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I am submitting herewith a dissertation written by Nan M. Gaylord entitled "The Relationship of Parents'/Guardians' Self-Management To Their Children's Self-Management, Academic Performance, and Health." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

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THE RELATIONSHIP OF PARENTS'/GUARDIANS' SELF-MANAGEMENT TO
THEIR CHILDREN'S SELF-MANAGEMENT, ACADEMIC PERFORMANCE,
AND HEALTH

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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Nan M. Gaylord

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DEDICATION

To my own children, Curt and Leah, for whom I try to do
all I know to do but have not always done
all they think I should have - whether by my own choice
or the deficit in my own self-management skills during this busy time.

To them,

my husband Mark,

and my parents Paul and Doris McCammon,

I dedicate this work and thank them for all their support and encouragement.

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ABSTRACT

This study examined parents'/guardians' self-management and its relationship to their children's self-management, academic performance, and health. It also examined the relationship between these children's self-management and their own health and academic performance. The sample consisted of 94 seventh grade student and parent/guardian pairs from an inner city school in the southeast. A parental consent form, student assent form, consent form for the release of academic records, the Lifestyle Approaches Inventory (Williams, Moore, Pettibone, & Thomas, 1992) and the Lifestyle Approaches Inventory-Revised were sent home with every seventh grade student in the school. Participation was encouraged by offering incentives to students for forms completed by both parent and student and physical parameters obtained from students. Participation rate was 52.2%

The Lifestyle Approaches (LSA) inventory was determined to be valid and reliable on an adult population of which 82% were college students. Therefore, the inventory's language was simplified for this project. In order to determine if the original inventory and the revised inventory (LSA-R) resulted in similar quantitative values, both inventories were given to a volunteer sample of 30 adults prior to the study of children and their parents/guardians. The mean score for both inventories was 46.77 and correlation between the two inventories was .90 ($p < .01$). Additionally, six items were selected from the Marlowe-Crowne Social-Desirability Scale (Crowne & Marlowe, 1960) and added to both the LSA and LSA-R. These items were included to measure the tendency to give socially approved, but unrealistic, responses.

Health was operationalized as (a) body mass index for age and gender, (b) blood pressure for age and gender, (c) parent's/guardian's report of the child's health status, (d) student's report of his or her own health status, (e) nutritional intake as assessed by a 24-hour dietary recall, (f) level of physical activity, and (g) parental report of child's clinic and emergency room visits within the past year. Academic performance was operationalized as grade point average, Terra Nova Achievement Test scores (total percentile score), and the number of school absences. All academic performance variables were obtained from school records.

Data were evaluated with correlational, t-test comparison of the means, and multiple regression analysis. A significant correlation ($p < .01$) was obtained between parents'/guardians' self-management and students' self-management, but there were no significant correlations between student or parent/guardian self-management and student academic performance. Likewise, neither student nor parent/guardian self-management was significantly correlated with the health measures. Similarly, comparisons at the extremes of academic and health measures showed minimal linkage between these variables and self-management. In the multiple regression analysis, self-management scores of parents'/guardians/ or students' had little more explanatory power for academic performance and health measures than the variables of parent/guardian educational level and the report of the family's financial problems. The variance explained by self-management (predictor variable) when academic performance and health measures were criterion variables ranged from 0 to 3.2%.

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Chapter 1

Introduction and Review of Significant Related Literature

Self-management practices have been described as those activities that provide persons the opportunity to achieve their full potential (Williams & Long, 1991). The construct of self-management includes a set of cognitive and behavioral strategies for directing one's efforts to accomplish certain goals (Moore, 1991). An individual engaged in a self-managed lifestyle may exhibit such personal characteristics as being organized, efficient, and goal oriented (Williams, Moore, Pettibone, & Thomas, 1992). This project studied self-management behaviors in parents and in their children.

The basic premise in this project was that children's academic success and health are related to their self-management practices. Additionally, the extent to which the child practices self-management behaviors is related to the self-management practices evidenced in their environment, most specifically the home. Therefore, the child's and the parent's/guardian's self-management are related to each other and to the child's academic performance and health. Although some research suggests a connection between a student's academic performance and that same student's self-management practices, the origin of those self-management behaviors has not been examined. Self-management practices, like most human volitional behaviors, are assumed to be learned. One way new patterns of behaviors can be acquired is by observation. According to Bandura (1977), "Most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action" (p. 22). Another premise of this project is that

such skills are learned in the home environment.

This study attempted to measure the extent to which the desired modeled behaviors, that is self-management practices, were reported by parents/guardians. According to Bandura's social learning theory, the extent to which children practice self-management should be similar to that observed in their parents. This project studied the relationship between the child's and parent's/guardian's self-management skills. Additionally, the project studied the relationship of parent's/guardian's and child's self-management to the child's academic performance and health.

Parent's/Guardian's Self-Management and Their Child's Academic Performance

Studies have shown that parental behaviors affect the behavior of children, but the correlation of parental self-management with the health or academic performance in their offspring has not been studied extensively. Early studies (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg, Lumborn, Dornbusch, & Darling, 1992) demonstrated that those parents whose parenting style was "authoritative" had children with higher academic achievement than children who had parents who were not "authoritative." Although each study defined and measured "authoritative" differently, these studies are important in that they demonstrate a linkage between parental behaviors and academic performance.

Other factors implicated as significant in children's academic performance are family income, parental IQ, parental educational level, family size and birth order. When these factors were held constant (Martini, 1995), those parents who had a democratic parenting style, who "microstructured" their children's development, and who were

extensively involved with their children and their activities had children with academic achievement higher than did parents not having such characteristics. Parents with these characteristics, according to Martini (1995), draw children into their systems of thinking, talking, and interacting, by attending and responding to them and by respecting their individual rights. In doing so, they also encourage autonomy and self-direction. These parental behaviors require planning and are goal-directed, characteristics of persons who are self-managed.

In a longitudinal study on academic performance, Melby and Conger (1996) gathered information on the parents of 347 seventh grade students regarding parental education, family income, and academic performance. (All parents were married, from the rural Midwest, and the student's biological parents. The median age for fathers was 39 years and for the mothers, 37 years. The mean income was \$33,700/year. All students had a sibling within four years of their age.) When the students were in the 8th grade, parental behaviors were evaluated, and in the 10th grade academic achievement was reassessed. Although there was a strong correlation between the GPA at Year 1 and Year 4, school performance was enhanced by an involved parental management style. This style was defined as one that sets standards for appropriate behavior, monitors adherence to or violations of these standards, provides positive consequences for desired adolescent behavior, and communicates reasons for behavioral standards through on-going exchange with the target adolescent. Parents' self-management was not specifically delineated as a concept in this study, but planning and goal setting (self-management behaviors) by parents was obviously required if such behavioral expectations were verbalized and

consequences of behavior provided. Additionally, parents' educational level was positively related to involved parenting practices and, therefore, indirectly related to the adolescents' academic performance. Per capita income was not significantly related to involved parenting or academic performance.

Children with handicaps especially need parents with good organizational skills. For example, Richardson, Kline, and Huber (1996) credited the academic and social success of an adolescent with Down's syndrome to the home and the structure provided by the mother. This adolescent had the ability to function independently because specific behavioral norms and expectations were provided at home. Consequences for failing to meet those expectations and rewards for meeting them were also provided. A highly structured home life enabled this student to function independently at school in a similarly structured environment. Such structure in a home requires parental self-management with intense focus on planning, organization, and task persistence.

Students' Self-Management and Academic Performance

The relationship between parents' self-management and their children's performance or behavior has been discussed above. The relationship between students' self-management and academic performance has been described by Dickinson (1993) in his analysis of contributors to academic difficulties.

The environment plays an important part in teaching students to be effective learners, one of which is parental modeling. However, there are occasions when the environment appears to be conducive to learning, but children still do not learn. This may happen because learners control part of the learning process and are

partly responsible for whether learning occurs. If learners control whether or not learning occurs, then an assessment should also focus on those aspects of learning, controlled by the students, upon which learning is contingent. In order to determine what role learners play in learning, an assessment should be made of their cognitive processing. (pp.104-105)

The steps in the cognitive assessment sequence are (a) defining the presenting problem, (b) collecting the data on the problem, and (c) assessing whether the behavior is in the child's repertoire or not. If the specific skill of concern is in the child's repertoire of behaviors, then an assessment of the student's metacognitive strategies is required.

The two metacognitive strategies proposed by Dickinson (1993) are self-management and problem-solving. Self-management strategies include setting a goal, organizing a plan for reaching that goal, understanding how setting events can encourage or discourage steps toward that goal, and evaluating progress toward that goal. Dickinson (1993) suggests that students who are successful in school continually set goals concerning their grades and school work, while students who are unsuccessful in school likely do not use this procedure. Poor planning skills have been shown to be associated with poor school achievement. Low achievers have difficulty organizing their approach to school tasks, cannot select the right materials at the right time, fail to complete their work, and fail to monitor and evaluate their work (Kops & Belmont, 1985). The other metacognitive strategy, problem-solving, consists of problem identification, development of a plan, plan monitoring, and plan evaluation. These behaviors listed as problem-solving behaviors are also frequently described in the self-management literature.

Students' self-management has been researched in relationship to academic performance. P. Moore (1994) studied college students (sample size=238) ages 17 to 19 and reported that time management practices accounted for a significant portion of the variance in academic performance (8%), independent of aptitude (13%). Furthermore, perceptions related to time control, and not behaviors associated with managing and utilizing time, were found to be the strongest determinants of performance. The Time Management Behavior Scale (TMBS) utilized in this study was a 46 question self-administered survey that taps four domains of time management: setting goals and priorities, mechanics of planning and scheduling, preference for organization, and perceived control of time. It is this last component of the inventory that revealed the strongest bivariate correlation with academic achievement ($p < .01$). "Students who reported being able to adequately predict the amount of time required to fulfill commitments, and who indicated that they could avoid getting bogged-down in unimportant tasks, were found to be more able to perform in the academic environment" (Moore, 1994, pp. 85-86). The other time management factor found to have a significant ($p < .05$) bivariate relationship with academic performance was setting goals and priorities. Although this study proposes time management as the variable of study, some of the components for measurement of the variable are also applicable to the concept of self-management.

Zimmerman and Pons (1986) interviewed students about their use of self-regulated (self-managed) learning strategies. These strategies included goal-setting, environmental structuring, applying self-consequences (self-rewarding and self-punishment), self-

evaluating, organizing and transforming information, seeking and selecting information, using rehearsal and mnemonic strategies, seeking social assistance, and reviewing previously compiled records. The high achievers (40 tenth grade students) reported utilizing 13 out of the 14 identified strategies listed above more frequently than did lower achievers (40 tenth grade students). Students' membership in their respective achievement group was predicted with 93% accuracy using their reports of self-regulated learning strategies. In regression analysis, the use of these strategies was the best predictor of standardized achievement test scores.

Academic Performance and Health

Academic success has also been related to health status in a variety of ways. In general, healthy children perform better academically than those children who are chronically ill, especially if the chronic illness causes significant limitations. Furthermore, those children with chronic illnesses frequently have multiple school absences, also contributing to difficulties in school. The National Health Interview Survey on Child Health (NHIS-CH) in 1988 estimated 31% of children under 18 years of age had one or more chronic health conditions, not including mental health conditions (Newacheck & Taylor, 1992). The majority of children (66%) in the NHIS-CH study were reported to be only mildly affected by their condition, but those in the severely affected group (5%) were reported to spend 10 days in bed and missed 11 days of school annually. Seventeen percent of the children with a chronic condition were identified as having a developmental delay as a result of their condition. These children were also reported to have increased hospitalizations and to miss twice as many days of school as nonaffected children, with

31% reporting the need to repeat a school grade. School absences can be related to a number of factors, but one cause of absences is illness, whether from generally poor health or chronic disease.

Healthy People 2000: National Health Promotion and Disease Prevention

Objectives (U.S. Department of Health and Human Services, 1992) reinforces in several sections the importance of health and the habits established during childhood:

An accurate profile of the health of U.S. children [ages 0 to 14], therefore, must go beyond mortality and morbidity data. It must also consider emotional, psychological, and learning problems, the social and environmental risks to which they are related, and the total costs to the Nation. . . . Childhood is the prime time of human development. This is no less true for development of good health than it is for social, educational, emotional, and moral development. It may be easier to prevent the initiation of some behaviors, such as smoking and alcohol and drug abuse, than to intervene once they have become established. Likewise, it may be easier to establish healthful habits, such as those related to basic hygiene and those related to dietary and physical activity patterns, during childhood than later in life. Childhood is the opportune period for such healthy development. . . . Schools can be used to facilitate children's access to basic health services. Better school-based programs, information for the public, and more immunization education for physicians and health professionals are needed. Improving the health of American children requires a wide range of social and economic interventions. (p.12-15)

Self-Management and Health

Although parental self-management has not been correlated with children's health, the establishment of healthful habits requires an organized parent. It requires organization and planning in order to provide a daily nutritional intake consistent with the U.S.

Department of Agriculture Food Guide/Nutritional Pyramid (Burns, Barber, Brady, & Dunn, 1996). The daily recommendation from this council consists of 4-5 vegetables per day, 3-4 milk products, 8-10 grain products, and two protein products, with a limited amount of fats and sugars. Parental planning is required to acquire these foods for the home; in addition, planning is required of students themselves to choose nutritional food eaten outside of the home. Physical activity is another component of health that requires planning for most adults and young adolescents because American lives are, for the most part, sedentary. An understanding of why certain health behaviors are desirable requires instruction from parents, schools, health professionals, and others. Self-management skills could assist students and parents in actualizing health behaviors in their lifestyles.

Most published studies in the health literature on self-management have reported the impact of self-management on particular disease entities: for example, asthma, arthritis, migraines, pain, chronic obstructive pulmonary disease, premenstrual syndrome, and multiple sclerosis. This literature describes how those patients who manage those problems well for themselves (in the case of a child, effective management of their disease by a parent) results in lower hospitalization rates, decreased physician visits, and increased "functioning" as measured specifically for each of these diseases. In a dissertation from the University of Tennessee, J. R. Williams (1988) documented the

effectiveness of a self-management regime on the health of asthmatic children. Children of parents who knew more about the signs and symptoms of the disease and treated those symptoms early and appropriately had decreased school absences, fewer emergency room visits and hospitalizations, and decreased physician office visits.

Focus of the Study

The manner in which parents manage their own and their children's lives is important because there are behavioral outcomes that have implications for the entire society. The health and well-being of our children today determines the health and well-being of our society tomorrow. What is it children need to be healthy and successful in school? One of the many necessary components to such accomplishments seems to be self-management. This study describes parents' self-management skills and examines the relationship between those specific behaviors and their middle school-aged children's self-management behaviors, health, and academic performance. Additionally, middle school students' own self-management behaviors and their health and academic performance were examined.

Chapter 2

Method

Participants, instruments, and procedures will be discussed in this chapter. Additionally, the evaluation of the revised instrument utilized with the students and parents/guardians is described in the instrument section.

Participants

The project sample consisted of 7th grade students and their parents or guardians at a middle school in Tennessee who agreed to participate. All 7th grade students and their parents/guardians were invited to participate, and all completed forms and inventories were utilized in this project. The number of potential participants was 180 and the actual sample size consisted of 94 student/guardian pairs, a survey return rate of 52.2%. Of the students who participated 46.8% (n=44) were male and 53.2% (n=50) were female; 73.4% (n=69) considered themselves Black, 24.5% (n=23) considered themselves Caucasian and 2.2% (n=1) considered themselves in another racial group. The age of the students ranged from 12 years 1 month to 14 years 3 months. Other participants came from the following categories: mothers (77%, n=73), fathers (3.2%, n=3), stepmothers (2.1%, n=2), stepfathers (2.1%, n=2), grandmothers (3.2%, n=3), other relatives (4.3%, n=4), and 7.4% (n=7) provided no answer or were in a category not listed.

Instruments

Measures of self-management included the Lifestyle Inventory and the Lifestyle Inventory-Revised. Academic performance measures included achievement test scores,

grade point average, days absent from school, and an academic index. Health measures included body mass index, blood pressure, a 24 hour nutritional recall, a physical activity checklist, and a health index.

Measures of Self-Management

Self-management as a construct has been discussed in the literature for over twenty years, but the development of instruments designed to measure this construct is relatively recent. The measures of self-management in this study included both the Lifestyle Approaches Inventory (LSA) and the Lifestyle Approaches Inventory-Revised (LSA-R).

Lifestyle Approaches Inventory. The inventory was originally developed from self-management practices advocated in the text Manage Your Life (Williams & Long, 1991). This instrument was refined by factor analysis from a 48-item inventory to a 22-item inventory and entitled the Lifestyle Approaches (LSA) Inventory. The LSA was a self-report inventory with six factors based on self-management behaviors. Factor 1, Performance Focus and Efficiency, assessed skill in prioritizing tasks and concentrating on them until completed. Factor 2, Goal Directedness, measured the perceived clarity with which one views personal goals and objectives. Factor 3, Timeliness of Task Accomplishment, indicated whether one begins a task promptly and works efficiently until it is finished. Factor 4, Organization of Physical Space, measured whether one keeps work and living areas attractive and well organized. Factor 5, Written Plans for Change, measured self-reported written formulation of goals and plans for change. Factor 6, Verbal Support for Self-Management, indicated whether one uses self-talk and seeks support

from others when attempting a self-change project.

