

PARENTING BACKGROUND AS RELATED TO
ACADEMIC ACHIEVEMENT

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Parenting Background as Related to Academic Achievement

The rapidly increasing rate of families maintained by a single-parent has stimulated much interest, concern and speculation regarding the impact on the children from these families. In 1978 there were 2.1 million marriages and 1.1 million divorces involving over one million children in the United States (Bureau of Census, 1979). Between 1970 and 1978, the number of one-parented families increased by 78% while the number of two-parented families actually declined slightly. Over twelve million children or 19.2% of all families with children under the age of 18 are headed by one-parent (Bureau of Census, 1979). An issue of particular concern is the relationship of parenting background with the academic achievement of children.

Although the single family can no longer be considered unique, society tends to assume that any departure from the traditional nuclear family model will have negative, long term consequences on children, not only in academic achievement but also emotionally and behaviorally (Herzog & Sudia, 1972). The schools

tend to assume that the single-parented child will perform at lower levels than children from nuclear families implying that the quality of parenting is inferior. Social attitudes consider the child a victim of a "broken home", and a potential "trouble-maker" (Clay, Note 1).

If a child from a one-parented home does poorly in school, the primary reason may be a result of a vast difference in family income rather than an absent parent. Nine out of ten one-parented families are female-headed and, while most of these parents work, the median income in 1975 of these families was \$6,844 as compared to \$14,816 for all families (Clay, Note 1). Of the 25% of women who receive child support payments, three-fifths received less than \$1,500 yearly regardless of the number of children involved. Only 4% of the eligible women received alimony payments in 1975 (Bureau of Census, 1979). The result is that although female-headed households comprise only 17% of all families, they account for 45% of those families living below the poverty level (Snapper & Ohns, 1977).

A lower achievement level of children from these families has been attributed to the lack of a parent often without regard to the complexity and interrelationships of the cluster of factors that are involved.

Studies conducted to determine what, if any, relationship parental absence has with cognitive performance have focused primarily on male children. Herzog and Sudia (1970) conducted a review of over four hundred studies and related articles for the United States Bureau of Children and, because of lack of evidence, restricted their conclusions to males only. In another review of fifty-eight studies, only one investigator sampled females exclusively (Shinn, 1978). Marino and McCowan (1976) generalized a review of research results to "children" and, with few exceptions, did not differentiate between males and females.

Methodological problems are prevalent in this type of research. Until recently, sophisticated computer multivariate and regression analyses were not available to accurately determine the relationship among the variables reported. Thus many studies are confounded by the lack of controls over variables that are

associated with families. Socioeconomic status (SES) is regarded as an independent variable that has considerable weight and influence on intelligence and academic achievement measures. In earlier studies, the conclusions about the relationship of parenting background with achievement were actually largely attributable to SES differences and not necessarily the family constellation (Herzog & Sudia, 1972; Marino & McCowan, 1976; Shinn, 1978). The lack of control over relevant variables and inadequate statistical methods to analyze the cluster of factors involved with family research projects have allowed the perpetuation of possible misconceptions regarding one-parented families (Herzog & Sudia, 1972).

Marino and McCowan (1976) also cite the lack of or widely varying operational definitions of achievement and parental absence. Parental absences due to divorce, separation, death, desertion, illegitimacy, or relatively temporary job assignments have obviously different psychological and economic impact but are frequently not adequately defined or assigned to broad subgroups and confound the results. Achievement

definitions include teacher rating scales, self reports from children, standardized group achievement test scores, grade point average, and accepted intelligence scales. Marino and McCowan (1976) feel this diversity of achievement measures confounds the findings of the studies, particularly the use of potentially biased scales without stringent control measures.

As a result of these methodological problems, the available literature tends to be highly contradictory. In addition, research containing subsets of data specifically related to parenting background, relevant variables and the influence on academic achievement of females is limited. Conclusions by the researcher often generalized the results as applied to the male sample with scant attention given to possible sex differences.

A review of the literature indicates that control of the socioeconomic status (SES) variable greatly influences the results of studies of achievement of children from different parenting backgrounds (Essen, 1979; Herzog & Sudia, 1970, 1972; Marino & McCowan, 1976; Miner, 1968; Shinn, 1978). Researchers of the

studies reviewed tended to study specialized populations and often SES was estimated for the sample by characterizing the children as all from a lower class area or district (Pedersen, Rubinstein, & Yarrow, 1979; Sciara, 1975; Solomon, Hirsh, Scheinfeld, & Jackson, 1972). Other studies computed the mean education of the parents of each group and discounted SES as a possible influence because the means were not significantly different (Chapman, 1977; Kunz & Peterson, 1976; Santrock, 1972).

Another method used was to state that the sample had no SES differences because there was an equal mixture of children from the same socioeconomic classes within the sample (Sutton-Smith, Rosenberg, & Landy, 1968; Nuttall, Nuttall, Polit, & Hunter, 1976). These techniques do not have the statistical effect of removing SES variable influence for all groups in the sample but indicate only the class homogeneity of the sample. Computing only the mean education level of male and female parents is not effective since male-headed households with less than an eighth grade education comprise 18.6% of families at the poverty rate. For female-headed families,

the corresponding rate was 40.7%. Even for parent(s) with some college experience, the poverty rate for male-headed families is 2.3% while female-headed families is 10.9% (Snapper & Ohms, 1977). While these studies did attempt to compare children from homes with equal resources available, estimating SES by these methods is not an adequate indication or measure of characteristics of the groups or of the sample. The results and apparent differences may be unrelated to the parenting situation of the child's family. Of the studies that did control for the SES variable statistically, with a multiple correlation technique, none had significant differences in achievement and single-parented females tended to score slightly higher than the single-parented males (Bales, 1978; Essen, 1979; Miner, 1968).

