

1-1-1990

A predictive model of adolescent pregnancy risk : a black-white comparison.

Dennis Jay Vogel

University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/dissertations_1

Recommended Citation

Vogel, Dennis Jay, "A predictive model of adolescent pregnancy risk : a black-white comparison." (1990). *Doctoral Dissertations 1896 - February 2014*. 4706.

https://scholarworks.umass.edu/dissertations_1/4706

This Open Access Dissertation is brought to you for free and open access by ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctoral Dissertations 1896 - February 2014 by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

UMASS/AMHERST



312066008868727

A PREDICTIVE MODEL OF ADOLESCENT PREGNANCY RISK:
A BLACK-WHITE COMPARISON

A Dissertation Presented

by

DENNIS JAY VOGEL

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

September 1990

School of Education

© Copyright by Dennis Jay Vogel 1990
All Rights Reserved

A PREDICTIVE MODEL OF ADOLESCENT PREGNANCY RISK:
A BLACK-WHITE COMPARISON

A Dissertation Presented

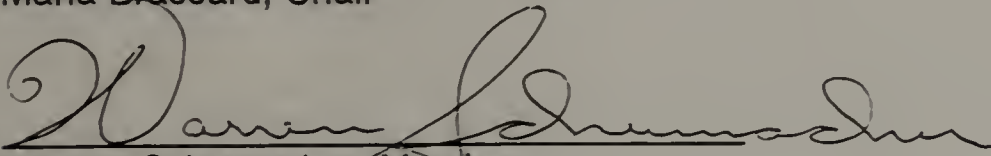
by

DENNIS JAY VOGEL

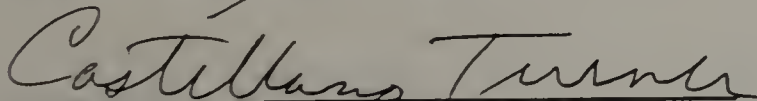
Approved as to style and content by:



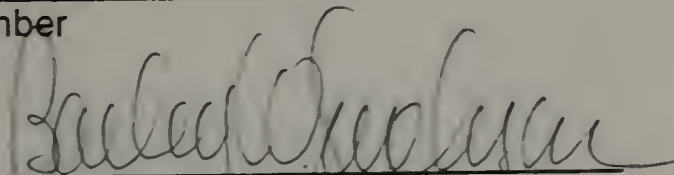
Marla Brassard, Chair



Warren Schumacher, Member



Castellano Turner, Member



Marilyn Haring-Hidore,
Dean, School of Education

ACKNOWLEDGEMENTS

This study is the result of the encouragement from many people. I particularly wish to acknowledge the support and direction of Dr. Marla Brassard, who served as chair of my committee. Dr. Warren Schumacher and Dr. Castellano Turner were especially helpful in defining the focus of this study.

I am most grateful to the group of students who served as subjects for this project. They made a potentially difficult process most enjoyable.

Finally, with love and gratitude, I thank my spouse equivalent, Dr. Kathleen Dillon whose patience and understanding were appreciated daily; and to Roman and Alexi for never allowing complacency to enter my life.

ABSTRACT

A PREDICTIVE MODEL OF ADOLESCENT PREGNANCY RISK: A BLACK-WHITE COMPARISON

SEPTEMBER 1990

DENNIS JAY VOGEL, B.A., LONG BEACH STATE UNIVERSITY

M.Ed., UNIVERSITY OF MASSACHUSETTS

Ed.D., UNIVERSITY OF MASSACHUSETTS

Directed by: Professor Marla Brassard

The purpose of this study was to delineate the role of race in the prediction of at-risk status for pregnancy among Black and White high school females from low socioeconomic backgrounds. Research findings relative to adolescent pregnancy were assimilated into a proposed three factor model of pregnancy risk which included: Knowledge and Attitude toward Sexuality and Childbearing, Current Life Situation, and Opportunity for Sex.

A questionnaire was developed to assess risk factors within the structure of the three model factors. The questionnaire examined the social, familial, and personal variables that influence a teen's sexual activity. The questionnaire was administered to 152 high school females aged 14-19.

It was hypothesized that: (1) at-risk status for pregnancy was associated with high risk scores on the model variables and factors; (2) Black subjects would receive higher risk scores on the Knowledge and Attitude toward Pregnancy and Childbearing factor than White students and that Current Life Situation and Opportunity for Sex would predict pregnancy status but show no racial differentiation; (3) if the second hypothesis was correct, a differential

pattern of pregnancy risk by race would result that could be incorporated into a model that discriminates risk status by race.

The scores on the variables were analyzed through the use of: multivariate tests of significance (MANOVA), univariate F -tests, and discriminant function analyses. Additionally, factor analysis was used to assess the proposed model and develop new models for specific application.