The 22 item, six factor LSA inventory was administered with comparison inventories by C. A. Moore (1991) to 735 college students (63%) and non-student adults (37%). Moore found that the first four factors (1, 2, 3, & 4) were highly correlated with the total LSA score and moderately correlated with each other. The last two factors (5 & 6) were weakly correlated with the first four factors and moderately correlated with the total LSA score. Although, each item within the six factors was also correlated with the total LSA score, items in Factors 5 and 6 had fewer significant correlations to the total LSA score than the items in the other four factors. When correlated with comparison inventories (Rotter Attitude Inventory, General Self-Efficacy, Social Self-Efficacy, Religious Beliefs, Religious Practices and Health Habits Scale), the first four factors also correlated more consistently with these inventories than did factors five and six. An internal consistency of .80 (Cronbach's alpha) was calculated on the entire inventory; however, internal consistency coefficients for each factor ranged from .38 to .71.

The LSA (Williams et al., 1992) was then administered to a secondary sample of 239 (82%) college students and 55 (18%) non-student adults. A series of factor analyses and validity assessments on this sample reduced the LSA to a shorter scale with 16 items and 4 factors (eliminating factors 5 and 6). This final scale (Appendix A) is strong in each of the following psychometric areas: internal consistency, test-retest reliability, convergent validity, concurrent validity, and discriminant validity. It has been related to both physical and psychological health variables (as measured by the Social Self-Efficacy Scale, Modified Purpose in Life Scale, Life Orientation Test, Ware's Health Perceptions

Questionnaire, and Health Habits Scale).

Lifestyle Approaches Inventory - Revised. The Lifestyle Approaches (LSA) inventory was determined to be valid and reliable on an adult population of which 82% were college students. Prior to this study it was known (Gaylord & Smith, 1996) that of the proposed population of study, the parents/guardians of the middle school students, only 30% of the students' parents/guardians had attended college. Therefore, the inventory's language was simplified for this project (Appendix B). In order to determine if the original inventory and the revised inventory (LSA-R) resulted in similar quantitative values, both inventories were given to a volunteer sample of 30 adults prior to the study of the children and parents/guardians. The 30 adult volunteers were friends, colleagues, and acquaintances of the researcher who were willing to participate. Fifteen (15) adult volunteers responded to the original inventory first and another 15 responded to the revised inventory first. Scores were compared to determine if the two inventories yielded similar self-management scores.

Additionally, six items were selected from the Marlowe-Crowne Social-Desirability Scale (Crowne & Marlowe, 1960) and added to both the LSA (Appendix C) and LSA-R (Appendix D). These items were included to measure the tendency to give socially approved, but unrealistic, responses. Social desirability is defined in terms of behaviors that are culturally approved but relatively unlikely to occur. The Marlowe-Crowne Social Desirability Scale was normed on college students but has been utilized with 15 other population types, including potential employees, psychiatric patients, secretaries, and prisoners. It is reliable (.89 on test-retest correlation and .88 internal

consistency correlation using the Kuder Richardson) and has convergent (significantly correlated with the Edwards Social Desirability Scales), content (100% interjudge agreement on 36 items), and construct validity (measures social desirability not based on psychopathology as determined by the overall instrument mean of 2.8 on a 5 point scale utilized to rate the degree of maladjustment in each item with 1=extremely well adjusted and 5=extremely maladjusted).

The six chosen items from the 33 on the original scale were selected based on the readability and understandability of the items by both middle school students and adults. Additionally, three of the items are scored for positive (true) answers and three are scored for negative (false) answers. The chosen items are the following:

- ___17. I never hesitate to go out of my way to help someone in trouble. (T)
- ___18. I like to gossip at times. (F)
- ___19. There have been times when I was quite jealous of the good fortune of others. (F)
- ___20. I'm always willing to admit it when I make a mistake. (T)
- ___21. When I don't know something I don't at all mind admitting it. (T)
- ___22. I sometimes feel resentful when I don't get my way. (F)

Numbers 18, 19, and 22 are assigned one point for false answers and numbers 17, 20, and 21 are assigned one point for true answers. Based on the norms for the complete inventory, the mean for six items is 2.54 with an average range of 1.55 to 3.54. Therefore, a score of 6 would alert the researcher to the participant's tendency to mark the questionnaire with the most socially-acceptable answers in an inventory that relies exclusively on self-report of selected behaviors.

The mean scores of the 30 adult volunteers on the Lifestyle Approaches Inventory, the Lifestyle Approaches Inventory-Revised, and each of their factors are presented in Table 1. The mean score of both inventories was 46.77. The correlation between the two inventories was .902, which is significant at the .01 level (2-tailed). The correlations between similar factors in the two inventories are presented in Table 2.

The Cronbach's alphas for this sample was .84 on the LSA and .79 on the LSA-R. The Cronbach's alpha was .83 for Factor 1 of the LSA, and .84 for Factor 1 of the LSA-R. For Factor 2 the Cronbach's alpha was .44 on the LSA and .40 on the LSA-R. For

Table 1

Description of Scores from the Lifestyles Approaches Inventory (LSA) and the Lifestyles Approaches Inventory-Revised (LSA-R) and Each Factor

Inventory	N	Minimum	Maximum	Mean	Std. Deviation
LSA	30	21.00	61.00	46.77	10.08
LSA:Factor 1	30	5.00	20.00	13.80	4.72
LSA:Factor 2	30	8.00	16.00	13.97	2.19
LSA:Factor 3	30	3.00	16.00	11.20	3.39
LSA:Factor 4	30	.00	12.00	7.80	3.41
Marlowe-Crowne:LSA	30	.00	4.00	1.80	1.19
LSA-Revised	30	24.00	64.00	46.77	9.39
LSA-R:Factor 1	30	2.00	20.00	12.20	5.34
LSA-R:Factor 2	30	8.00	16.00	13.93	2.27
LSA-R:Factor 3	30	5.00	16.00	12.00	3.16
LSA-R:Factor 4	30	.00	12.00	8.30	3.49
Marlowe-Crowne:LSA-R	30	.00	4.00	1.90	1.00
Valid N (listwise)	30				

Table 2

Correlations of the Lifestyle Approaches Inventory with the Lifestyle Approaches

Inventory- Revised

Inventory and Factors	Lifestyle Approaches- Inventory-Revised	LSA-R: Factor 1	LSA-R: Factor 2	LSA-R: Factor 3	LSA-R: Factor 4
Lifestyle Approaches Inventory	.902**				
LSA:Factor 1		.84**			
LSA: Factor 2			.68**		
LSA: Factor 3				.83**	
LSA: Factor 4					.78**

**Correlation is significant at the .01 level (2-tailed)

Factor 3 the Cronbach's alpha was .69 on the LSA and .72 on the LSA-R. For Factor 4 the Cronbach's alpha was .78 on the LSA and .82 on the LSA-R. The measures of internal consistency originally reported by Williams et al. (1992) were .80 (Cronbach's alpha) for the entire inventory with .71 reported for Factor 1, .66 reported for Factor 2, .64 reported for Factor 3, and .71 reported for Factor 4.

Each factor except Factor 2 was found to be significantly ($p < .01$) positively correlated with the total LSA-R score. Factor 1 was correlated with the total LSA-R score at .84, Factor 2 at .32, Factor 3 at .89, and Factor 4 at .54. On the LSA, all factors except Factor 2 were also significantly ($p < .01$) correlated with the total LSA score. The correlations of the LSA factors and the total LSA score (22-item inventory) provided by Williams et.al. (1992) were .76 for Factor 1, .63 for Factor 2, .73 for Factor 3, and .62 for

Factor 4.

Four individuals in the volunteer sample who took the LSA scored 6 on the Marlowe-Crowne questions and two who took the LSA-R scored 6. However, those were six different participants, meaning no one participant scored 6 on both of the inventories. The Marlowe-Crowne questions were given in the same order in both inventories; however, the LSA presented the questions at the end and the LSA-R presented the questions in the middle of the inventory. The correlation between the Marlowe-Crowne questions on the two inventories was .54, which is significant at the .01 level but is not a 1:1 correlation. No correlation between the two inventories and their respective Marlowe-Crowne questions was significant, with or without the inclusion of the six volunteers who scored 6 on the Marlowe-Crowne. It was thus determined that participants' socially desirability scores were not related to scores on the self-management inventories.

It was concluded, therefore, that the Lifestyle Approaches Inventory (LSA) and the Lifestyles Approaches Inventory- Revised (LSA-R) measures were very similar, based on the high correlations, the similar means, and the Cronbach's alpha, which were consistent and higher on three out of the four factors than those originally reported. Consequently, the LSA and LSA-R were both utilized in the project.

Measures of Academic Performance

Academic performance was measured by Terra Nova Achievement Test scores, grade point average for the previous school year, the number of school absences for the previous school year, and a composite academic performance index.

Terra Nova Achievement Tests. In the state of Tennessee achievement test

measures of grade level performance have been developed by the state and are utilized by the public school system. The Tennessee Comprehensive Assessment Program (TCAP) is customized for the state and is a combination norm- and criterion-referenced test. Terra Nova is the name given to the TCAP for middle school students. Assessment is made in each subject area with an overall national percentile score given for each subject area and for the total battery. Students take this assessment in the spring of every year. This project transcribed from each student's academic record the total battery percentile score given to each student completing the achievement test in the spring of 1998.

Grade Point Average. End of the year grades were transcribed from each student's academic record for the following subjects: math, language arts, reading, social studies, and science. These subjects were chosen because they are the core courses required for all sixth grade students except a few students ($n=10$) who were exempted from the reading course and permitted to substitute another language arts course. These five grades (four grades for those students exempted from reading) were averaged and this average is considered the student's academic grade point average (GPA) in this study.

School Absences. Each student's number of absences for the past school year utilized in this project was transcribed from the student's academic record.

Academic Performance Index. An academic index between 2 and 8 was calculated on each student based on their national percentile rank on the Terra Nova and their GPA. Point allocation was as follows.

Four (4) points were assigned if a student's score on the Terra Nova fell within the range of scores in the upper quartile (>75 th percentile) of the sample.

Three (3) points were assigned if a student's score on the Terra Nova fell within the range of scores in the third quartile (50th to 75th percentile) of the sample.

Two (2) points were assigned if a student's score on the Terra Nova fell within the range of scores in the second quartile (25th to 50th percentile) of the sample.

One (1) point was assigned if a student's score on the Terra Nova fell within the range of scores in the bottom quartile (0 to 25th percentile) of the sample.

Four (4) points were given for a GPA in the fourth quartile (>75th percentile) of the sample.

Three (3) points were given for a GPA in the third quartile (50th to 75th percentile) of the sample.

Two (2) points were given for a GPA in the second quartile (25th to 50th percentile) of the sample.

One (1) point was given for a GPA in the bottom quartile (0 to 25th percentile) of the sample.

Measures of Health

Health status was operationalized as (a) body mass index percentiles based on age and sex (Appendices E & F), (b) blood pressure percentiles for both systolic and diastolic readings based on age and sex (Appendix G), (c) assessment of nutritional intake by a 24-hour dietary recall (Appendices H & I), (d) level of physical activity (Appendix J), (e) the students' perception of their own health (Appendix K), (f) the parents' perception of their child's health (Appendix L), (g) doctor/clinic/health department visits within the past year (Appendix L), and (h) emergency room visits within the past year (Appendix L). A

composite health index based on these variables was calculated for each student.

Body Mass Index. Body mass index (BMI) was chosen as a measure of health, because it can be used to evaluate the appropriate range of body weight by comparing the adolescent's BMI to age-based and sex-specific national norms. Height and weight measurements were done by the researcher on a scale calibrated in the fall of 1998. Students were measured without their shoes. After the adolescent's height and weight are measured, the BMI can be calculated [$\text{weight(kg)}/\text{height(m}^2\text{)}$] or determined using the Body Mass Index for Selected Statures and Weights Table (Appendix E). The study utilized this table to determine the BMI of each student. Once the BMI was determined, the chart appropriate for gender (Appendix F) was utilized to determine the percentile range into which each students' BMI fell. As indicated on the charts, students who have BMI's above the 85th percentile of the national norm are at risk for being overweight and those students whose BMI's are above the 95th percentile of the national norm are considered overweight.

Blood Pressure. Blood pressures were measured with a standard mercury sphygmomanometer and stethoscope by the researcher who is a registered nurse. Readings were taken in either arm with the student sitting and the sphygmomanometer at the level of the heart. Readings were taken after the student had been sitting for several minutes completing the questionnaires. Both systolic and diastolic readings were plotted on national norm charts (Appendix G) and percentile ranges recorded.

24 Hour Nutritional Recall. Students were asked to record all of the food and drink they had consumed in the past 24 hours (Appendix H). All 24 hour recalls were

performed on a day after a school day. The diet history was then evaluated according to the recommended dietary intake from the U.S. Department of Agriculture's Food Pyramid Guide (Appendix I) and all reported intake was categorized into one of the six food groups. The recommendations from this guide are 2-3 milk products, 2-3 protein servings, 3-5 vegetables, 2-4 fruits, and 6-11 bread servings daily for a total of 16 to 26 servings. Intake in each of the food groups was reported in the number of servings consumed. Additionally, the total number of servings was divided by the number of fat, oil, and sweet servings to obtain a percentage of fat intake for the day.

Physical Activity Checklist. The Physical Activity Checklist (Appendix J) is a frequency checklist of 32 sedentary and nonsedentary activities based on the Minnesota Leisure Time Activity Questionnaire for adults and developed by the Cardiovascular Health in Children and Youth (CCHC) study group from the University of North Carolina, Chapel Hill, School of Nursing. The Physical Activity Checklist is a component of a more comprehensive survey entitled the Youth Health Survey (YHS), which is one of the assessment tools developed by this research group exploring cardiovascular risk factors in children and adolescents in a longitudinal school-based study.

Two exercise physiologists independently coded each activity in the Physical Activity Checklist in terms of a metabolic equivalent (MET) level of 3, 5 or 8. Activity level is assessed by asking the number of times each activity was done for "more than 15 minutes last week." Frequency choices are "not at all," "1-2 times," "3-5 times," and "6 or more times." The frequency of the given activity (0, 1, 3, or 6) is then multiplied by the MET for each activity to obtain the activity score. All activity scores are then added

together and the sum serves as the Physical Activity Checklist score. The Cronbach alpha for the instrument was reported as .74 and the test-retest correlation was .70 (Gilmer, Speck, Bradley, Harrell, & Belyea, 1996). Permission to use the tool was obtained (Appendix M) and the Physical Activity Checklist score for each student was utilized in this project.

Health Index. In order to standardize the measurement of health, a health index was formulated for each student by utilizing the following weighting and criteria. This system resulted in a score between 0 and 14, with 14 indicating better health.

Two (2) points were given for a BMI <85th percentile for sex and age.

One (1) point was given for a systolic blood pressure <90th percentile for sex and age.

One (1) point was given for a diastolic blood pressure <90th percentile for sex and age.

One (1) point was given for 16 to 26 servings reported eaten in the 24 hours recall.

One (1) point was given if <30% of the number of servings was from fat (total number of fat servings divided by total number of servings).

One (1) point was given if breakfast was eaten.

One (1) point was given if lunch was eaten.

Two (2) points were given for a Physical Activity Checklist score >50th percentile for this sample.

One (1) point was given for a Physical Activity Checklist score between the 25th and 50th percentile for this sample.

One (1) point was given if the student reported himself as healthy.

One (1) point was given if the parent reported the student as healthy.

One (1) point was given if the student visited the ER in the past year only 1 time or not at all.

One (1) point was given if the student visited the clinic/doctor's office <3 times in the past year.

Additional Demographics

Other correlates of academic success and health discussed in the literature are family income and parental educational level; therefore, such information was collected and correlated with academic performance in the current study. Assessment of parental educational level was by self-report on the release of information form signed by the parents/guardians (Appendix L). Family financial difficulties were also measured by self-report from the release of information form. Parents reported either no financial difficulties, some financial difficulties, or lots of financial difficulties. School records were also assessed for the student's participation or non-participation in the free or reduced lunch program. Participation in the school lunch program was important in the assessment of the family's financial difficulties and in the assessment of the student's nutritional intake.

Procedure

The University of Tennessee Institutional Review Board and the College of Education Human Subjects Committee approved the study prior to the initiation of the research. After University approval, consent to do research in the school setting was sought and obtained from the school principal and the school district.

After the LSA and LSA-R tool evaluation was complete as described in the

instrument section, a parental consent form (Appendix N), a student assent form (Appendix K), a consent form for the release of academic records with additional demographics (Appendix L), the Lifestyle Approaches inventory (LSA, Appendix C), and the Lifestyle Approaches-Revised inventory for the parents (LSA-R, Appendix D) were sent home with all 7th grade students to be completed by a parent/guardian. The student information and physical parameters were acquired when parent/guardian consents, student assents, educational release forms, and parent/guardian inventories were returned.

Information collected on each student at school by the researcher consisted of self-management, academic performance and health measures. The Lifestyle Approaches-Revised inventory for the assessment of self-management behaviors was completed by the student in the presence of the researcher.

Physical parameters assessed on each student by the researcher were height, weight, and blood pressure, all of which were reported to the parents (Appendix O). Blood pressures outside the ranges of normal (<10th%tile or >90th%tile) for their age and sex as determined by the American Heart Association were rechecked in the clinic two more times. Parents were informed when students' blood pressures were consistently outside the ranges of normal. Referral to another health facility and assistance with such referrals were as provided as needed.

A 24-hour dietary recall was obtained from each student (Appendix H). The student completed the form, which was then reviewed by the researcher with clarifications and additions made based on the discussion with the student. The physical activity checklist (Appendix J) was also reviewed by the researcher and students were asked if

they really did all the activities marked for at least 15 minutes. Adjustments to the checklists were then made by the students when appropriate.

In order to encourage participation, each participating student received \$1, a pocket calendar, and a #2 school pencil when the data file was complete. The student signed a receipt when these incentives were received. Additionally, the student's name was entered into a weekly drawing for \$10. This data collection process lasted 2 weeks, with two weekly drawings. Each student with a complete data file was eligible for both drawings unless that student had already won the first drawing. A receipt was signed by the student upon receiving the \$10 incentive.

