total sample, family expressiveness will be negatively related to depression.

Hypothesis Vb predicted that family expressiveness would be negatively correlated with depression. The findings supported this hypothesis. Pearson correlations revealed that there was a significant negative relationship between family expressiveness and depression ($r(356)= -.296$, $p<.001$) for the entire sample.

Hypothesis VI: It is hypothesized that depression and cohesion will predict GPA. In addition to these two variables, it is theorized that the strength of the relationship of GPA to depression will increase as cohesion is reduced. Therefore it is also hypothesized that the cross product of cohesion with depression will be a significant predictor of GPA.

A multiple regression was calculated using cohesion and depression to predict GPA, with and without the interaction between depression and cohesion used as an additional predictor variable. The depression and cohesion measures were first centered by subtracting their means, and the cross product term was then constructed in terms of the centered variables. First, when only cohesion and depression were examined (without the interaction term), it was found that the two combined variables significantly predicted GPA (Mult. $R=.36$, $F(2,354)=26.26$ $p<.001$). However, while cohesion contributed

significantly to the prediction of GPA (b=.86, t(354)=5.35, p<.001), depression did not (b= -.06, t(354)= -1.78, p=.075). Thus the results show that although depression was not a significant predictor, cohesion was a significant predictor of GPA.

All three variables - depression, cohesion, and cross product - were entered into a regression analysis. The three variables significantly predicted GPA (Mult. R=. 36, F(3,353)=17.69, p<.001). Again, only cohesion was found to be a significant predictor of GPA when each variable was examined separately (b=.83, t(353)=5.10, p<.001). Thus the second part of the hypothesis concerning a possible interaction was not supported.

Hypothesis VII: It is hypothesized that the GPA of students who score high on depression and high on cohesion will be significantly higher than the GPA of students who score high on depression and low on cohesion.

To further examine the relationship between depression, cohesion, and GPA, two extreme groups were compared on their GPA. Adolescents who scored high on depression were compared on the basis of high and low cohesion scores. In this case a clinical definition of depression was employed; only depression scores above the clinical cut of 77 were used for the high depression group. A t-test was conducted to examine the difference between the two groups. It was found that students who scored high on depression and scored high on cohesion (N=34) had significantly higher GPA scores (M=88.8 (SD=9.84)) than those who scored high on depression and low on cohesion (N=62) (M=83.6(SD=6.86)) (t(94)=2.95, p.<.004). This hypothesis was supported.

Supplemental analyses

Supplemental analyses were conducted for extreme scoring groups, gender, ethnicity, and demographic information, to further examine the data that were generated from this study.

Supplemental analysis on total sample for extreme scores.

Perceived family cohesion, conflict and depression scores were divided into groups on the basis of scores in the upper and lower quartiles. This procedure was followed because it is possible that high and low scoring adolescents for depression and cohesion may represent distinct groups (as opposed to being members of a class forming a continuum as in the analyses for the total sample).

A t-test was conducted to compare the family conflict for subjects with high levels of depression N=97 and low levels of depression N=95. The sample was divided into upper and lower quartiles on the depression scale. This analysis revealed that there was a significant difference between adolescents with high and low levels of depression for family conflict ($t(190)=9.43$, $p<.001$), such that adolescents with high levels of depression (score on the RADS above 69) experienced more family conflict (N=97, M=5.41(SD=1.78)) than adolescents with low depression levels (score on the RADS below 51) (N=95, M=2.66(1.78)).

To determine whether adolescents with high depression (N=97) or low depression (N=95) differed in levels of family cohesion the sample was divided into upper quartiles (RADS > 69) and lower quartiles (RADS < 51). This analysis revealed that there was a

significant difference (t(190)=8.80, p<.001) such that adolescents with high levels of depression had significantly lower family cohesion scores (M=4.56 (SD=2.53)) than did those adolescents with low levels of depression (M=7.33 (SD=1.75)).

The relationship between depression, family conflict and GPA was also investigated by examining GPA scores for students in the upper and lower quartiles for both depression and family conflict. A analysis of variance (ANOVA) was conducted. These analyses revealed that there was a significant main effect for depression (F (1,112)=5.59, p=.020) such that adolescents in the lower quartile on depression (N=50; M=92.1 (SD=3.63)) scored significantly higher on GPA than those in the upper quartile on depression (N=66; M=86.5 (8.75)). There was no significant difference for conflict (F (1,112)=0.87, p=.354), where the adolescents in the lower quartile (N=54; M=91.39 (SD=4.64)) were not significantly different on GPA from those in the upper quartile (N=62; M=86.76 (SD=8.83).

The relationship between family cohesion and GPA was investigated by dividing the group into upper quartiles (N=132, scores >8), and lower quartiles (N=94, scores <4) on the family cohesion scale. It was found that there was a significant difference between the groups for GPA (t (224)=5.73, p<.001). Specifically, adolescents who scored lower on family cohesion (at or below a score of 4) had lower GPAs (N=94, M=86.89 (SD=9.14)) than those who scored higher on family cohesion (at or above a score of 8) (N=132, M=92.16 (SD=4.46)).

To further examine the predictive ability of depression and family cohesion for GPA and the possible interactive effects of depression and family cohesion upon GPA,

subgroups were formed on the basis of scores in the upper and lower quartiles for scores on depression and cohesion. A two-way ANOVA was conducted. This analysis revealed that there was a significant main effect for depression ($F(1,122)=3.88$, $p=.051$) with adolescents in the lower quartile (N=63; M=91.89 (SD=4.50)) scoring significantly higher for GPA than those in the upper quartile (N=63; M=86.13 (SD=9.41)). There was also a significant main effect for cohesion ($F(1,122)=4.26$, $p=.041$) such that adolescents with low cohesion scored significantly lower (N=57; M=85.73 (SD=9.49)) than those with high cohesion (N=69; M=91.71 (SD=4.89)). There was no significant interaction ($F(1,122)=0.26$, $p=.614$).

Supplemental analysis for ethnic groups.

Given that the sample was primarily composed of students who identified themselves as either Caucasian (N=154) or Asian American (N=153), the following analyses were conducted for each group separately for each hypothesis. This was conducted to determine possible cultural contributions to the hypothesized relationships.

The correlation between depression and family conflict was significant for Caucasian adolescents ($r(154)=.402$, $p<.001$) as well as for Asian Americans ($r(153)=.433$, $p<.001$). Z-score transformations revealed that these correlations were not significantly different.

There was a significant correlation between depression and family cohesion for Caucasians ($r(154)=-.433$, $p<.001$) as well as for Asian Americans ($r(153)=-.507$, $p<.001$). Z-score transformations revealed that these correlations were not significantly

different.