Not all hypotheses were accepted. Pregnancy status was predicted by the first hypothesis with findings reaching significance. On hypothesis 2, White pregnant subjects were more at-risk than other groups followed by Black pregnant subjects, Black never-pregnant subjects and, finally, White never-pregnant subjects. The questionnaire identified differential patterns for each racial group which validated the use of a stepwise discriminant analysis to help discriminate pregnancy risk status by race. The use of discriminant analysis derived variables increased prediction of pregnancy accuracy to 98.48% for Black subjects and 94.52% for White subjects. The need for replication studies and investigations of other racial and ethnic groups is discussed.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	iv
ABSTRACT	v
LIST OF TABLES.....	viii
CHAPTER	
I. STATEMENT OF THE PROBLEM	1
Purpose of Study	3
Significance and Rationale	4
II. REVIEW OF THE LITERATURE	6
Introduction.....	6
Adolescent Sexuality Statistics	7
Adolescent Pregnancy and Illegitimacy	12
Historical Perspective	12
Shift of Focus.....	15
Cultural Issues.....	17
Knowledge of Sexuality	22
Socioeconomic Issues.....	24
Developmental Issues	30
Psychological Issues	32
Parental Availability and Emotional Support Systems.....	35
Summary and Implications	39
III. METHODOLOGY	45
Research Hypotheses	45
Subjects.....	47
Instrument	49
Data Collection and Analysis.....	52
IV. RESULTS.....	54
Knowledge and Attitude toward Sexuality and Childbearing	56
Current Life Situation.....	59
Opportunity for Sex	62
Subsequent Analyses.....	64
V. CONCLUSIONS AND DISCUSSION.....	73
Summary	73
Discussion of Findings	75
Implications of Findings for Intervention.....	86
Limitations of Study	88
Suggestions for Future Research.....	89
APPENDIX: QUESTIONNAIRE.....	91
REFERENCES.....	98

LIST OF TABLES

		Page
Table 1.	Demographic Characteristics of Female Subjects	48
Table 2.	A MANOVA of Proposed Factor Scores: by Race (R), Pregnancy Status (P), and Race by Pregnancy Status (RxP)	55
Table 3.	Comparisons of Black and White Subjects on the Knowledge and Attitude toward Sexuality and Childbearing Proposed Factor: by Pregnancy Status (P), Race (R), and Race by Pregnancy Status (RxP).....	57
Table 4.	Comparisons of Black and White Subjects on the Current Life Situation Proposed Factor: by Pregnancy Status (P), Race (R), and Race by Pregnancy Status (RxP)	60
Table 5.	Comparisons of Black and White Subjects on the Opportunity for Sex Proposed Factor: by Pregnancy Status (P), Race (R), and Race by Pregnancy Status (RxP)	63
Table 6.	Discriminant Function Analysis of Student Pregnancy: Groups Defined by Pregnant and Never-Pregnant	65
Table 7.	Stepwise Discriminant Function Analysis of Black Female Adolescents: Best Predictor Variables for Pregnancy	67
Table 8.	Stepwise Discriminant Function Analysis of White Female Adolescents: Best Predictor Variables for Pregnancy	68
Table 9.	Varimax Rotated Factor Matrix of a Black Three Factor Model of Pregnancy Risk: by Discriminant Analysis Identified Factors.....	70
Table 10.	Varimax Rotated Factor Matrix of a White Four Factor Model of Pregnancy Risk: by Discriminant Analysis Identified Factors.....	71

CHAPTER I

STATEMENT OF THE PROBLEM

More than one million teenage girls in the United States become pregnant each year, approximately 400,000 girls obtain an abortion and 470,000 give birth (Hayes, 1987). Most of these births are to unmarried mothers, approximately one-half to girls who have not yet reached their eighteenth birthday. Personal costs to the adolescent mother often include discontinued education, reduced employment opportunities, unstable marriages, low incomes, sustained poverty and frustration. In 1985, welfare, Medicaid and Food Stamp Program costs totaled 16.5 billion dollars for families begun by a birth to a teenager (Hayes, 1987). Children born to teens face an infant death risk that is twice as high as children born to mothers in their twenties. Maternal mortality and morbidity, and the risk of low-birth-weight-infants are also greater among teenage mothers so that, overall, the prospects for a healthy and independent life are reduced for teen parents and their children (Alan Guttmacher Institute, 1981). When compared to other industrialized nations, the United States has the second highest adolescent pregnancy rate among thirty developed nations (Hungary currently leads with 103 births per 1,000 adolescent girls while the U.S. has 101 births per 1,000 adolescents).

