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A CORRELATIONAL STUDY OF THE RELATIONSHIP BETWEEN
ACADEMIC PERFORMANCE AND PARENTAL AGE

by
Jamie Melamed

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
04/24/01

Approved by _____
Professor

Date Approved 4/30/01

ABSTRACT

Jamie Melamed

A Correlational Study of the Relationship Between Academic Performance and Parental Age

2001

Dr. John Klandermann and Dr. Roberta Dihoff, thesis advisors

School Psychology, Master of Arts Degree

This study sought to examine the relationship between academic performance and parental age. Parental age has previously been shown to be a strong predictor of academic performance. This study consisted of a survey of 45 undergraduate students at Rowan University to determine the degree to which their parents' ages, both mothers and fathers, correlated with academic performance as measured by high school class rank, SAT score, and GPA at Rowan. All participants were children of intact families, and the sample consisted of 25 females and 20 males. Both mothers age and fathers age were found to correlate strongly with the three measures of academic performance as determined by the Pearson Product Moment Correlation test, and correlations for all three measures were statistically significant. This study concluded that parental age is a reliable indicator for predicting academic performance. The study was strictly correlational and did not seek to determine the cause of this correlation, merely to support its existence.

MINI-ABSTRACT

Jamie Melamed

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This study sought to examine the relationship between academic performance and parental age. It was found using the Pearson Product Moment Correlation test that both mothers and fathers ages were reliable predictors of academic performance as measured by SAT score, GPA, and high school class rank.

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Chapter I: The Problem

1. Need

In the course of a child's development, one of the most important measures of individual success is his or her academic achievement. This has been an area of intense study as of late, with psychologists trying to determine what factors are most important in producing an academically successful student. In particular, studies have examined the effects of class size, early intervention programs, socio-economic status, and a variety of other variables trying to determine the most favorable environment for children and teenagers to thrive intellectually. While studies in this area have been numerous, few recent studies have looked at the role parents play in this process, putting the emphasis on the in-school environment and class size reduction rather than on family and parental factors.

The family environment, however, should be treated as importantly or more importantly than the school environment in producing a student who excels academically. For instance, completing homework assignments has been shown to be one of the most important factors in determining the degree to which a student will achieve in school. The desire to complete assigned work has to be largely instilled at home by the parents and family. While schools can punish uncompleted work with failing grades and detention, without the support of parents at home the student's performance can continue deteriorate. The question that needs to be asked then, is what attributes or factors conspire to produce

parents who, in turn, produce successful students. That, in a broad sense, is what the present study will investigate.

2. The Purpose

The purpose of the present study is to investigate if a relationship exists between parental age and the academic success of their children. Namely, whether older parents, due to a variety of factors, raise children more academically successful than those of younger parents. It is important to help determine whether an inherent and unchangeable variable that a parent possesses, his or her age, can have a significant effect on the success of a child academically. With an increased number of parents waiting later in life to have children, sometimes into their late 40's, it is interesting and important to examine the effect that this has on a child.

3. Hypothesis

The present study proposes to examine the relationship between parental age and the academic success of their children. The study will examine children of parents from different age groups, and through a variety of different measures examine if there is a link between older parents and higher academic achievement. It is the hypothesis of this study that a positive relationship exists between the age of parents and the academic success of their children; that older parents will have children who perform at a higher level academically.

4. Theory

The hypothesis of this study draws upon aspects of many related studies and theories, several of which will be outlined here. First, there are several characteristics that are usually uniquely inherent to older parents and not to younger ones. In personality trait theory it has been found that personality traits continue to evolve and become more stable as one ages. Studies have found that as a person reaches their early 40's, self-criticism and dependence greatly decrease, while confidence and decisiveness increase (Helson & Wink, 1992). These are qualities that are important in promoting the emergence of an authoritative parenting style, which has been shown to be the most effective parenting style in raising well adjusted, successful children. It has also been found that in middle age, people develop a so-called executive personality. This is characterized by increased "self-awareness, selectivity, manipulation and control of the environment, mastery, and competence, and a wide array of cognitive strategies" (Neugarten, 1968 p. 98). These qualities again are synonymous with the authoritative parenting style, and give older parents an advantage over younger parents with the development of these "executive personality" traits.

A second advantage that older parents have been found to have is increased access to material resources. Obviously as one ages and works throughout a career, one acquires more financial and job security. It has been found in numerous studies that children from higher socio-economic backgrounds tend to perform better in school and college. The children of older parents would therefore most likely come from a family more financially stable than the children of younger parents, and would have a selective advantage over children of younger parents. Older parents can also afford to devote more time to their family, having most likely already established themselves in stable careers. Younger parents, especially in

the 20-29 year old range, cannot afford this luxury, having to devote more time to their jobs and careers to establish themselves, many times at the expense of their family. It has also been found that working in more stable and prestigious jobs, as become available to more experienced individuals, promotes a favorable change in personality traits in middle adulthood, further benefiting the home life of children of these older parents. (B.W. Roberts, 1997).

Finally, older parents inherently have the simple advantage of more life experience than younger parents do. It has been found that one of the major reasons for the continual evolution and stabilization of personality traits through life is the acquisition of more experience. Older parents have the advantage of more experiences to draw upon and teach their children from, whereas younger parents simply have not had the time to gather as many experiences from which to raise their children.

5. Definitions

Throughout this paper several terms will be used which need to be operationally defined. In this paper the term 'older parent' will refer to those parents above the age of 35, while 'younger parent' will refer to parents below the age of 30. Parental age is defined as the average age of a subject's parents at the time of his or her birth. Any reference to academic achievement refers to performance as measured by SAT scores, high school class rank, high school GPA, and college GPA.