The relationships between depression and GPA ($r(154) = -.288$, $p < .001$) and conflict and GPA ($r(154) = -.205$, $p = .011$) were both significant for Caucasian adolescents. The relationships between depression and GPA ($r(153) = -.208$, $p < .010$) and conflict and GPA ($r(153) = -.235$, $p = .003$) were also both significant for Asian Americans. Z-score transformations did not reveal any significant differences between the groups for the correlations.

The correlation between family cohesion and GPA was significant for Caucasians ($r(154) = .318$, $p < .001$) as well as for Asian Americans ($r(153) = .357$, $p < .001$). Z-score transformations again showed no difference between the correlations for the groups.

The relationship between family expressiveness and GPA was not significant for Caucasians ($r(153) = .105$, $p = .198$) or for Asian Americans ($r(153) = .117$, $p = .151$) due to the reduced sample size for each correlation computed. Further comparisons were made to determine whether the groups differed for family expressiveness and GPA. Here it was found that a significant difference existed between the groups for family expressiveness ($t(304) = 5.22$, $p < .001$) such that Caucasians scored higher (N=154, M=5.42 (SD=2.05)) than Asian Americans (N=153, M=4.20 (SD=2.00)). There was no significant difference for GPA ($t(304) = 2.00$, $p = .046$, ns with Dunn-Bonferroni correction; Caucasians: N=154, M=90.83 (SD=6.72); Asian-Americans: N=153, M=89.28 (SD=6.93)).

Pearson correlations revealed that there was a significant negative correlation between family expressiveness and depression for both Caucasians ($r(154) = -.288$, $p < .001$) and Asian Americans ($r(153) = -.280$, $p < .001$) . Z-score transformations again

showed no difference between the correlations for the groups. Further comparisons were made to determine whether the groups differed for depression. Here it was found that there was no significant difference between the groups for depression ($t(304)=1.49$, $p=.138$; Caucasians: N=154, M=59.55 (SD=12.58); Asian-Americans: N=153, M=61.48 (SD=11.53)).

Differences were observed in the relative contribution of cohesion and depression in predicting GPA for Caucasians and Asian Americans. First, for Caucasian adolescents, it was found that depression and cohesion together significantly predicted GPA (Mult. $R=.36$, $F(2,150)=11.10$, $p<.001$). It was also found that each variable individually significantly predicted GPA (cohesion: $b=.647$, $t(150)=2.82$, $p=.005$; depression: $b=-.010$, $t(150)=-2.22$, $p=.028$).

In the case of Asian American adolescents, a different pattern emerged from the regression analyses. When cohesion and depression were considered for their predictive utility in relation to GPA, it was found that both variables formed a significant model (Mult.$R=.36$ $F(2,150)=11.05$, $p<.001$). However, when examined individually only cohesion significantly predicted GPA ($b=.996$, $t(150)=3.82$, $p<.001$), with depression contributing a small amount of variance to the model ($b=-.002$, $t(150)=-.416$, $p=.678$).Adding the interaction term in the model did not change the amount of variance accounted for. These regression analyses are summarized in Appendix C Table 4.

Supplemental analysis for gender groups.

The following analyses were conducted to examine gender differences. There was

an approximately even number of males (N=174) and females (N=183) in the present sample. Significant gender differences were evidenced for cohesion ($t(355)=2.68$, $p=.008$), depression ($t(355)=5.23$, $p=.012$) and GPA ($t(355)=5.23$, $p<.001$). See Appendix C Table 5. In the case of family cohesion, females scored significantly higher (M=6.4 SD=2.38) than males (M=5.7, SD=2.48). For depression, females scored significantly higher (M=61.96, SD=12.68) than males (M=58.60, SD=12.56). Finally, for GPA, females scored significantly higher (M=91.64, SD=5.47) than males (M=87.92, SD=7.79). In the case of cohesion, although females scored significantly higher, there was no difference between males and females in the numbers of adolescents identified as significantly high or low scorers on perceptions of family cohesion (Chi-square (1)=.620, p=.431). Specifically, there were 41 females and 53 males below the twenty-fifth percentile (of the total sample distribution) for cohesion, and 78 females and 54 males above the twenty-fifth percentile. For depression (Chi-square(1)=3.00, p=.083), there was no difference in the number of males (N=42) or females (N=55) scoring above the twenty-fifth percentile or below the twenty-fifth percentile (males N=53 and females N=42). Males' and females' depression scores above a clinical cut-off (RADS=77) were also examined. Of a total of 33 adolescents scoring above this criterion, there were twice the number of females (N=22) as males (N=11). However, due to the small sample size this difference was not found to be significant.

All of the hypotheses - excluding number VII - were examined separately by gender. Hypothesis I was supported for both males and females. There was a significant relationship between family conflict and depression for females ($r(183)=.479$, $p<.001$) as

well as for males ($r(174)=.393$, $p<.001$). Z-score transformations revealed no significant differences between these correlations.

Hypothesis II was also supported across genders. Depression was negatively correlated with cohesion for females ($r(183)= -.525$, $p<.001$) as well as for males ($r(174)= -.476$, $p<.001$). Z-score transformations did not reveal a significant difference between these correlations.

Hypothesis III was supported across genders. Depression was negatively correlated with GPA for females ($r(183)= -.287$, $p<.001$) and for males ($r(174)= -.277$, $p<.001$). Z-score transformations showed that these correlations were not significantly different. Family conflict was also significantly negatively correlated with GPA, for females ($r(183)= -.181$, $p=.015$) and for males ($r(174)= -.252$, $p<.001$). In this case, z-score transformations revealed a significant difference between the correlations.

Hypothesis IV predicted that there would be a positive correlation between cohesion and GPA. This hypothesis was supported across gender. Significant correlations were found for both females ($r(183)=.319$, $p<.001$) and for males ($r(174)=.321$, $p<.001$). Z-score transformations did not reveal any differences between the groups.

Hypothesis Va predicted a significant correlation between expressiveness and GPA. This was not supported across gender. Correlations were not significant for either females ($r(183)=.061$, $p=.417$), nor for males ($r(174)=.156$, $p=.040$, ns by Dunn-Bonferroni correction). Hypothesis Vb predicted a positive correlation between expressiveness and depression. This hypothesis was supported across gender; females ($r(183)= -.358$, $p<.001$), and males ($r(174= -.258$, $p=.001$). There was no significant

difference when z-score transformations were performed.