Pregnancy statistics in America are not evenly distributed by race and class. For Black adolescents under age 18 in the U.S., the current pregnancy rate is 237 per 1,000, compared to 71 births per 1,000 for White teenagers (Taborn, 1987). Presently, a majority of births to teenagers are out-of-wedlock. Ladner (1987) reports that minority youths make up approximately 27 percent of the teen population in the United States, but "they have roughly 40 percent of the

adolescent births and 57 percent of births to unmarried teens" (p. 53). These pregnancy rate differences are rarely, if ever, addressed in programs designed to reduce the incidence of teen pregnancy. Franklin (1987) states that "Studies about adolescent pregnancy seem to circumvent the concerns of race, gender, and socioeconomic class. The literature appears to be fragmented and theoretically scattered" (p. 15-16). What is needed, according to Franklin, is an investigation of race and class specific aspects of adolescent pregnancy in order to delineate implications for pragmatic intervention.

Recent research has clearly demonstrated that student populations that differ by race and social class show differential rates of pregnancy risk (Chilman, 1983; Hogan & Kitagawa, 1985; Singh, 1986; Zelnik & Kantner, 1981). A higher social class is associated with less sexual activity, fewer children and greater use of birth control for all adolescents (Perlman, Klerman & Kinard, 1981). For Black adolescents, social class has a stronger effect on sexual behavior and pregnancy than it has on White students, with Black upper class status associated with less activity and pregnancy (Washington, 1982). Hogan and Kitagawa (1985), in their study of more than 1,000 Black females aged 13-19, reported that three factors were statistically significant in affecting the rate of pregnancy among their subjects: their social class, the number of brothers and sisters they had, and the marital status of their parents. Furstenberg, Brooks-Gunn and Morgan (1987) noted that race and educational level of parents were the primary predictors of the current economic status of women who had gotten pregnant as teens 17 years earlier. These studies demonstrate the strength of social class effects on Black adolescents and the consistent influence of race as a predictor of pregnancy and economic status.

Purpose of Study

The fact that the pregnancy/birth rate for Black teens in the U.S. is 237 per 1,000 compared to 71 per 1,000 for White adolescents, and the fact that upper class Blacks have a lower birth rate than upper class Whites, combine to clarify the primary importance of class in explaining the variance in pregnancy rates between Black and White teens. However, if we are dealing with a population of Black and White adolescents from the lower social class, then race may become the primary factor in explaining the variance in pregnancy rates.

While race and class factors account for most of the differences between the pregnancy statistics of Black and White adolescents, the factors do little to help describe the process of thinking, feeling, and acting that any particular adolescent experiences around the issues of sexual activity and pregnancy. What is it about the factor of race among lower socioeconomic teens that differentiates risk? This dissertation research represents an effort to respond to Franklin's (1987) challenge to delineate the role of race and class in adolescent pregnancy in order to develop "more sensitive, constructive intervention with adolescents and their families" (p. 15).

The purpose of this study is to delineate the role of race in the prediction of at-risk status for pregnancy among low socioeconomic level Black and White high school females. To examine the differences in the two groups of students, a questionnaire has been developed to assess the ethnocultural influences on the beliefs, perceptions, current relationships, and opportunity factors associated with pregnancy risk. These variables were chosen because they represent differences between Black and White adolescents in the research.

Significance and Rationale

Primary prevention of teenage pregnancy involves delaying adolescents' early sexual activity and improving contraceptive use among sexually active teens. It is important to note that eight out of ten Americans believe that sex education should be taught in the schools, and seven out of ten believe information about contraception should be included (Gallup Poll, 1977). Dryfoos (1985) reported that most sex education programs are of three general types: (a) those that impart knowledge or attempt to influence attitude, (b) those that provide access to contraception, and (c) those that enhance life options. The first two increase knowledge and access to services, the third category develops and strengthens adolescents' motivations to avoid pregnancy. The vast majority of school sex education programs focus on physiological facts and neglect to focus on the individual needs of the clientele they serve. Sonnenstein and Pittman (1984) found that when one factors out physiological information from the sex education all the school districts provide, less than 15 percent of the districts discuss interpersonal topics, thereby ignoring the importance of cultural, socioeconomic, and psychological factors in the lives of students.

In the 1970's, the federal government through the Adolescent Health Services and Pregnancy Prevention Act (PL95-626, Health Services and Centers Amendments of 1978), promoted the development of comprehensive service models for teens. These models prescribed educational, medical and social services for teens while focusing on individual needs. In order to be considered comprehensive, a service model was required to provide the following services: pregnancy testing, family planning, primary and preventive health services, nutrition information, counseling and referral services, educational services,

screening for sexually transmitted diseases, and vocational services. Although data from these comprehensive models were uniformly positive, few programs were established and, because of budget cuts, fewer still survive today.