Two weeks after the initial data collection, the LSA-R inventory was once more sent home with the student. The parent/guardian was asked to complete the inventory for a second time. Once the LSA-R was returned completed by the parent for the second time, the student also completed the LSA-R a second time. When both forms were completed the student received another pencil and was entered in the third and fourth weekly drawings for \$10.

Chapter 3

Results

This project was a descriptive study of the relationship between parents' or guardians' self-management and their children's self-management, academic performance, and health. It also examined the relationship between the children's self-management and their own health and academic performance. Relationships and differences were evaluated in terms of both their statistical and practical significance.

Of the parents/guardians ($n=92$) who answered the questionnaire, 6.4% had a graduate degree, 19.6% had a college degree, 15.2% had vocational training, 22.8% had some college, 21.7% had a high school diploma, 4.3% had a GED certificate, and 9.7% had less than a high school degree. Thirty-four percent (34%) of the parents/guardians reported little to no financial problems, 52% reported some financial problems, and 14% reported lots of financial difficulty. Ninety percent (90%) of the students ($n=94$) were on the federal free lunch program, 5.3% on the reduced lunch program, and 4.3% were on the full self-pay lunch program.

Parents'/Guardians' Self-Management

Parents'/guardians' self-management scores were obtained from both the LSA and the LSA-R. The correlation between the LSA and the LSA-R for the adults in this population was .896, which is statistically significant at the .01 level. The correlation (.896) for this population compares favorably with the volunteer sample given the inventories prior to this project and whose correlation between the two inventories was .902. Additionally, in the parents'/guardians' LSA and LSA-R inventories all four factors

were significantly correlated. The specific correlations are presented in Table 3, along with the mean scores on the total LSA and LSA-R and each of the four factors. The means and standard deviations for the LSA and each of the factors tended to be slightly higher than those previously reported by Williams et al. (1992).

The parents'/guardians' LSA and LSA-R scores were also analyzed using a paired t-test for the totals and each of the four factors. As evidenced in Table 4, there were significant differences in the means of Factors 1 (LSA-R score lower than the LSA) and 4 (LSA-R score higher than the LSA) but not between the total inventories, Factors 2, and Factors 3.

The results of both the LSA and the LSA-R inventories tended toward a normal distribution, with the LSA-R inventory having less kurtosis than its predecessor as demonstrated in Figure 1. Specifically, the LSA for parents/guardians had a skewness statistic of $-.38$ and a kurtosis statistic of $-.86$. The LSA-R for parents/guardians had a skewness statistic of $-.58$ and a kurtosis statistic of $-.57$.

For the parents/guardians, each factor was also found to be significantly positively correlated at the .01 level with the total LSA-R score. Factor 1 was correlated with the total LSA-R score at .81, Factor 2 at .72, Factor 3 at .74, and Factor 4 at .73. Factor 2 was not significantly correlated (.30) with LSA scores in the parents'/guardians sample, although all other factors were significantly ($p < .01$) correlated with the total LSA score.

A test-retest analysis of the LSA-R inventory for parents/guardians revealed a correlation of .823 ($p < .01$) between the first inventory and the second inventory completed two to four weeks later. The paired t-test confirmed no difference in means

Table 3

Correlations and Means of Parents'/Guardians' LSA, LSA-R, and Each Factor

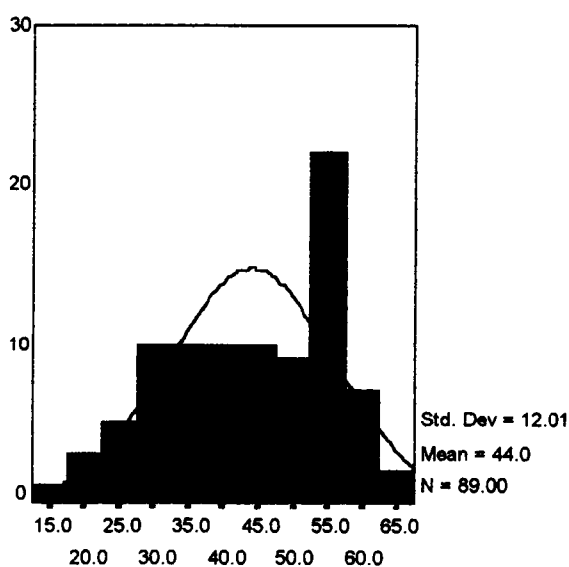
	N	Mean	Std. Deviation	Std. Error Mean	Correlation
Parental LSA Score &	88	44.15	11.98	1.28	.896**
Parental LSA-R Score		44.10	11.77	1.25	
LSA-Factor 1 &	88	12.91	4.77	.51	.73**
Parental LSA-R: Factor 1		11.73	5.49	.58	
LSA- Factor 2 &	88	12.43	3.62	.40	.60**
Parental LSA-R: Factor 2		12.64	3.11	.33	
LSA- Factor 3 &	88	10.44	3.61	.39	.68**
Parental LSA-R: Factor 3		10.83	3.71	.40	
LSA- Factor 4 &	88	8.47	3.45	.37	.81**
Parental LSA-R: Factor 4		8.90	3.31	.35	

**Correlation is significant at the .01 level (2-tailed)

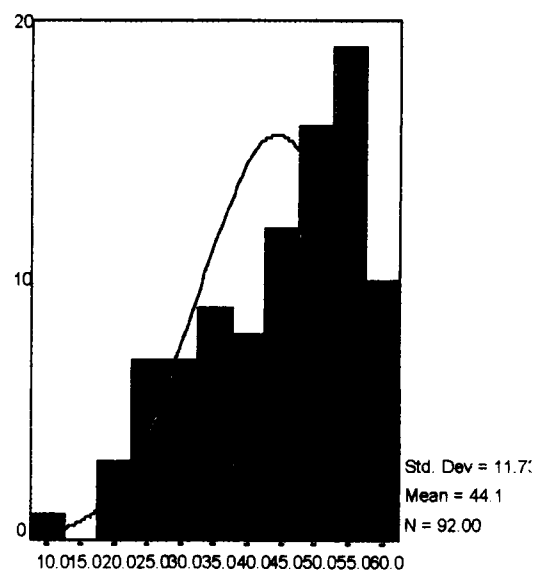
Table 4

Paired T-Test of Parents'/Guardians' LSA, LSA-R, and Each Factor

	Mean Diff.	Std. Dev.	Std. Error	95% Confidence Interval of the Mean Difference		t	df	Sig. (2- tailed)
				Lower	Upper			
Parental LSA Score - Parental LSA-R Score	.06	5.43	.58	-1.09	1.21	.10	87	.00
LSA-Factor 1 - Parental LSA-R: Factor 1	1.18	3.86	.41	.36	2.00	2.87	87	.01
LSA- Factor 2 - Parental LSA-R: Factor 2	-.20	3.05	.33	-.85	.44	-.63	87	.53
LSA- Factor 3 - Parental LSA-R: Factor 3	-.39	2.94	.31	-1.01	.24	-1.23	87	.22
LSA- Factor 4 - Parental LSA-R: Factor 4	-.43	2.07	.22	-.87	.82	-1.96	87	.05



Parental LSA Score



Parental LSA-R Score

Figure 1

Distribution of the Parents'/Guardians' LSA and LSA-R Scores

between the two LSA-Rs taken by the parents/guardians. The return rate on the second questionnaire for parents/guardians was 24.5% ($n=23$) of the original 94 student/guardian pairs analyzed.

Sixteen parents/guardians scored 6 on the six questions chosen from the Marlowe-Crowne Social Desirability Scale on both the LSA and the LSA-R inventories. Two of these sixteen scored 6 again on the LSA-R on retest. (Unfortunately, only three of those original sixteen participants elected to participate in the re-test.) Of those 16 parents/guardians ($n=16$) who scored 6, three of their children also scored 6 and none of these three students elected to participate in the retest. The range of LSA and LSA-R scores for the above 16 parents/guardians was from 30-62, which is somewhat higher than the range (17 to 63) for both the entire sample ($n=88$) and those parents who scored <6 ($n=75$) on the Marlowe-Crowne Social Desirability Scale on both inventories. Additionally, the mean scores of those 16 parents on the LSA and LSA-R were 50.38 and 51.56, respectively. Whereas, for the other participants the mean scores were 42.47 on the LSA and 42.39 on the LSA-R. The entire sample means were 44.15 for the LSA and 44.10 for the LSA-R (see Table 3). The correlation between the LSA and the LSA-R for these 16 parents was .82, which is lower than for the entire sample (.896). For the 75 parents who scored <6 on both the LSA and the LSA-R, the correlation between their scores was .90. There was, however, a significant ($p<.01$) positive correlation between the entire parent/guardian sample's LSA (.42) and LSA-R (.45) scores and the Marlowe-Crowne scores, which was not the case for the volunteer sample.

If those parents scoring 6 on the Marlowe-Crowne Social Desirability Scale were

trying to answer the questionnaire with the most socially-acceptable responses, one would anticipate they would have also made a more concerted effort to be consistent in all their answers. However, this assumption is not borne out even though both LSA and LSA-R were in their possession when completing them. Additionally, there was inconsistency between Factor Three scores and the LSA and the LSA-R scores in this sample of 16, as it was in the total sample and in the volunteer sample. Based on the fact that there was lower consistency between inventories for this group of 16 than for the other participants (difference in means=.19), the researcher concluded that social acceptability was not a major concern and, thus, retained the scores from this group.

For the parent/guardian LSA and LSA-R scores, there was no significant correlation between either parental educational level or reported family financial difficulties and the self-management scores.

Students' Self-Management

The students' LSA-R scores were analyzed extensively also, because the LSA-R inventory had not been given to adolescents prior to this project. The LSA-R was the only self-management inventory given to the students for the following reasons: a high correlation had previously been obtained between it and the LSA, the language was simpler than on the LSA, and neither the LSA nor LSA-R had been utilized in an adolescent population and, therefore, no norms were available for either. Student LSA-R scores (n=94) ranged from 9 to 62 with a mean score of 39.62. Table 5 compares the LSA-R total inventory means and each factor in each of the groups tested.

As demonstrated in Table 5, the scores for the students followed the same pattern

Table 5

LSA-R (in bold) and LSA (in italics): Means and Ranges for Total Inventory and Factors

	Total		Factor 1		Factor 2		Factor 3		Factor 4	
	Mean	Range (Possible Range 0-64)	Mean	Range (Possible Range 0-20)	Mean	Range (Possible Range 0-16)	Mean	Range (Possible Range 0-16)	Mean	Range (Possible Range 0-16)
Previously reported by Williams et.al. (n=735)	<i>41.46</i>		<i>11.6</i>		<i>12.74</i>		<i>9.38</i>		<i>7.74</i>	
Volunteer Sample (n=30 adults)	<i>46.77</i>	<i>21-61</i>	<i>13.8</i>	<i>5-20</i>	<i>13.97</i>	<i>8-16</i>	<i>11.2</i>	<i>3-16</i>	<i>7.8</i>	<i>3-16</i>
	46.77	24-64	12.2	2-20	13.93	8-16	12	5-16	8.3	0-12
Parents/Guardians (n=88)	<i>44.15</i>	<i>17-63</i>	<i>12.91</i>	<i>3-20</i>	<i>12.43</i>	<i>3-16</i>	<i>10.44</i>	<i>2-16</i>	<i>8.47</i>	<i>0-12</i>
	44.10	12-62	11.68	0-20	12.64	4-16	10.85	0-16	8.92	1-12
Students (n=94)	39.62	9-62	9.26	0-20	11.52	3-16	10.40	1-16	8.45	0-12

as the adult population but were lower. The paired t-tests demonstrated there were statistically significant ($p < .01$) differences between the means of the parents'/guardians' LSA-R total scores and students' LSA-R total scores, as well as on Factors 1 and 2. For the students, each factor was found to be significantly positively correlated at the .01 level with the total LSA-R score. Factor 1 was correlated with the total LSA-R score at .72, Factor 2 at .65, Factor 3 at .72, and Factor 4 at .62. Correlation of all the factors to one another and to the total LSA-R score for students is presented in Table 6.

Student scores on the LSA-R were distributed normally (skewness = -.18 and kurtosis = -.27) as illustrated in Figure 2.

Assessment of test-retest reliability of the LSA-R inventory for students (n=50) over a two to four week period produced a correlation of .83 ($p < .01$). The paired t-test confirmed no significant difference in the means of the first and second set of LSA-R scores.

Table 6

Correlation of Students' LSA-R Scores and Factor Scores

LSA-R	Factor 1	Factor 2	Factor 3	Factor 4
LSA-R	.72**	.65**	.72**	.62**
Factor 1		.31**	.28**	.21*
Factor 2			.30**	.18
Factor 3				.43**
Factor 4				

*Correlation is significant at the .05 level (2-tailed)

**Correlation is significant at the .01 level (2-tailed)

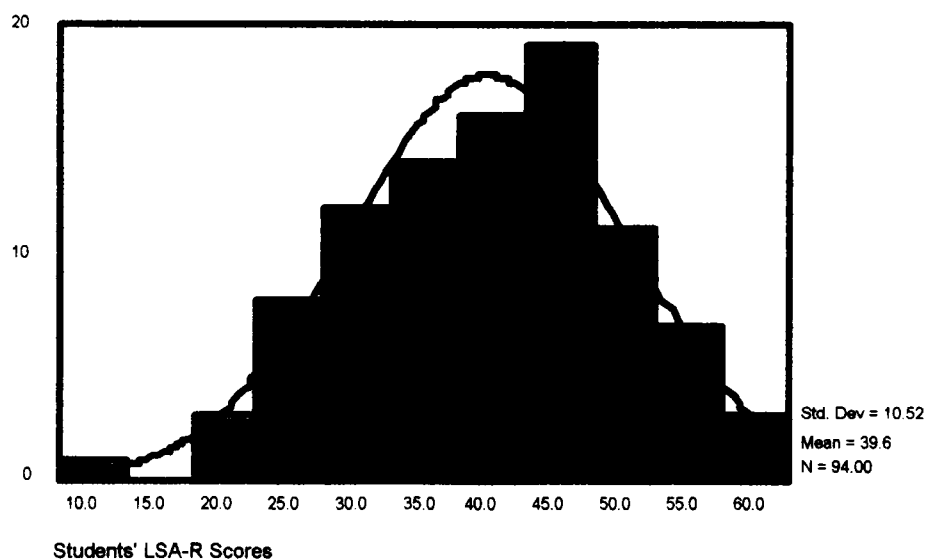


Figure 2

Distribution of Students' LSA-R Scores

Seven students scored 6 on the Marlowe-Crowne questions, suggesting a pattern of answering the inventory questions in the most socially acceptable manner. To determine whether to retain these students' LSA-R scores in subsequent analyses, their scores were compared with the LSA-R scores for those who scored 1 to 5 (there were no 0's) on the Marlowe-Crowne questions. Table 7 describes the means and Cronbach alphas for the LSA-R for students with various Marlowe-Crowne scores. The Cronbach alphas and means were consistent, with no significant difference between any of the means. Therefore, all student surveys, including those with Marlowe-Crowne scores of 6 ($n=7$), were utilized in this portion of the data analysis.

Parents'/Guardians' Self-Management and Students' Self-Management

The correlation between the parent's/guardian's LSA-R score and their student's LSA-R score was .30 ($p<.01$). The scatter plot in Figure 3 visually depicts the nature of

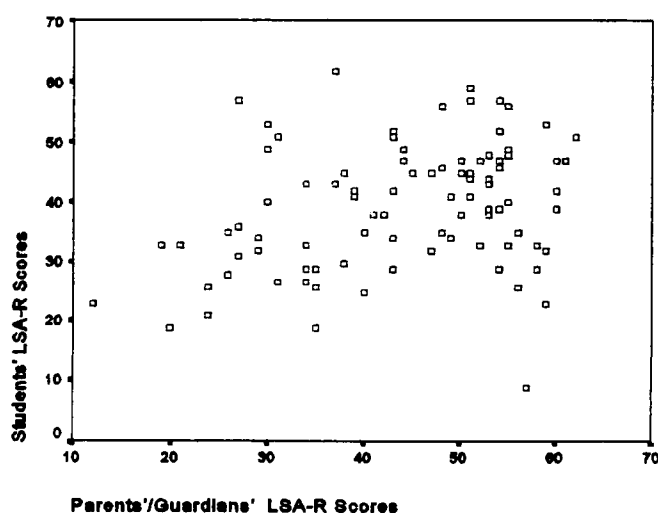


Figure 3

Scatter Plot of Parents'/Guardians' LSA-R Scores and Students' LSA-R Scores

Table 7

Students' LSA-R Means and Cronbach Alphas in Total Sample and with the Sample Split into Groups Based on Marlowe-Crowne Scores

Marlowe-Crowne Scores								
	1-6 (All)	1-5 (All except Scores of 6)	6 (Scores of 6)	5 (Scores of 5)	4 (Scores of 4)	3 (Scores of 3)	2 (Scores of 2)	1 (Scores of 1)
n	94	87	7	28	29	19	9	2
LSA-R Mean	39.63	39.37	42.71	44.32	39.38	33.21	37.56	*
LSA-R C. Alpha	.75	.75	.62	.71	.78	.68	.63	*
Factor 1 Mean	9.26	9.11	11.0	11.36	9.07	6.95	7	*
Factor 1 C. Alpha	.58	.57	.54	.58	.55	.58	.16	*
Factor 2 Mean	11.52	11.44	12.43	11.96	11.41	10.58	12.56	*
Factor 2 C. Alpha	.56	.57	.44	.53	.48	.74	.35	*
Factor 3 Mean	10.40	10.29	11.86	12.07	10.59	7.63	9.89	*
Factor 3 C. Alpha	.67	.69	-.57	.61	.66	.76	.52	*
Factor 4 Mean	8.45	8.53	7.43	8.93	8.76	8.05	8.11	*
Factor 4 C. Alpha	.61	.59	.79	.31	.68	.71	.59	*

* Sample size too small - zero variance

this relationship.