Hypothesis VI predicted that depression and cohesion would significantly predict GPA with and without the interaction term. There was no interaction effect for males or females. However the predictive ability of depression and cohesion was supported when examined for females. The two variables significantly predicted GPA (Mult.R=.37, $F(3,181)=14.97$, $p<.001$) for females. Each variable individually also predicted GPA. Specifically, depression was significant ($b=-.008$, $t=-2.36$, $p=.019$) as was cohesion ($b=.558$, $t=2.96$, $p=.003$). For males, a different pattern emerged. Here, there was significant prediction when both variables were examined (depression, cohesion) (Mult.R=.35, $F(3,171)=12.02$, $p<.001$). However, when examined separately, only cohesion was significant ($b=.771$, $t(171)=3.01$, $p=.003$) whereas depression was not quite significant ($b=-.01$, $t(171)=-1.97$, $p=.051$), not significant by Dunn-Bonferroni.

Additional analyses were conducted for Caucasian males and females and Asian American males and females to examine the correlations between GPA and depression, and GPA and family cohesion for each group. For Caucasian females, the correlation between GPA and depression was significant ($r(82)=-.368$, $p<.001$), as was the correlation between GPA and cohesion ($r(82)=.233$, $p=.016$). For Caucasian males, the correlation between GPA and depression was significant ($r(72)=-.273$, $p=.021$), as was the correlation for GPA and cohesion ($r(72)=.340$, $p=.004$). For Asian American females, the correlation between GPA and depression was not significant ($r(77)=-.221$, $p=.053$), although the correlation between GPA and cohesion was significant ($r(77)=.409$, $p<.001$). For Asian American males the correlation between GPA and depression was significant

(r(76)= -.283, p=.013), as was the correlation between GPA and cohesion (r(76)=.276, p=.016). Z score transformations indicated that there were no significant differences between the groups due to the small sample size.

Hypothesis VII was not examined separately by gender, as there were not sufficient numbers within the depression subgroup to adequately test group differences based on levels of family cohesion.

Supplemental analyses for the Demographic Questionnaire

The following are the additional analyses conducted for the information generated by the demographic survey. As a proxy measure of the perception that one may need psychological assistance and be willing to accept help, adolescents were asked whether they would seek help for personal problems. A total of 221 adolescents responded that they would seek help for personal problems, while 134 indicated that they would not. Two groups – based on whether or not the individual would seek help – were compared on a variety of variables: cohesion, expressiveness, independence, depression, GPA, conflict, and control. Comparison of the two groups revealed that there was a significant difference for cohesion (t(353)=2.86, p=.004) where those who would seek help scored higher (M=6.4, SD=2.43) than those who would not (M=5.6, SD=2.40). A significant difference was found for family expressiveness (t(353)=2.48, p=.013), revealing that those adolescents who reported they would seek help scored higher (M=5.0, SD=2.11) than those who would not (M=4.4, SD=2.09). A significant difference between groups was observed for independence (t(353)=2.72, p=.007) with those stating that they would seek

help scoring higher (M=6.1, SD=1.56) than those who would not (M=5.6, SD=1.76). No significant differences between groups were found for depression (t(353)=1.69, p=.093), GPA (t(353)=2.02, p=.044, ns by Dunn-Bonferroni correction), family conflict (t(353)=2.33, p=.020, ns by Dunn-Bonferroni correction) and family control (t(353)=1.69, p=.092). The means and standard deviations for all of these variables are displayed in Table 6 found in Appendix C.

All adolescents were asked about their perceived ability to compete academically with their peers. This variable was conceptualized as a measure of self-efficacy within the domain of academics. Two groups were formed on the basis of answering yes or no to this question. When the groups were compared on the basis of this variable, it was found that the groups differed for depression levels (t(353)=4.47, p<.001) where adolescents who felt they could effectively compete had lower depression scores (N=290, M=58.78, SD=11.6) than those who felt they could not (N=65, M=66.22, SD=14.3). When these groups were compared on GPA, the groups differed significantly (t(353)=6.03, p<.001) with adolescents who felt they could compete having higher grades (N=290; M=90.8, SD=6.3) than those who felt they could not compete (N=65; M=85.3, SD=7.9). A Significant difference between groups was observed for cohesion (t(353)=4.31, p<.001), with those indicating they could compete scoring higher (N=290; M=6.4, SD=2.38) than those who felt they could not (N=65; M=4.9, SD=2.42). There was a significant difference between groups for expressiveness (t(353)=2.57, p=.011), with adolescents who indicated that they could compete scoring higher (N=290; M=4.9, SD=2.16) than those who indicated that they could not (N=65; M=4.2, SD=1.80). There was a

significant difference between groups for independence ($t(353)=3.32$, $p=.001$) with adolescents who indicated that they could compete scoring higher ($N=290$; $M=6.1$, $SD=1.55$) than those who indicated they could not ($N=65$; $M=5.3$, $SD=1.95$). Finally, a significant difference between groups was observed for control ($t(353)=2.56$, $p=.011$), with adolescents who indicated they could compete scoring lower ($N=290$; $M=4.4$, $SD=2.32$) than those who indicated they could not ($N=65$; $M=5.2$, $SD=2.41$). There was no significant difference between groups for conflict ($t(353)=2.25$, $p=.025$ ns by Dunn-Bonferroni correction). These data are displayed in Appendix C Table 7.

Adolescents were also asked to report on how much time they spend studying and completing homework. Not surprisingly, there were significant correlations between number of hours spent on homework and GPA ($r(353)=.267$, $p<.001$) and number of hours spent studying and GPA ($r(354)=.133$, $p=.012$). These variables were further examined for possible cultural differences regarding emphasis placed upon schoolwork outside the classroom. These analyses revealed no differences between Caucasian and Asian Americans for hours spent on homework ($t(303)=1.3$, $p=.195$) or for hours spent studying ($t(303)=1.77$, $p=.077$).

Finally, given that the majority of the sample was comprised of ninth and eleventh graders, these groups were compared for differences in depression, cohesion, expressiveness, conflict and GPA. It was revealed that there were no differences between the groups for depression ($t(314)=.00$, $p=.997$), cohesion ($t(314)=1.69$, $p=.093$) or GPA ($t(314)=1.45$, $p=.148$). This suggests that grade of the participant was not a likely contributing third variable in any of the previous analyses.

DISCUSSION

Based on a multidimensional theory of underachievement, the variables of family environment and depression were studied as possible antecedents to school underachievement. This study investigated the relationship between family environment, depression, and academic performance among gifted adolescents.

In this chapter, the findings as well as the implications that emerged from the research are discussed. Limitations of the study and suggestions for future research are also discussed. Given the unique composition of the sample population - primarily two ethnic groups, Caucasians and Asian Americans – additional discussion of how these variables relate to ethnicity and gender are presented.

Discussion of themes

The results from this study supported the four general proposed themes for this sample: a) the existence of a relationship between depression and family environment (conflict, cohesion, and expressiveness); b) the existence of a relationship between family environment and academic performance; c) the existence of a relationship between depression and academic performance; and d) the predictive ability of depression and family environment for underachievement. The findings suggest a multifaceted dimensional explanation for underachievement.