6. Assumptions

This study makes several assumptions that should be discussed. First, it is assumed that all subjects who participate in this study come from relatively uniform backgrounds, aside from differences in parental age. Birth order is assumed to have little or no effect in this study and is not accounted for. Also, the age of the parents given in this study is an average of both the mother and father's ages. It is assumed that any age difference between any particular subject's parents will have an insignificant effect on results. Also it is assumed that despite having a stratified population sample, as is discussed in the following section, this stratified sample will disperse in accordance with the hypothesis just as in the general population.

7. Limitations

There are certain limitations in this study which must be discussed here. The most obvious limitation is the nature of sample population. All subjects who participate in this study are students at Rowan University. Obviously, admission to colleges and universities is limited to those who meet the entrance requirements as measured by high school class rank, SAT score, and high school GPA. Those who fall below these criteria cannot attend the school, and those who achieve significantly above the requirements will likely attend a more selective university. Therefore, despite obtaining a random sample of students at Rowan University, the population by its very nature has been stratified through the admission process. However it is assumed that despite this, the stratified population sample will disperse as measured by college GPA just as the general population would in accordance with this study's hypothesis.

8. Overview

The upcoming chapters will proceed in a manner as outlined here. In chapter two, a review of the relevant literature will be presented. A more detailed look at some of the information provided in this chapter's theory section will be provided, as well as the introduction and discussion of other pertinent literature. In chapter three a detailed look at the design of the study, including examination of the sample population, discussion of the measures used, and a complete statistical analysis of the data, will be provided. Chapter four will largely consist of an interpretation of the results found in the present study. All statistically significant as well as any statistically non-significant findings will be discussed. Chapters three through five, however, will all build upon the foundation laid by previous research, so it is most important to provide a review of that literature preceding any further discussions, which is done in the forthcoming chapter.

Chapter II: Literature Review

1. Introduction

The literature concerning parent-child interactions and the impact they may have both academically and socially is varied and diverse. There are obviously many ways in which parents shape their children, and there are many variables that govern whose children will be successful and whose will not. Some of these variables are an inherent characteristic of the parent, such as his or her age. The first body of literature that will be discussed will illustrate what effect older and younger parents have on their children. Another factor that will be reviewed is the effect of parenting style on children's social and academic performance. Parenting style can vary with age and experience and has been shown to be one of the most important factors affecting a child's academic success. This area of literature review will also include other, rather eclectic studies examining other factors such as wealth and family structure. A third area that will be reviewed concerns the personality traits of parents and how they vary and stabilize with age. A parent's personality can have a direct impact on how well a child can identify with the parent and well rules are established and enforced.

2. Older vs. younger parents

Several experiments similar to the present study have been carried out in recent years with interesting findings. One recent study examined the age of a son's father as a

determinant for the child's later academic and social success. Although social success is not being addressed in the present study, the age of parents at birth and academic success are being examined. It was found that a son's academic success directly correlated with the age of their father's, with children of the oldest fathers obtaining on average 1.2 more grades of education than those of the youngest fathers (Mare & Tzeng, 1989). This effect was found once family background was controlled for. The advantageous effect of being born to older fathers was also found to carry over into the status of son's first occupation, with the sons of the older fathers obtaining jobs that rated on average three SEI points higher than sons of younger fathers (Mare, Tzeng, 1989). This study is limited, however, by its exclusion of the effect of the mother's ages on son's achievement, as well as the exclusion of daughters' academic achievement in the study.

One such study that did include these factors found that being born to younger or teenage parents had a detrimental effect on future academic success. This study found that for several cohorts, children of parents less than 20 years of age at the time of their birth scored lower than their classmates on all cognitive tests. The result was quite large, with the children of younger parents scoring .4 standard deviations below the level of their classmates (Card, 1981). This study, however, did not measure the scores of children of older parents who may have shown tendencies in the opposite direction, investigating only the children of adolescent parents. Possible reasons for this decrease in cognitive and academic performance for children of younger parents can be seen when one looks at the social repercussions for teenage parents.

Teenage motherhood is found to result in reduced educational and occupational achievement for the mother, along with a higher degree of marital instability, which can in

turn affect a child's development (Card & Wise, 1978). It was also found that the children of these younger mothers, when all other socioeconomic factors are accounted for including race, are at the lower end of a linear relationship between maternal age and intellectual achievement in children (Dyfoos & Belmont, 1978). It was also found that children of older parents felt they were provided more financial security, more wisdom about life and greater support in academic pursuits than did children of younger parents (Morris, 1987).

It was also found that from the parents' point of view, the transition to parenthood might be easier for older parents than for younger ones. In a study that administered questionnaires to both couples who had children at a young age and those who had children at an older age, it was found that older parents viewed the responsibilities and restrictions that come along with parenthood in a more positive light (Issod, 1987). The improved attitude of older parents may be one factor that helps their children to succeed at higher levels.

3. Other parental factors

Many researchers have examined aspects other than parental age that may affect a child's academic performance. This literature is important to the present study since many factors, such as parenting style and personality traits, vary as a function of age.