The SES variable influence can have a dramatic influence on the dependent measure, achievement, when removed. Essen (1979) states that before SES influence was controlled over all groups, the single-parented children's scores were significantly lower on all tests of achievement. After adjusting for SES, only the mathematics scores were slightly lower

(non-significantly) for the single-parented group. It seems apparent from the review of literature that unless the SES variable is controlled, the study may be measuring the relationship of family income rather than that of parenting situations and achievement on children.

Among studies using an estimation technique without statistical control of SES effects, all but one (Solomon, et al., 1972) found significantly lower achievement of the group of one-parented children as compared to two-parented children, regardless of the achievement criterion or test instrument used. When separated by sex, however, females showed at least slightly different patterns than males in some studies. Single-parented females did not have as many significant differences when compared to children in the intact parent group as male one-parented children (Nuttall, et al., 1976; Santrock, 1972; Sicara, 1975; Sutton-Smith et al., 1968). Unfortunately, relevant studies which include females in the sample and report the results by sex are extremely limited in this area.

However, two studies (Chapman, 1977; Pedersen et al., 1979) found distinct differences in the predicted patterns of achievement and parenting with females. Scholastic Aptitude Test (SAT) scores for father-absent females were not significantly higher than scores of females from intact families (Chapman, 1977). The male groups, however, performed as predicted, with the intact family group significantly higher on the SAT. The failure to find consistency with previous research was explained by the author citing Hetherington (1972) as the possible result of personality disturbances related to females and father absence, thus allowing only the more intelligent single-parented females to be included in a college sample.

A second study involved fifty-five black infants from single-and two-parented lower class families (Pederson et al., 1979). Using the Bayley Test of Infant Development and four items measuring problem solving ability, the researchers found that female infants were unaffected by father absence or presence. Male infants from father absent homes scored lower on fifteen out of sixteen measures compared to male infants in the father-present group with three

differences statistically significant. Although the female results were contrary to their predictions, discussion focused on results of the male group. The conclusion states that the father is a significant part of the infant's environment. While this conclusion may be supported by the male group, the results indicate that female infants are not affected in a similar manner.

Several studies have also investigated the relationship of birth order, family size, and age of the child at loss of parent as related to achievement. Birth order and family size research results are fairly consistent. Birth order studies have shown that first born females achieve at higher levels than male first born and, unlike males, family size does not have a negative impact (Chittenden, Foan, Zweil, & Smith, 1968; Knuz & Peterson, 1977; Milner, 1968; Nuttall et al., 1976). The lower the number of months between the first born and the next sibling may increase this achievement superiority (Chittenden et al., 1968).

The sex of the second sibling and age at loss of parent may be related to achievement. A study of absent

father family composition (Sutton-Smith et al., 1968) found that first born females with a male sibling scored lower, quantitatively, than those with a female sibling. The relationship of father absence achievement was most pronounced in three-child families and on females if absence occurred between the age of 0 to 4 years. Santrock (1972) found that females from divorced families when absence occurred at 0 to 5 years of age scored lower than if the loss was between the ages of 6 and 13. Other studies have contradicted this finding (Essen, 1979; Spohn, 1978). It should be noted that both Sutton-Smith et al. (1968) and Santrock (1972) did not control for the SES variable and the negative relationships of age and sex of sibling as related to achievement may be confounded.

In summary, the review of literature indicates the importance of the SES variable in studies involving achievement measures. The lack of "hard" research and data on females as related to achievement and parenting background is obvious when compared to the number of studies conducted with male samples. The review serves,

however, to illustrate that conclusions from a male sample may not be appropriate with females and the possibility that female children may not react in the same manner or intensity as males in equal parenting situations.

This study was designed to investigate the relationship of parenting background with college achievement and to determine a valid combination of predictor variables using a female sample. The review of the literature, does contain some indications of possible sex differences as related to achievement factors. Each variable has been selected for this study because of its potential to be an important piece of the complex cluster that is involved in families and achievement, particularly as related to women.

The major hypothesis of this study is that females from one-parented homes will have a significantly lower mean GPA than females from two-parented homes. A second hypothesis is that certain sociological and environmental variables are strongly related to GPA and will account for the mean differences between the two groups allowing the mean GPA differences to become non-significant.

Method

Subjects

The sample consisted of 200 self selected female volunteers classified as sophomores, juniors, or seniors from a southwestern woman's university. The students were assigned to two groups, according to parenting background, from information obtained in the data collection. The first group lived with both natural parents from birth to 18 years of age. The second group lived at least two consecutive years with one parent before the age of 18, regardless of remarriage, if any, of that parent. Absence of the other parent may not be for job related or military assignment reasons but must be of a permanent nature such as divorce, separation, or death.

Materials

A self report questionnaire was designed by the researcher to collect data on the subject's current and cumulative school achievement, class status, and family background and history (Appendix A). Both groups were asked to supply information relating to the independent variables: socioeconomic status, birth

order, family size, age at and reason for parent absence, duration of parent absence, and remarriage of parent. The dependent variable, cumulative college grade point average, was supplied by the respondent.

A combination of open (short answer) and closed response type questions were used for the format. Respondents were also invited to add additional clarifying information if the choices or questions were not applicable or did not reflect their family accurately. This invitation was printed within the body of the questionnaire.

