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ADOLESCENTS AND CHANGES THAT OCCUR

BETWEEN TRIMESTERS

BY

LINDA AILEEN FURLANI

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By

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B.S.N., D'Youville College, 1972

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Abstract

Twenty-two nonpregnant adolescents and 14 pregnant adoles-

cents selected from Chesterfield Health Department's clinic

population participated in a study to determine if the

self-concept of a nonpregnant adolescent is higher than that

of a pregnant adolescent. Each group was further subdivided

into a middle adolescent and a late adolescent category to

determine if there is any difference in the self-concept of a

pregnant adolescent in the middle adolescent stage versus that

of a pregnant adolescent in the late adolescent stage.

Coopersmith's Self-Esteem Inventory (SEI), School Form, was

administered to test the subject's perception of herself and

to measure evaluative attitudes toward the self in social,

academic, family, and personal areas of experience. The SEI

was administered to each pregnant adolescent prior to the end

of her second trimester and again during her third trimester

and once to each nonpregnant adolescent. The first analysis

employed a MANOVA based on a 2 (pregnant versus nonpregnant) x

2 (middle adolescent stage versus late adolescent stage)

design with five dependent variables: total self score,

general self score, social self-peer score, home-parents

score and school-academic score. Data from the pregnant

group was subjected to a repeated measures MANOVA

to determine if there was any difference in a pregnant

adolescent's self-concept in her second trimester versus her
third trimester of pregnancy. The analysis of data revealed
no significant difference between the self-concept of a non-
pregnant adolescent and a pregnant adolescent. Further,
there was no significant difference found in the self-concept
of a pregnant adolescent in the middle versus the late adoles-
cent stage. There was also no significant difference in the
self-concept of a pregnant adolescent throughout the second
and third trimesters of pregnancy. While empirical research
done to date has pointed toward the probable existence of a
low self-concept on the part of pregnant adolescent girls,
the present research does not support the previous findings.

The Self-Concept of Pregnant and Nonpregnant Adolescents

and Changes That Occur Between Trimesters

Adolescence, according to Douvan and Adelson (1966), is a period of transition: "it draws its meaning from the past and from its relationship to some future adulthood toward which it aims and unfolds" (p. 229). Further, the authors assume that the adolescent adaptation "directly depends on the ability to integrate the future to their present life and current self-concept" (p. 229).

According to Leifer (1977):

> Pregnancy is generally regarded as a critical
> event in a woman's life, one which presumably
> involves libidinal and ego adaptations in the
> process of assuming a new role. During
> pregnancy and early motherhood, psychological
> change is rapid.... Some of these changes may
> be temporary and contingent upon the
> biological events and special circumstances
> of this period while others mark the
> beginning of more permanent aspects of the
> adult personality (p. 58).

If one integrates Douvan and Adelson's notion of the transitional complexity of adolescence with Leifer's view that pregnancy precipitates certain personality reorganizations, it would seem plausible to hypothesize that intrapsychic changes are in existence during an adolescent's pregnancy. The general purpose of this study is to investigate the presence of intrapsychic changes, more

specifically, the presence of changes in self-concept that occur during an adolescent's pregnancy. The primary premise underlying this investigation is that adolescent pregnancy brings about various biopsychological changes which precipitate changes in self-concept and these changes may ultimately be predictive of maternal role adjustment.

Unfortunate consequences of teenage pregnancy are undeniable. Teenage pregnancy in the United States continues to occur at significant rates. According to Roosa, Fitzgerald, and Carson (1982), each year over one million teenage pregnancies result in about 600,000 live births. Further, Held (1981) drawing from Stickle (1975), reported birth rates for those teenagers 17 years of age and younger are rising while those of women 18 and 19 have declined since 1970. Protinsky, Sporakowski, and Atkins (1982), also drawing from Stickle (1975), found 60% of mothers who are under 16 at the time of their first child have another infant while they are still of school age. Horowitz (1980) discovered adolescent mothers who became pregnant a second time not only have less positive feelings toward the second pregnancy but also faced greater pressures after the second birth. Horowitz stated this negativism raises important questions about their future satisfaction and functioning as mothers.