The first theme – that a relationship between depression and family environment exists- was supported in this study. It was found that high levels of depression among adolescents coincide with high levels of family conflict. It was also found that at the same

time, depressed adolescents experience low perceived family cohesion and family expressiveness. Although directionality and causality cannot be determined using correlational studies, the findings imply that family dynamics such as conflict, cohesion, and expressiveness have an impact on the affect of adolescents. Depression is not considered to be a normal affective state during adolescence (Reynolds, 1987). Thus these findings suggest the hypothesis that in addition to a biological predisposition to depression, environment plays a meaningful role in the development of depression among adolescents. These findings indicate that family relationships and parental behaviors are significantly associated with the development of depressive illnesses in adolescents.

The findings that depression was positively related to family conflict and that depression was negatively related to family cohesion and family expressiveness are consistent with the research conducted in the areas of depression and family therapy. Holahan and Moss (1981) reported that the "lack of support in the family was associated with more concurrent depression" and "a decline in family support was associated with increased depression over a 1-year interval" (as cited in Moss & Moss, 1994, p. 66). Birmaher et al. (1996) found that family conflict was a significant factor in the development of depressive illness in children and adolescents. Russell and Russell (1996) and Billings and Moos (1983) reported that the lack of cohesion and expressiveness in the family environment was related to higher levels of depressed mood. In addition, good communication and expressiveness in the family was found to be related to psychological well being, less depression, and less loneliness (Moos & Moos, 1994).

These findings imply that families that are supportive - committed to help,

encourage and understand its members - and that value communication and expressiveness create environments that aid in minimizing depressive symptomatology among adolescents. These findings also imply that family conflict reduces cohesion and expressiveness in the family, thereby creating an environment that leads to poor family functioning. In addition, the findings indicate that family conflict is destructive to families by creating strained relationships, loss of trust among family members, problems with communication, less expression of affection and feelings of rejection. These findings support the importance of the family as a major influence on adolescents and support the notion that family processes affect the mental health of adolescents. The findings also suggest that open communication among family members may be a buffer against depression in adolescence.

The second theme - that a relationship between family environment and academic performance exists – was also supported by this study. Family conflict was found to be negatively correlated with GPA and family cohesion. Family cohesion - the degree of commitment, help, and support family members provide for one another – and family expressiveness were found to be positively correlated with GPA. Family cohesion was also found to be a significant predictor of GPA as well as a moderator of depressive symptomatology. In fact, adolescents who scored high on family cohesion had significantly higher GPAs than those students who scored low on family cohesion.

These findings are in agreement with the research on family environment and academic performance which reports that families have substantial impact on the lives of children and their school achievement. In fact, family cohesion was identified by

Christenson et al. (1992), Moos and Moos (1981), and Wood et al. (1988) as a key variable affecting student achievement. Gurman (1970) and Morrow and Wilson (1961) reported that underachievement - especially in gifted students – is often related to conflict within the home environment.

The findings in this study suggest that parental behavior patterns and family interactions affect adolescent academic performance. These findings indicate that students who experience their family members as highly committed to one another, helpful, supportive, nurturing, caring, accepting, permitting of free expression of feelings and ideas and promoting quality interactions and communications, tend to perform well in school. Students who experience arguing, fighting, tension, and rejection at home are more likely to perform poorly in school. It stands to reason that a conflictual home environment disrupts an adolescent's ability and/or desire to study and distracts him/her from necessary work. The lack of time and/or effort devoted to schoolwork may be a reaction to conflict in the home. For example, the adolescent may be angry and rebelling, attempting to distract parents from tensions at home, seeking attention and/or help, or retaliating for experienced rejection.

Although the relationship between family expressiveness and GPA was supported in the study, the correlation between these variables was weak. This finding suggests that perceived expressiveness in the family is somewhat helpful in promoting academic success, but it is not as important a factor as family cohesion. The research conducted by Moos and Moos (1994), Bullock and Pennington (1988), Drotar and Eckerle (1989), and Gottfried and Gottfried (1984) found a stronger relationship between expressiveness and cognitive

development than was found in the present study. In fact, in the above-mentioned studies, expressiveness was one of the three measures on the FES most closely associated with childrens' cognitive development. Perhaps the difference between the strength of the relationship in the present research and that found in the literature is due to the fact that this research was restricted to an adolescent population and to a gifted population. Family expressiveness may play a more important role when children are young than when they are adolescents. This may be due to the fact that adolescents highly value their peers and spend more time communicating with their peers than with their families.

The results point to the probability that achieving academic success is greater when the home environment is perceived as cohesive and a place for open expressiveness rather than when it is perceived as being conflictual. Cohesion in the family is essential for good family functioning. Good parental relationships, joint decision making, high warmth and acceptance, firm enforcement of rules with explanations, guidance, high quality verbal interactions, support, and encouragement all help to create cohesion in families (Moos & Moos, 1986).

The findings also suggest that concurrent with evaluations of students who are performing poorly - below their predicted level of achievement - it is important to consider the family environment. A student evaluation may not be complete without an assessment of the family environment. An investigation of the family environment could offer clues as to the underlying issues that may be contributing to students' poor academic performance. Schools cannot deal with the issue of underachievement alone; they need the involvement of the family. Stronger relationships between schools and families help create an

environment in which everyone stands to benefit - the student, the family and the school. Schools can help families learn better parenting skills and by supporting the family help promote better academic performance.

The third theme - that a relationship between depression and academic performance exists - was supported in this study but not as strongly as anticipated. Depression was negatively correlated with GPA for the entire sample and also found to be a significant predictor of GPA for Caucasian adolescents, for students scoring in the upper and lower quartiles on the depression scale, and for female adolescents. In addition, those students who endorsed many depressive symptoms - scored above 69 on the depression scale - had significantly lower GPA scores than those students who endorsed few depressive symptoms - scored below 50 on the depression scale. These findings imply that adolescent depression does in fact have an impact on GPA, and that even mild depression has an effect on academic performance. For the majority of students, the higher the level of endorsed symptomatology, the greater the negative impact on academic performance. In other words, students who experience higher levels of depression tend to have lower GPAs. These findings suggest that depression affects cognitive functioning and the energy and motivation to participate in school related activities. An adolescent who is depressed may evidence some of the following symptoms of depression which may interfere with academic performance: diminished ability to maintain concentration, short attention span, feelings of hopelessness and futility, lowered self-esteem, and loss of interest in school and other activities. An adolescent with one or more of these symptoms would have a difficult time focusing on necessary schoolwork and would thus find it difficult maintaining a high

GPA. Usually the greater the number of symptoms endorsed by an adolescent the harder it is for him/her to focus on schoolwork.