Although significantly correlated and demonstrated in the scatter plot, there were outliers (5) that were further evaluated. The differences between scores were normally distributed (Figure 4), which contributed to a significant correlation between parents' and students' scores. If the 5 outliers (differences in scores of 30, 25, 23, -36, and -48) are removed from the paired sample of parents/guardians and students ($n=89$), the correlation between the two groups increases to .49 ($p<.01$).

In the entire sample ($n=92$) parent/guardian and student scores were significantly ($p<.05$) correlated for three out of the four factors (1, 3, & 4), with Factor 3, Timeliness of Task Completion, being the most significantly ($p<.01$) correlated. The significant correlations ranged from .21 to .31 (see Table 8).

Self-Management and Academic Performance

There were no significant correlations between self-management scores (LSA-R) of either students or parents/guardians and grade point average (GPA) or percentile ranking on the Terra Nova achievement tests. Although not the focus of the current study, significant correlations were obtained between GPA, percentile ranking on the Terra Nova achievement tests, and the number of student absences. Although skewness and kurtosis statistics were acceptable for both GPA and Terra Nova achievement scores, none of these three variables were normally distributed, as evidenced in Figure 5. Consequently, Kendall's Tau was chosen for these correlational analyzes due to the non-normality of the variables and the numerous ties in the data. Grade point average correlated negatively ($p<.01$) with the number of school absences at -.22. Grade point average correlated

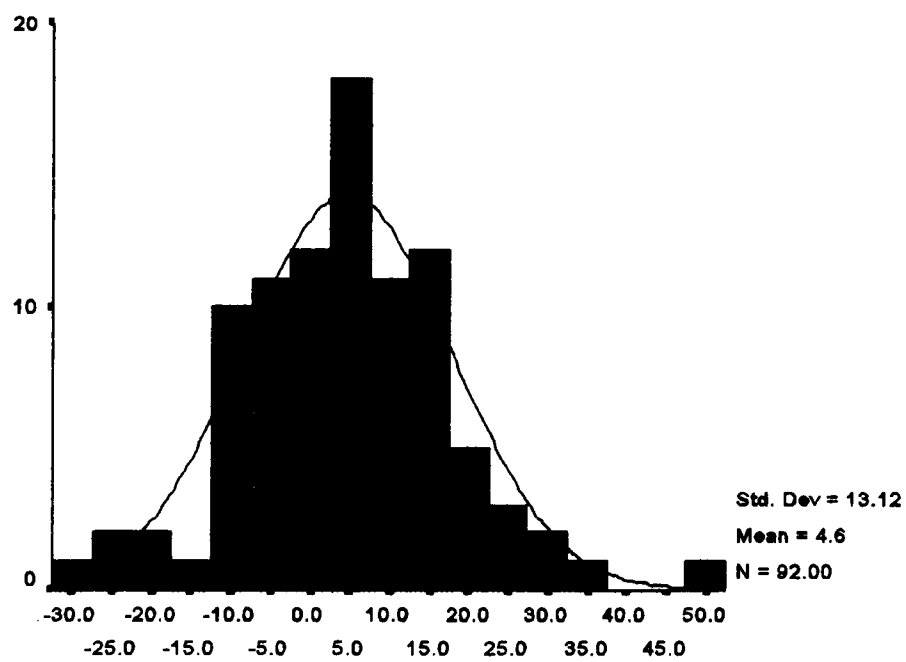


Figure 4

Distribution of the Differences in the Means between the Parent's/Guardian's LSA-R
Score and Their Child's LSA-R Score

Table 8

Correlation of Parents'/Guardians' Self-Management Scores (LSA-R) and Students' Self-Management Scores (LSA-R)

	Parents/Guardians Scores				
	LSA-R	Factor 1 Performance Focus and Efficiency	Factor 2 Goal Directedness	Factor 3 Task Completion	Factor 4 Organization of Physical Space
Student Scores					
LSA-R	.30*	.19	.16	.26*	.31**
Factor 1	.26*	.21*	.20	.17	.20
Factor 2	.11	.07	.14	.05	.10
Factor 3	.21*	.09	.01	.27**	.30**
Factor 4	.22*	.14	.08	.20	.26*

*Correlation is significant at the .05 level (2-tailed)

**Correlation is significant at the .01 level (2-tailed)

positively ($r = .45$, $p < .01$) with the percentile ranking on the Terra Nova achievement tests.

The percentile ranking on the Terra Nova achievement tests correlated negatively ($r = -.16$, $p < .05$) with the number of school absences.

An academic performance index was calculated on each student (see "Procedures" section in "Method" chapter for exact calculation process) based on GPA and Terra Nova scores. The academic performance index correlated positively at the .01 level of significance for both the Terra Nova Achievement Test (.73) and GPA (.75), which were equal contributors to the index. Following the same pattern as the variables contributing to the academic index, the academic index variable was not normally distributed and had a

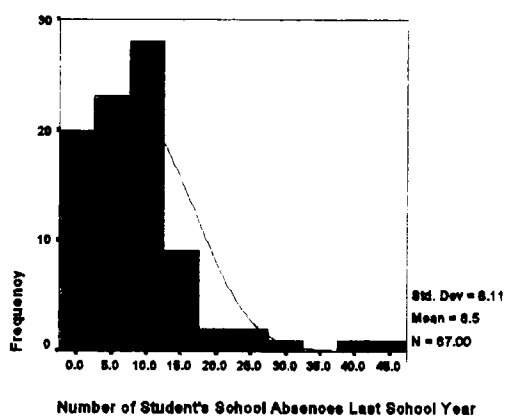
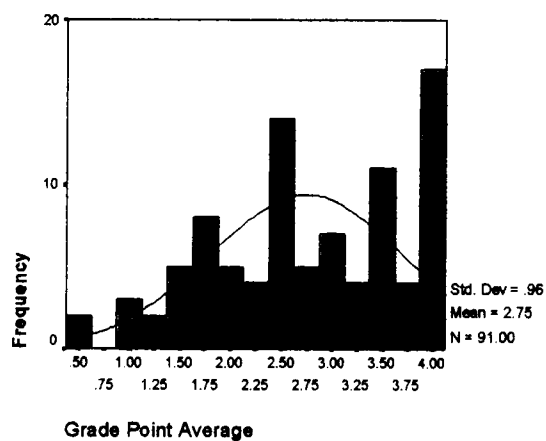
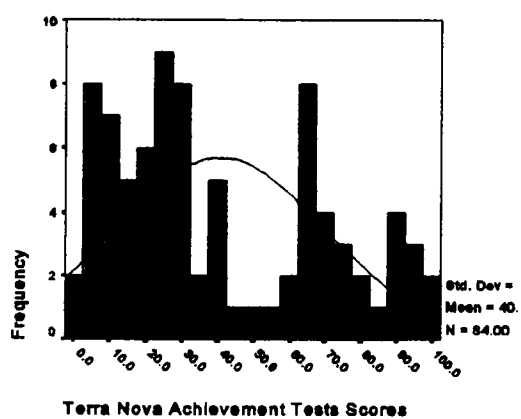


Figure 5

Distribution of GPA, Terra Nova Scores, and Student Absences

kurtosis statistic of -1.12. A z-transformation was attempted but not successful in producing data with a normal distribution. As evidenced in Figure 6, there were two groups of students: (a) those successful academically and whose normal curve peaked around 100, and (b) those less successful academically and whose normal curve peaked around 50. The academic index did not significantly correlate (Kendall's Tau) with the self-management scores of parents/guardians or students.

Given the absence of any significant correlations between self-management scores of either students or parents/guardians with any of the measures of academic performance,

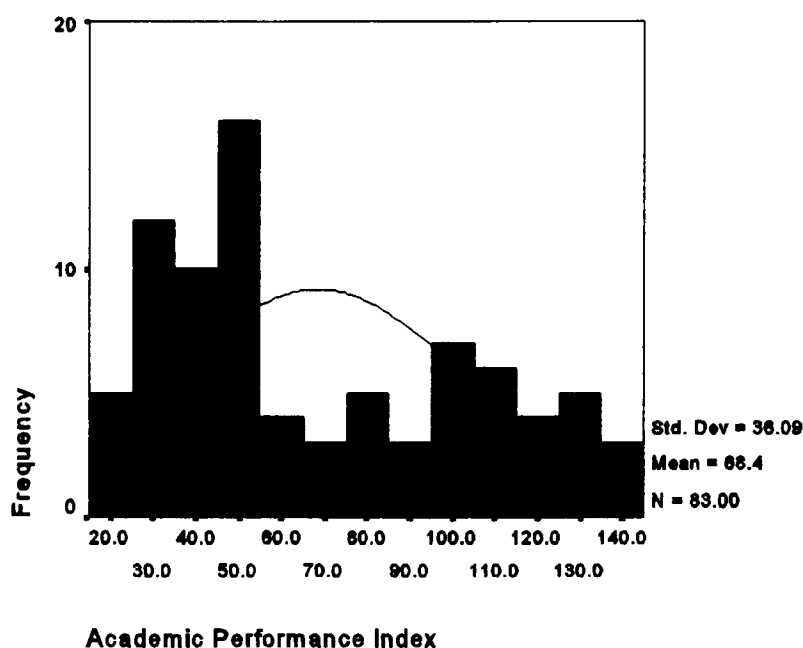


Figure 6

Academic Performance Index: Distribution of Data

the experimenter divided the students into groups for further analysis of the target variables. For example, the sample was divided into three groups based on academic performance index scores: the top 20% of scores (scores of 7 and 8, $n=19$), the bottom 20% of scores (scores of 1 and 2, $n=21$), and the middle scores between 20% and 80% (scores of 3, 4, 5, and 6, $n=65$). An independent t-test comparing the means of students' LSA-R scores in the lowest academic performance index group and the highest academic performance index group found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the lowest academic performance index group and the highest academic performance index group also found no significant difference between the two groups of parents.

Students were then divided into three groups based on their GPAs. For comparison, the groups were the bottom 20% of GPAs ($n=18$, GPA ranged from .5 to 1.75), the top 20% of GPAs ($n=19$, GPA ranged from 3.8 to 4.0), and the group in between from 20% to 80% ($n=65$, GPAs ranged from 1.8 to 3.75). An independent t-test comparing the means of students' LSA-R scores in the lowest GPA group and the highest GPA group found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the lowest GPA group and the highest GPA group also found no significant difference between the two groups of parents.

The student sample was also divided into three groups based on Terra Nova scores. The groups were again the bottom 20% of Terra Nova scores ($n=17$, scores ranged from 1 to 12), the top 20% of scores ($n=19$, scores ranged from 71 to 98), and the

group in between the two at 20% to 80% ($n = 47$, scores ranged from 13 to 70). An independent t-test comparing the means of students' LSA-R scores in the lowest Terra Nova group and the highest Terra Nova group found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the lowest Terra Nova group and the highest Terra Nova group likewise found no significant difference between the two groups of parents.

Students were divided into three groups based on their number of school absences. Those students (20%, $n=18$) with the most absences had missed between 12 to 46 days of the last school year; those students with the least absences (20%, $n=18$) had 0 to 2 absences; and the middle group had 3 to 10 absences. An independent t-test comparing the means of students' LSA-R scores in the group with the lowest number of absences and the group with the highest number of absences found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the group with the lowest number of absences and the group with the highest number of absences found no significant difference between the two groups of parents.

Self-Management and Health

A health index was calculated (see "Procedures" section in the "Method" chapter for calculation process) on each student from the health parameters assessed. The health index ranged from 6 to 14 points and was normally distributed (Figure 7), with a skewness statistic of $-.58$ and a kurtosis statistic of $-.23$. Pearson correlations between both parents'/guardians' self-management scores (LSA-R) and students' self-management scores (LSA-R) and the calculated health index revealed, however, no significant

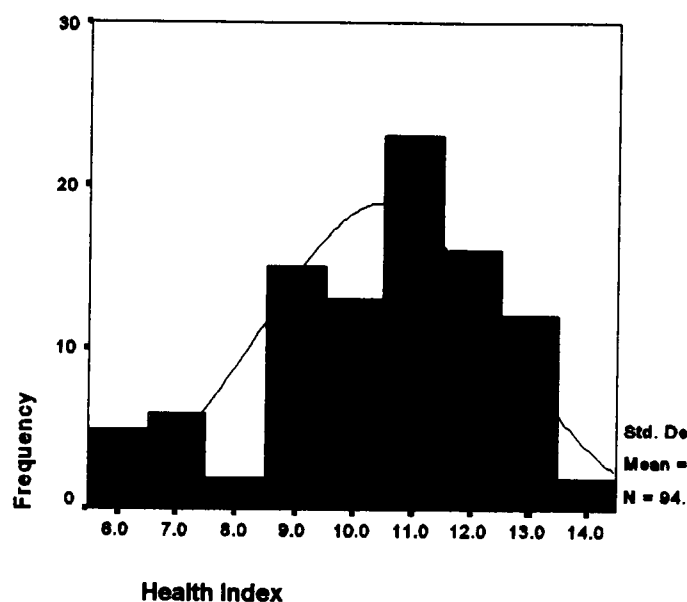


Figure 7

Health Index: Distribution of Data

correlation between the health index and self-management scores. Analysis of health variables individually revealed data outside of a normal distribution. A correlation of both parents'/guardians' and students' LSA-R scores with blood pressure, diet, emergency room (ER) visits, health care office visits, perception of health, activity and body mass index (BMI) revealed no significant relationships (Kendall's Tau, $p > .01$) between the health variables and self-management scores. Figure 8 provides the distribution of the students' BMI (at 13 years of age, a BMI of ≥ 22 put the child at high risk for being overweight or is overweight; see Appendix F), nutritional intake (recommended intake between 15 and 24 servings per day; see Appendix I), and activity level (norms reported by J. Harrell with a sample size of 29, range was 0 to 423, mean was 107.46, and standard

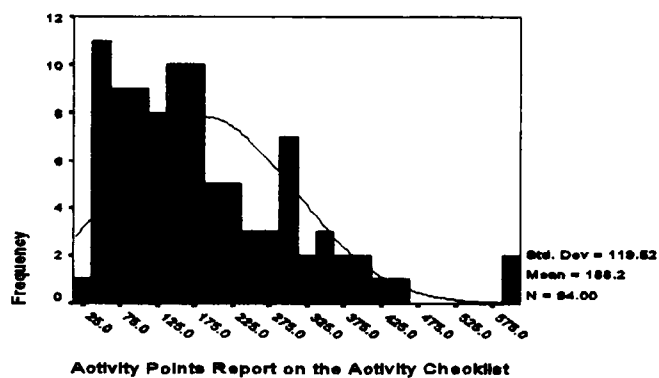
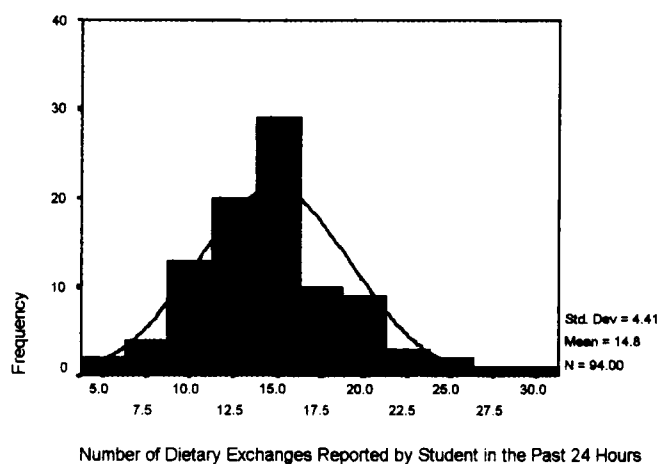
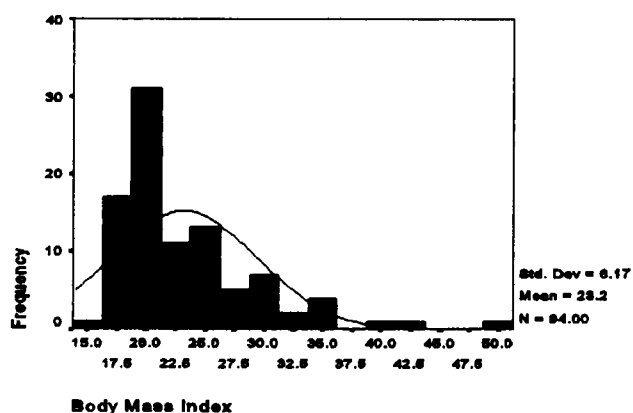


Figure 8

Distribution of Students' BMI, Nutritional Intake, and Activity Level

deviation was 42.12)

The student sample was then divided into groups based on health variables to further analyze the relationship between parents'/guardians' and students' self-management scores and health. The sample was first divided into three groups based on health indexes. The lowest health indexes of 6 to 8 (13.8%, n=13) was one group, the highest health indexes of 13 to 14 points (14.9%, n=14) another group, and health indexes ranging from 9 to 12 points (71.3%, n=65) the third group. An independent t-test comparing the means of students' LSA-R scores in the lowest health index group and the highest health index group found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the lowest health index group and the highest health index group found no significant difference between the two groups of parents.

The students were then divided into two groups based on ER visits. The first group (89.2%, n=83) had 0 to 1 ER visits in the previous year and group two had 2 to 5 (10.8%, n=10) visits last year. An independent t-test comparing the means of students' LSA-R scores in the two groups found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the two groups also found no significant difference between the two groups of parents.

The students were also divided into two groups based on health care office visits. The first group had 0 to 2 visits this past year (85.6%, n=75) and the second group had 3 to 10 visits this past year (14.4%, n=13). An independent t-test comparing the means of students' LSA-R scores in the two groups found no significant difference between the two

groups of students. An independent t-test comparing the means of parents' LSA-R scores in the two groups likewise found no significant difference.