One area of rather intense study has examined the effect of different parenting styles on a child's academic performance. Baumrind first outlined the three major types of parenting styles; authoritative, authoritarian, and permissive. These three types of parenting styles have also been empirically supported, and tests for parents have been created that are

able to derive these three types of parenting styles (Robinson, Mandelco, Olsen, & Hart, 1995). Authoritarian styles of parenting are heavy-handed, dominating, and controlling, while permissive styles are much the opposite, with inconsistent enforcement of rules and a lax attitude toward the child's behavior, with as little punishment as possible. The authoritative style, however, is a happy medium, with rational guidance, expression of affection, encouragement of independence and open communication (Baumrind, 1967, 1971). It has been found in numerous studies that the authoritative style is by far the most beneficial in most regards. It has been shown, for example, that as college freshman, children whose parents used the authoritative parenting style functioned at a higher level than those whose parents used other styles of parenting. The students from authoritative parents performed better academically, having come from a background in which they were encouraged to achieve higher levels of mastery and self-regulation, skills important to successful college life (Hickman, Botholomae, McKenry, 2000). Authoritative parenting encourages "the youth's active participation in the discussion of choices, and facilitates the development of psychosocial maturity" (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, p. 296). These are values that are important to any child in being academically and socially successful. It has also been found that not only does authoritative parenting benefit the child, but permissive and authoritarian parenting styles hurt the child. In a study of 7,836 students, it was found that both authoritative and permissive parenting styles had a negative effect on grades, while authoritarian parenting produced a positive effect on grades. This effect was found across gender, age, parental education, and ethnic and family structure categories (Dornbusch, Ritter, Leiderman & Roberts, 1987). These studies obviously show the important role a parent plays in determining the academic success of his children.

The effect of parenting style is shown to have an even more universal impact when one looks at the literature examining parenting style in specific situations. For instance, the effectiveness of authoritative parenting is apparent when one looks at the case of first-born children only. With first-born children, those who described their parents as treating them warmly, democratically, and firmly (traits consistent with the authoritative parenting style) were found to perform better in school than other children (Steinberg, Elmen, & Mounts, 1989). This advantage was also found when children in urban and inner-city environments were looked at. Urban children whose parents engaged in authoritative parenting styles not only performed at a higher level academically, but engaged in more effective learning and study strategies, which allowed them to not only excel in the present but in the future as well (Boveja, 1998). This finding of improved study strategies was replicated in areas other than urban settings. It was found in a study in Europe, for example, that children who perceived their parents as more authoritative applied the “most adaptive achievement strategies with low levels of failure expectations, task irrelevant behavior, and the use of self enhancing attributions” (Aunola, Stattin & Nurmi, p. 205). It has even been shown that the beneficial effect of authoritative parenting can facilitate self-actualization in children. It was found that children whose parents used an authoritative parenting style achieved higher levels of self-actualization, and that an authoritarian parenting style was actually detrimental to the level of self-actualization of children as measured by the Short Index of Self Actualization (Dominguez & Carton, 1997). This was in contrast to children from families that employed other parenting styles, which caused children to more frequently use maladaptive coping strategies and have lower levels of self-esteem (Aunola, Stattin & Nurmi, 2000).

It has also been found that the ability of a child to identify with his parents is important in improving academic performance during the adolescent years (Morrow & Wilson, 1961; Shaw & White, 1965). The ability of a child to identify with his parents is obviously based on the child's ability to understand the demands and constraints his parents place on him. Authoritative parenting, with its rational discipline, firm enforcement of rules, and encouragement and support, seems to be the parenting style that the child could most identify with. The importance of identifying with one's parents has been substantiated and replicated in several studies (Swift, 1965; Kandel & Lesser, 1969).

The importance of several other parental factors has also been shown. The mere presence of both of the child's parents throughout adolescence has been shown to have a beneficial effect on the child. Children who were brought up in nonintact (single parent households or with stepparents) families received less attention, encouragement, and had lower expectations than those brought up in intact families (Astone, & McLanahan, 1991). It was also found that children from nonintact families were more likely to exhibit signs of early disengagement from school and had lower levels of achievement (Astone, & McLanahan, 1991).

An additional correlate between parents and their children's' academic and social performance is the family's social capital. Financial wealth is an inherent parental variable, with older parents tending to be more financially stable than younger ones. This has been found to be an important factor not only in academic performance, but promoting healthy social adjustment and lack of behavioral problems. It has been found that parents who work in "good" jobs invest more time in their children and have a positive impact on child outcomes. Children of parents who have less social capital or work in poor job conditions

were found to have a higher occurrence of behavior problems and have more problems with social adjustment and peer interaction (Parcel & Meneghan, 1993).

These studies all show the far reaching impact that parents have not only on their children's academic success, but on their coping ability, social skills, and even self-actualization.

4. Personality Traits

Another variable that can vary with age and have an effect on child rearing is personality. It had been postulated for many years in psychology that personality traits were formed early in childhood and remained consistent throughout life after approximately the age of 3 (Sapir, 1934). More recently, however, it has been argued that personality traits are variable throughout life and can be changed even in middle or late adulthood (Aldwin & Levenson, 1994). Theoretical arguments have been made linking childhood temperaments and the Big Five traits; openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. Studies examining the consistency of personality temperaments and traits between childhood, adolescence, and adulthood have yielded interesting results.

For example, it has been argued that childhood temperaments such as shyness are predictive of the adult trait of extroversion (Wachs, 1994; Digman & Shmelyov, 1996). In other studies, however, it has been shown that personality traits remain malleable throughout childhood and can be changed into at least early adulthood. Bloom (1964), through a review of rather limited longitudinal studies, concluded that traits did not stabilize until about the

age of 20, and remained consistent through adulthood. In later longitudinal studies, it has been shown that personality traits reach their peak consistency at the age of 30 (Costa & McCrae, 1988). In even more recent studies, it has been shown that women in the Mills Longitudinal Study had an increase in confidence and decisiveness and a decrease in dependence in their 40's and 50's (Helson & Wink, 1992). This finding is supported by much earlier research done by theorists such as Neugarten.