Since depression is negatively related to academic achievement and may be one of the underlying causes of underachievement, it seems imperative that schools examine the affective state of students who are performing poorly. Depression is not a normal affective state during the course of adolescent development, and if left untreated, this disorder could last for months or years. The longer the duration, the more pervasive the impact on the adolescent and on school performance. With a longer duration, there is also a higher incidence of recurrence (Reynolds, 1987). Parents need to be informed that depression may be related to their child's poor academic performance and that the disorder itself needs to be attended to. School psychologists can serve as the liaison between the school and the family to inform parents of this situation. They can also perform a depression screening with parental permission as part of an assessment to ascertain the level of depressive symptomatology. However, not all depressed adolescents underachieve. The findings from this study also suggest that the family environment may mediate the effects of depression on academic performance. These findings imply that working with families is an important intervention that may ameliorate or prevent adolescent academic underachievement.

The final themes emerging from the study are: a) the family environment (conflict and cohesion) and depression are predictive variables of GPA, and b) the strength of the relationship of depression and GPA will increase as cohesion is reduced. The interaction between depression and family cohesion was not supported by this study; the strength of

the relationship between depression and GPA did not increase as cohesion was reduced. In fact, family cohesion was the only significant predictor of GPA when examined with depression, with and without the interaction term. The contribution of depression to the prediction of GPA was low and not quite significant. It is speculated that this was due to the restricted range of GPAs in the sample and that depression would be a more important predictor of GPA with a more heterogeneous population. It appears as if cohesion and depression are independent of each other and one does not compound the effects of the other. When depression and family conflict were examined together, both were significant predictors of GPA. It should be noted however, that the amount of variance for each variable was low.

The findings indicate that family cohesion is the strongest predictor of GPA of all the variables examined and remained the strongest predictor in every analysis conducted. Here again the findings suggest that the family environment - especially family cohesion - is a vital element in adolescent functioning in school. In fact, when depressed adolescents were divided into two groups based on high and low cohesion scores the depressed adolescents with high cohesion scores had significantly higher GPAs than the depressed adolescents with low cohesion scores. Family cohesion appears to serve as a mediating source and/or buffer from the detrimental effects that depression can have on academic performance.

Supplemental discussion

It is noteworthy however, that when the supplemental analyses were conducted, and the variables - depression, cohesion and the interaction term –were examined further, a different pattern emerged for different groups of adolescents. For example, in the group composed of students who scored in the upper and lower quartiles on the depression and cohesion scales, both depression and cohesion remained significant predictors of GPA. This finding is in contrast to the results for the entire sample when depression and cohesion were used as continuous variables. In that analysis, only cohesion remained a significant predictor variable of GPA. The results of the analysis on the students in the upper and lower quartiles suggest that these students may in fact represent a distinct group who function differently than the rest of the sample. For this distinct group, in the upper and lower quartile, depression appears to play a more important role and have a greater effect on GPA than for the entire group when depression is considered on a continuum. It seems that high levels of depressive symptomatology among adolescents result in their inability to function optimally in the academic arena.

Another pattern emerged for the predictability of depression and cohesion on GPA was examined for each ethnic group. For Caucasian adolescents both depression and cohesion were significant predictors of GPA when examined with and without the interaction term. For Asian American adolescents, only cohesion was a significant predictor of GPA when examined with and without the interaction term. This finding suggests that for Caucasian adolescents, depression is a more salient predictor of GPA and plays a more important role in academic performance than was previously evidenced when

the entire sample examined. This finding also suggests that depression is not an important factor in predicting GPA for Asian Americans. Perhaps when the entire sample was examined, the impact of depression on GPA was obscured by the lack of impact that depression had among Asian American adolescents. Considering that 42% of the sample consisted of Asian Americans, it is possible that ethnicity played a role in the weak evidence for the effects of depression on academic performance for the whole sample.

These findings highlight a cultural difference between Caucasians and Asian Americans in that there is a difference in academic performance for each group based on their family cohesion, expressiveness, and depression scores. Perhaps the effect of depression on GPA among Asian Americans is overcome by the important role academic achievement plays within that culture. Caucasians may not successfully overcome depression, and consequently this may have a greater effect on their academic performance. Had this study been conducted with a sample that was more heterogeneous (i.e., more representative of the ethnic distribution of the region), the role depression plays in academic performance may have been greater. These findings suggest that there exist a more complex picture of the role of depression, expressiveness, and cohesion than had been previously predicted. Further research is needed to understand the complexity of the variables and the differences between these two ethnic groups.

Perceived family expressiveness was another variable where ethnic differences were evidenced. Family expressiveness was significantly higher for Caucasian adolescents than for Asian American adolescents. Although these findings were weak, they suggest that Caucasian adolescents are more inclined, allowed, and/or encouraged to express their

feelings directly than are Asian American adolescents. In addition, the findings suggest that the direct expression of feelings in the family is perhaps advantageous for Caucasian adolescents' academic performance but not for that of Asian Americans. This difference between the ethnic groups on expressiveness may partially explain the weak correlation between expressiveness and GPA for the entire sample.

Additional analyses were conducted to discern whether there were gender differences within the sample. The results indicate that there were differences for males and females in support of two hypotheses. A gender difference was evidenced for the predictability of depression and cohesion on GPA. Depression and cohesion were significant predictors of GPA for females. However, only cohesion was a significant predictor for males; depression was not significant. The findings in the study also indicated that females have significantly higher levels of depression than males. It should be noted that when females were broken down into ethnic groups, the correlation between GPA and depression was some what higher for Caucasian females than for Asian American females. In fact the correlation between GPA and depression was not significant for Asian American females. These findings suggest that not only do females suffer with higher levels of depression than males, but that Caucasian females are also more affected by depression than Asian American females. It appears that depression does not effect academic performance for Asian American females in spite of having equally high depression scores as Caucasian females. The results also support the hypothesis that the higher the level of depression, the greater the impact on academic performance. There was also a significant gender difference in the relationship between family conflict and GPA.

This finding suggests that family conflict has a greater effect on GPA for males than for females. In addition, females had significantly higher scores on measures of cohesion and GPA.

The demographic questionnaire revealed additional notable information. One of the questions asked referred to subject interest in seeking psychological assistance for personal problems. There were significant differences between the two groups formed as a result of a "yes" or "no" response to this question. The adolescents in the group who answered "no" scored significantly lower on the cohesion, expression, and independence family variables than did the adolescents in the "yes" group. This finding reveals that those adolescents who rate themselves most in need of psychological help are not as likely to seek that help as those who rate themselves least in need of psychological help. Although the difference in depression scores for the two groups was not quite significant, those adolescents who indicated they would not seek treatment were those who tended to score higher on depression than those who indicated they would seek treatment for personal problems. This may be the case because adolescents with emotional problems tend to deny the existence of those problems. These findings point up the importance of identifying at risk adolescents who are most in need of psychological assistance, since they tend to not seek help themselves. This early identification could mean early appropriate interventions that would help the adolescent to function better and possibly prevent poor academic performance.