The students were also divided into groups based on nutritional intake. One group had less than 16 of the recommended 16 servings per day (based on the food pyramid) and the other group had 16 to 29 servings as reported by the student in the 24 hour nutritional recall. An independent t-test comparing the means of students' LSA-R scores in the two groups found no significant difference between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the two groups found a significant ($p < .01$) difference between the two groups of parents. Those students who ate 16-29 of the recommended servings per day ($n=29$) had parents whose LSA-R mean score was 39.41. Those students who ate <16 servings per day ($n=63$) had parents whose LSA-R mean score was 46.25.

Although not an original focus of this study, an independent t-test comparing the students' LSA-R means in the 'ate breakfast' group ($n=67$, LSA-R mean = 38.05) and the 'did not eat breakfast' group ($n=27$, LSA-R mean = 43.51) found a significant difference ($p < .05$) between the two groups of students. An independent t-test comparing the means of parents' LSA-R scores in the 'ate breakfast' group (mean= 43.23) and the 'did not eat breakfast' group (mean= 46.19) found no significant difference between the two groups of parents.

The student sample was also divided into two groups based on the percentage of fat intake calculated from the 24 hour nutritional recall. The first group had a fat intake of $<30\%$ (56.4%, $n= 62$) and the second group had a fat intake of $>30\%$ (43.6, $n=32$). An

independent t-test comparing the means of students' LSA-R scores in the two groups found no significant difference. An independent t-test comparing the means of parents' LSA-R scores in the two groups also found no significant difference.

The student group was also divided into activity levels. The first group was the lowest 20% of the students' reported activity levels (point range from 34-76, n=19), the next group was the highest 20% of the students' reported activity levels (point range from 294-593, n=19), and the last group was the group in the middle (point range from 85-290, n=56). An independent t-test comparing the means of students' LSA-R scores in the two extreme groups found no significant difference between the highest activity level group and the lowest activity level group of students. An independent t-test comparing the means of parents' LSA-R scores in the highest and lowest activity level groups found no significant difference between the two groups of parents.

The student group was also divided into two groups by body mass index. Those students' whose BMI was >95% for age and sex constituted one group and those students whose BMI's were <95% for age and sex constituted another group. An independent t-test comparing the means of students' LSA-R scores in each of the two groups revealed no significant difference in the means of the LSA-R scores of the two groups. An independent t-test comparing the LSA-R score means of parents/guardians of the students in these two groups revealed no significant difference in the LSA-R means between the parents of students whose BMI's were >95% and those of the students who were <95% for age and sex.

Reevaluation of the LSA-R Scores with a Marlowe-Crowne Score of 6

In order to validate the researcher's decision to include all the LSA-R scores in data analysis, a re-analysis of the data was completed excluding the LSA-Rs of those students and parents/guardians with a Marlowe-Crowne score of 6. Again, no significant correlations were identified between the self-management scores (LSA-R) of either students or parents/guardians and grade point average (GPA) or percentile ranking on the Terra Nova achievement tests ($n=60$) of the students. The same significant correlations between GPA, percentile ranking on the Terra Nova achievement tests, and the number of student absences emerged. Grade point average correlated negatively ($p<.01$) with the number of school absences at $-.25$ and positively ($p<.01$) with the percentile ranking on the Terra Nova achievement tests at $.44$. The percentile ranking on the Terra Nova achievement tests, however, did not correlate significantly with the number of school absences.

Pearson correlations between both parents'/guardians' self-management scores (LSA-R) and students' self-management scores (LSA-R) and the calculated health index again revealed ($n=68$) no significant correlation between the health index and self-management scores. A correlation of both parents'/guardians' and students' LSA-R scores with student's blood pressure, diet, emergency room (ER) visits, health care office visits, perception of health, activity and body mass index (BMI) revealed no significant relationships (Kendall's Tau, $p>.05$) between the health variables and self-management scores. Thus both data sets, those with Marlowe-Crowne scores < 6 and those $=6$, yielded similar results. Utilization of all the parent/guardian and student pairs for data analysis,

therefore, was justified and continues in the multiple regression analysis below.

Multiple Regression Analysis of Self-Management, Academic

Performance, and Health Variables

When the criterion variable was students' self-management scores and the predictor variables were parent/guardian self-management scores, the rating of the family's money problems, parent/guardian educational level, GPA, Terra Nova scores, school absences, and health index, all variables except parents'/guardians' self-management scores were eliminated in the step-wise multiple regression. Consistent with the correlational analysis, the regression analysis reaffirms that variables other than the parents'/guardians' self-management score were insignificant contributors to students' self-management score variance. The regression equation for predicting a student's LSA-R score is $x = 27.76 + .27(y)$, where y is the parent's/guardian's LSA-R score. The standard error in the equation is .09. However, the data were evaluated for outliers and four of the five outliers previously identified had standard residual values >2 or <-2 . After these four outliers were omitted from the analysis, the regression equation for predicting a student's LSA-R score is $x = 23.02 + .38(y)$, where y is the parent's/guardian's LSA-R score. The standard error in this equation is .07.

Academic Performance

Parent/guardian educational level and the family's financial status have been previously reported as positively correlated with a student's academic success (Melby & Conger, 1996). Therefore, when GPA, Terra Nova scores, and school absences were criterion variables, parent/guardian educational level and the report of the family's

financial problems were entered into the step-wise multiple regression as predictor variables prior to the students' LSA-R scores or parents'/guardians' LSA-R scores. As evidenced by the large F value and the essential stable regression sum of squares and residual (error) sum of squares, self management scores of parents/guardians and students had little more explanatory power than the variables of parent/guardian educational level and the report of the family's financial problems on any of the academic performance variables. (The ANOVA tables for each regression analysis are presented in Appendix P.)

GPA was first used as the criterion variable with students' LSA-R scores included in the regression analysis. In this analysis, 3.1% of the variance in GPA was explained by parent/guardian educational level; 7.6% of the variance by parent/guardian educational level and the rating of the family's money problems; and 8.6% of the variance by parent/guardian educational level, the rating of the family's money problems, and the student's LSA-R score ($F_{3, 85} = 2.68, p=.052$). GPA was next used as the criterion variable with parents'/guardians' LSA-R scores included in the regression analysis. In this analysis, 3.3% of the variance in GPA was explained by parent/guardian educational level; 7.2% of the variance by parent/guardian educational level and the rating of the family's money problems; and 8.5% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score ($F_{3, 83} = 2.59, p=.06$).

The percentile ranking on the Terra Nova achievement tests was used as the next criterion variable with students' LSA-R scores included in the regression analysis. In this analysis, 7.2% of the variance of achievement test scores was explained by parent/guardian educational level; 10.7% of the variance by parent/guardian educational level and the

rating of the family's money problems; and 10.7% of the variance by parent/guardian educational level, the rating of the family's money problems, and the student's LSA-R score ($F_{3, 79} = 3.15, p=.03$). When percentile ranking on the Terra Nova achievement tests was used again as the criterion variable and parents'/guardian's LSA-R scores were entered into the regression analysis, 6.8% of the variance of the achievement test scores was explained by parent/guardian educational level; 10.2% of the variance by parent/guardian educational level and the rating of the family's money problems; and 10.2% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score ($F_{3, 77} = 2.91, p=.04$).

The number of student absences last school year was used as the final criterion variable for academic performance with students' LSA-R scores included in the regression analysis. In this analysis, 0.1% of the variance in absences was explained by parent/guardian educational level; 6.1% of the variance by parent/guardian educational level and the rating of the family's money problems; and 8.6% of the variance by parent/guardian educational level, the rating of the family's money problems, and the student's LSA-R score ($F_{3, 79} = 2.48, p=.07$). The number of student absences was next used as the criterion variable with parent's/guardians' LSA-R included in the regression analysis. In this analysis, 0.1% of the variance in absences was explained by parent/guardian educational level; 7.3% of the variance by parent/guardian educational level and the rating of the family's money problems; and 7.8% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score ($F_{3, 77} = 2.16, p=.10$).

All independent variables in the regression analysis of academic performance were screened for outliers in the data, which could exert more influence on the regression line than other variables. All independent variable cases had centered leverage values of $< .2$, which alleviated such a concern. When the number of school absences for the last year was used as the criterion variable in the regression analysis, two outliers demonstrated standard residual values of 4.69 and 3.23, with days absent numbering 46 and 40, respectively. These two cases were eliminated from the analysis as significant outliers and, therefore, $n=82$ instead of 84 when student LSA-R scores was the predictor variable and $n=80$ instead of 82 when parental LSA-R scores was the predictor variable.

Health

The health index and specific health variables were utilized as criterion variables in multiple regression analysis. When the health index, number of dietary exchanges, BMI, activity points, and ER visits were criterion variables, parent/guardian educational level, report of family's financial problems, parents'/guardians' LSA-R scores, and students' LSA-R scores were predictor variables in the hierarchical step-wise multiple regression. Both parents' and students' LSA-R scores were utilized in the same regression analysis of health variables, because several of the health measures relied exclusively on parents, for example ER visits, or was a joint effort by both student and parent, for example nutritional intake, which was not necessarily the case for the student's academic performance.

Self-management scores of parents/guardians and students had little more explanatory power than the variables of parental educational level and the report of the family's financial problems on any of the health variables. This is evidenced again by the

small F value and the essential stable regression sum of squares and residual (error) sum of squares. (The ANOVA tables for each regression analysis are presented in Appendix P.)

When the health index was the criterion variable, 0.7% of the variance in the index was explained by parent/guardian educational level; 1.0% of the variance by parent/guardian educational level and the rating of the family's money problems; 1.4% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score; and 1.6% of the variance by parent/guardian educational level, the rating of the family's money problems, the parent's/guardian's LSA-R score, and the student's LSA-R score ($F_{4,85} = 3.5, p=.85$).

When the number of dietary exchanges reported by the student in the past 24 hours was the criterion variable, 0.1% of the variance was explained by parent/guardian educational level; 0.1% of the variance by parent/guardian educational level and the rating of the family's money problems; 7.7% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score; and 10.9% of the variance by parent/guardian educational level, the rating of the family's money problems, the parent's/guardian's LSA-R score, and the student's LSA-R score ($F_{4,85} = 2.59, p=.04$).

When the student's body mass index was the criterion variable, 1.8% of the variance in BMI was explained by parent/guardian educational level; 2.7% of the variance by parent/guardian educational level and the rating of the family's money problems; 4.6% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score; and 6.3% of the variance by

parent/guardian educational level, the rating of the family's money problems, the parent's/guardian's LSA-R score, and the student's LSA-R score ($F_{4, 85} = 1.43, p=.23$).

The regression analysis revealed that when the number of times the student had been seen in the ER this year was the criterion variable, 0.2% of the variance in the number of visits was explained by parent/guardian educational level; 6.2% of the variance by parent/guardian educational level and the rating of the family's money problems; 7.4% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score; and 7.5% of the variance by parent/guardian educational level, the rating of the family's money problems, the parent's/guardian's LSA-R score, and the student's LSA-R score ($F_{4, 85} = 1.73, p=.15$).

When the number of activity points reported on the Physical Activity Checklist was the criterion variable, 1.5% of the variance in activity points was explained by parent/guardian educational level; 2.7% of the variance by parent/guardian educational level and the rating of the family's money problems; 3.3% of the variance by parent/guardian educational level, the rating of the family's money problems, and the parent's/guardian's LSA-R score; and 5.2% of the variance by parent/guardian educational level, the rating of the family's money problems, the parent's/guardian's LSA-R score, and the student's LSA-R score ($F_{4, 85} = 1.16, p=.33$).

Although not the focus of this study, correlations between health and academic performance have been reported in the literature. However, there was no significant correlation between the health index and the academic performance index in the sample ($n=83$). Three multiple step-wise regression analyses were done with the criterion

variables being the academic performance variables: GPA in the first analysis, Terra Nova scores in the second, and the number of school absences in the third. Parent/guardian education level, rating of the family's money problems, and the health index were the predictor variables and entered into the analysis in the order described. In all three analyses there was no additional explanatory power with the health index than from the first two variables.

Chapter 4

Discussion and Implications

The investigation describes the relationship between parents'/guardians' self management skills and their children's self-management skills, academic performance, and health. There were, however, few significant findings connecting self-management (either the parent's/guardian's or child's) with the child's academic performance and health. The most significant finding of the study was the positive correlation between the parent's/guardian's self-management and their child's self-management. Additionally, the utilization of the self-management inventory with an adolescent population provides a significant contribution to the literature as its validity and reliability had not been evaluated with this younger population prior to this study.

The Lifestyle Approaches (LSA) inventory (Williams et al., 1992), a comprehensive self-management assessment tool that had been correlated with a variety of physical and mental health measures, was proposed for this study. The LSA, however, presented some complicated phrasing and words that could have been problematic for some adults but especially for the adolescents proposed for the study. Therefore, the LSA was revised, and a volunteer adult sample (N=30) was used to compare responses to the revised LSA with those to the original LSA. The Lifestyle Approaches - Revised (LSA-R) scores were found to correlate at .90 with Lifestyle Approaches (LSA) scores. Thus, in this project the LSA-R was administered to the target sample to assess their self-management skills.

The LSA-R relied on the validity demonstrated on the LSA. The very high

correlation between the two instruments and the exact mean for both inventories (46.77) in the volunteer sample supported the LSA-R's validity. The significant correlation ($p < .01$) between the scores on the LSA-R in the initial inventories and the ones given 2 to 4 weeks later (parents/guardians, $n=23$, .82; students, $n=50$, .83) provides evidence as to the instrument's reliability over time with both adults and adolescents.

Based on the results of this study, the LSA-R appears to be a comprehensible tool to use with this age group. The researcher was present during the completion of all the inventories. Only one student had obvious difficulties completing it. She was a special education student of low ability and the researcher assisted her by reading the questions aloud. However, even this student would have been able to complete the task given ample time. Three students asked the meaning of the word "resentful" and it was explained to them. "Resentful" is a word on one of the Marlowe-Crowne questions and not an item on the LSA-R inventory. The mean LSA-R score, however, for this sample of adolescents was lower and significantly ($p < .01$) different than the means for the adults, both the parents'/guardians' and the volunteer group's (Table 5). Additionally, students' LSA-R Factors 1 (Performance Focus and Efficiency) and 2 (Goal Directedness) scores were lower and significantly ($p < .01$) different from the parents'/guardians' LSA-R factor scores. Students' Factors 3 (Timeliness of Task Completion) and 4 (Organization of Physical Space) scores did not produce significantly different means from the parents'/guardians' group.

This study demonstrated that children and parents/guardians have self-management (LSA-R) scores that correlate (.30) significantly at the .01 level. As discussed in the

introduction, self-management skills are presumably learned from significant role models. Learning by indirect instruction occurs through observation and modeling according to Bandura's (1977) theory of social learning. The significant positive correlation between parents'/guardians' self-management skills and those of their own child's supports Bandura's learning theory. For those parents/guardians and student pairs whose self-management scores have wide differences, other theories about self-management behaviors may emerge.

The five student outliers identified in this sample have LSA-R score differences of 23, 25, 30, -36, and -48 between themselves and their parent/guardian. For three (positive differences) of the outliers scores, the students have high LSA-R scores and their parents/guardians have low LSA-R scores. As the nurse in the school clinic, the researcher knows the students and has frequent contact with them. One of these students (mean difference = 30) was succeeding academically (GPA = 4.0) beyond the average student. She had purposefully set out to do well in school, and organizational support from home was not necessary for her academic pursuits. Her academic success may be due, in part, to her well-developed self-management abilities (LSA-R score = 57) and her previous experience (Terra Nova Score in 65th percentile). She is known for being organized, motivated, and studious. Another one of these outliers (mean difference is 25) is a student with a chronic illness who was hospitalized for 10 days due to a flare-up of the condition just prior to the study. Hospitalization of a family member changes the normal routines in the family, may cause some disorganization, and may have been an influencing factor on the parent's/guardian's lower LSA-R score. In order to complete the missed academic

assignments and be compliant with the recommended therapeutic regime for the illness, the student needed to be self-managed and this may have been an influencing factor in his high LSA-R score. Yet, for this student, academic success eludes him (GPA = 1.0 and Terra Nova score in the 20th percentile). The other student with a high LSA-R score (mean difference = 23) also struggles academically (GPA = 1.4 and Terra Nova score in the 32nd percentile). All three of these students had Marlowe-Crowne scores of 5 on their inventory, indicating a strong tendency to give socially approved answers.

The two other students (negative differences) have low LSA-R scores and their parents/guardians have high scores. Both of these students have organized parents who appear to organize them. One student seems to have other interests outside academia and his academic performance reflects such (GPA = 2.6). The other student is highly successful (GPA = 4.0), yet both scored in the mid 70th percentile on the Terra Nova Achievement Tests (75th percentile and 78th percentile, respectively).

The only significant relationships between self-management and health were found in the nutritional intake of the students, but these differences were in the negative direction. There were significant ($p < .01$) differences between the means of the LSA-R scores of parents/guardians and the number of food servings (< 16 servings/day and ≥ 16 servings/day) eaten by students in the past 24 hours. There were also significant ($p < .05$) differences between the means of the LSA-R scores of students who ate breakfast and those who did not. One would anticipate that the higher the score on the LSA-R, the better the nutritional measures. In actuality, the reverse was found. The mean scores of parents/guardians on the LSA-R were higher in the students who ate less than 16 servings

per day, and the mean scores of students on the LSA-R were higher in the students who did not eat breakfast. One hypothesis that might account for parents/guardians having high LSA-R scores and students who do not eat breakfast is that those students are asserting their own control, in a highly structured environment. Those students who do not eat breakfast may be structuring their own environment and are self-managed in their attempts to lose weight by skipping meals, especially in light of the fact there were 20% in the at-risk-for-overweight category and 20% in the overweight category. These significant differences in the means of the two groups, however, were not supported by the multiple regression analysis of the nutritional intake; LSA-R scores had little impact on the regression equation (Appendix P) when the 24-hour dietary recall was the dependent variable. No other health variables were significantly related to self-management.