Researchers found that pregnant adolescents, especially those of low socioeconomic status and/or nonwhites, are at risk medically, educationally, and socially (Osofsky, 1970). Complications of pregnancy include prematurity, fetal and neonatal mortality, greater maternal mortality, anemia, toxemia, urinary tract infections, and greater incidence of caesarean section. Felice, Granados, Ances, Hebel, Roeder, and Heald (1981) contend pregnant teenagers under the age of 15 years are known to be at highest risk for delivering low birth weight infants, particularly poor black girls. Educational prognosis is often poor (Osofsky, 1970) and repetition of undesirable pregnancies is prevalent (Sarrel and Davis, 1966).

Mercer, Hackley, and Bostrom (1984) found the adolescent mother consistently scored lower than older mothers on observed and self-rated maternal competency behaviors. Oppel and Royston (1971) concluded that young mothers less adequately nurtured their children and that these children exhibited deficits in their physical, social, and/or psychological development. McAnarney (1983) found the younger the mother, the less she utilized verbal communication and closeness in her interaction with her infant.

Tilden (1984), in her review of literature, reported that a number of researchers have documented symptoms of

emotional disequilibrium during pregnancy, including heightened anxiety, ambivalence, lability, introversion, depression, and mood disturbance. Bibring (1959) viewed pregnancy as a period of crisis involving profound endocrine, somatic and psychological changes and believed the outcome of this crisis has profound effects on the early mother-child relationship.

In considering psychological aspects of adolescent pregnancy, Protinsky et al. (1982) utilized Erikson's theoretical framework to examine the identity formation of the pregnant adolescent. For Erikson (1959), one of the developmental tasks of adolescence is resolving identity versus identity confusion. Protinsky et al. (1982) hold that the ego identity formation process is complicated when pregnancy occurs during adolescence. The adolescent must now be concerned with tasks involved in a successful pregnancy and eventual motherhood and with issues of dependence versus independence since the adolescent striving for independence is often by necessity dependent due to the pregnancy.

Self-concept, as defined by Rice (1975), is a "conscious, cognitive perception and evaluation by an individual of his self; it is his thought and opinions about himself" (p. 140). He further states:

> Each person is really six different selves:
> the person he really is, the person he thinks
> he is, the person others think he is, the
> person he thinks others think he is, the
> person he really wants to become, and the
> person he thinks others want him to become
> (p. 140).

Self-esteem, as defined by Patten (1981), is the adolescent's perception of how he or she is viewed by others. Self-esteem, according to Silber and Tippett (1965), is a concept which is embedded in psychoanalytic ego psychology as well as in other personality theories. Wylie (1961) summarizes by construing the term self-concept to include:

> cognitions and evaluations regarding relatively
> specific aspects of self, e.g., mathematics
> ability, predispositional anxiety in inter-
> personal situations, family status such as being
> a parent, racial identity, gender identity,
> class membership; ideal self, comprising not only
> the person's ideals about specific self-aspects
> such as being scholastically able, having a sense
> of humor, being well-liked by peers, but also
> such phenomenal goals as wishing to be a
> well-educated person or to attain a particular
> career status; overall self-regard, a term which
> covers such global constructs as self-esteem,
> self-acceptance, self-favorability, and self-ideal
> discrepancies which are presumably determined by
> some combination of cognitions and evaluations of
> many attributes of self (pp. 3-4).

For the purposes of this investigation, Wylie's definition of self-concept will be employed rather than delineating the broader concept of identity and referring to self-image.

Empirical research done to date has pointed toward the probable existence of a low self-concept on the part of pregnant adolescent girls. Juhasz (1974) reported Josselyn (1965) found feelings of inadequacy in unmarried mothers while Kimball (1969) characterized them by lack of self-esteem and by too little basic faith in their own ability. Shiller (1974) also found poor self-images in a pregnant school age population. Zongker (1977) concluded that pregnant adolescents exhibited poor self-esteem, feelings of inadequacy and unworthiness, and were decisively more dissatisfied with their relationships and physical bodies. Babikian and Goldman (1971) found what teenage pregnant subjects lacked most was an adequate ego and superego functions and hypothesized that this psychodynamic factor led them to sexually act out and resulted in pregnancy.