Procedure

The subjects were solicited by the use of the subject pool or by personal solicitation by the researcher. Each subject was given a coded questionnaire and verbal instructions. The verbal instructions paraphrased the introduction of the form. Students were reassured of confidentiality by the use of identifying code numbers and reminded not to write their names on the questionnaire.

The socioeconomic status (SES) of the family was determined by the occupation of the parent(s) during

childhood and by the education level attained by the parent(s). A version of The Duncan Socioeconomic Index (Mercer & Lewis, 1977) was used to rate occupations from 0 (unemployed, disabled) to 9 (professionals, managers). Education is rated from 1, eighth grade or less, to 5, college graduates. Both of these ratings were used for the SES of each family. For two-parented families, however, only the highest score of each category was used in order to reflect the actual SES of the home on the same basis as the one-parented home (see page 6 of literature review for discussion of the SES variable). Reason for absence was coded from 1, death, to 4, mother unmarried. The birth order position variable was coded as 1, first born, 2, last born, and 3, only child.

Cumulative grade point average was the dependent variable and the measure of achievement for purposes of this study. Possible values of GPA are from 0.00 to 4.00. Students had at least two semesters of college grades (sophomore status) for eligibility as a subject. The researcher feels cumulative GPA in college a less biased and more representative estimate of actual achievement than specialized test scores.

Statistical Analysis

A t-test for mean differences for independent samples was used to test for significance between groups for the GPA variable at the .01 level of significance. A multiple regression analysis will be used to determine the influence of each predictor variable on the dependent variable. Partial regression coefficients will be utilized to remove the effects of selected independent variables within the groups. A chi square analysis will be used to test for differences among the two independent samples of the two SES variables.

Results

Within the sample of 200 subjects, 41 (20.5%) were from a single-parented family background (Group 1) and 159 (79.5%) students were two-parented children (Group 2). The two groups closely approximate the percentages of one and two-parented families in the United States population (Bureau of Census, 1979). The students ranged in age from 18 to 56 years old with only 55% in the traditional college age bracket of 18 to 22 years old. The mean ages of Group 1 ($\bar{x} = 26.42$, $SD = 6.96$) and Group 2 ($\bar{x} = 25.15$, $SD = 7.59$) were not significantly different when compared using the t-test for mean differences for independent samples. However, the correlation coefficient for GPA and the age of the student exceeded the calculated critical value for r for the Group 1 students ($r = .58$, $p < .001$).

The main hypothesis of this study was that females from one-parent backgrounds would, initially, have a significantly lower mean GPA than females from two-parented homes. However, this difference would become nonsignificant when the influence of the sociological variables, education and occupation levels of the parent, were removed.

The calculation of the mean GPA for both groups in the sample revealed that Group 1's mean cumulative GPA was 3.08 (SD = .534) and Group 2's mean was 3.00 (SD = .510). A t-test for mean differences for independent samples for GPA and parenting background showed this difference to be nonsignificant ($t = .52$, $p > .62$). Since the group means of the dependent variable, GPA, were not significantly different, the multiple regression equation was not calculated. Tests of significance were conducted to investigate the relationship of the sociological and environmental variables with the designated achievement measure, cumulative GPA.

A one-way analysis of variance (ANOVA) was used to test for differences in GPA between parent occupation levels. The results indicate that the occupation of the parent has a significant relationship with the GPA of the student (See Table 1). The original nine categories of occupations in the SOMPA Socioculture Scale (Mercer et al., 1977) were reduced by combining Laborer (nonfarm) and Laborer (farm) as the first level and the Mid-level and Upper-level Professionals into the seventh and last category due to the small sample sizes in the extremes. Levene's test of homogeneity of variances was performed

due to the unequal group sizes. The result was non-significant ($F = .39$, $df = 6,180$, $p > .88$).

Table 1
Summary of the One Way ANOVA of Parental
Occupation Level to GPA

Source	SS	df	MS	F
Between	5.202	6	.871	3.59**
Within	43.533	180	.2418	
Total	48.735	186		

** $p < .01$

In order to estimate the overall strength of association between the independent variable, parent occupation, and the dependent variable, GPA, the omega square test was calculated. The SES variable, parent occupation, accounted for 7.66% of the variance in GPA. The Newman-Kuells Multiple Comparison Method using the harmonic mean for unequal group sizes determined that the GPA of the first occupation level, Laborer, differed significantly from the GPA of the other six occupation categories. However, all other group comparisons were not significant. Table 2 illustrates the mean, standard deviation, and frequencies of each occupation level and the total sample.

Table 2
 Mean GPA and Frequency Distribution of Parenting
 Groups by Parent Occupation Levels

Occupation Level	Mean GPA	SD	<u>Group 1</u> Group n in each level Cumulative (%) by Group	<u>Group 2</u> Group n in each level Cumulative (%) by Group	Cumulative n and (%) of Total Sample
Laborer	2.145	.532	0 (0%)	6 (4%)	6 (4%)
Unskilled	3.035	.508	8 (22.2%)	5 (7.3%)	19 (11%)
Semi-skilled	3.022	.513	7 (41.6%)	19 (20%)	45 (25%)
Skilled	3.040	.500	10 (69.3%)	26 (37%)	81 (44%)
Highly Skilled	3.106	.515	4 (80.4%)	46 (67.6%)	131 (70.5%)
Lower-level Professional	3.068	.394	6 (97%)	23 (82.6%)	160 (85.5%)
Mid/Upper Level Professional	2.945	.493	1 (99.7%)	26 (99.8%)	187 (99.5%)
Total Sample	3.017	.512	36%	151%	187%

Also represented in parentheses is the cumulative frequency percentage of each group by occupation level. The one-parented group has a cumulative percentage median falling between the Semi-skilled and Skilled categories while the median for Group 2 is within the Skilled and Highly Skilled levels.