In Neugarten's research it has been proposed that adults in middle age develop an "executive personality", allowing them to implement a wider variety of cognitive strategies, and allow for greater control and manipulation of the environment (Neugarten, 1968). This finding has been empirically supported by research showing that men use increasingly complex self-defense mechanisms as they age (Vaillant, 1977). It has also gained support from the finding that men in middle and late adulthood, ages 40-60, showed a peak in attitude strength and consistency, and were less likely to be persuaded to change their attitudes under pressure (Visser & Krosnick, 1998). Similarly, it was found that identity certainty, closely related to personality consistency, became most prominent during middle age (Stewart & Ostrive, 1998). These studies all lend support to Neugarten's hypothesis that personality becomes most stable during middle adulthood.

Two studies have attempted to undertake a thorough quantitative analysis of personality consistency throughout adulthood. Schuerger (1989) carried out an analysis of personality trait consistency by examining data from 106 separate personality trait measures through a series of eight self-report questionnaires. It was found that while individual subject's responses were quite varied over long intervals of time, older individuals (40-60 years of age) responded with much more consistency over time than did younger individuals

(Schuerger, 1989). This pattern of responding implies the evolution of a more stable personality into middle adulthood.

A second study performed a review of several databases and an extensive review of relevant research articles. It was found that personality trait consistency increased throughout adulthood and reached a peak between the ages of 50-59 (Roberts & DelVecchio, 2000). It was also found that before this peak was reached, personality trait consistency dramatically rose between the ages of 40-49. During and after middle age, personality trait consistency plateaued with a .75 level of correlation between longitudinal measurements. This is in contrast to levels of correlation between .45-.59 in early and middle adulthood (Roberts & DelVecchio, 2000). These studies show the advantage that children of older parents have. Increased personality consistency over time is important to achieve consistent family structure and rule enforcement, qualities that are inherent in the authoritative parenting style.

This entire body of literature supports the idea that middle-aged parents are more likely to raise academically and socially successful children. With greater personality stability, more experience, and an ability to implement more effective parenting styles, it would seem that children of older parents would perform at a higher level than their counterparts. The purpose of the present study is to examine whether this is the case, and seeks to lend support to the effect of these various other factors that covary with age.

Chapter III: Methods

1. Sample

The sample used in this study consisted of 45 college students from Rowan University, ranging in ages from 18-25. 25 women and 20 men participated in this study. The participants were natives of New Jersey, New York, Pennsylvania, and Delaware. The participants were all undergraduate students and most were children of middle or upper-middle class families. All participants were members of intact families, where both the mother and father lived together and remained married. Data from children whose parents had divorced was not used.

2. Measures

All measures used in this study were designed to measure academic performance. There were a total of three quantitative measures employed. The first was high school class rank. This provided a within-subjects measure of academic performance achieved before enrollment at Rowan University. While it is difficult to compare class rank between subjects since the rigor of high school classes and coursework chosen varies greatly from subject to subject and school to school, it provided a useful measure of each participant's academic ability in the context of their high school environment. Class rank was converted into a percentile rank for analytical purposes, with the 99th percentile being the highest obtainable rank.

The second measure used was SAT score. The SAT is required for entrance to any Rowan University undergraduate program. The test has established means and standard deviations, and its reliability and validity have been strongly established. The SAT score provided an adequate means of measuring academic performance between-subjects, as it is a standardized test and is not dependent on variables such as geographic location or high school attended.

A third measure used was college GPA while at Rowan University. This provided an additional between-subjects measure of academic performance. All students, while establishing their GPA, were subjected to basically the same learning environment at Rowan. Despite differences in classes chosen and major selected, classes at Rowan are relatively similar in quality of instruction, class size, and competitiveness between students; allowing for a reliable measure that can be compared between students. Parent's age, participant's age, and current marital status of the participant's parents were additional measures employed in the survey.

3. Design

The design of this study was strictly correlational, no control group was used. The correlation between academic performance, as gauged by the three measures outlined in the measures section, and parental age was then able to be determined.

4. Testable Hypothesis

The null hypothesis of this study for fathers ages was that there is a non-significant correlation between academic performance and fathers ages. The null hypothesis of this study for mothers ages was that there is a non-significant correlation between academic performance and mothers ages. The alternative hypothesis for fathers age was that academic performance and fathers age are correlated. The alternative hypothesis for mothers age was that academic performance and mothers age are correlated. The hypothesis of the study was that both mothers and fathers ages are positively correlated with academic performance.

5. Analysis

The data was analyzed using the Pearson r coefficient test. The degree of correlation was determined by comparing academic performance versus parental age. Tests were run separately for both mothers and fathers age vs. GPA, SAT, and high school class rank, for a total of 6 correlation coefficients.

6. Summary

The design and analysis of this study was arranged to allow for a thorough and complete evaluation of each participant's academic performance and ability. The data gathered was grouped and analyzed to allow for a quantitative determination of the extent to which academic performance and parental age covaried in this study.