Although this project supports Bandura's social learning theory, not all self-management behaviors, or the lack thereof, are explained by this theory. Self-management behavior is presumably volitional; individuals may choose to utilize those skills to the fullest or minimally. Although the skills reflected in the self-management inventory would appear to be conducive to better academic performance and health, no significant linkage was obtained between self-management and either academic performance or health measures.

A fundamental question about the findings of this study is why the self-management measures were not linked to academic and health variables. One major problem area may be the self-report nature of the self-management inventories. When utilizing self-report inventories, one is concerned about the possibility that participants respond primarily with socially-acceptable answers. This study offered some protection

against this concern with the six Marlowe-Crowne questions, which attempted to ascertain whether study participants answered the inventories with the most socially acceptable answers. Nonetheless, 68% of the students obtained high scores (4-6) on the six Marlowe-Crowne social desirability items (Table 7). The parents/guardians scored even higher on the Marlowe-Crowne items of the LSA-R, with 74% obtaining high scores (73% on the LSA). In the adult volunteers, 70% had high scores on the Marlowe-Crowne items of the LSA-R (73% on the LSA). Reevaluation of the results after eliminating participants with the highest (6) scores did not, however, change the results when the data were analyzed from all the participants. Nonetheless, the high Marlowe-Crowne scores raise concerns about the credibility of the participants' responses on the self-report inventories.

Another concern about self-report studies is that participants may not accurately assess their own behaviors. It may be that poor self-managers cannot clearly assess their own self-management skills. Or, good self-managers may underestimate the abilities they possess. Additionally, it is difficult to determine if the participant is reporting the actual behavior or simply a behavioral preference. On the LSA-R, for instance, the statement "I like to keep things in their place" may be answered positively by the participant who actually has a tidy living space or one who likes things in their place but may not be able to meet that standard.

In self-report inventories the researcher relies on the participant to report his own behavior, but in observational studies the researcher checks and verifies that the behavior is actually exhibited. Whether such observations of specific self-management skills are more valid than self-report measures, though, is questionable. There are some persons

who are active, organized, and directed but seem to accomplish little, while others who appear disorganized are actually precise and efficient and accomplish much. Moreover, self-management techniques utilize cognitive domains (e.g., positive self-talk and perceived self-efficacy) as well as behavioral domains. Therefore, a more accurate measure of self-management skills may be an inventory that combines self-report with an outside observer's observations.

While other self-management assessment tools recognize only contributions of cognition to self-management, the LSA attempts to balance the cognitive and behavioral contributions to self-management. Cognitive contributions to self-management skills are important, but are measurable only by participant self-report, whether that be written (self-report inventory) or oral (in a directed interview with examples of the answers provided). Evidence of self-management skills in behavior is actually the result of the thought processes (e.g., goal planning and prioritization) and may be observable. However, observational assessment of self-management behaviors based on the LSA by a researcher would only be possible with Factor 4 (Organization of Physical Space) and the researcher would have to observe participants in their home or work environment. In order for Factor 3 (Timeliness of Task Completion) to be observational data, the researcher would have to work with the participant for a length of time to verify such behaviors. The two other factors (Performance Focus and Efficiency and Goal Directedness) are cognitive contributions to self-management and must rely upon self-report for assessment.

This study assumes, which may be another concern for the study of self-management, that there are measurable behavioral outcomes of self-management

practices. Behaviors that reflect self-management practices are not necessarily the result of self-management practices themselves (e.g., goal planning and positive health practices) but from other reasons, such as doctor's orders. One would assume, too, that positive outcomes would be, in part, a result of general self-management practices but, in fact, that may not be the case. This assumption requires that self-management skills are transferred from one specific area in life (from a neat office) to another (to positive eating habits). If the skills are transferable from one area of life to another, self-management skills may be a set of strategies available for use in many situations and may contribute to success when utilized. If this is the case, self-management might then be modified from a skill to a trait, a personal attribute or quality. If self-management skills are not transferable into many areas, then self-management skills are domain specific and contingent upon the situation or environment.

A related but different concern about the transferability of self-management practices is the generic nature of self-management as defined in this study. The LSA-R inventory is a general measure of self-management. The generic nature of the self-management inventory may contribute to difficulties with self-assessment. A general measure of self-management with conceptual items may be more difficult to answer than a self-management measure requesting the report of explicit behaviors. Additionally, the more generic, non-specific, and possibly abstract the inventory items, the more difficult the utilization and transferability of such skills into every day life. Moreover, the LSA-R may be too general of an assessment tool to demonstrate an impact on academic performance or health practices by a young adolescent. It may be that enhancement of adolescents'

academic performance requires more domain specific self-management behaviors, such as in writing down homework assignments or studying in the same place every night. More specific health self-management behaviors may also need to be targeted (e.g., eating 3 to 5 vegetables servings per day or 4 to 6 servings of fruit per day) to demonstrate an impact on health status by self-management practices.

Another reason that there may have been a limited relationship between self-management and academic performance or health for the adolescent is that such skills are not necessary components for positive outcomes in those areas at this age. Students this age are just beginning to have their own calendars, earn their own money for specific projects, and set specific goals. These skills are just beginning to be cultivated in early adolescence. The full development and impact of such skills may not occur for several years. Although the LSA-R demonstrated test-retest reliability in the adolescents, it may be that there is an increase in the adolescent's utilization of these skills with age. The adolescents' significantly ($p < .01$) lower scores than the adults support the notion that the full acquisition of these skills is possibly a developmental process.

It is also possible that confounding variables may have neutralized the linkage between self-management skills and academic performance and health measures. Controlling for the known influences on academic performance and health was attempted by entering financial status and parent/guardian educational level into the regression equation first. Of interest, though, is that the variance was minimally explained by these two variables when any of the academic performance or health variables were criterion variables. The regression equation variances explained by the reported financial difficulties

of the family and the parent/guardian educational level ranged from 0.1 to 10.7. However, other variables may also be contributing to the academic performance and health measures. Examples of other such variables include recent changes in the home (e.g., relocation, divorce, or death), environmental or cultural factors (e.g., role models, violence), and genetic predisposition toward health problems. These and other factors may be overriding the influence of self-management in outcome studies such as this one.

Furthermore, the outcome measures of self-management practices for these adolescents may not become evident for several years. Most children ages 11 to 13 are still in school and have not dropped out or lost complete interest in academic pursuits. And, most children ages 11 to 13 are healthy and the consequences of poor health habits may not be evident for a decade.

The LSA's value may be in personal self-assessment, assisting one in analyzing one's own behaviors, and not in its predictive nature of one's performance. The LSA's concurrent validity was based on other related self-report inventories and not on specific behavioral outcomes and, therefore, may not be useful as such. 'Self-management' may only be another term that exists to rationalize some persons' success and others' failures. Just as 'motivation' and 'free will' are termed 'explanatory fictions' by the behaviorists, so may self-management.

For many of the reasons stated above, and possibly others, self-management was not linked to academic performance and health variables in this study. Therefore, other research needs to be done on self-management in general, self-management in specific areas, and its relationship to outcomes, if applicable.

Future Research

Continued testing of the LSA-R with different populations is needed for norms to be established. This is especially true in regards to adolescents, given the significant difference in the means of the LSA-R scores of the adolescents and adults in this sample. Therefore, testing on different populations should include other adolescents, children (ages 10 and older), and various adult groups (e.g., employed adults, non-employed adults, retired adults, young parents, single parents, older first-time parents, grandparents, athletes, non-athletes, regular church attenders, non-attenders of church, artists, designers, engineers, educators, and nurses). By having the inventory completed by a variety of subgroups, one could ascertain if certain populations were more or less self-managed. The LSA-R may also have better predictive/concurrent validity with some populations than with others.

Students in the 7th grade may have GPAs that are sensitive to domain-specific self-management behaviors. Those self-management behaviors need to be identified, however, and compared with the self-management behaviors on the LSA-R. Examples of such specific self-management behaviors that may influence academic performance have been reported by Zimmerman and Pons (1986). The reported strategies identified by the students (self-report) in this study were goal setting, environmental restructuring, applying self-consequences (reward and punishment), self-evaluating, organizing and transforming information, seeking and selecting information, using rehearsal and mnemonic strategies, seeking social assistance, and reviewing previously compiled records. These strategies, though, were categorized by the researcher from the interview with students. Students did

not utilize the same terminology previously listed; those theoretical concepts were identified through examples and codified by the researcher. Therefore, intervention studies that researched the application of the self-management skills previously identified and labeled from student usage would be beneficial. Other self-management strategies are yet to be identified and may also be helpful, such as completing a task or attendance.

Another technique for identifying self-management strategies is to study those students on the extremes of performance, those who are excelling and those who are failing in their academic endeavors. After attempting to control for known and possible confounding factors, researchers should seek to determine how the two groups differ in the management of their time and resources. Students on the extremes of health could also be observed for identification of differences in the groups' behaviors.

Different types of intervention curriculums based on specific self-management behaviors could then be developed. Both long-term and short-term intervention studies, with the intervention group matched with a control group for grades and achievement test scores, could also be designed. Comparable intervention programs could be generated for designated health concerns, especially in regards to nutritional intake, for which specific self-management behaviors may be helpful.

Long-term follow up of the students in this study would provide additional information about the students' academic performance, health, stability of the LSA-R over a longer period of time, and its relationship to health and academic measures. With the above suggestions for future research, self-management's contribution to academic performance, health, and other areas of our lives could be evaluated more thoroughly.

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APPENDICES

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APPENDIX A
LIFESTYLE APPROACHES FACTORS AND SCORING

Lifestyle Approaches (LSA)

Use the following scale in responding to the items:

- (A) Very different from me
- (B) Somewhat different from me
- (C) Uncertain
- (D) Somewhat similar to me
- (E) Very similar to me

Simply indicate your response to each item by placing the appropriate letter in the blank before that item.

Factor 1 (Performance Focus and Efficiency)

___2. When confronted with many different things to do, I have difficulty deciding what is most important to do. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___5. I have difficulty judging how long it will take me to complete a task. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___10. I have difficulty matching various tasks with my energy level. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___15. When I deviate from my selected goal, I have a hard time getting back on track. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___ **FACTOR 1 TOTAL**

Factor 2 (Goal-directedness)

___1. In most situations, I have a clear sense of what behaviors would be right or wrong for me. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___7. I have a clear sense of what I want to experience in my life. [Positively scored: A=0, B=1,

C=2, D=3, E=4]

___9. I'm confused as to the kind of personal qualities I want to develop in my life. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___12. I have little idea as to what I want to achieve in my life. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___ **FACTOR 2 TOTAL**

Factor 3 (Timeliness of Task Accomplishment)

___4. Once I decide what is most important to do at any given time, I start on that task right away. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___8. I complete tasks at the time I say I'm going to complete them. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___11. I subdivide big tasks into a series of smaller tasks. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___14. I complete major tasks well in advance of deadlines. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___ **FACTOR 3 TOTAL**

Factor 4 (Organization of Physical Space)

___6. I keep my work space well-organized. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___13. I actively work to make the place where I spend a lot of time more attractive. [Positively scored: A=0, B=1, C=2, D=3, E=4]

___16. My living space is quite messy. [Negatively scored: A=4, B=3, C=2, D=1, E=0]

___ **FACTOR 4 TOTAL**

___ **GRAND TOTAL OF FACTOR TOTALS (LSA SCORE)**

APPENDIX B

LIFESTYLE APPROACHES INVENTORY AND

LIFESTYLE APPROACHES INVENTORY-REVISED

Lifestyle Approaches (LSA)

Use the following scale in responding to the items:

- (A) Very different from me
- (B) Somewhat different from me
- (C) Uncertain
- (D) Somewhat similar to me
- (E) Very similar to me

Simply indicate your response to each item by placing the appropriate letter in the blank before that item.

- ___1. In most situations, I have a clear sense of what behaviors would be right or wrong for me.
- ___2. When confronted with many different things to do, I have difficulty deciding what is most important to do.
- ___3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.
- ___4. Once I decide what is most important to do at any given time, I start on that task right away.
- ___5. I have difficulty judging how long it will take me to complete a task.
- ___6. I keep my work space well-organized.
- ___7. I have a clear sense of what I want to experience in my life.

Lifestyle Approaches - Revised (LSA-R)

- (A) Like Me
- (B) Somewhat Like Me
- (C) I Do Not Know
- (D) Somewhat Different From Me
- (E) Not Like Me

Read the statement. Match one of the above (A, B, C, D, E) with the statements below.

- ___1. Most of the time I know what I should and should not do.
- ___2. When I have many things to do, I have trouble deciding what to do first.
- ___3. After deciding what to do, I often start doing something else.
- ___4. Once I decide what to do, I start on it right away.
- ___5. Things often take longer to finish than what I expect.
- ___6. I like to keep things in their place.
- ___7. I have a clear idea of what I want to do in my life.

___8. I complete tasks at the time I say I'm going to complete them.

___9. I'm confused as to the kind of personal qualities I want to develop in my life.

___10. I have difficulty matching various tasks with my energy level.

___11. I subdivide big tasks into a series of smaller tasks.

___12. I have little idea as to what I want to achieve in my life.

___13. I actively work to make the place where I spend a lot of time more attractive.

___14. I complete major tasks well in advance of deadlines.

___15. When I deviate from my selected goal, I have a hard time getting back on track.

___16. My living space is quite messy.

___8. I finish tasks by the time I say I will.

___9. I am not sure about the kind of person I want to be.

___10. I often wait to do difficult tasks until I am too tired.

___11. I divide big jobs into smaller jobs that I can finish.

___12. I have little idea as to what I want to achieve in my life.

___13. I try to make the place where I spend a lot of time look good.

___14. I finish big jobs ahead of time.

___15. If I get sidetracked from my goal, I have trouble getting back on track.

___16. Where I keep my things at home is quite messy.

APPENDIX C
LIFESTYLE APPROACHES INVENTORY
INCLUDING SOCIAL DESIRABILITY ITEMS FROM THE MARLOWE-CROWNE

Lifestyle Approaches (LSA)

Use the following scale in responding to the items:

- (A) Very different from me
- (B) Somewhat different from me
- (C) Uncertain
- (D) Somewhat similar to me
- (E) Very similar to me

Simply indicate your response to each item by placing the appropriate letter in the blank before that item.

- ___1. In most situations, I have a clear sense of what behaviors would be right or wrong for me.
- ___2. When confronted with many different things to do, I have difficulty deciding what is most important to do.
- ___3. After making a decision about what is most important to do at any given time, I easily get sidetracked from that activity.
- ___4. Once I decide what is most important to do at any given time, I start on that task right away.
- ___5. I have difficulty judging how long it will take me to complete a task.
- ___6. I keep my work space well-organized.
- ___7. I have a clear sense of what I want to experience in my life.
- ___8. I complete tasks at the time I say I'm going to complete them.
- ___9. I'm confused as to the kind of personal qualities I want to develop in my life.
- ___10. I have difficulty matching various tasks with my energy level.
- ___11. I subdivide big tasks into a series of smaller tasks.
- ___12. I have little idea as to what I want to achieve in my life.
- ___13. I actively work to make the place where I spend a lot of time more attractive.
- ___14. I complete major tasks well in advance of deadlines.
- ___15. When I deviate from my selected goal, I have a hard time getting back on track.
- ___16. My living space is quite messy.
- ___17. I never hesitate to go out of my way to help someone in trouble.
- ___18. I like to gossip at times.
- ___19. There have been times when I was quite jealous of the good fortune of others.
- ___20. I'm always willing to admit it when I make a mistake.
- ___21. When I don't know something I don't at all mind admitting it.
- ___22. I sometimes feel resentful when I don't get my way.

APPENDIX D

LIFESTYLE APPROACHES INVENTORY-REVISED

INCLUDING SOCIAL DESIRABILITY ITEMS FROM THE MARLOWE-CROWNE

Lifestyle Approaches - Revised (LSA-R)

- (A) Like Me**
- (B) Somewhat Like Me**
- (C) I Do Not Know**
- (D) Somewhat Different From Me**
- (E) Not Like Me**

Read the statement. Match one of the above (A, B, C, D, E) with the statements below.