To test whether a one-or two-parented family is associated with the occupation levels of the parent, a chi square test for independent samples was utilized for these nominal variables. The results indicated that whether the family is maintained by one-or two-parents is related to the occupational level of the family's primary provider ($\chi^2 = 27.36$, $df = 6$, $p < .001$) with a contingency coefficient of .357 (see Table 3).

The second SES variable, parent education level, and GPA was tested with a one way ANOVA and the groups were not significantly different in mean GPA ($F = .59$, $df = 4, 191$, $p > .66$). A chi square test for independent samples was performed to test parent education and parenting status and was not significant ($\bar{\chi} = 5.07$, $df = 4$, $p > .28$). However, a chi square analysis of parent education level and ethnic group was significant ($\chi^2 = 32.073$, $df = 8$, $p < .001$), with a contingency

Table 3

A Chi Square Analysis of Parenting Status
and Parent Occupation Level^a

	Laborer	Unskilled	Semi- skilled	Skilled	Highly Skilled	Lower Prof.	Mid-upper Prof.
Group 1	0	8	7	10	4	6	1
n = 36	(0)	(61.5)	(26.9)	(27.7)	(8)	(21)	(3.7)
Group 2	6	5	19	26	46	23	26
n = 151	(100)	(38.5)	(73)	(72.2)	(92)	(79)	(96.3)
Total	6	13	26	36	50	29	187

$\chi^2 = 27.36$, $df = 6$, $p < .001$, $C = .357$.

^aNumbers in parentheses indicate percentages.

coefficient of .375. Examination of the percentages in Table 4 shows whites to have relatively low representation in the lower education levels but a high percentage of college graduates (43%).

Table 4
A Chi Square Analysis of Parent Education
Level and Ethnic Group^a

Education Level	Ethnic Group			
	White	Black	Hispanic/ Oriental ^b	Total
8th Grade or less	5 (3.3)	3 (8.8)	4 (23.5)	12
Attended High School	11 (7.4)	6 (17.6)	2 (11.7)	19
High School Graduate	39 (26.3)	5 (14.7)	3 (17.6)	47
Attended College	29 (19.5)	15 (44)	4 (23.5)	48
College Graduate	64 (43)	5 (14.7)	4 (23.5)	73
Total	148	34	17	196

$\chi^2 = 32.073$, $df = 8$, $p > .001$, $C = .375$.

^aNumbers in parentheses indicate percentages.

^bHispanic and Oriental groups were collapsed due to low cell frequency sizes.

The ethnicity of the student also has a relationship with the GPA. A one way ANOVA indicated that there were significant differences between ethnic groups and their mean GPA's ($F = 4.66$, $df = 3,196$, $p < .01$). The homogeneity of variance was tested using Levene's technique and failed to reach significance ($F = 1.08$, $df = 3,196$, $p > .36$). The omega square test reveals that 5.2% of the variance in the GPA may be accounted for by ethnic group.

Table 5

Summary of the One Way ANOVA of Ethnic Group to GPA

Source	SS	df	MS	F
Between	3.512	3	1.1708	4.66**
Within	49.225	196	.2511	
Total	52.737	199		

** $p < .01$.

The group means were compared using the Newman-Kuells Multiple Comparison Procedure using the harmonic mean. The mean GPA of the white students ($\bar{x} = 3.077$, $n = 151$) was not significantly higher than the mean GPA of the Black students ($\bar{x} = 2.808$, $n = 32$) or the Hispanic students ($\bar{x} = 2.711$,

n = 11). The Asian students, with a mean GPA of 3.318 (n = 6) differed significantly with the Hispanic students ($\underline{q} = 4.561$, $df = 4.196$, $\underline{p} < .01$) and the Black students ($\underline{q} = 3.835$, $df = 3.196$, $\underline{p} < .05$).

Another variable of interest was birth position of the student to their siblings, if any, and relationship with achievement. A one way ANOVA compared the GPA means of students who are first, middle, last born, or single children. The analysis (Table 6) revealed a significant difference between the mean GPA of the birth order groups ($\underline{F} = 2.67$, $df = 3.196$, $\underline{p} < .05$). Levene's test for equal variances was not significant ($\underline{F} = 2.09$, $df = 3.196$, $\underline{p} > .10$).

Table 6

One Way Analysis of Variance of Birth Order
Position and Mean GPA

Source	SS	df	MS	F
Between	2.070	3	.6903	2.67*
Within	50.667	196	.2585	
Total	52.737	199		

* $\underline{p} < .05$.

The omega square test indicated that only 2.3% of the variance in GPA was accounted for by the birth order variable.

No significant difference existed between the GPA means of the first born children ($\bar{x} = 3.145$, $n = 63$), middle children ($\bar{x} = 2.907$, $n = 69$), last born children ($\bar{x} = 2.999$, $n = 57$), or only children ($\bar{x} = 3.147$, $n = 11$) when compared using the Newman-Kuells Procedure with the harmonic mean. The p value of the Levene test of variance homogeneity is close to statistical significance and the variances of the groups may not be equal. A chi square test for independent samples indicated that Groups 1 and 2 were similar in terms of percentages of first, middle, last, and only children ($\chi^2 = .81$, $df = 3$, $p > .50$). However, the entire group of only children were from single-parented backgrounds.