School programs designed to reduce teenage pregnancies need to become more prescriptive about pregnancy prevention through careful assessment of the populations the programs are designed to serve. By viewing at-risk status for pregnancy as a function of variables that affect students knowledge of sex, how they get along with others, and how they handle leisure time, interventions within the school setting become plausible. Understanding the racial and cultural factors involved in teenage pregnancy can provide some predictions of teens who are at-risk for pregnancy. The best interventions will be those that reach individual teens in a way that are meaningful to their lives. This study represents an effort to separate female adolescents who are a high risk for pregnancy from those at low risk for pregnancy, and to differentiate Black and White at-risk adolescents. If successful, high school counselors, teachers and administrators would be given an opportunity to target specific groups of students and develop programs and curricula that reduce pregnancy risk.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This section provides a review of the literature on adolescent pregnancy with an emphasis on Black-White differences. The chapter begins with a discussion of adolescent sexuality statistics which cover the past two decades. A historical perspective of adolescent pregnancy and illegitimacy follows which includes an overview of the various ways in which adolescent pregnancy has been approached both socially and scientifically.

Throughout the literature section an emphasis has been placed on reviewing studies which include ethnically diverse student populations which reflect, as closely as possible, the socioeconomic and ethnic makeup of the student population used in this study; specifically, at-risk for pregnancy status of Black and White low socioeconomic teens. The literature sections that most clearly differentiate Black and White adolescents in who are at-risk for pregnancy include historical and cultural differences, knowledge of sexuality, and socioeconomic issues. The three sections entitled developmental, psychological and parental report some Black-White differences but are less clear in explaining racial differences. These sections are included because they are considered by this investigator to be fertile areas of research that could explain at-risk behavior of multiracial populations.

Adolescent Sexuality Statistics

To what extent do minors engage in premarital sexual intercourse?

According to the Alan Guttmacher Institute (AGI), in 1974 an estimated eleven million 15-19 year olds had engaged in sexual intercourse; in 1978, the number rose to twelve million (AGI, 1981). This figure breaks down to approximately seven million young men and five million young women. The average age for first sexual intercourse for White young women was 16.6 years in 1971, 16.3 years in 1976, and 16.4 years in 1979; for Black young women the age of first intercourse was 15.9 years in 1971, 15.6 years in 1976 and 15.5 years in 1979 (Zelnik & Kantner, 1980).

Zelnik and Kantner (1980) reported the following estimated percentages for unmarried adolescent females who had engaged in sexual intercourse: at age 15, approximately 41.1 percent of Blacks were sexually active, 18.3 percent of Whites; at age 16, 50.4 percent of Blacks and 35.4 percent of Whites were active; at 17, 73.3 percent of Blacks, 44.1 percent of Whites; at age 18, 76.3 percent of Blacks, 52.6 percent of Whites; and at age 19, 88.5 percent of Blacks and 64.9 percent of Whites were sexually active. Estimates for 1986 indicate that 37 percent of White and 57 percent of Black adolescents, aged 15-19, were sexually active (Hayes, 1987), which demonstrates a consistency over the past 6-7 years.

Zelnik and Kantner conducted three major surveys on sexual activity among American teenagers between 1971 and 1979. The 1971 survey was the largest and included some 4700 interviews with females aged 15-19 years of age living in the continental United States. The age of the sample (15-19) was chosen because the data from public sources on young women are more often

published for this age category than any other. The survey involved two independent national probability samples, the first (and larger) of women living in households and the second of women living in college dormitories. The household sample included some 1500 Blacks and 3100 White female adolescents. The 1976 sample numbered 2500 female adolescents but did not include those living in college dorms. The 1979 sample covered young women living in households in Standard Metropolitan Statistical Areas (SMSA's) in the continental United States. It was therefore possible to separate out the metropolitan portions of the 1971 and 1976 studies and compare them with the 1979 sample. All Zelnik and Kantner statistics which include the 1979 study refer to metropolitan area teenagers.

The age of first intercourse declined by an average of four months between Zelnik and Kantner's 1976 and 1979 studies, with Blacks continuing to initiate sexual activity about one year earlier than White youngsters. Washington (1982) noted that the percentage of never married White females aged 15-19 who had experienced sex rose from 23 percent in 1971, to 42 percent in 1979. For Black females the figures were 53 percent in 1971 and 65 percent in 1979. Although all rates were progressively higher, the racial differentiation has decreased over time.

During the course of the 1970's, sexual activity among women aged 15-19 living in metropolitan areas rose by two-thirds (Alan Guttmacher Institute, 1981). Since the rate of sexual activity among Whites had doubled for those in the 15-17 year old group, the increase in sexual activity between 1975 and 1980 was almost entirely accounted for by unmarried Whites.

In 1976, Zelnik and Kantner found that White teens who were sexually active had a higher frequency of sexual activity (intercourse) and more sexual partners than their Black counterparts. The mean frequency for sexually active

Whites in the 15-19 age group was 3.1 per month in 1971; for Blacks, it was 2.1 per month. For 1976 the frequency of activity was 3.0 per month for White young women and 1.7 for Black young women. Interestingly, the modal frequency during the reference period (one month) for each race in both surveys was zero. Although most teenagers had sex infrequently and with only one partner, White females reported having sex more frequently and were more likely to have had six or more partners (11.3 percent of White females age 15-19 as opposed to 6.0 percent of Black 15-19 year old females) (Zelnik, Kantner, & Ford, 1981).