- ___1. I divide big jobs into smaller jobs that I can finish.**
- ___2. I have little idea as to what I want to achieve in my life.**
- ___3. I try to make the place where I spend a lot of time at home look good.**
- ___4. I finish big jobs ahead of time.**
- ___5. If I get off track from my goal, I have trouble getting back on track.**
- ___6. Where I keep my things at home is quite messy.**
- ___7. I never hesitate to go out of my way to help someone in trouble.**
- ___8. I like to gossip at times.**
- ___9. There have been times when I was quite jealous of the good fortune of others.**
- ___10. I'm always willing to admit it when I make a mistake.**
- ___11. When I don't know something I don't at all mind admitting it.**
- ___12. I sometimes feel resentful when I don't get my way.**
- ___13. Most of the time I know what I should and should not do.**
- ___14. When I have many things to do, I have trouble deciding what to do first.**
- ___15. After deciding what to do, I often start doing something else.**
- ___16. Once I decide what to do, I start on it right away.**
- ___17. Things often take longer to finish than what I expect.**
- ___18. I like to keep things in their place.**
- ___19. I have a clear idea of what I want to do in my life.**
- ___20. I finish tasks by the time I say I will.**
- ___21. I am not sure about the kind of person I want to be.**
- ___22. I often wait to do difficult tasks until I am too tired.**

APPENDIX E

BODY MASS INDEX FOR SELECTED STATURES AND WEIGHT TABLE

Body Mass Index (BMI, in kg/m²) for Selected Statures and Weights

		Height m (in)																											
Weight kg (lb)																													
	1.24 (49)	1.27 (50)	1.30 (51)	1.32 (52)	1.35 (53)	1.37 (54)	1.40 (55)	1.42 (56)	1.45 (57)	1.47 (58)	1.50 (59)	1.52 (60)	1.55 (61)	1.57 (62)	1.60 (63)	1.63 (64)	1.65 (65)	1.68 (66)	1.70 (67)	1.73 (68)	1.75 (69)	1.78 (70)	1.80 (71)	1.83 (72)	1.85 (73)	1.88 (74)	1.90 (75)	1.93 (76)	
20 (45)	13	13	12	12	11	11	10	10	10	9	9	9	8																
23 (50)	15	14	13	13	12	12	12	11	11	10	10	10	9	9	9	9	8												
25 (55)	16	15	15	14	14	13	13	12	12	12	11	11	10	10	10	9	9	9											
27 (60)	18	17	16	16	15	15	14	13	13	13	12	12	11	11	11	10	10	10	9	9									
29 (65)	19	18	17	17	16	16	15	15	14	14	13	13	12	12	12	11	11	10	10	10	10								
32 (70)	21	20	19	18	17	17	16	16	15	15	14	14	13	13	12	12	12	11	11	11	10	10							
34 (75)	22	21	20	20	19	18	17	17	16	16	15	15	14	14	13	13	12	12	12	11	11	11	10						
36 (80)	24	22	21	21	20	19	19	18	17	17	16	16	15	15	14	14	13	13	13	12	12	11	11	11					
39 (85)	25	24	23	22	21	21	20	19	18	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12	11				
41 (90)	27	25	24	23	22	22	21	20	19	19	18	18	17	17	16	15	15	14	14	14	13	13	13	12	12	12			
43 (95)	28	27	25	25	24	23	22	21	20	20	19	19	18	17	17	16	16	15	15	14	14	14	13	13	13	12	12		
45 (100)	29	28	27	26	25	24	23	22	22	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13	13	13	12	
48 (105)	31	30	28	27	26	25	24	24	23	22	21	21	20	19	19	18	17	17	16	16	16	15	15	14	14	13	13	13	
50 (110)	32	31	30	29	27	27	25	25	24	23	22	22	21	20	19	19	18	18	17	17	16	16	15	15	15	14	14	13	
52 (115)	34	32	31	30	29	28	27	26	25	24	23	23	22	21	20	20	19	18	18	17	17	16	16	16	15	15	14	14	
54 (120)	35	34	32	31	30	29	28	27	26	25	24	24	23	22	21	20	20	19	19	18	18	17	17	16	16	15	15	15	
57 (125)	37	35	34	33	31	30	29	28	27	26	25	25	24	23	22	21	21	20	20	19	19	18	18	17	17	16	16	15	
59 (130)	38	37	35	34	32	31	30	29	28	27	26	26	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	16	
61 (135)	40	38	36	35	34	33	31	30	29	28	27	27	25	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	
64 (140)	41	39	38	36	35	34	32	31	30	29	28	27	26	26	25	24	23	22	22	21	21	20	20	19	19	18	18	17	
66 (145)	43	41	39	38	36	35	34	33	31	30	29	28	27	27	26	25	24	23	23	22	21	21	20	20	19	19	18	18	
68 (150)	44	42	40	39	37	36	35	34	32	31	30	29	28	28	27	26	25	24	24	23	22	21	21	20	20	19	19	18	
70 (155)	46	44	42	40	39	37	36	35	33	33	31	30	29	29	27	26	26	25	24	23	23	22	22	21	21	20	19	19	
73 (160)	47	45	43	42	40	39	37	36	35	34	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20	19	
77 (170)	50	48	46	44	42	41	39	38	37	36	34	33	32	31	30	29	28	27	27	26	25	24	24	23	23	22	21	21	
79 (175)	49	47	46	44	42	40	39	38	37	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	

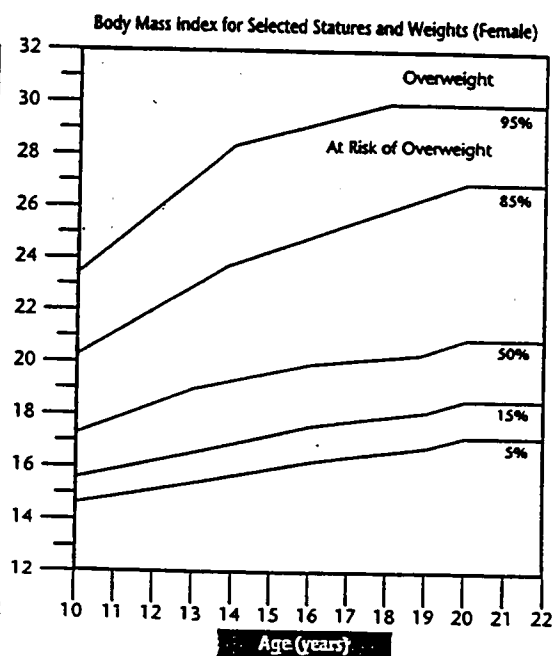
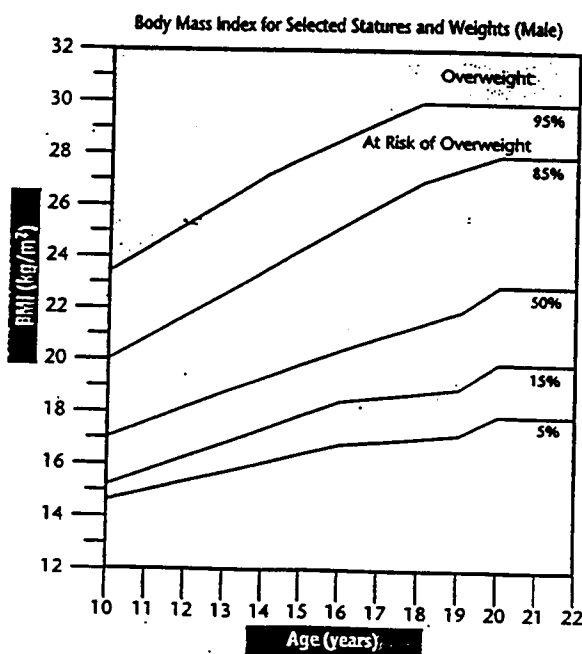
APPENDIX F
BODY MASS INDEX FOR AGE AND SEX

Body Mass Index

The Body Mass Index (BMI) is defined as weight (kg)/height (m)². It can be used to evaluate the appropriate range of body weight by comparing the adolescent's BMI to age-based and sex-specific national norms. BMI should not be calculated if the adolescent has disabilities that confound measurements of height or weight.

After the adolescent's height and weight are measured, the BMI can be calculated [weight (kg)/height (m)²] or

determined using the Body Mass Index for Selected Statures and Weights Table on the next page. Once the BMI is determined, use the appropriate chart below to determine whether the adolescent needs further evaluation or counseling regarding his or her weight.



APPENDIX G

NATIONAL BLOOD PRESSURE NORMS FOR AGE AND SEX

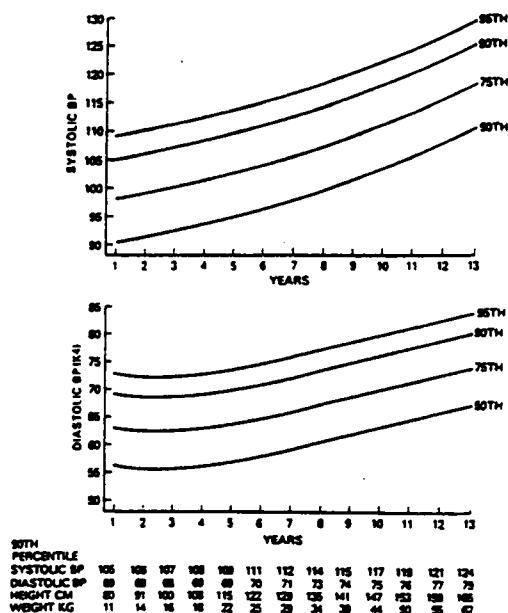


FIGURE 3-1-6
Age-specific percentiles of blood pressure (BP) measurements in boys, 1 to 13 years of age; Korotkoff phase IV (K4) used for diastolic BP. (Reproduced by permission of *Pediatrics*, Vol. 79, page 6, copyright 1987.)

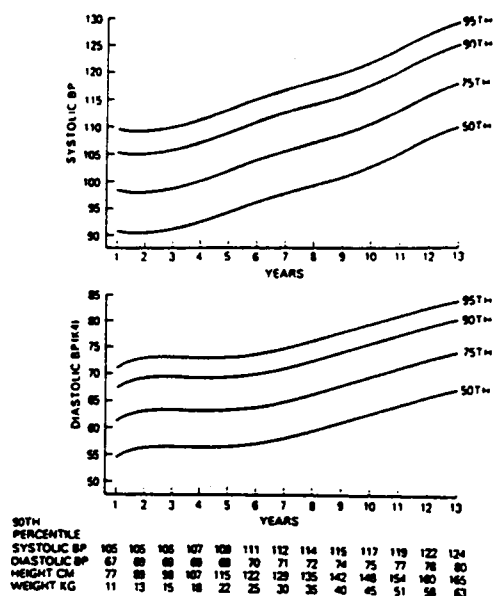


FIGURE 3-1-7
Age-specific percentiles of blood pressure (BP) measurements in girls, 1 to 13 years of age; Korotkoff phase IV (K4) used for diastolic BP. (Reproduced by permission of *Pediatrics*, Vol. 79, page 6, copyright 1987.)

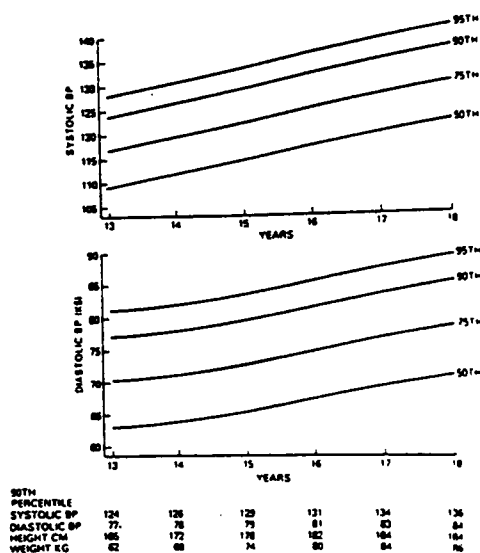


FIGURE 3-1-8
Age-specific percentiles of blood pressure (BP) measurements in boys, 13 to 18 years of age; Korotkoff phase V (K5) used for diastolic BP. (Reproduced by permission of *Pediatrics*, Vol. 79, page 6, copyright 1987.)

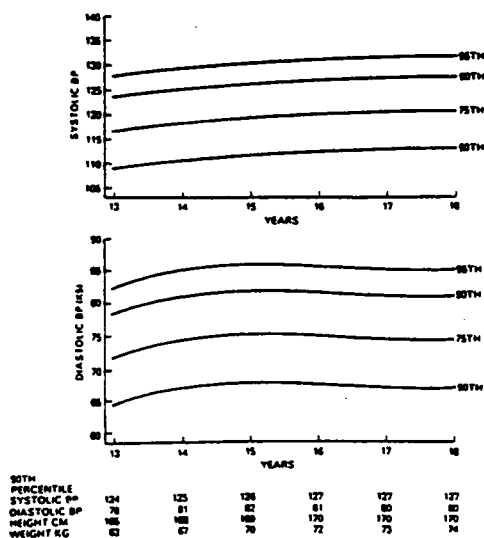


FIGURE 3-1-9
Age-specific percentiles of blood pressure (BP) measurement in girls, 13 to 18 years of age; Korotkoff phase V (K5) used for diastolic BP. (Reproduced by permission of *Pediatrics*, Vol. 79, page 7, copyright 1987.)

APPENDIX H
24 HOUR NUTRITIONAL RECALL

24 Hour Nutritional Recall

Write down everything you have eaten in the past 24 hours, including snacks.

Breakfast

Snack

Lunch

Snack

Dinner

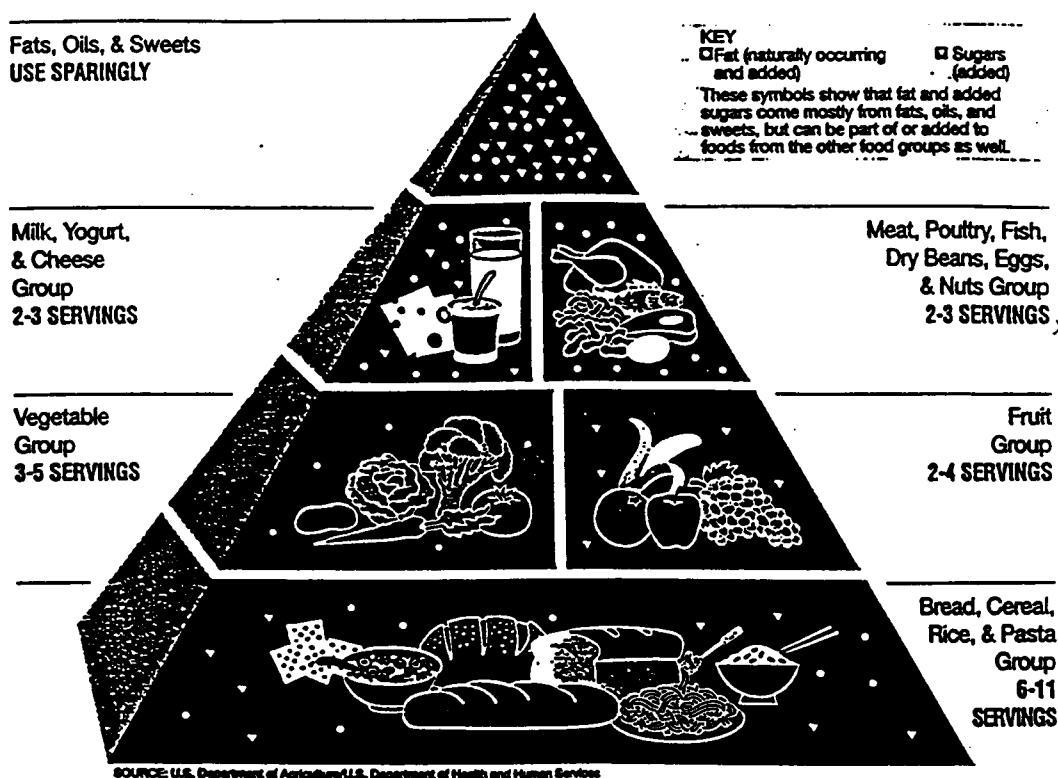
Snack

Thank You!

APPENDIX I
FOOD PYRAMID GUIDE

Food Guide Pyramid

A Guide to Daily Food Choices



SOURCE: U.S. Department of Agriculture/U.S. Department of Health and Human Services

Use the Food Guide Pyramid to help you eat better every day...the Dietary Guidelines way. Start with plenty of Breads, Cereals, Rice, and Pasta; Vegetables; and Fruits. Add two to three servings from the Milk group and two to three servings from the Meat group.

Each of these food groups provides some, but not all, of the nutrients you need. No one food group is more important than another — for good health you need them all. Go easy on fats, oils, and sweets, the foods in the small tip of the Pyramid.

To order a copy of "The Food Guide Pyramid" booklet, send a \$1.00 check or money order made out to the Superintendent of Documents to: Consumer Information Center, Department 159-Y, Pueblo, Colorado 81009.

U.S. Department of Agriculture, Human Nutrition Information Service, August 1992, Leaflet No. 572

How to Use The Daily Food Guide

What counts as one serving?

Breads, Cereals, Rice, and Pasta

1 slice of bread
1/2 cup of cooked rice or pasta
1/2 cup of cooked cereal
1 ounce of ready-to-eat cereal

Vegetables

1/2 cup of chopped raw or cooked vegetables
1 cup of leafy raw vegetables

Fruits

1 piece of fruit or melon wedge
3/4 cup of juice
1/2 cup of canned fruit
1/4 cup of dried fruit

Milk, Yogurt, and Cheese

1 cup of milk or yogurt
1-1/2 to 2 ounces of cheese

Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts

2-1/2 to 3 ounces of cooked lean meat, poultry, or fish
Count 1/2 cup of cooked beans, or 1 egg, or 2 tablespoons of peanut butter as 1 ounce of lean meat (about 1/3 serving)

Fats, Oils, and Sweets

LIMIT CALORIES FROM THESE
especially if you need to lose weight

The amount you eat may be more than one serving. For example, a dinner portion of spaghetti would count as two or three servings of pasta.

How many servings do you need each day?

	Women & some older adults	Children, teen girls, active women, most men	Teen boys & active men
Calorie level*	about 1,600	about 2,200	about 2,800
Bread group	6	8	11
Vegetable group	3	4	5
Fruit group	2	3	4
Milk group	**2-3	**2-3	**2-3
Meat group	2, for a total of 5 ounces	2, for a total of 6 ounces	3 for a total of 7 ounces

*These are the calorie levels if you choose lowfat, lean foods from the 5 major food groups and use foods from the fats, oils, and sweets group sparingly.

**Women who are pregnant or breastfeeding, teenagers, and young adults to age 24 need 3 servings.

A Closer Look at Fat and Added Sugars

The small tip of the Pyramid shows fats, oils, and sweets. These are foods such as salad dressings, cream, butter, margarine, sugars, soft drinks, candies, and sweet desserts. Alcoholic beverages are also part of this group. These foods provide calories but few vitamins and minerals. Most people should go easy on foods from this group.