The college major and class are also variables that are related to the student's GPA. A one way ANOVA for significant differences between GPA means of sophomores ($\bar{x} = 2.936$, $n = 37$), juniors ($\bar{x} = 2.912$, $n = 72$) and seniors ($\bar{x} = 3.145$, $n = 90$) showed a significant difference between the three groups ($F = 4.96$, $df = 2, 197$, $p < .01$). Levene's test for equal variances found the degree of heterogeneity of the groups nonsignificant ($F = 2.13$, $df = 2, 197$, $p > .12$). The omega square test estimated the variable, class, accounts for only 3.8% of the variance in GPA. The

Newman-Kuells comparison using the harmonic mean showed significant differences between the senior class and both the junior class ($q = 3.58$, $df = 3.197$, $p < .05$) and the sophomore class ($q = 3.215$, $df = 2.197$, $p < .05$).

A one way ANOVA between the six college major groups indicated a significant difference between the means ($F = 3.46$, $df = 5.194$, $p < .01$). Levene's test of variances was not significant ($F = 2.81$, $df = 5.194$, $p > .13$). The college major accounts for 5.79% of the variance in the GPA as estimated by the omega square test (est $w^2 = .0579$). The Newman-Kuells comparison using the harmonic mean indicated that the GPA mean of education majors ($\bar{x} = 3.156$, $n = 53$) differed significantly with physical/occupational therapy majors ($q = 4.79$, $df = 6.194$, $p < .01$) and business majors ($q = 4.72$, $df = 5.194$, $p = < .01$). Table 7 shows the frequencies and mean of each of the six majors.

The presence of an adult (other than a parent) with a significant, positive influence on the student during childhood was examined as a possible factor related to achievement. However, a t-test for differences in mean GPA for independent samples was nonsignificant ($t = .49$, $p > .62$). The chi square analyses showed no significant

relationship with any of the other variables investigated in this study.

Table 7
Descriptive Statistics for Groups by College Major

	Mean GPA	Standard Deviation	n	Percentage of Total n
Nursing	3.038	.439	40	20
Education	3.156	.441	53	26.5
Liberal Arts	3.094	.568	44	22
Occupational/ Physical Therapy	2.757	.370	24	12
Business/Computer Science	2.763	.590	21	10.5
Physical Sciences	3.063	.632	18	9
Total	3.021	.515	200	100%

The future educational aspirations, after the undergraduate degree, and possible relationship with the GPA was investigated. The educational aspirations variable was divided into three groups. The first group had no expectations for any additional degrees after the B.A. or B.S. ($\bar{x} = 2.918$, $n = 85$). The students expecting to obtain a Master's degree were the second and largest group

($\bar{x} = 3.054$, $n = 101$). The third group expected to obtain a Ph.D. or M.D. degree ($\bar{x} = 3.413$, $n = 14$). A one way ANOVA for group differences in mean GPA indicated significant differences at the .01 level ($F = 6.31$, $df = 2.197$, $p < .01$). Levene's variance test yielded a nonsignificant result ($F = .36$, $df = 2.197$, $p > .69$). Educational aspirations is responsible for only 5.2% of the variance in GPA as estimated by the omega square test. The Newman-Kuells comparison using the harmonic mean reveals the the Ph.D./M.D. group is significantly different from the Master's group ($q = 4.08$, $df = 2.197$, $p < .01$) and the group having no further educational aspirations ($q = 5.63$, $df = 3.197$, $p < .01$).

A number of analyses were performed using the additional data gathered on variables related to the single-parented students. A one way ANOVA for group differences between educational aspirations and the mean age at the onset of parent absence was significant. The group with no post-B.A. plans had a mean age of 9.58 years ($n = 12$) when parent absence occurred. Students in the Master's group were 8.08 years old ($n = 24$) while the Ph.D./M.D. group was 4.25 years old ($n = 4$). The results of the ANOVA indicated significant differences between the groups

($F = 3.59$, $df = 2.37$, $p < .05$) and a homogeneity of the variances between the groups ($F = .65$, $df = 2.37$, $p > .52$). The Newman Kuells comparison using the harmonic mean indicated a significant difference between the mean age at onset of parent absence in the Ph.D./M.D. group and the Master's group ($q = 3.13$, $df = 2.37$, $p < .05$) and the group with no post-B.A. plans ($q = 4.368$, $df = 3.37$, $p < .05$). The omega square estimate of the strength of the association between the age at onset of parent absence and the educational aspirations was 11.45%.

Similar results were obtained for educational aspirations and the total number of years the student had lived in a single-parent maintained home. The Group 1 students were maintained by a single-parent for a mean of 6.90 years ($SD = 4.30$) before remarriage or reaching 18 years of age. The students with no post-B.A. education plans has a mean of 5.25 years of their childhood in a single-parent setting before the remarriage of the primary caretaker or reaching 18 years of age. Those with expectations of a Master's degree had a mean of 6.58 total years and the group expecting to pursue a Ph.D./M.D. degree had a mean of 13.75 total years with a single-parent. The one way ANOVA for group differences indicated a significant

difference between the groups ($F = 8.26$, $df = 2.37$, $p < .01$). The homogeneity of variance using Levene's test was not significant. The omega square test estimated the strength of association between the two variables as 26.63%. Comparison of the group means by the Newman-Kuells method using the harmonic mean revealed that the mean number of years in the Ph.D./M.D. group was significantly different from the group with no post-B.A. plans ($q = 6.54$, $df = 3.37$, $p < .01$) and the Master's group ($q = 5.52$, $df = 2.37$, $p < .01$).