Another question on the demographic survey referred to the students' feelings of competence or self-efficacy to compete academically with peers. The findings indicated

that students who felt they could compete academically with peers had significantly lower depression scores and perceived family control scores, higher perceived family cohesion, expressiveness, and independence scores, and higher GPAs than those students who felt they could not compete academically with their peers. These findings suggest that an important relationship exist between how students feel about their academic ability, their perceived immediate environment, and their academic performance.

The empirical evidence in the literature for the relationship between depression and academic performance remains equivocal (Haines et al., 1996). The findings from this study lend support for the hypothesis that a relationship does in fact exist. This study also contributes needed information in the area concerning the relationship between mild depressed mood (non-clinical depression) and academic performance for the general population. Most of the research on depression and cognitive functioning has been conducted with people who had been previously diagnosed with severe depression (inpatient or clinic samples). The participants in this study had not been diagnosed with depression nor referred to a clinic or therapist for depressive symptomatology prior to the study.

Limitations of the Research and Future Research Directions

The sample utilized in this study represented the top 5% of the gifted population in the New York City public school system. In order to study underachievement of gifted students, a population was needed that had been previously tested for IQ and academic performance. A previously tested group was needed to insure that the students were of equal caliber and to rule out the possibility that extraneous variables, such as IQ or academic skills and knowledge, were responsible for poor academic performance. Although this type of population – of equal caliber - was necessary for the design of this study, it was also one of the sources of limitations for the study. The homogeneity of the sample caused a restriction of range for GPA, resulting in a skewed narrow distribution of scores. This restriction of range may have underestimated the magnitude of some of the investigated relationships. The findings may have been stronger with greater variability in the population.

The unique makeup of the sample was another limitation of this study. Although this sample was representative of the student population in the high school where the study was conducted, the sample and the student population are not representative of the gifted population. The most salient differences between the sample in this study and other gifted populations were in ethnic composition and in percentage of intact families. Since some differences between the two ethnic groups – Caucasian (43%) and Asian American (42%) - were evidenced, it is hypothesized that there may have been additional differences if other ethnic groups had been more represented. Eighty-three percent of the sample was from intact families. This is significantly different from the general population in which

divorce rates are at 50 %. Divorce is a factor that causes conflict, lack of cohesion, stress, and depression among family members. The RADS scores and the FES scores may have been different if the family composition of the sample was more representative of the population.

Another limitation of this study was the unequal age/grade representation. Due to school restrictions, the research was limited to recruiting students in minor subject classes such as art, music, and health education. Art and music classes are a requirement for freshman, and health education classes are a requirement for juniors. Therefore there is an under representation of sophomores and seniors. Because there were no significant differences between the freshman and juniors on any of the variables measured, it was hypothesized that there would be no differences for the other grades. However, the low sophomore and senior representation represents a lack of information.

The suggested directions for future research are derived from the limitations of this study and from the information obtained from it. It is recommended that this study be replicated in other schools for gifted students with a more heterogeneous population and in other schools with an average population controlling for IQ and skills acquisition. This would insure a heterogeneous population with greater variability in GPA, family environment and family composition factors. It is also recommended that the families be included in the study. Comparisons could be made on the basis of similarities and differences between parents and their children on their perception of the home environment. This would give researchers a better indication of where problems lie in the family environment. Other factors that need to be investigated in relation to academic

performance are the effects of anxiety, social status, self-efficacy and gender. These variables may also be considered in relation to depression and family environment.

. This study supports the Divergent Etiology model proposed by this researcher and also supports the theoretical position hypothesized by Roth and Meyersburg (1963), Tannenbaum (1983), Mandel and Marcus (1988), and Rimm (1995). The position endorsed by the previous researchers and this researcher is that underachievement is a multidetermined phenomenon and that underachievers as a group are heterogeneous. In summary, it may be concluded from the findings of the present study that depression and perceived home environment are two of the many variables that affect academic performance among gifted adolescents.

Appendix A

Definition of Terms

DEFINITIONS

GPA	**Grade Point Average is a universally recognized index of academic achievement at the high school and college level. GPA is calculated by taking the average of all subjects, with major subjects weighted as 1 and minor subjects weighted as ½. Each major subject is multiplied by 1 and each minor subject is multiplied by ½. All the weighted scores are added up and divided by the sum of the weights to determine the GPA.**
High Ability	**For the purpose of this study high school students are identified as having high ability if they score in the top 5 % on the Specialized Scholastic High School Admissions Test (SSHSAT) and are enrolled in one of the three specialized high schools in the New York City Public Education System.**
Low Achievement	**For this study high ability students are considered to be underachieving if their GPA places them one standard deviation below the mean GPA of their peers (Farquhar & Payne 1964; Mandel & Marcus, 1988).**
Perception of Family Environment	**This concept refers to each person's opinion of his/her own family, as a result of his or her experiences in that family. It is each person's image of his/her own family's personality, social interaction, emotional atmosphere and degree of conflict. It is one's view of how friendly, competitive, supportive, restrictive, controlling, autonomous, and stressful one's family of origin is. It is the participant's perception of his/her relationship with his/her parents; the level of parental acceptance, nurturance, encouragement, involvement, and emotional responsiveness to the child's needs (Moos & Moos, 1986). This is measured here by the Family Environment Scale Form R (FES).**
Family Cohesion	**This term refers to the degree of commitment, help, and support family members provide for one another (Moss & Moss, 1986). This was measured by the cohesion subtest on the Family Environment Scale Form R.**

Family Conflict	This term refers to the amount of openly expressed anger and conflict there is among family members (Moos & Moos, 1986). This was measured by the Family Conflict subtest on the Family Environment Scale Form R.
Family Expressiveness	This term refers to the extent to which family members are encouraged to express their feelings directly. This was measured by the Family Conflict subtest on the Family Environment Scale Form R.
Depression	An affective, or mood, disorder that is characterized by mood deviations that exceed normal mood fluctuations. It is a constellation of signs and symptoms that cluster together (e.g., sadness, negative self-concept, anhedonia, physical changes, and diminished ability to think, concentrate, and make decisions) (Ingram, 1994). Depression was measured by the Reynolds Adolescent Depression Scale Form HS.

Appendix B

Parental Consent Form

Dear Student, Parent/Guardian:

I am a graduate student completing my doctoral studies in school psychology at the City University of New York Graduate Center. In order to complete the requirements for my degree, I am conducting a research project in which I would like you/your child to participate.