Chapter IV: Results

1. Mother's data

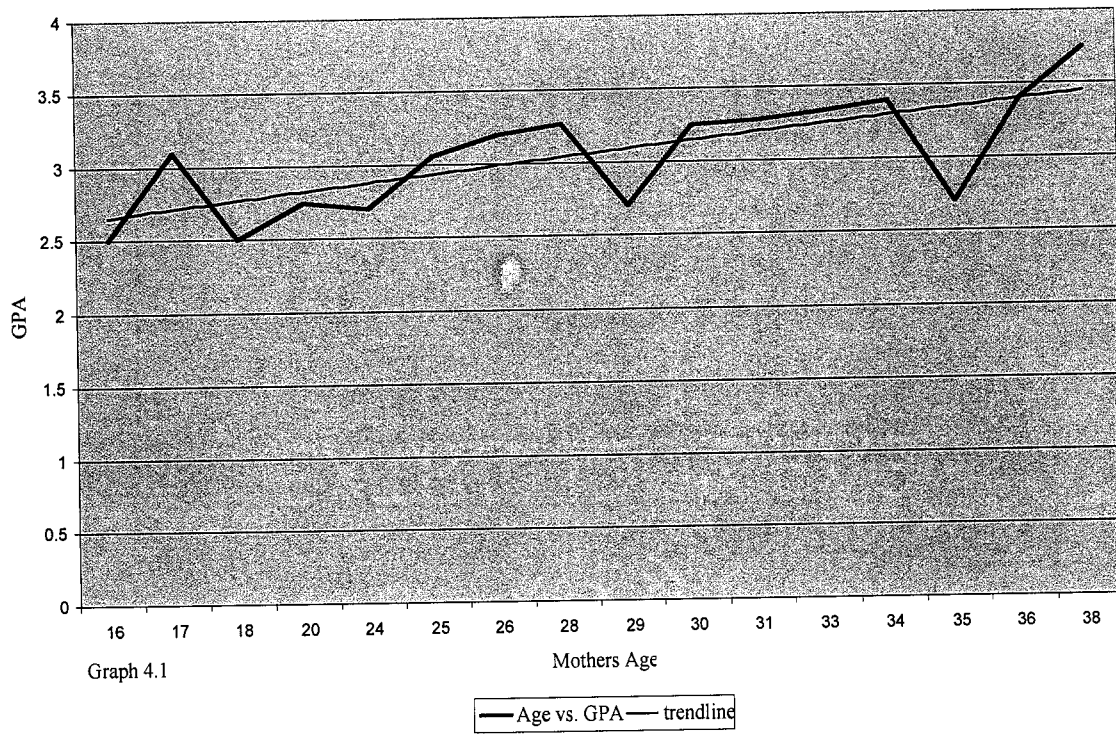
The following data was found with the Pearson r test of correlation, examining degrees of correlation between mother's age and the three measurements of academic success: for mother's age and GPA, $r=.431$, $p=.003$; for mother's age and SAT $r=.413$, $p=.005$, and for mother's age and high school class rank, $r=.386$, $p=.009$. All of these correlations are at the significant level with $p<.01$, leading to acceptance of the hypothesis that mother's age is a significant factor in determining the academic success of children. Descriptive data from the sample surveyed (both mothers and fathers) can be seen in chart 4.1. The data used to determine the correlations for mother's age and academic performance can be seen in graphs 4.1-4.3.

Chart 4.1		Descriptive data			
	N	Minimum	Maximum	Mean	SD
Fathers Age	45	18	39	28.6333	5.0714
Mothers Age	45	16	38	28.1778	5.3398

2. Father's data

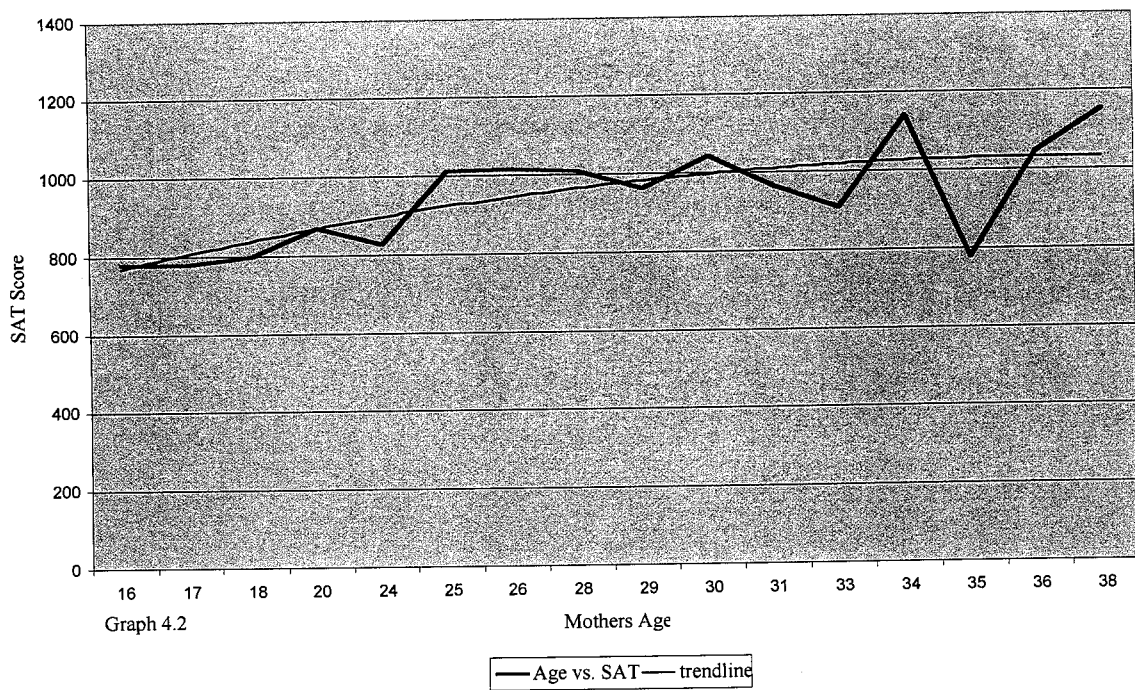
The following data was found with the Pearson r test of correlation, examining degrees of correlation between father's age and the three measurements of academic success: for father's age and GPA, $r=.400$, $p=.003$; for father's age and SAT score, $r=.530$, $p<.000$; and for father's age and high school class rank, $r=.354$, $p=.017$. The correlation between father's age and both SAT score and GPA were significant to $p<.01$, and for father's age and