More recently, Alexander, Ensminger, Kim, Smith, Johnson, and Dolan (1989) reported that in a study of the sexual activity of 758 eighth-grade students from three rural counties in Maryland, 61 percent of males and 47 percent of females had engaged in sexual intercourse. They noted that differences by race were significant, "Seventy-seven percent of Black students reported having had sexual intercourse, compared with 40 percent of Whites; the odds that Black eighth graders have engaged in sexual intercourse remain more than five times the odds that their White counterparts have done so..." (p. 263-264).

According to the Massachusetts Department of Public Health, the teenage birthrate in Massachusetts was 28.1 births per 1,000 females 15-19 years old in 1980; in 1987, the birth rate for adolescents 15-19 years old increased to 32.0 per 1,000 despite a decrease in the female population (15-19 years old) of 18.5 percent. For the general population, overall fertility rates have declined - in 1975 there were 58 births per 1000 women under age 20; in 1982, there were 53 births per 1000 women. The proportion of out of wedlock births has shown an increase over the same period. In America, between 1970 and 1982, the proportion of all births to women aged 15-19 that were out of wedlock rose from 17 to 37 percent among White women and from 62 to 87 percent among young Black women.

During the 1970's, teenagers who reported using some means of protection against pregnancy rose considerably. In 1979, 7 in 10 unwed sexually active teenagers reported using birth control at the last intercourse; in 1976 it was 6 in 10; in 1971 it was 5 in 10. The use of the most effective methods of birth control (pill and IUD) almost doubled between 1971 and 1976, but declined by 8 percent the last part of the decade. The use of the least effective method, withdrawal, rose by 46 percent between 1976 and 1979 (AGI, 1981). Experts propose that teenagers have been influenced by the adverse publicity about the dangers of the pill and the IUD's, especially in publications most often read by young people (Jones, Beneger, & Westoff, 1980). Jones and Forrest (1989) reported that the failure rates of contraceptives were much higher than previously thought (rates as reported up to 1987). They found that within the first year of "correct" use, the failure rate was 14 percent for the condom, 16 percent for the diaphragm and for rhythm, and 26 percent for spermicides. They note that "Nonwhites tend to fail more often than Whites, and the strength of the relationship also varies by method" (p. 109).

There appear to be some general trends involving contraception. While most teenagers are trying harder than ever to avoid pregnancy outside of marriage by utilizing birth control, there is also a growing disinclination of teenagers to marry. In 1960, 16 percent of young women aged 15-19 were married. This compares with 8 percent married in 1982. The largest decline was among Black women, with the percentage dropping from 7.7 percent to 3.4 percent in the ten years from 1968-1978 (AGI, 1981).

Young women may be using more birth control, but there appears to be an increased use of the least effective methods, as can be evidenced by the fact that teens are having more success in avoiding births than avoiding pregnancies. One fact is clear however, the rise in premarital pregnancy is due primarily to

higher percentages of teenagers who are sexually active, not the lack of contraceptive use (Rodman, 1986).

In summary, teens in the 1980's are having sex earlier, using birth control more, getting married less, and giving birth less than they did in the 1970's. Racially, Blacks continue to begin having sexual intercourse approximately one year earlier than Whites, although the differentiation has decreased. Among teens who are sexually active, Whites teens are more active and have more partners than Black teens. Metropolitan area teens increased sexual activity by two thirds during the 1970's, with White adolescents mostly responsible for the increase.

While Whites have been responsible for most of the increase in adolescent sexual activity, much of the focus of teen pregnancy research continues to be on Blacks. The reason for this focus probably stems from: the higher percentage of adolescent pregnancies associated with Blacks, the contraceptive failure rate of Blacks, and the fact that Black pregnant teens marry less than White pregnant teens. There is also the distinct possibility that the inclusion of welfare statistics, primarily Aid to Families with Dependent Children (AFDC) numbers, is a signal that the Black population has been singled out as more of a "social problem" because of societal costs. Yet, the fact that Black pregnancy rates have remained very stable while the rate for White teens has been increasing dramatically underscores the need to identify at-risk behavior for this rising problem within the White communities. Statistics clearly demonstrate the need to view adolescent pregnancy as a non-racial problem.

Adolescent Pregnancy and Illegitimacy

The statistical information supplied above has important implications for the identification of target populations and for the designing and implementation of strategies for intervention. In the next sections, historical, cultural, socioeconomic, psychological, cognitive and parental issues that impact adolescent behavior will be discussed.