Lindeman (1974) asserted that failure to redefine one's self-concept was a crucial factor in teenage pregnancy. He found the girls did not admit to themselves they had become sexually active and therefore would not use contraceptives because to do so would mean preplanned sexual intercourse and this was dissonant with their self-perceptions. Meyerowitz and Malev (1973), in developing a predictive model of adolescent pregnancy, identified low ego strength or self-derogation as a causal factor in adolescent

illegitimate pregnancy. Kogan, Erling, and Valentine (1965) investigated adolescent unwed mothers in a residential home. Their data suggested that subjects experienced a sense of isolation in that they felt differently than most other teenage girls and that they had failed to live up to parental expectations.

In order to determine the importance of unwed adolescent mothers' perceptions of themselves and their perceptions of how they are viewed by others, Patten (1981) made comparisons between these adolescents' self-perceptions, norms of the general population, and results of previous studies and found these perceptions may be important factors in unwanted pregnancies. In addition, comparison of data with previous studies revealed some statistically significant differences in demographic and subjective variables.

The purposes of the present study are threefold: first, to determine if the self-concept of a nonpregnant adolescent is higher than that of a pregnant adolescent; second, to determine if there is any difference in the self-concept of a pregnant adolescent in the early adolescent stage versus that of a pregnant adolescent in the middle adolescent stage versus that of a pregnant adolescent in the late adolescent stage; and third, to determine if the self-concept of the pregnant adolescent changes over trimesters.

It is hypothesized that the self-concept of a non-pregnant adolescent will be higher than the self-concept of a pregnant adolescent. Since no previous studies could be found which compared early, middle, and late adolescence in terms of differences in experiences, perceptions of pregnancy, or effects of pregnancy on self-concept, the present study will be exploratory, descriptive and hypothesis-generating rather than hypothesis-testing in the area of comparison of adolescent stages.

Method

Subjects

Participants were selected from the clinic population of Chesterfield Health Department, Chesterfield, Virginia. The sample was to consist of 42 female adolescents divided into two groups: 21 in a pregnant group from the prenatal clinic and 21 in a nonpregnant group from the family planning clinic. Each group was to be further subdivided to include seven each in an early adolescent, middle adolescent and late adolescent category as defined by Thornburg (1975) (see Appendix A). Since pregnant adolescents, 11-13 years of age, or in the early adolescent stage, were not available, this subgroup was omitted for both the pregnant and nonpregnant groups.

Fifteen pregnant teenagers, five aged 14-16 and 10 aged 17-19, and 23 nonpregnant teenagers, seven aged 14-16 and 16 aged 17-19 participated in the study.

Only those subjects without chronic diseases, chronic physical disabilities and no psychiatric history, or in the case of the pregnant teenagers, without complications of pregnant as defined by Petres and Coogan (1980), were allowed to participate in the study. The subjects had English language fluency. The treatment of the above individuals was in accordance with the ethical standards of the American Psychological Association (A.P.A., 1973).

Materials

Coopersmith's Self-Esteem Inventory (SEI) (1981), School Form, was used to test the subject's perception of herself. The SEI is designed to measure evaluative attitudes toward the self in social, academic, family, and personal areas of experience. There is also a Lie Scale that indicates extremely socialized response sets.

The School Form, which is designed for students aged eight through 15 is printed as a four-page booklet and is labeled "Coopersmith Inventory" so as to avoid influencing subjects' responses. The form consists of 58 items: 50 self-esteem items and eight items that constitute the Lie Scale. A high score on the Lie Scale may indicate

that the examinee responded defensively or thought she under-

stood the intention of the inventory and was attempting to

respond positively to all items. Of the 15 prenatal clients

tested only one client had a lie scale of six. The others

had lie scales of less than four. Of the 23 clients tested

in the control group, four had lie scales of five. The

others had lie scales of less than three.

Use of Coopersmith's SEI yields a total self score as

well as the following subscale scores: a general self sub-

scale score, a social self-peers subscale score, a

home-parents subscale score and a school-academic subscale

score.