The purpose of my study is to investigate academic performance among gifted students. To gather the information needed, I will administer a demographic survey, the Reynolds Adolescent Depression Scale, and the Family Environment Scale to students in a group setting. This will take place during one non-major subject class period. Administration of these scales takes approximately 25 minutes. I will also need to look at your/your child's school records to obtain your/his/her grade point average and score on the Specialized Scholastic High School Admissions Test. No information from this study will become part of the student's school records.

The results of this study may assist educators in gaining important insight concerning their students' academic performance. This information may enable education professionals to work more effectively with adolescents in the schools.

Participation in the study is completely voluntary; withdrawal is possible at any time. There are no foreseeable risks involved in the study. All information provided by the participant will be kept strictly confidential. However, an exception will be made if a respondent is found to have a significantly elevated score on the depression scale; in such cases, due to ethical and legal guidelines, the respondent's parent or guardian will be advised that further assessments may be warranted, and will be supplied with a list of qualified referral agencies. It should be noted that you/your child will be administered general tests, and that responses on these questionnaires reflect students' mood fluctuations and therefore a high score does not necessarily always indicate a problem.

All respondents' names will be excluded from the questionnaires after the information has been collated. Any personal information will be used for statistical purposes only. At the conclusion of the study, results may be obtained from the researcher at the following number: (718) 941-7201.

Parent/Guardian consent is requested for participants under 18 years of age. Please sign in the space provided (on the back of this page) and return this form within one week to the examiner. Further instructions concerning the dates of administration will be given to the students by the examiner during the non-major subject period. Any questions may be directed to Robin Shaw at the following telephone number: (718) 941-7201; or at the address listed above; to Professor Tittle, the faculty advisor for this study, at (212) 642-2254; or to the Institutional Review Board at the City University of New York at (212) 642-2059.

Your participation is greatly appreciated. Thank you for offering your valuable time to assist in this project.

Sincerely,
Robin Shaw, CSW

Approved:
Expires:

For Participants Under 18 Years of Age:

I have reviewed the information presented above and give permission to my son/daughter for whom I am the legal guardian to participate in this study.

I agree to let my child _____(name), participate in the study described above.

Parent/Guardian Signature _____Date _____

Parent/Guardian Signature _____Date _____

Student Signature _____Date _____

Appendix C

Tables

Table 4

Summary of Regression Analyses for Total Sample, Caucasians, and Asian-Americans: Predicting GPA

Predictor variables in model	b-weight	Beta	t-value	p-value
Total Sample				
MAIN EFFECTS MODEL				
Cohesion	.855	.301	5.35	<.001
Depression	-.055	-.100	-1.78	.075
			Mult. R=.36, F(2,354)=26.26, p<.001	
INTERACTION MODEL				
Cohesion	.829	.292	5.08	<.001
Depression	-.005	-.091	-1.59	.114
Interaction	-.001	.042	.790	.430
			Mult. R=.362, F(3,353)=17.69, p<.001	
Caucasians Only				
MAIN EFFECTS MODEL				
Cohesion	.647	.238	2.82	.005
Depression	-.010	-.187	-2.22	.028
			Mult. R=.36, F(2,150)=11.10, p<.001	

Variable	b-weight	Beta	t-value	p-value
INTERACTION MODEL				
Cohesion	-.600	-.221	2.60	.010
Depression	-.009	-.167	-1.96	.050
Interaction	.002	.106	1.33	.184
			Mult. R=.37 F(3,150)=8.13, p<.001	
Asian Americans Only				
MAIN EFFECTS MODEL				
Cohesion	.996	.338	3.82	<.001
Depression	-.002	-.037	-.42	.678
			Mult. R=.36 F(2,150)=11.05, p<.001	
INTERACTION MODEL				
Cohesion	.996	.353	3.90	<.001
Depression	-.005	-.050	- .55	.581
Interaction	-.001	-.065	-.79	.432
			Mult. R=.36, F(3,150)=7.55, p<.001	

Note: In all instances, the interaction term was determined by forming a linear transformation based on the cohesion and depression variables.

Table 5

Means and standard deviations for gender, ethnicity and total group

Group	GPA	Depression	Cohesion	Expressiveness	Conflict	Independence	Control
			Gender				
Females (N=183)	91.6(5.47)	61.9(12.68)	6.4(2.38)	4.9(2.11)	3.9(2.40)	6.0(2.3)	4.4(2.3)
Males (N=174)	87.9(7.79)*	58.6(12.56)*	5.7(2.48)*	4.6(2.11)	3.9(2.24)	5.7(1.6)	4.6(2.4)
			Ethnicity (Asians and Caucasians only)				
Caucasians (N=154)	90.8(6.72)	59.6(12.58)	6.2(2.48)	5.4(2.05)	4.1(2.23)	6.2(1.6)	3.8(2.3)
Asians (N=153)	89.3(6.93)	61.5(11.53)	5.8(2.45)	4.2(1.99)*	3.8(2.46)	5.6(1.7)	5.1(2.3)*
Total Sample (N=357)	89.8(6.94)	60.3(12.71)	6.1(2.45)	4.8(2.11)	3.9(2.32)	5.9(1.7)	4.5(2.4)

Note. *variable pair significantly different at p<.001.

Table 6

Means and Standard Deviations for Family Environment Variables, Depression, and GPA for Adolescents Indicating They Would or Would Not Seek Help for Personal Problems

Variable	Seek Help	Not Seek Help	t-value	p-value
Cohesion	6.4 (2.43)	5.6 (2.40)	2.86	.004*
Expressiveness	5.0 (2.11)	4.4 (2.09)	2.48	.013*
Independence	6.1 (1.56)	5.6 (1.76)	2.72	.007*
Conflict	3.7 (2.39)	4.3 (2.17)	2.33	.020
Control	4.3 (2.31)	4.8 (2.42)	1.69	.092
Depression	59.3 (12.42)	61.6 (12.44)	1.69	.093
GPA	90.4 (6.54)	88.9 (7.52)	2.02	.044

Note. * $p < .05$ using Dunn-Bonferroni correction (alpha per comparison=.007).

Table 7

Means and standard deviations for family environment variables, depression, and GPA for adolescents indicating they could or could not compete academically

Variable	Could Compete	Not Compete	t-value	p-value
Cohesion	6.4 (2.38)	4.9 (2.42)	4.31	<.001*
Expressiveness	4.9 (2.16)	4.2 (1.80)	2.57	.011
Independence	6.1 (1.55)	5.3 (1.95)	3.32	.001*
Conflict	3.8 (2.33)	4.5 (2.24)	2.25	.025
Control	4.4 (2.32)	5.2 (2.41)	2.56	.011
Depression	58.8 (11.62)	66.2 (14.26)	4.47	<.001*
GPA	90.8(6.32)	85.3 (7.92)	6.03	<.001*

Note. * p <. 05 using Dunn-Bonferroni correction (alpha per comparison=.007).