The father was most often the absent parent. Of the 41 students in Group 1, 36 (87.8%) were from families maintained by the mother. Of the 5 families with mother as the absent parent, 4 listed death as the reason for the absence. Predictably, divorce was the most frequent cause of parent absence and was cited by 30 (73%) of the students. Parent absence because of death was given as the cause for 9 or 22% of the group. Parent absence for two of the students was due to an unmarried mother. The mean age at onset of parent absence was 8.15 years ($SD = 3.68$). Remarriage of the caretaker parent was reported by 16 students or 39% of the sample at a mean age of 12.05 years ($SD = 3.37$).

A t-test for mean differences for independent samples was not significant between the mean GPA ($\bar{x} = 3.170$, $SD = .52$) of students with a stepparent and the mean GPA ($\bar{x} = 3.066$, $SD = .55$) of students whose parent did not remarry ($t = .22$, $df = 39$, $p > .81$). Similarly, no significant difference was found between the mean GPA when absence was due to death ($\bar{x} = 2.996$, $SD = .424$) or divorce ($\bar{x} = 3.090$, $SD = .603$) using the t-test for independent samples ($t = .76$, $df = 34$, $p > .80$). Table 8 contains a summary of the results of the analyses presented in this chapter. Appendix B contains descriptive statistics of each variable discussed with the group and sample frequencies.

Table 8

Summary of the Analyses of the Parenting Background Variables

Variable(s) Analyzed	Test of Significance * (Value Obtained)	p Value
Parenting Background/ GPA (p. 21)	t-test ($t = .52$, $df = 199$)	$p > .62$
<u>SES-Parent Occupation</u> <u>Level</u> /GPA (p. 19)	One way ANOVA ($F = 3.59$, $df = 6/180$)	$p < .01^{**}$
/Parenting (p. 20)	Chi Square ($\chi^2 = 27.36$, $df = 6$)	$p < .001^{***}$
<u>SES-Parent Education</u> <u>Level</u> /GPA (p. 21)	One way ANOVA ($F = .59$, $df = 4/191$)	$p > .66$
/Parenting Background (p. 21)	Chi Square ($\chi^2 = 5.07$, $df = 4$)	$p > .28$
/Ethnic Group (p. 21)	Chi Square ($\chi^2 = 32.07$, $df = 8$)	$p < .001^{***}$

Table 8 continued

Variable(s) Analyzed	Test of Significance * (Value Obtained)	p Value
<u>Birth Order</u>		
/GPA (p. 22)	One way ANOVA (\underline{F} = 2.67, df = 3/196)	\underline{p} < .05*
/Parenting Background (p. 23)	Chi Square (χ^2 = .81, df = 3)	\underline{p} > .50
<u>Educational Aspirations</u>		
/GPA (p. 25)	One way ANOVA (\underline{F} = 6.31, df = 2/197)	\underline{p} < .01**
/Age at Onset of Parent Absence (p. 26)	One way ANOVA (\underline{F} = 3.59, df = 2/37)	\underline{p} < .05*
/Total Number of Years in One Parented Home (p. 27)	One way ANOVA (\underline{F} = 8.26, df = 2/37)	\underline{p} < .01**
College Class /GPA (p. 23)	One way ANOVA (\underline{F} = 4.96, df = 2/197)	\underline{p} < .01**

Table 8 continued

Variable(s) Analyzed	Test of Significance * (Value Obtained)	p Value
College Major /GPA (p. 24)	One way ANOVA ($F = 3.46$, $df = 5/194$)	$p < .01^{**}$
Remarriage of Parent /GPA (p. 28)	t-test ($t = .22$, $df = 39$)	$p > .81$
Reason for Parent Absence /GPA (p. 28)	t-test ($t = .76$, $df = 34$)	$p > .80$
Influential Adult. /GPA (p. 24)	t-test ($t = .49$, $df = 184$)	$p > .62$
Age (Group 1) (p. 18)	Critical r Value ($r = .58$)	$p < .001^{***}$
Ethnic Group /GPA (p. 21)	One way ANOVA ($F = 4.66$, $df = 3/196$)	$p < .01^{**}$

*Note: The tests of significance referred to are the (1) the t-test for mean differences for independent samples; (2) the analysis of variance for differences between group means (ANOVA) with one factor; and (3) the chi square test of association for independent samples.

Discussion

The results of this study suggest that parenting background of females, during childhood, may have little relationship with academic success at the college level. Unlike much of the previous research reviewed (Brown, 1980; Essen, 1979; Miner, 1968; Santrock, 1972; Sciara, 1975; Spohn, 1978; Sutton-Smith et al., 1968), the present study failed to find a significant relationship between parenting background of the student and the designated achievement criterion, GPA.

The lack of a significant difference in the mean GPA between the one- and two-parented groups is consistent, however, with the results obtained by Chapman (1977) with the female, college-age group of his sample. Chapman found no significant difference between the mean SAT scores of the single-parented group and the two-parented females.

Using the same operational definition for the single-parented group (a two year duration of parent absence before age 18) may have contributed to the similarity of results of the present and Chapman's. The diversity of the definitions and measures used by the investigators to group subjects and quantify the female variables makes meaningful comparisons with other results difficult to

evaluate for consistency of results and limits general-
ibility.