Procedure

Only individuals who volunteered and understood the

nature of the research were used in the study. Each

participant signed a participant agreement form (see Appendix

B) prior to administration of the research instrument. In

addition, parental consent (see Appendix C) was obtained from

those prenatal subjects 17 years old or younger with the

subject's verbal permission to do this. Due to the

confidential nature of the clinic visit, Chesterfield Health

Department's Medical Director permitted family planning

clinic patients 17 years old or younger to participate in the

study without parental consent. The SEI was to be

administered to each pregnant adolescent prior to the end of

her first trimester or before the 14th week of pregnancy,

prior to the end of her second trimester or before the 27th

week of pregnancy, and again during her third trimester or

prior to delivery. Since no first trimester subjects were

available, this subgroup was omitted from the study. The

nonpregnant subjects were contacted once during a regularly

scheduled clinic visit.

Each subject was approached as she registeref for her

scheduled clinic appointment. In the case of the seven

pregnant subjects 17 years or younger, parental consent

was not required for the three subjects who were married.

The investigator contacted the mothers of the remaining four

subjects by telephone and subsequently obtained parental

consent in the subjects' homes. Coopersmith's SEI was

administered by the investigator, who is a

baccalaureate-prepared registered nurse and candidate for

a Master of Arts degree in psychology. Since no one area

could be designated as a testing area due to overcrowding

in the clinic, testing was done in whatever space was

available at the time of the clinic. On four different

occasions, subjects were asked to relocate in order that

the area might be used for other clinic activities.

The following directions from Coopersmith's manual

(1981) were given to each subject:

> On the next pages you will find a list of
> statements about feelings. If a statement
> describes how you usually feel, but a X in
> the column 'Like me.' If the statement does
> not describe how you usually feel, put a X
> in the column 'Unlike me.' There are no
> right or wrong answers (p. 1).

Coopersmith cautions that explanatory remarks should

be kept to a minimum during test administration so as not

to influence the examinee's responses.

The test was untimed and took approximately 10 minutes

to complete. After completion of the initial contact for

the family planning group and the last contact for the

prenatal group, each participant was advised of her right

to withdraw from the research and was debriefed as to the

purpose of the study.

One subject from the prenatal group aged 17-19 and one

subject from the nonpregnant group aged 17-19 were

discounted due to very low total self scores, 28 and 34

respectively. For the SEI, high scores correspond to high

self-esteem. Coopersmith (1981) reports that in most

studies the distribution of SEI scores have been skewed in

the direction of high self-esteem: the means have generally

been in the range from 70 to 80 with a standard deviation

from 11 to 13. Thus a total of nine pregnant subjects aged 17-19 and 15 nonpregnant subjects aged 17-19 were used.

Design

The first analysis employed a MANOVA based on a 2 (pregnant versus nonpregnant) x 2 (middle adolescent stage versus late adolescent stage) design with five dependent variables: total self score, general self score, social self-peer score, home-parents score and school-academic score. Data from the prenatal group was subjected to a repeated measures MANOVA to determine if there was any difference in a pregnant adolescent's self-concept in her second trimester versus her third trimester of pregnancy.

Results

The first analysis employed a MANOVA based on a 2 x 2 design with five dependent variables. Cell means, standard deviations, and cell sizes for each dependent variable are reported in Tables 1-5. The multivariate

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Insert Tables 1-5 about here

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test of group by age interaction using Hotellings T produced .059, p = .889. This value is nonsignificant indicating no overall interaction effect for the five dependent variables. The univariate F-tests for interaction

for each dependent variable were nonsignificant and are reported in Tables 1-5.

The multivariate test of age effect using Hotellings T produced .093, p = .755. This value is nonsignificant indicating no overall age effect. The univariate F-tests for each dependent variable were nonsignificant for age effect and are reported in Tables 1-5.

The multivariate test of group effect using Hotellings T produced .261, p = .234. This value is nonsignificant indicating no overall group effect. The univariate F-tests for each dependent variable were nonsignificant for group effect and are reported in Tables 1-5.

The final analysis done was a repeated measures MANOVA of the prenatal group tested during the second and third trimesters of pregnancy. The multivariate test of age by time using Hotellings T produced .363, p = .715. This value is nonsignificant indicating no effect of age by time. The univariate F-tests for each dependent variable were nonsignificant for age by time and are reported in Tables 6-10.