Mothers Age vs. GPA Score



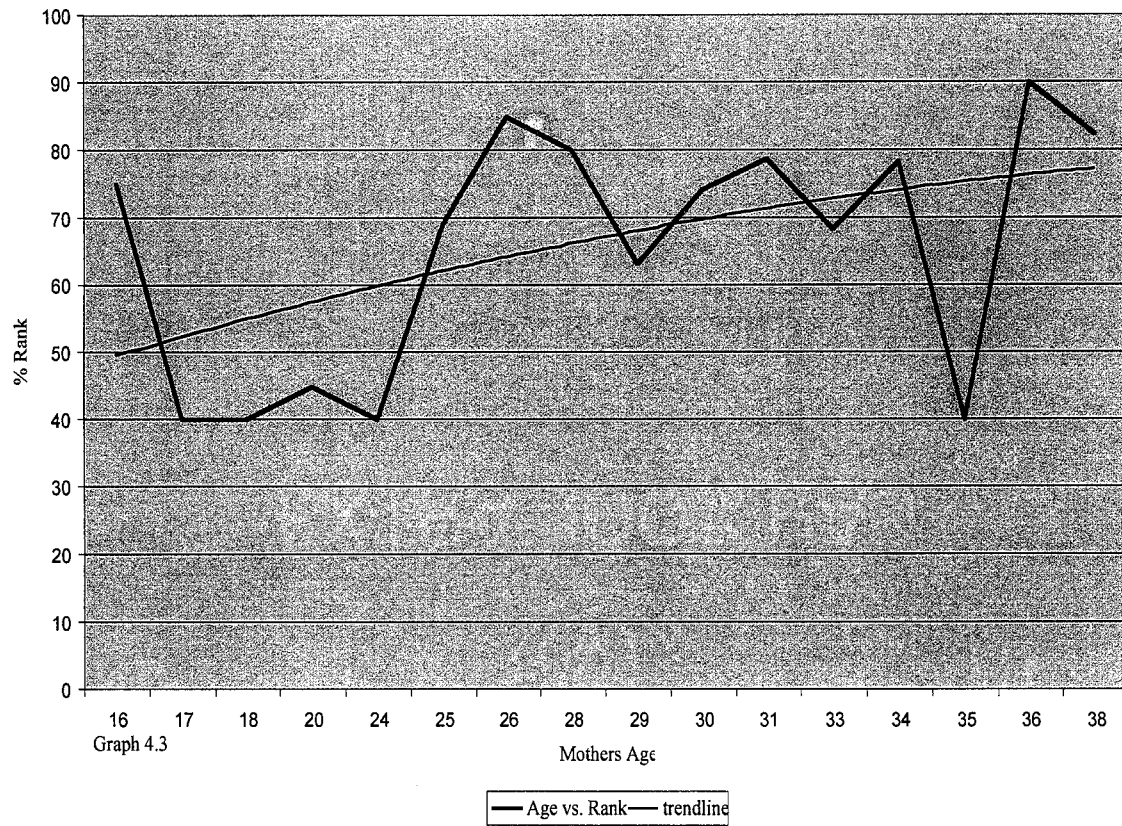
Graph 4.1

Mothers Age vs. SAT Score



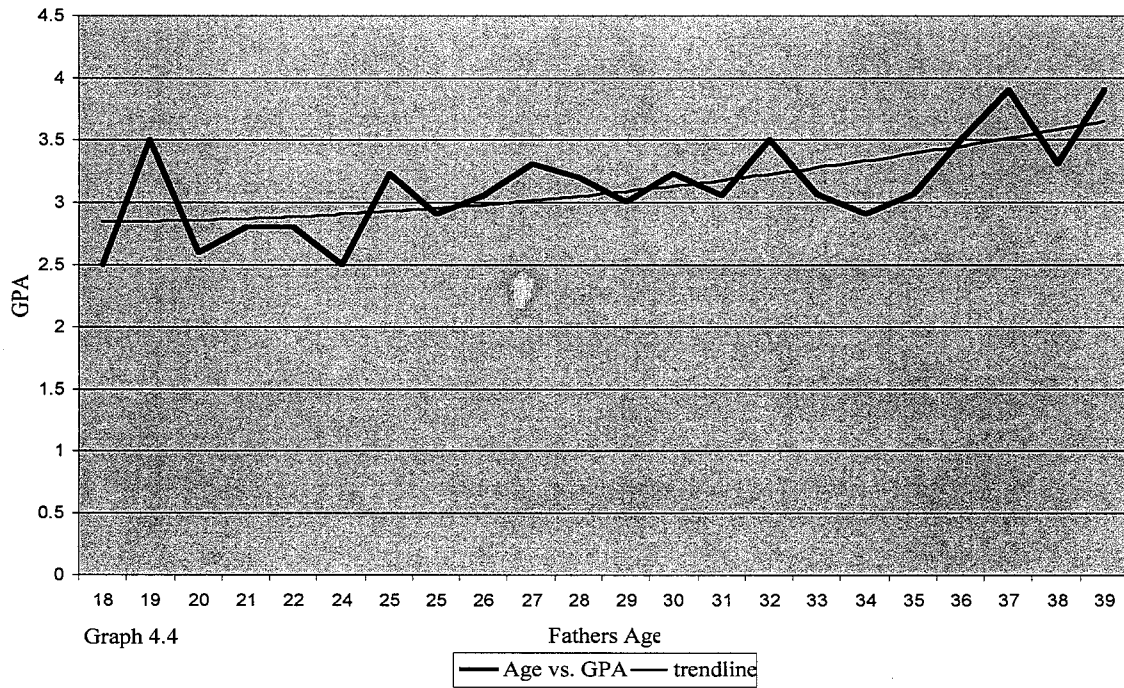
Graph 4.2

Mothers Age vs. High School Class Rank

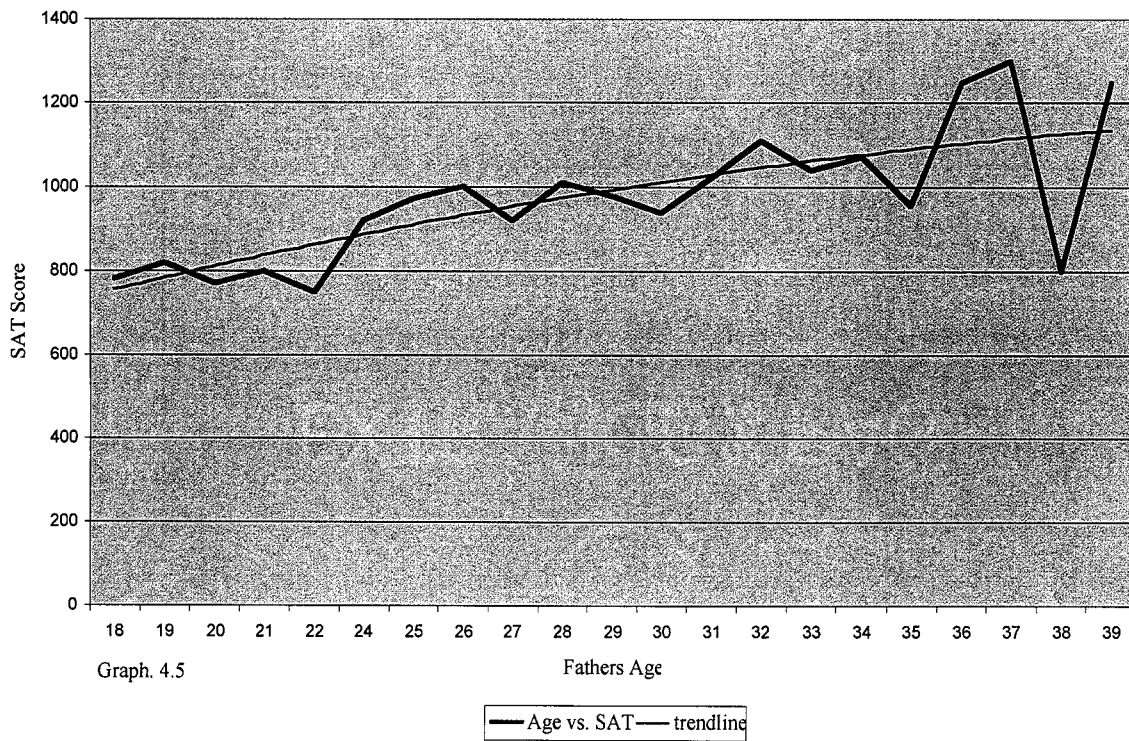


high school class rank was significant to $p < .05$. These degrees of correlation lead to acceptance of the hypothesis that father's age is a significant factor in determining the academic success of children. The data collected for father's ages and the various measures of academic achievement can be seen in graphs 4.4-4.6.