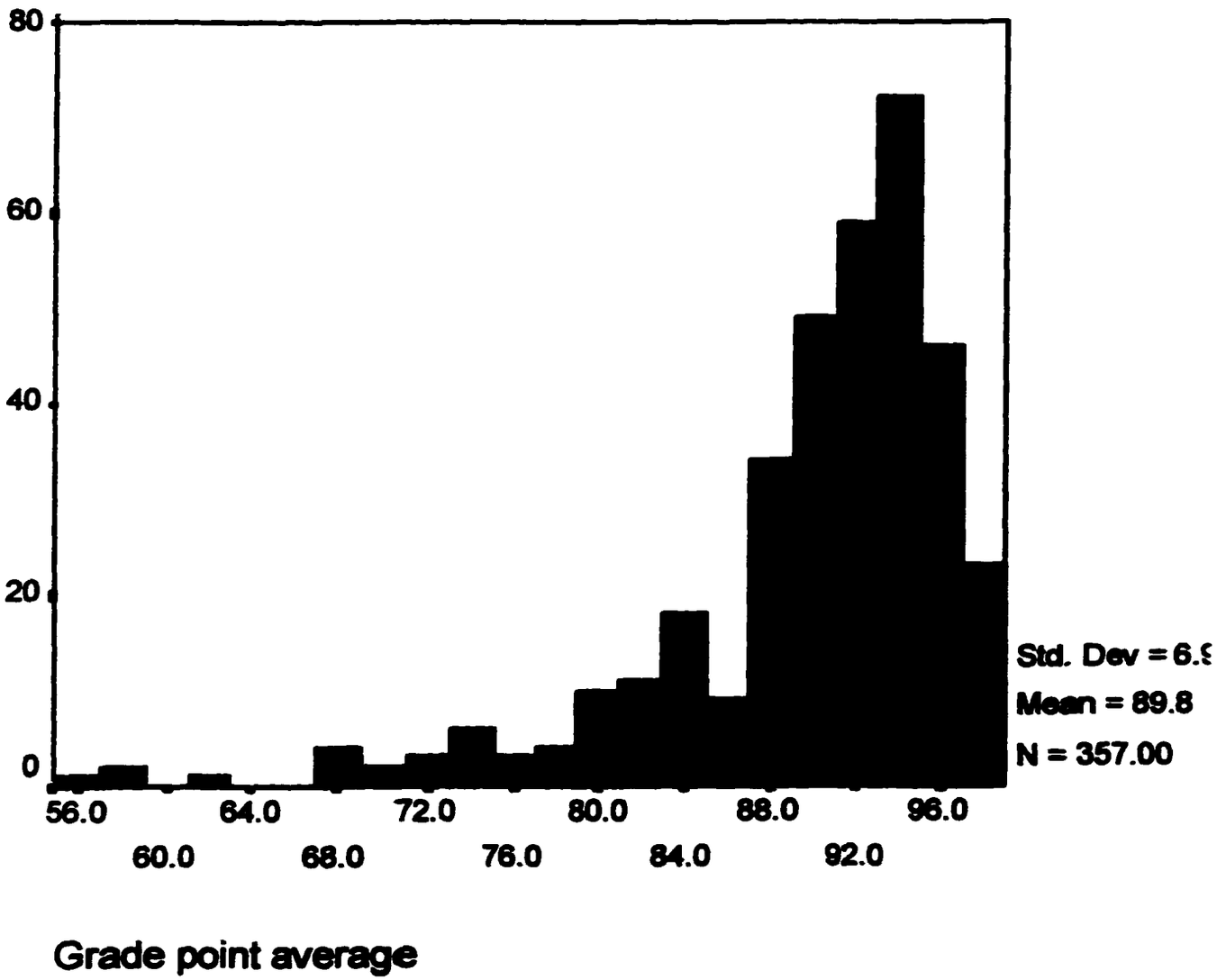
Table 8

Distribution of participants above clinical cut-off for depression (RADS > 77)

Group	N above 77	N below 77	Significance
		Gender	
Female	22	161	
Male	11	163	$X^2_{(1)}$ =3.45, p=.063
		Ethnicity (Asians and Caucasians only)	
Caucasians	13	140	
Asians	14	139	$X^2_{(1)}$ =.04, p=.840

Table 9

Distribution of Grade Point Averages



Appendix D

Demographic Questionnaire

STUDENT QUESTIONNAIRE

1. Name (Please Print)_____ M___F___

2. Age_____

3.Grade (Circle One) 9 10 11 12

4. I live with my (Circle One):

1. Mother and Father
2. Mother
3. Father
4. Adoptive Mother and Father
5. Mother and Stepfather
6. Father and Stepmother
7. Other_____

5. Father's Occupation_____

6. Mother's Occupation_____

7. Number of Brothers_____ Number of Sisters_____

8.Which best describes your racial/ethnic background? (Circle One)

1. African American
2. American Indian
3. Caucasian
4. Asian American
5. Puerto Rican
6. Hispanic
7. Multiracial
8. Other _____

9. How many hours a day do you spend doing homework?_____

10. How many hours a week (not including time on homework) do you spend studying?_____

11. I have no friends_____ I have few friends_____ I have many friends_____.

12. I see my friends at school only___ weekdays after school only ___weekends only____ weekdays after school and weekends____

13. I hardly ever see my friends___I see my friends sometimes__I often see my friends __

14. Would you prefer to be with friends _____ or alone? _____

15. Would you seek help for personal problems? Yes No

16. Do you feel stress as a result of being in school? Yes No

17. Do you feel that you can compete with your peers academically? Yes No

Appendix E

Letter to parents regarding high depression scores.

Dear Parents:

During the 1999 spring semester you signed a consent form giving your son/daughter permission to participate in a research study that I was conducting. In the consent form I emphasized the fact that all information would be kept confidential. However, due to ethical and legal guidelines, I stipulated that I would inform you in the event that your son/daughter was found to have a significantly elevated score on the depression scale.

The results indicated that your child scored above the clinical cut off score for depression. I would like to point out that your child was administered a general test and that his/her responses on these questionnaires reflected his/her mood fluctuations. A high score does not necessarily indicate a problem. However, I recommend that you consider some follow up and further assessment.

I have enclosed a list of qualified referral agencies that you can contact. If you would like to speak with me I can be reached at the following number: (718) 941-7201.

Sincerely,

Robin Shaw

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