Insert Tables 6-10 about here

The multivariate test of age effect using Hotellings T produced .383, p = .694. This value is nonsignificant indicating no age effect. The univariate F-tests for each dependent variable were nonsignificant for age effect and are reported in Tables 6-10.

The multivariate test of time using Hotellings T produced .174, p = .912. This value is nonsignificant indicating no effect of time. The univariate F-tests for each dependent variable were nonsignificant for time and are reported in Tables 6-10.

Discussion

The analysis of data revealed no significant difference between the self-concept of a nonpregnant adolescent and a pregnant adolescent. Further, there was no significant difference found in the self-concept of a pregnant adolescent in the middle versus the late adolescent stage. There was also no significant difference in the self-concept of a pregnant adolescent throughout the second and third trimesters of pregnancy.

While empirical research done to date has pointed toward the probable existence of a low self-concept on the part of pregnant adolescent girls, the present research does not support the previous findings. Although results of data analysis do not support the research hypothesis, certain

limitations of the study must be considered.

One such limitation may be found in the measurement tool employed. Coopersmith's SEI was selected because of its high reliability and validity, ease of administration, and appropriateness to the subject population. Questions asked by approximately one-fourth of the subjects during the administration of the inventory indicated a lack of understanding of how to complete the test. This was evident from the frequency and nature of the questions the subjects asked. Misunderstanding of instructions may explain why two subjects who were discounted had total self scores three standard deviations below the mean for the norm.

Another limitation as it relates to the measurement tool is the use of the School Form. One 16 year old pregnant subject stated she had difficulty answering the questions dealing with school issues since she was no longer going to school. Of the 58 items comprising the School Form, six items deal directly with school. At least four subjects had stopped attending school at some point during the pregnancy. No information was available regarding the school status of the other subjects.

Another area of concern is the environment in which the testing was done. As noted in the methodology section,

subjects were tested during scheduled clinic appointments. Clinic noise level and confusion could have been significant enough to be disruptive to test-taking.

The population used as a control group is an additional consideration. As previously discussed, there was a paucity of investigations comparing adolescent pregnant populations with adolescent nonpregnant populations. While this study attempted such a comparison, an adolescent nonpregnant control group other than ones selected from a family planning clinic may have yielded different results. The control group used may be dealing with issues revolving around sexuality and birth control and this may influence self-concept.

The focus of the study has considerable potential for further research. Results obtained from subsequent studies could contribute to a better understanding of the pregnant adolescent experience as well as underscore the impact self-concept ultimately may have on maternal-infant interaction. The following suggestions would improve the experimental design: selecting a more appropriate control group, securing a quiet environment conducive to test-taking, and combining observation with an instrument tool.

A suggested methodological alteration would involve the selection of a more appropriate control group. Subjects could be selected from a school setting. This approach would strengthen the design of the study since the school group would be less likely than the present group to be involved in the tasks associated with birth control choices.

Securing a quiet, private area to administer the measurement tool would serve to provide a more controlled environment.

Lastly, the selection of an instrument to measure self-concept could be combined with observation or clinical evaluation. Supplemental measures and/or observations would enhance information about the persons being assessed. Coopersmith (1981) stresses the importance of supplemental measures and observations since momentary or short-lived changes can occur and can temporarily inflate or deflate self-esteem.

Findings of future investigations may well have implications for those who work with pregnant adolescents and facilitate effective counseling and assistance to this population.

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Table 1

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Factor for the
Dependent Variable Total Self Score

Age Factor

14-16 y.o.   17-19 y.o.