Some fat or sugar symbols are shown in the other food groups. That's to remind you that some foods in these groups can also be high in fat and added sugars, such as cheese or ice cream from the milk group, or french fries from the vegetable group. When choosing foods for a healthful diet, consider the fat and added sugars in your choices from all the food groups, not just fats, oils, and sweets from the Pyramid tip.

APPENDIX J
PHYSICAL ACTIVITY CHECKLIST

For each activity listed below, check how many times you spent more than 15 minutes doing it **THIS PAST WEEK**.

	TIMES THIS PAST WEEK			
	Not at all	1 or 2 times	3 to 5 times	6 or more
Aerobics or cheerleading.....	_____	_____	_____	_____
Arts and crafts (draw, paint).....	_____	_____	_____	_____
Baseball or softball.....	_____	_____	_____	_____
Basketball.....	_____	_____	_____	_____
Bicycling.....	_____	_____	_____	_____
Bowling.....	_____	_____	_____	_____
Collecting (stamps, rocks, cards)	_____	_____	_____	_____
Dancing.....	_____	_____	_____	_____
Football.....	_____	_____	_____	_____
Group meetings or club meetings	_____	_____	_____	_____
Gym class (PE).....	_____	_____	_____	_____
Gymnastics.....	_____	_____	_____	_____
Hanging out at the mall.....	_____	_____	_____	_____
Hiking.....	_____	_____	_____	_____
Homework.....	_____	_____	_____	_____
Housework.....	_____	_____	_____	_____
Jumping Rope.....	_____	_____	_____	_____
Karate or Judo.....	_____	_____	_____	_____
Music Lessons (choir, band).....	_____	_____	_____	_____
Reading.....	_____	_____	_____	_____
Roller-skating or In-line skating	_____	_____	_____	_____
Running.....	_____	_____	_____	_____
Soccer.....	_____	_____	_____	_____
Skate Boarding.....	_____	_____	_____	_____
Swimming.....	_____	_____	_____	_____
Talking on the phone.....	_____	_____	_____	_____
Tennis.....	_____	_____	_____	_____
Television or VCR movies.....	_____	_____	_____	_____
Trampoline jumping.....	_____	_____	_____	_____
Video Games.....	_____	_____	_____	_____
Walking.....	_____	_____	_____	_____
Yardwork or Farmwork.....	_____	_____	_____	_____

APPENDIX K
STUDENT ASSENT FORM

January 19, 1999

Dear Student,

You are invited to take part in a research study. If you want to do that, sign this form and bring it back to your homeroom teacher along with the enclosed form and questionnaires completed by your parent (or guardian). You will fill out the same questionnaires in the clinic. Also I will take your height, weight, and blood pressure and ask you about what you eat and do. This should take about 10 minutes.

If you take part you will receive \$1, a pocket calendar, and a #2 school pencil. Plus, your name will be entered into a weekly drawing for \$10. There will be two drawings. (1/22 and 1/29)

After all of this is done, I will send the forms out again. The forms are the same but sometimes things change for people and they may answer the questions differently. When you and your parent (or guardian) fill these forms out you will receive another pencil and will be entered into two more \$10 drawings. (2/12 and 2/19)

You can decide whether you want to be a part of the study or not. The facts you give are private and your name will not be written on the questionnaires. A code number will be used to match your questionnaires with your parent/guardian's questionnaires. By filling out this form and bringing it back, you are able to take part in the study.

Sincerely,

Nan Gaylord R.N., Pediatric Nurse Practitioner
Researcher

If you have questions about the study, you may contact me at the University of Tennessee, 1200 Volunteer Boulevard, Knoxville, TN 37996-4180 (974-7622) or at the Vine Middle School Community Health Clinic (594-5078). If you have questions about your rights as a participant, contact the Compliance Section of the Office of Research at the University of Tennessee (974-3466).

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Student's signature _____ Date _____

Parent's signature _____ Date _____

Researcher's signature _____ Date _____

Do you consider yourself (Check One)

_____ Healthy _____ Sick
_____ Not So Healthy _____ I Do Not Know

Reason for Choice Above _____

APPENDIX L
RELEASE OF EDUCATIONAL RECORDS CONSENT
FORM AND DEMOGRAPHICS

**RELEASE OF INFORMATION
EDUCATIONAL RECORDS**

I have been invited to participate in a research study and if I agree to participate my child's academic records will be assessed for grade point average, achievement test scores, school absences/late days, and utilization of the school lunch program (for nutritional assessment).

I have read the above information and I agree to release my student's educational records to the researcher for this project.

Parent's/Guardian's signature _____ Date _____

Relationship to Student at Vine _____

Researcher's signature _____ Date _____

Parent/Guardian has completed which grade in school: (Check one)

- ☐ Did not attend school
- ☐ 1st to 7th grade
- ☐ 8th or 9th grade
- ☐ 10th or 11th grade
- ☐ 12th grade
- ☐ Some college
- ☐ Vocational Training
- ☐ College Graduate
- ☐ Other. Please specify. _____

How many times has your student been seen in the Emergency Room this year? _____

How many times has your student been seen by the doctor/clinic/ health department this year? _____

Do you consider your child: (Check One)

- ☐ Healthy
- ☐ Not So Healthy
- ☐ Sick
- ☐ I Do Not Know

Reason for Choice Above _____

At the present time, how would you rate your family's money problems?

- ☐ Little or No Problems
- ☐ Some Problems
- ☐ Lots of Problems

APPENDIX M

PERMISSION TO USE THE PHYSICAL ACTIVITY CHECKLIST

TO: Joanne S. Harrell
 FAX: 919-966-3752

RE: YHS Use

I am interested in using the following scales of the YHS (please mark all you intend to use) :

- ☒ Physical Activity Scale
- ☐ Tobacco Use Habits Scale
- ☐ Rosenberg Self-Esteem Scale (Rosenberg, 1965)
- ☐ Attitudes Towards Exercise Scale
- ☐ What Others Believe Scale
- ☐ Perception of Peer Health Behaviors Scale
- ☐ Adult Role Model Health Behaviors Scale
- ☐ Demographics
- ☐ Health Knowledge (designed specifically to test the CHIC II Health intervention)

In using these scales of the Youth Health Survey I agree to

- 1) acknowledge Joanne Harrell, R.N. Ph.D. and the CHIC II study as the authors of this tool
- 2) share final results from this tool with the investigators
- 3) discuss with Joanne Harrell the possibility of providing data and basic demographic information on the subjects to whom the YHS is given (with the potential for collaborating on manuscripts)

(Please sign and date this document and return it along with the address to which we should send the instrument.)

Nan Gaylord
 Signature

DATE 10/28/98

University of Tennessee

Title: The Relationship of Parents' Self-Management to Their Children's Self-Management, Academic Performance, and Health
 Institutional or Organizational Affiliation (include study title if available)

Name and address of person to receive the YHS (PLEASE PRINT)
 Please FAX

Nan Gaylord

1200 Volunteer Blvd.

UTKCON

Knoxville, TN. 37996-4180

APPENDIX N
PARENT/GUARDIAN CONSENT FORM

January 19, 1999

Dear Parent/Guardian,

All 7th grade students at Vine Middle Magnet School for the Sciences and Performing Arts are invited to take part in a research study. The questionnaire in this envelope is to be filled out by a parent or guardian of the student. When this questionnaire and the child's assent form are returned to their homeroom teacher, children will fill out the same questionnaires in the clinic. Blood pressure, height, weight, activity level and a food checklist will also be done.

The questionnaires may take up to 5 minutes to answer. The other checklists may take 5 more minutes.

After all the forms are filled out the student will receive \$1, a pocket calendar, and a #2 school pencil. Additionally, the child's name will be entered into a weekly drawing for \$10. The drawings will occur on Thursday 1/22 and Friday 1/29.

Since things sometimes change with families, I will send the same forms home three weeks after the first ones. Please fill them out again. When the forms are returned to their homeroom teacher, the children will receive two more pencils and will again be registered in two weekly drawings for \$10. (Thursday 2/11 and Friday 2/19)

This study will help us know more about children and how they learn and stay healthy. The risks to parents and children are the same as in every day life in school or the health clinic. Blood pressure, height, and weight findings will be sent home with your child. Blood pressures too high will be rechecked two more times. Those blood pressures always high will be referred to another health facility.

You can decide if you want to be in the study or not. You may quit at anytime. The facts you provide are private. A code number will be used to put your questionnaires with your child's questionnaires. By returning the forms filled out, you are able to take part in the study.

Sincerely,

**Nan Gaylord R.N., Pediatric Nurse Practitioner
Researcher**

If you have questions about the study, you may contact me at the University of Tennessee, 1200 Volunteer Boulevard, Knoxville, TN 37996-4180 (974-7622) or at the Vine Middle School Community Health Clinic (594-5078). If you have questions about your rights as a participant, contact the Compliance Section of the Office of Research at the University of Tennessee (974-3466).

APPENDIX O
PHYSICAL PARAMETERS REPORT FORM

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
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Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

Name _____
Date _____
Height _____ Weight _____
Blood Pressure _____

APPENDIX P
MULTIPLE REGRESSION ANOVA TABLES

Table 9

Summary of Hierarchical (Step-Wise) Regression Analysis with GPA as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	2.54	1	2.54	2.77	
						.10 ^a
	Residual	79.66	87	.92		
	Total	82.19	88			
2	Regression	6.26	2	3.13	3.55	.03 ^b
	Residual	75.93	86	.88		
	Total	82.19	88			
3	Regression	7.10	3	2.37	2.68	.05 ^c
	Residual	75.09	85	.88		
	Total	82.19	88			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores

d Dependent Variable: Grade Point Average from Math, Science, Reading, Language Arts, and Social Studies from Last School Year

Table 10

Summary of Hierarchical (Step-Wise) Regression Analysis with GPA as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	2.67	1	2.67	2.89	.09 ^a
	Residual	78.70	85	.93		
	Total	81.37	86			
2	Regression	5.89	2	2.95	3.28	.04 ^b
	Residual	75.47	84	.90		
	Total	81.37	86			
3	Regression	6.95	3	2.32	2.59	.06 ^c
	Residual	74.42	83	.90		
	Total	81.37	86			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Dependent Variable: Grade Point Average from Math, Science, Reading, Language Arts, and Social Studies from Last School Year

Table 11

Summary of Hierarchical (Step-Wise) Regression Analysis with Percentile Ranking on the Terra Nova Achievement Tests as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	5060.76	1	5060.76	6.26	.01 ^a
	Residual	65453.63	81	808.07		
	Total	70514.39	82			
2	Regression	7520.22	2	3760.11	4.78	.01 ^b
	Residual	62994.17	80	787.43		
	Total	70514.39	82			
3	Regression	7526.80	3	2508.93	3.15	.03 ^c
	Residual	62987.59	79	797.31		
	Total	70514.39	82			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores

d Dependent Variable: National Percentile Ranking on the Terra Nova Achievement Tests

Table 12

Summary of Hierarchical (Step-Wise) Regression Analysis with Percentile Ranking on the Terra Nova Achievement Tests as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	4733.93	1	4733.93	5.75	.02 ^a
	Residual	65069.43	79	823.66		
	Total	69803.36	80			
2	Regression	7086.61	2	3543.31	4.41	.02 ^b
	Residual	62716.75	78	804.06		
	Total	69803.36	80			
3	Regression	7104.07	3	2368.02	2.91	.04 ^c
	Residual	62699.29	77	814.28		
	Total	69803.36	80			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Dependent Variable: National Percentile Ranking on the Terra Nova Achievement Tests

Table 13

Summary of Hierarchical (Step-Wise) Regression Analysis with Number of Student's School Absences Last School Year as the Criterion Variable Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	3.77	1	3.77	.10	.75 ^a
	Residual	3090.86	81	38.16		
	Total	3094.63	82			
2	Regression	188.89	2	94.44	2.60	.08 ^b
	Residual	2905.74	80	36.32		
	Total	3094.63	82			
3	Regression	265.99	3	88.66	2.48	.07 ^c
	Residual	2828.64	79	35.81		
	Total	3094.63	82			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Student LSA-R Scores

d Dependent Variable: Number of Student's School Absences Last School Year

Table 14

Summary of Hierarchical (Step-Wise) Regression Analysis with Number of Student's School Absences Last School Year as the Criterion Variable Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores as Predictor Variables

ANOVA ^d						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	3.02	1	3.02	.08	.78 ^a
	Residual	3067.60	79	38.83		
	Total	3070.62	80			
2	Regression	223.04	2	111.52	3.06	.05 ^b
	Residual	2847.58	78	36.51		
	Total	3070.62	80			
3	Regression	238.52	3	79.51	2.16	.10 ^c
	Residual	2832.10	77	36.78		
	Total	3070.62	80			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Dependent Variable: Number of Student's School Absences Last School Year

Table 15

Summary of Hierarchical (Step-Wise) Multiple Regression Analysis with the Health Index as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, and Student LSA-R Scores as Predictor Variables

ANOVA ^a						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	2.40	1	2.40	.61	.44 ^a
	Residual	347.56	88	3.95		
	Total	349.96	89			
2	Regression	3.38	2	1.69	.42	.66 ^b
	Residual	346.58	87	3.98		
	Total	349.96	89			
3	Regression	5.01	3	1.67	.42	.74 ^c
	Residual	344.94	86	4.01		
	Total	349.96	89			
4	Regression	5.63	4	1.41	.35	.85 ^d
	Residual	344.32	85	4.05		
	Total	349.96	89			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, Student LSA-R Scores

e Dependent Variable: Health Index

Table 16

Summary of Hierarchical (Step-Wise) Multiple Regression Analysis with Number of Dietary Exchanges Reported by Student in the Past 24 Hours as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, and Student LSA-R Scores as Predictor Variables

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.14	1	1.14	.07	.80 ^a
	Residual	1531.18	88	17.40		
	Total	1532.32	89			
2	Regression	1.20	2	.60	.03	.97 ^b
	Residual	1531.12	87	17.60		
	Total	1532.32	89			
3	Regression	118.24	3	39.41	2.40	.07 ^c
	Residual	1414.08	86	16.44		
	Total	1532.32	89			
4	Regression	166.33	4	41.58	2.59	.04 ^d
	Residual	1365.99	85	16.07		
	Total	1532.32	89			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, Student LSA-R Scores

e Dependent Variable: Number of Dietary Exchanges Reported by Student in the Past 24 Hours

Table 17

Summary of Hierarchical (Step-Wise) Multiple Regression Analysis with the Student's Body Mass Index as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, and Student LSA-R Scores as Predictor Variables

ANOVA ^a						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	63.21	1	63.21	1.63	.21 ^a
	Residual	3407.32	88	38.72		
	Total	3470.53	89			
2	Regression	94.89	2	47.44	1.22	.30 ^b
	Residual	3375.64	87	38.80		
	Total	3470.53	89			
3	Regression	158.54	3	52.85	1.37	.26 ^c
	Residual	3311.98	86	38.51		
	Total	3470.52	89			
4	Regression	218.31	4	54.58	1.43	.23 ^d
	Residual	3252.22	85	38.26		
	Total	3470.53	89			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Score

d Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, Student LSA-R Scores

e Dependent Variable: Student's Body Mass Index

Table 18

Summary of Hierarchical (Step-Wise) Multiple Regression Analysis with Number of Times the Student Has Been Seen in the ER This Year as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, and Student LSA-R Scores as Predictor Variables

ANOVA ^a						
Model		Sum of	df	Mean	F	Sig.
		Squares		Square		
1	Regression	.15	1	.15	.19	.66 ^a
	Residual	68.47	88	.78		
	Total	68.62	89			
2	Regression	4.27	2	2.14	2.89	.06 ^b
	Residual	64.35	87	.74		
	Total	68.62	89			
3	Regression	5.10	3	1.70	2.30	.08 ^c
	Residual	63.53	86	.74		
	Total	68.62	89			
4	Regression	5.16	4	1.29	1.73	.15 ^d
	Residual	63.46	85	.75		
	Total	68.62	89			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, Student LSA-R Scores

e Dependent Variable: Number of Times the Student Has Been Seen in the ER This Year

Table 19

Summary of Hierarchical (Step-Wise) Multiple Regression Analysis with the Number of Activity Points Reported on the Physical Activity Checklist as the Criterion Variable and Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, and Student LSA-R Scores as Predictor Variables

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	16052.84	1	16052.84	1.30	.26 ^a
Residual	1089555.26	88	12381.31		
Total	1105608.10	89			
2 Regression	29954.41	2	14977.20	1.21	.30 ^b
Residual	1075653.69	87	12363.84		
Total	1105608.10	89			
3 Regression	36755.84	3	12251.95	.99	.40 ^c
Residual	1068852.25	86	12428.52		
Total	1105608.10	89			
4 Regression	57301.93	4	14325.48	1.16	.33 ^d
Residual	1048306.17	85	12333.01		
Total	1105608.10	89			

a Predictors: (Constant), Parent/Guardian Education Level

b Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems

c Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores

d Predictors: (Constant), Parent/Guardian Education Level, Rating of the Family's Money Problems, Parent/Guardian LSA-R Scores, Student LSA-R Scores

e Dependent Variable: Activity Points Report on the Activity Checklist

VITA

Nan McCammon Gaylord was born in Knoxville, Tennessee on February 23, 1955. She attended the University of Tennessee, Knoxville, and received a Bachelor of Science in Nursing in 1977. After working as a registered nurse in an intensive care nursery for two years, she entered the Master of Science in Nursing program at the University of Colorado Health Sciences Center, Denver. She graduated from the master's program in August of 1980 and worked in Colorado for the next seven years as a pediatric nurse practitioner. Upon returning to Tennessee, she accepted a position as a nursing clinical instructor at the University of Tennessee, Knoxville. She received a Master's of Arts in Philosophy with an emphasis in medical ethics from the University of Tennessee in 1997 but at that time had already begun to pursue a doctoral degree in the College of Education. Her Doctorate of Education in Educational Psychology was received in December of 1999.