An unusual relationship was found between the two
SES variables and the mean GPA. No previous study reviewed
has obtained a highly significant difference between the
GPA means of the groups on an SES variable and also a non-
significant difference between the one- and two-parented
students on the achievement measure without first removing
the influence of that SES variable.

The significant F ratio obtained between the mean GPA
of the students in the parent occupation levels may have
been influenced by the mean GPA of the students who
comprised the Laborer category. This group differed
significantly with the mean GPA of the other six levels
but further comparisons among these levels were not
significant. In addition, the six students in the
Laborer level were two-parented students and the signifi-
cant relationship obtained by the chi square analysis
between parent occupation and marital status would appear
to be unduly influenced by this small group. However,
calculating the chi square test with the Laborer group
eliminated ($n = 181$ within six levels) was also highly
significant.

The group differences with respect to parent occupation suggest that the college achievement of the single-parented students has not been affected adversely by their relatively lower socioeconomic level. Conversely, it is also possible that a higher family income did not influence the GPA of the two-parented students in this sample in the direction or magnitude that might be predicted by previous research.

The tendency of one-parented families to be grouped in lower occupation levels is consistent with the statistics cited by the Bureau of Census (see pages 2 and 3). The majority of families in Group 1 were female-headed households (36 out of 41) and the discrepancies between the employment opportunities available to men and women, regardless of education level, is further illustrated by the parent education SES variable.

Over 80% of the parents in Group 1 and 86% of the Group 2 parents are high school graduates or above. The lack of a significant difference between the parent group and education level while there is a highly significant relationship of the groups with respect to occupation level suggests that this sample shows a similarity to the larger population. The same general relationship of

male-and female-headed households and occupation/education differences of the population is present in this sample. This, of course, is not proof of the representativeness of the sample but does allow for some confidence that the sample is at least not extremely atypical.

Unfortunately, the methods of determining education level of the parents used in previous studies prohibits comparison with the present results. Also, much of the research appears to have focused on children from families from a very low socioeconomic and educational level (Bales, 1978; Brook et al., 1979; Essen, 1979; Miner, 1968; Pederson, et al., 1979; Santrock, 1972; Sciara, 1975; Solomon et al., 1972).

It is possible that these results may be a reflection of a restriction of range of the sample. Although the parenting groups approximated the distribution found in the United States population, the sample collected may have been highly homogeneous and, therefore, subject to restricted variability. The size of the sample was large enough to be considered representative of the population but was limited to upperclass women attending a predominately female university. These limitations will exclude the

first year students who haven't been successful in maintaining the required GPA to continue.

The degree of selectivity may have been enhanced further by the type of university chosen for sampling. Women attending a traditionally all-female school may have significantly different psychological and motivational characteristics from women attending a coeducational institution. Self selection of the volunteers also may be a threat to the heterogeneity of the sample. These factors severely limit the generality of the results to the overall female college population, regardless of the parenting background of the student.

The results of this study suggests that achievement may be affected by a cluster of variables each exerting a relatively small but definite influence on the student. The variables that had a significant relationship with GPA, (parent occupation, birth order, ethnic group, educational aspirations, college class and major), each accounted for only a small percentage of the variance in the dependent variable.

Analyses of the variables involving only the single-parented student group indicated that the reason for parent-absence or the remarriage of the caretaker parent

did not significantly influence the GPA. However, the age at onset of parent-absence and the total number of years the student was maintained in a single-parented home had a significant relationship with future educational aspirations. The relatively strong association of these variables suggests that the younger the child at parent absence and the longer the child lives in a single-parented home, the higher the child's educational aspiration level.

Since the divorce rate, the number of illegitimate births, and remarriage of single-parents continue to increase, further research is necessary to establish an adequate theoretical base with accurate and valid statistical data. More attention should be devoted to an operational definition of terms. Frequently, parent-absence is investigated without regard to the reason, age at onset, and duration of absence. Temporary absence is often not distinguished from permanent absence. Also, the results are reported for the entire sample without investigating possible sex differences.

The present study illustrates the need to utilize two measures of socioeconomic status. Parent education level alone does not provide an adequate estimate of family income but may be valuable in assessing parent

interest in the child's achievement. Studies that explore the relationship of achievement and parent-absence or presence across various economic subgroups, particularly the middle class, would provide a better basis for prediction.

The need for longitudinal studies is also evident. To accurately determine the influence of parent-absence, it is necessary to establish the achievement level preceding and following absence. Although this type of research would be difficult to conduct, the method is scientifically superior to "after the fact" investigations. It would also seem that the effort is justified by the significance of the question and would allow for development of effective approaches and methods to maximize every child's potential.

Appendix A - Questionnaire

Code # -1

Texas Woman's University

Denton, Texas

The purpose of this questionnaire is to gather information about female college students. Please add any comments or information on the back of the form(s) that you feel describes your situation more completely. Each questionnaire is coded by number to insure all information obtained will remain anonymous and will not be identified with you as an individual. Please do not write your name on any page.

No medical service or compensation is provided to subjects by the University as a result of injury from participation in research. I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH. I understand that my participation is voluntary and that I may withdraw at any time.