	14-16 y.o.	17-19 y.o.
Pregnant	M = 78.80 s = 10.25 5	M = 76.00 s = 10.58 9
Non-pregnant	M = 78.57 s = 14.12 7	M = 75.33 s = 10.84 15

Pregnancy
Factor

Entire Sample
M = 76.61
s = 10.69

(1) Univariate F-test for interaction
   $F(1,32) = .00300$, $p = .957$

(2) Univariate F-test for age
   $F(1,32) = .61000$, $p = .444$

(3) Univariate F-test for groups
   $F(1,32) = .02823$, $p = .868$

Table 2

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Factor for the
Dependent Variable General Self Score

Age Factor

		14-16 y.o.	17-19 y.o.	
	Pregnant	M = 22.00 s = 2.44 5	M = 21.22 s = 3.07 9	Entire Sample M = 21.05 s = 2.88
Pregnancy Factor	Non- pregnant	M = 21.57 s = 3.20 7	M = 20.40 s = 2.89 15	

(1) Univariate F-test for interaction
    $F(1,32) = .03415$, $p = .855$

(2) Univariate F-test for age
    $F(1,32) = .94050$, $p = .339$

(3) Univariate F-test for groups
    $F(1,32) = .51927$, $p = .476$

Table 3

Means, Standard Deviations, and Cell Sizes by Age
Factor and Pregnancy Factor for the Dependent
Variable Social Self-Peers Score

Age Factor

	14-16 y.o.	17-19 y.o.	
Pregnant	M = 7.00 s = 1.73 5	M = 7.11 s = 1.05 9	Entire Sample M = 7.22 s = 1.01
Non- pregnant	M = 7.42 s = 1.13 7	M = 7.26 s = .70 15	

Pregnancy
Factor

(1) Univariate F-test for interaction

$F(1,32) = .12892$, $p = .722$

(2) Univariate F-test for age

$F(1,32) = .01947$, $p = .890$

(3) Univariate F-test for groups

$F(1,32) = .46908$, $p = .498$

Table 4

Means, Standard Deviations, and Cell Sizes by Age
Factor and Pregnancy Factor for the Dependent
Variable Home-Parents Score

Age Factor

	14-16 y.o.	17-19 y.o.	
Pregnant	M = 5.40 s = 1.67 5	M = 6.66 s = 1.41 9	Entire Sample M = 5.77 s = 2.16
Non- pregnant	M = 5.71 s = 2.42 7	M = 5.40 s = 2.55 15	

Pregnancy
Factor

(1) Univariate F-test for interaction
$F(1,32) = .99607$, $p = .326$

(2) Univariate F-test for age
$F(1,32) = .17177$, $p = .681$

(3) Univariate F-test for groups
$F(1,32) = .90569$, $p = 348$

Table 5

Means, Standard Deviations, and Cell Sizes by Age
Factor and Pregnancy Factor for the Dependent
Variable School-Academic Score

Age Factor

	14-16 y.o.	17-19 y.o.
Pregnant	M = 5.00 s = 2.54 5	M = 4.11 s = 1.90 9
Non- pregnant	M = 6.00 s = 1.63 7	M = 5.26 s = 1.27 15

Pregnancy
Factor

Entire Sample
M = 5.08
s = 1.76

(1) Univariate F-test for interaction
$F(1,32) = .01585$, $p = .901$

(2) Univariate F-test for age
$F(1,32) = 1.72577$, $p = .198$

(3) Univariate F-test for groups
$F(1,32) = 3.34980$, $p = .077$

Table 6

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Trimester Factor for
the Dependent Variable Total Self Score

Age Factor

		14-16 y.o.	17-19 y.o.
	2nd trimester	M = 78.80 s = 10.25 5	M = 76.00 s = 10.58 9
Pregnancy Trimester Factor	3rd trimester	M = 83.20 s = 13.00 5	M = 78.88 s = 7.68 9

(1) Univariate F-test for age by time

$F(1,12) = .04970$, $p = .827$

(2) Univariate F-test for age effect

$F(1,12) = .61707$, $p = .447$

(3) Univariate F-test for time effect

$F(1,12) = 1.11442$, $p = .312$

Table 7

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Trimester Factor for
the Dependent Variable General Self Score

Age Factor

		14-16 y.o.	17-19 y.o.
	2nd trimester	M = 22.00 s = 2.44 5	M = 21.22 s = 3.07 9
Pregnancy Trimester Factor	3rd trimester	M = 23.40 s = 3.20 5	M = 21.11 s = 2.66 9