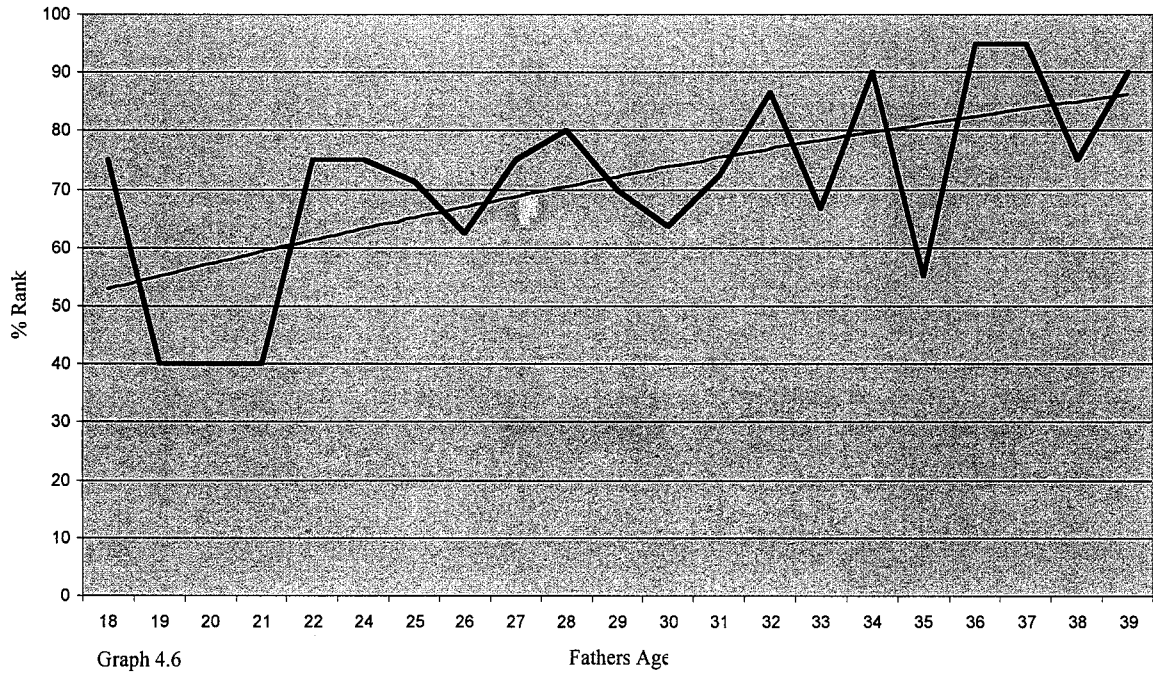
Fathers Age vs. GPA



Fathers Age vs. SAT Score



Fathers Age vs. High School Class Rank



— age vs. rank — trendline

Chapter V: Discussion

1. Summary

The findings of the present study supported that a significant correlation exists between the ages of both the mother and father and the academic success of their children as measured by all three measures of academic success. The findings were similar to those found by Mare & Tzeng; that academic performance correlates strongly with parental age. Mare & Tzeng, however, looked only at the correlation between father's ages and their son's academic performance, excluding both mothers and daughters. The present study found that, even with both mothers and daughters included, parental age correlated strongly with all three measures of academic performance examined (SAT score, GPA, and high school class-rank). The present study found that mothers ages correlated slightly more strongly with college-GPA and high school class rank than fathers ages did, and that fathers ages correlated more strongly with SAT score than mothers ages did. All of these correlations were statistically significant. There are several possible reasons for the existence of these strong correlations between parental age and academic performance.

2. Discussion

It is possible, as was mentioned in the literature review, that some parental traits may covary as a function of age, allowing older parents to produce children who are more successful academically. It is possible, for example, that Neugarten's theory of an "executive personality", which develops during middle age, may help to account for the success that

older parents have in raising academically successful children. Older parents who have developed this executive personality are able to exhibit more consistent attitudes across diverse situations and more effectively deal with the stresses that are involved in a child's upbringing. It has been shown that children whose parents have displayed consistent and rational rule enforcement throughout their upbringing perform better both academically and socially, and this may help to account for the success shown by children of older parents. The stability of personality traits that middle-aged parents seem to display once this executive personality is utilized no doubt has a strong positive impact on their children.

Another factor that may be responsible for the discrepancy between the academic performance of children of older and younger parents is parenting style. It is possible that parenting style (authoritative, authoritarian, & permissive) may covary with age just as personality does. Since parenting styles are to a large degree derived from and an extension of underlying personality structure, it is conceivable that they could vary with age just as personality traits do in Neugarten's theory. The authoritative parenting style, which has been shown to be the most effective parenting style, shares many aspects with the executive personality that was theorized by Neugarten, as well as several other personality changes that have been found to occur in middle age. Past research has found an increase in identity certainty in middle age along with an increase in personality consistency, which may help to facilitate an increase in the use of the authoritative parenting style in middle aged parents. Increased use of the authoritative parenting style would undoubtedly help these children to achieve at higher levels both academically and socially.

3. Conclusions

Despite the correlational nature of this study, meaningful conclusions can be drawn from the data gathered. It is clear that in the sample examined parental age is a strong factor in determining the academic success of children. Both mothers and fathers ages were shown to be adequate predictors of academic performance on all three measures of academic success; SAT score, GPA, and high school class rank. This study therefore concludes that supports exists for the hypothesis that parental age is one of the most important factors in determining the level of academic success of children, and that older parents produce children who perform considerably better academically than younger parents. The precise reason for the finding of this correlation cannot be determined by this study, however several possible explanations were offered in the preceding section and several other possibilities are discussed in the following section.

4. Limitations/ Implications for Future Research

The present study does have limitations, such as the fact that it did not examine any sort of parental demographics other than age and marital status. Future studies examining the effect of parental age on academic performance might build on the current findings by examining a variety of parental factors along with the academic performance of children. By examining parenting style, attitude strength, and financial stability of parents, for example, a future study may be able to examine whether some factors covary with a parent's age.

A further limitation of the present study is that it was strictly correlational. It is impossible to tell whether the better academic performance of children of older parents is caused by the fact that parents become better as they enter into middle age, or if better

parents simply wait longer to have children. It is perfectly reasonable to theorize that couples who are inherently better parents will wait longer to have children, so that they are better positioned professionally and financially to accommodate the stresses that come with raising a child. Whether or not this is the case is impossible to tell since these factors were not examined in the present study and since a correlational study cannot determine causation.

Future research may build upon the present study in a variety of ways. By examining the evolution of parenting styles longitudinally, a study may be able to determine whether parenting styles do change or if they remain rather consistent over a significant period of time. Future studies could also look at personality traits and financial stability to determine the degree to which they vary with age. By examining the demographics and personality characteristics of parents across different ages in greater detail, a more complete picture of the advantages of older parents could be obtained.

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