Code # -2

1. Age _____
2. Race White Black Hispanic Other _____
3. Major Course of Study _____
4. Scholastic Aptitude Test Scores (SAT) Verbal _____
Math _____ Total _____
5. Class Status Sophomore Junior Senior
6. College Grade Point Average (GPA) from Last
Semester Courses Only _____
7. Total or Cumulative College GPA _____
8. Do you plan to continue your education beyond the
undergraduate degree? No Undecided
Yes Master's , PhD or Other _____
9. Number of Brothers Older Than You _____
Younger Than You _____
Number of Sisters Older Than You _____
Younger Than You _____
10. Were either or both of your natural parents
absent (other than job related) from your home
during your childhood?
 - a. No, both parents were present -Skip to
question #14
 - b. Yes, father was absent and I lived with
mother

Code # -3

- c. Yes, mother was absent and I lived with
father
- d. Yes, both parents were absent and I lived
with _____
- e. If none of the above statements apply to your
situation, please describe _____

11. Indicate the reason for parent absence

- a. Death b. Divorcé c. Separation
d. Mother Unmarried e. Other reason _____

12. How old were you when parental absence occurred?

13. Did the parent you lived with remarry (or
establish a permanent live-in relationship)?

Yes -How old were you? _____ No

14. During your childhood, was there any adult
(other than parents) that you feel had a special
positive interest in you? Yes No

15. When you were a child, what was the primary
occupation of:

Mother _____ (Unknown _____)

Father _____ (Unknown _____)

Code # -4

16. Please check the highest grade completed by your
mother and father

<u>Mother</u>	<u>Father</u>
	8th grade or less
	Attended high school but did not graduate
	High School graduate
	Attended college but did not graduate
	College graduate
	Unknown to you

***Please add any further information on the back if you
feel the questions and/or choices offered cannot
adequately describe your personal situation.

I sincerely appreciate your taking the time to
complete this form, sharing your personal history, and
your assistance with my research.

Marilyn J. Sweet

Appendix B
Descriptive Statistics

Table 9
 Frequency Distribution of the Parental Occupation
 Level of the Student Sample

	Group 1		Group 2		Total Sample	
	Frequency	%	Frequency	%	Frequency	%
Laborer	0	0.0	6	3.9	6	3.2
Unskilled	8	22.2	5	3.3	13	6.9
Semiskilled	7	19.4	19	12.6	26	13.9
Skilled	10	27.8	26	17.2	36	19.3
Highly Skilled	4	11.1	46	30.5	50	26.7
Lower-Level Profes- sional	6	16.7	23	15.2	29	15.5
Mid & Upper Level Profes- sional	1	2.8	26	17.2	27	14.5
Total	36	100.0%	151	100.0%	187	100.0%

Table 10
 Frequency Distribution of the Parental Education
 Level of the Student Sample

	Group 1		Group 2		Total Sample	
	Frequency	%	Frequency	%	Frequency	%
Completed 8th Grade or less	4	9.8	8	5.2	12	6.1
Attended High School but did not graduate	5	12.2	14	9.0	19	9.7
High School graduate	13	31.7	34	21.9	47	24.0
Attended College but did not graduate	9	22.0	36	23.2	45	22.9
College graduate	10	24.4	63	40.6	73	37.3
Total	41	100.0%	155	100.0%	196	100.0%

Table 11

Mean Cumulative GPA of One- and Two-Parented Students

Group	n	Mean GPA	Standard Deviation
One-Parented Students	41	3.08	.534
Two-Parented Students	159	3.00	.510
Total Sample	200	3.02	.515

Table 12
Mean Age of One-and Two-Parented Students

Group	n	Mean GPA	Standard Deviation
One-Parented Students	41	26.42	6.96
Two-Parented Students	159	25.15	7.59
Total Sample	200	25.41	7.46

Table 13
 Frequency Distribution of the Ethnic Composition
 of the Student Sample

	Group 1 Frequency %		Group 2 Frequency %		Total Sample Frequency %	
White	28	68.3	123	77.4	151	75.5
Black	9	22.0	23	14.5	32	16.0
Hispanic	4	9.8	7	4.4	11	5.5
Oriental	0	0.0	6	3.8	6	3.0
Total	41	100.0	159	100.0	200	100.0

Table 14
 Frequency Distribution of the Class Status
 of the Student Sample

	Group 1 Frequency %		Group 2 Frequency %		Total Sample Frequency %	
Sophomore	7	17.	30	18.9	37	18.5
Junior	17	41.5	56	35.2	73	36.5
Senior	17	41.5	73	45.9	90	45.0
Total	41	100.0%	159	100.0%	200	100.0%

Table 15
 Frequency Distribution of the Post-B.A. Educational
 Aspirations of the Student Sample

	Group 1 Frequency %		Group 2 Frequency %		Total Sample Frequency %	
No Plans Beyond B.A.	12	29.3	73	45.9	85	42.5
Master's Degree	25	61.0	76	47.8	101	50.5
Ph.D., M.D., or J.D.	4	9.7	10	6.3	14	7.0
Total	41	100.0%	159	100.0%	200	100.0%

Table 16

Frequency Distribution of the Birth Order of the Respondents

	Group 1 Frequency %		Group 2 Frequency %		Total Sample Frequency %	
First Born	15	36.3	48	30.2	63	31.5
Middle Child	8	19.5	61	38.4	69	34.5
Last Born	14	34.1	43	27.0	57	28.5
Only Child	4	9.8	7	4.4	11	5.5
Total	41	100.0%	159	100.0%	200	100.0%

Table 17

Frequency Distribution of the Presence of an Influential
Adult, Other than a Parent, During Childhood
of the Student Sample

	Group 1 Frequency %		Group 2 Frequency %		Total Sample Frequency %	
Influential Adult Was Present	32	65.7	111	75.0	134	73.2
No Adult	12	34.3	37	25.0	49	26.8
Total	35	100.0%	148	100.0%	183	100.0%

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