(1) Univariate F-test for age by time
$F(1,12) = .93610$, $p = .352$

(2) Univariate F-test for age effect
$F(1,12) = 1.20433$, $p = .447$

(3) Univariate F-test for time effect
$F(1,12) = .32796$, $p = .577$

Table 8

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Trimester Factor for
the Dependent Variable Social
Self-Peers Score

| | Age Factor | |
	14-16 y.o.	17-19 y.o.
2nd trimester	M = 7.00 s = 1.73 5	M = 7.11 s = 1.05 9
3rd trimester	M = 7.20 s = .8366 5	M = 6.77 s = .97183 9

Pregnancy Trimester Factor

(1) Univariate F-test for age by time
$F(1,12) = 1.01587$, p = .333

(2) Univariate F-test for age effect
$F(1,12) = .07223$, p = .793

(3) Univariate F-test for time
$F(1,12) = .31746$, p = .584

Table 9

Means, Standard Deviations, and Cell Sizes by
Age Factor and Pregnancy Trimester Factor for
the Dependent Variable Home-Parents Score

Age Factor

	14-16 y.o.	17-19 y.o.
2nd trimester	M = 5.40 s = 1.67 5	M = 6.66 s = 1.41 9
3rd trimester	M = 6.40 s = 2.60 5	M = 6.44 s = 1.58 9

Pregnancy Trimester Factor

(1) Univariate F-test for age by time
$F(1,12) = .65807$, $p = .433$

(2) Univariate F-test for age effect
$F(1,12) = 1.07483$, $p = .320$

(3) Univariate F-test for time
$F(1,12) = .08911$, $p = .772$

Table 10

Means, Standard Deviations, and Cell Sizes by Age
Factor and Pregnancy Trimester Factor for the
Dependent Variable School-Academic Score

Age Factor

		14-16 y.o.	17-19 y.o.
	2nd trimester	M = 5.00 s = 2.54 5	M = 4.11 s = 1.90 9
Pregnancy Trimester Factor	3rd trimester	M = 4.60 s = 2.40 5	M = 5.11 s = 1.69 9

(1) Univariate F-test for age by time
$F(1,12) = 1.47656$, $p = .248$

(2) Univariate F-test for age effect
$F(1,12) = .03651$, $p = .852$

(3) Univariate F-test for time
$F(1,12) = .82031$, $p = .383$

Appendix A

Stages of Human Development

Infancy

Prenatal period	(conception to birth)
Neonatal period	(birth to 4-6 weeks)
Infancy	(4-6 weeks to 2 years)

Childhood

Early childhood	(2 years to 5 years)
Middle childhood	(6 years to 8 years)
Late childhood	(9 years to 11 years)

) Preadolescence
) (9-13 years)

Adolescence

Early adolescence	(11 years to 13 years)
Middle adolescence	(14 years to 16 years)
Late adolescence	(17 years to 19 years)

Young adulthood

College-age youth	(18 years to 23 years)
Young adulthood	(24 years to 29 years)

Adulthood

Early adulthood	(30 years to 45 years)
Middle adulthood	(45 years to 55 years)
Late adulthood	(55 years to 65 years)
Old age	(65 years and beyond)

Source: Thornburg, Hershel, Development in Adolescence, p. 5.

Appendix B

Subject Consent Form

Date: _____

    I, _____, agree

to participate in a research investigation at _____

_____ by completing a questionnaire

which will assess my likes and dislikes. I understand there

is no risk of psychological or physical harm.

    I further understand that I may withdraw from the experi-

ment at any time without penalty and that I will be provided

with a debriefing session following the experimental session

to have the purpose of the experiment explained to me.

Appendix C

Parental Consent Form

Date: _____

I, _____, give

permission for my child to participate in a research investi-

gation at _____.

I understand that there is no risk of psychological or

physical harm to my child.

I further understand that my child may withdraw from the

experimental at any time without penalty and that my daughter

will be provided with a debriefing session following the

experimental session to have the purpose of the experiment

explained to her.

_____
Parental Signature

Biography

The author received a Bachelor of Science degree in Nursing from D'Youville College, Buffalo, New York in 1972. Since that time the majority of her nursing experience has been in the area of community health. She currently holds the position of Director of Recruitment and Public Relations for the Virginia Commonwealth University/Medical College of Virginia School of Nursing.