Historical Perspective

Traditional American families are usually viewed as consisting of children and their married parents who remain married until one spouse dies. Reid (1985), in a summary article on the progress of Black Americans in Population Bulletin stated that this type of family rarely existed for Blacks during two-thirds of their history in this country. As a slave, a Black had no property rights as a human being before the law; marriage was not a recognized legal act and, therefore, lineage had no legal support. Reid suggested that matriarchal affiliations grew out of the context of slavery and continue to be characteristic of Black families. The mother provided as much nurturing as was possible in the slave society.

In the first half of this century, the Black family was organized around the mother, and was often disrupted. In 1910, only 36 percent of Black women aged 50-54 were living with their first husbands while 59 percent of White women that age were with their first husbands (Reid, 1985). Another 35 percent of Black women were divorced or widowed, compared to 19 percent of their White counterparts. These statistics remained constant until the 1940's.

According to Hauser (1965), who researched demographic family factors of the 1960's:

Family disorganization and unstable family life among Negro Americans is a product of their history and caste status in the United States. During slavery and for at least the first century after emancipation, the Negro never had the opportunity to acquire the pattern of sexual behavior and family living which characterized middle-class White society... Moreover, as a result of the slave traffic, children were necessarily attached to their mothers in a more lasting manner than their fathers (p. 854).

Gutman (1976) used statistics of births, deaths and conjugal unions from plantation ledgers, census bureau statistics and local population records, to suggest that the true structure of the Black family emerges when viewed over two or three generations. He believed that such research showed that a close family feeling and marital loyalty among Blacks in America had existed since the mid-eighteenth century. Both Gutman and Fogel-Engerman (1974) have strongly denied that present conditions affecting many Blacks were due to the legacy of past family instability. Both writers agreed that the Black family was not shattered by slavery but they also stated that there was no doubt that slavery did frustrate Black family development. The Black male under slavery was not in a position to protect Black women, his family, or other Black males, as was the White male (Gibson, 1980).

The irony was, and perhaps is, that the majority culture imposed marriage and property laws and then followed these laws with the generalization or "perception" that Blacks had no family unit. Gibson (1980) said that prior to the 1940's, the academic community in America generally sanctioned racism in historical writings. More recent scholars (since 1950) have subjected slavery and the slave family structure to a more thorough reexamination. Gibson argued that

the traditional view of supposedly Black social patterns advanced by racists, historians, and other social scientists consisted of selected data which supported their views of the biological inferiority of Blacks. These views spawned negative attitudes and derogatory stereotypes of unstable Black families and Blacks as social deviants.

Webster's (1977) defines illegitimacy as "not recognized as lawful offspring; born of parents not married to each other-not sanctioned by law" (p. 570). Historically it can be stated that during much of Black history, it was impossible for Black families to be legitimate. The lack of marriage legitimacy must be factored into the cultural, sociological, psychological and cognitive makeup of Black families in America. The extent to which Whites and Blacks assimilated the "traditional view" is, of course, difficult to assess other than to say that any such belief was widely accepted in historical writings through the 1940's.

According to Vincent (1961), there appears to have been an evolution of thought toward what constituted legitimate family forms. More specifically, reasons were postulated to explain illegitimacy. Before 1930, the emphasis was on the character of the mother, her immorality or mental deficiency. The 1930's saw a move to consideration of environmental factors, for example, poverty or the fact that one grew up in a disadvantaged neighborhood. During the 1940's, an adolescent's culture began to be seen as the most important explanation for early childbearing; illegitimacies were considered a way of life or an adaptation to a "culture of poverty". A "culture of poverty" situation was characterized as including female or mother-centered families in which there existed an acceptance of non-marital sexual relationships. Essentially, "culture of poverty" became viewed as synonymous with Black living conditions by the majority White culture.

During the 1950's, psychological explanations began to be offered for teenage illegitimacy. Some hypothesized that a young woman who became pregnant had a pathological relationship with her parents. Other such theories included the need to affirm one's sense of masculinity or femininity or relationship difficulties (Fisher & Scharf, 1980).

According to Washington (1982), contemporary investigators, as reflected by Furstenberg (1976), focus on socioeconomic factors. They have observed that adolescents with clear goals and the opportunities to reach these goals are less involved in early childbearing. Relative to these findings, Reid (1985) noted that when poverty statistics were first computed in 1959, 48 percent of Black families were classified as poor. By 1966, that rate was down to 35.5 percent and dropped steadily to a low of 16.9 percent in 1974, followed by some years of fluctuation. The 1981 level of 31 percent is the highest recorded since 1967. For the past fifteen years, Black families have been three and one-half to more than four times as likely as White families to be poor.

Shift of Focus

Sociologists Arney and Bergen (1984), suggest that all recent (past twenty years) investigations into teen pregnancy should be seen within the framework of a major shift of focus relative to the concept of illegitimacy. They conclude that the term "teenage pregnancy" replaced the morally loaded terms of "illegitimacy" and "unwed mother" around 1970. They believe that the meaning of the shift is one that begins to treat pregnant adolescents as scientific problems and not moral problems. "A change in the 'truth' of a social phenomenon is a change in

the practice of power that surrounds and constitutes the phenomenon" (Arney & Bergen, p. 11).

Concurrent with a shift of focus has been the emergence of the "new" problem in White communities. In 1972 the National Urban League estimated that about 67 percent of White children of unwed mothers were formally adopted as opposed to 10 percent of Black children of unwed mothers. Since 1972, Scales and Gordon (1979) reported a startling statistic: the percentage of children who are born out of wedlock and placed for adoption was down from approximately 90 percent in the late 1960's to 10 percent in the late 1970's. Bachrach (1986) found that in 1982 an estimated 93 percent of unmarried mothers ages 15-19 (91 percent of Whites and 95 percent of Blacks) kept and raised their children. The "new" problem is therefore centered in the White community since the rate of adoption for Blacks has varied less than 5 percent while the White rate has changed more than 60 percent. The "problem" was always there, just well hidden behind the walls of adoption agencies.

In summary, "teenage illegitimacy" has been replaced with "teenage pregnancy", and the "culture of poverty" concept has been dropped in favor of socioeconomic level. What had been considered a moral problem has now become a technical or scientific problem. Moral problems invite punishment and practices of exclusion. Technical problems are subjected to technologies of correction and normalization. These shifts of focus have allowed for and reopened investigations of cultural, psychological, socioeconomic, racial and cognitive factors relative to the incidence of teenage pregnancy. The influence of these factors on adolescent pregnancy can be seen as having progressed through various historical perspectives; how we have thought and how we presently think about teenage pregnancy may have as much to do with how the problem is defined as the problem itself.

The next sections of the literature review cover research-identified areas that differentiate pregnant from never-pregnant teens and Black from White pregnant teens. These areas include cultural and knowledge differences, socioeconomic, developmental, psychological, and parental availability and support issues.

Cultural Issues

Since 1920, American pregnancy statistics have included comparisons of two populations: White and non-White. According to Baldwin (1976), 92 percent of the non-White population cited in pregnancy research since 1920 was Black, so that statistically, we are essentially looking at Black-White statistics. Natality statistics dating back to 1920 indicate that birth rates among non-White adolescents (ages 15-19) have been nearly twice that of White adolescents (Washington, 1982). For example, in 1979, there were 104.9 live births per 1,000 Black young women age 15-19, and 44.5 live births per 1,000 White women age 15-19.

The family (parents) functions as the main conduit through which a child inculcates moral values. The cultural norms of the family incorporate the tenets that affect sexual activity, contraception use, and abortion choices (Chilman, 1983).

Washington (1982), contends that Black adolescents grow up with a certain "cultural ethos", or set of guiding principles that have roots in an African racial heritage. She believes that a common historical experience provides a frame of reference to Black teens' sexual activity, contraceptive use, abortion choices, illegitimacy and adoption practices. Any discussion of a Black "cultural

ethos" presupposes a White "cultural ethos" if for no other reason than as a point of departure. It is not within the scope of this paper to compare and contrast cultures, but to present evidence of how certain scholars see cultural heritage as impacting the present day attitudes of, in this case, Black adolescents in America. However, as a point of departure, certain statements can and should be made about the majority White culture.

The majority White culture is seen as loosely structured around the concept of the Protestant Ethic, which is a trait that calls for hard work, thrift and a Christian spirit. "With the Protestant Ethic, work and family are somehow bound together in a moral sense" (Gibson, 1980, p. 90). This moral sense included the concept of the nuclear family and the demand that childbirth be the fruit of a marriage. Any in-depth analysis of the 20 or more European groups which loosely constitute the White majority culture would disclose serious divergences from the stated moral imperatives. "The fact is that the (White) ethnic groups in America experienced hardships and conflicts in an effort to maintain group-family cohesion in conditions of continuous social and economic dislocation" (Gibson, 1980, p. 89). With the knowledge that the Protestant Ethic concept includes a healthy dose of fantasy and does not represent the White American culture in any unitary way, the author understands that findings and descriptions of Black cultural studies are not unitary in any sense, but may be used as plausible explanations for racial differences in teenage sexual statistics. According to Chilman (1983):

The pregnancy related activity of Black teenagers can be traced back to the African ethos in which survival of the group was paramount, procreation was the way to insure immortality of the group, clan or tribe; the size of a man's family was a test of his virility, and the value of a woman was intimately related to her ability to bear children

(Chilman, 1983, p. 5). Martin and Martin (1985), in their discussion of the helping tradition of Black families in America, note that kinship bonds were so strong in traditional Africa that sometimes smaller family units (nuclear families) would become part of a larger extended family network, and the larger extended family network would often make up a clan, and several clans would make up the entire tribe or community. They also noted that for women, there was no more important role than that of bearing children, and that the children were brought up in a prosocial way under a system of "reciprocity" with other people.

The extent to which this helping attitude, extended family structure, and an emphasis on the importance of childbearing have carried over to America has been the subject of debate among many scholars, most notably Frazier and Herskovits, two researchers who differ dramatically in their assessment of the affects of slavery on Black Americans. Frazier has stated, "Probably never before in history has a people been so completely stripped of its social heritage as the Negroes who were brought to America" (Frazier, 1969, p. 15). Yet Herskovits has said that it is "The force of African tradition" that has made for "the special cultural traits that mark off the Negro in this country" (Herskovits, 1958, p. 298-299). Herskovits believes that the helping tradition is such a deep-rooted drive in Negro life that it is difficult if not impossible to account for it satisfactorily except in terms of the traditional African past. More recently, Magdol (1977) concluded, "Among slaves and freedmen, an ethos of mutuality was the expression of traditional African consciousness and morality" (Magdol, 1977, p. 11).

White (1984) characterized the Frazier position as the "Deficit-Deficiency Model" which he believes to be the traditional view of the Black family. This view identified the Black family as disorganized, single-parented, subnuclear, and female dominated. The Herskovits view, as seen by White (1984), has been

representative of the "Extended Family Model" which evidenced aunts, uncles, cousins, grandparents, boyfriends, and girlfriends forming a cooperative interface with each other to confront daily problems of living and rearing children. Martin and Martin (1985) summed up current thought on the topic by stating, "This tradition (Extended Family Model) took on different forms as Blacks responded to the exigencies of their situation, and it was no longer rooted in the rituals and institutions of their indigenous culture. Nevertheless, the tradition was strong among Blacks in this country and emerged as a dominant force in all areas of their lives" (Martin & Martin, 1985, p. 18).

Cultural influences play an important role in adolescent pregnancy (Butts, 1981; Chilman, 1983; Washington, 1982). According to Ladner (1987) Blacks have expressed a greater tolerance and acceptance of teen pregnancy than have Whites. Out-of-wedlock birth was regarded as a mistake made by the female, for which rehabilitation was available. "The literature is consistent in regard to the treatment of children born into out-of-wedlock status. These children ... were not assigned negative labels and inferior treatment since they were regarded as innocent and, therefore, were not held responsible for their own status" (p. 56). With regard to the acceptance of babies born to unwed mothers, not only do Black youths anticipate the birth of a child as more special and important than White youths (Thompson, 1980), but the children also serve an important function by expanding the kinship and extended family networks of assistance; even if the parents do not marry, the father's family assumes a share of the responsibility (Stack, 1974). These findings may serve to mollify the publicly expressed negative consequences of pregnancy for some adolescents thereby affecting their view of the "seriousness" of pregnancy.

Washington (1982) contends that the Black family in America, as well as in most third world countries, reflects more of an agrarian social framework. Others

note that Black families are similar to pre-industrial families with their close-knit organization and mutual networking (McAdoo, 1981). Gabriel and McAnarney (1983) observed that the age of parenthood varies in American society. Working class families have their first child before the age of 20, middle class parents have children later; professional women defer childbearing until their late twenties or early thirties, and low income urban Blacks often begin parenthood before the age of 18. Gabriel and McAnarney believe that many adolescents make little attempt to defer parenthood because adult roles other than motherhood are seen as less valued and/or inaccessible.

Butts (1981) suggested that the Black community posits a "sex positive" nature while the White communities promote a "sex negative" attitude. The "sex positive" attitude is evident in Black childrearing practices where children are allowed greater acceptance of their sexuality. Butts traces this attitude to African origins where, she notes, there are very few cases of sexual dysfunction. The "sex negative" attitude of the White society is viewed by her as a schism of attitudes and practices which, she believes, reflects Freud's distinction between the id and the ego. Butts feels that the attitude that mind/cognition is superior to feelings leads to the suppression of feelings.

In summary, it can be argued that one of the most important factors in the survival of Blacks, against great odds, has been strong family relations. These relations were based on the historical needs of group survival where procreation and the size of a family was tied to virility, and extended family acceptance of out-of-wedlock children without negative labeling was the rule. Historically, White culture reflects less acceptance of out-of-wedlock births, less acceptance of sexuality in general and less reliance on extended family social structure in order to survive and prosper. Births that were not the outcome of marriages were labeled negatively for Whites. Black youth anticipate the birth of a child from an

unwed mother more positively than White teens, possibly because the birth serves as an expansion of kinship and family networks. For White youth, the birth may promote isolation from family rather than expansion of ties. Certainly, White families do not share the historical framework of most Black families; Whites have not been subjected to the cruelties and illegalities of slavery. The mutual networking of pre-industrial families dissipated for Whites as they began to enjoy the benefits of industry, and the upward social mobility afforded to White Americans has been associated with delayed parenthood and fewer children.

Knowledge of Sexuality

Are teenagers aware of the nature of the risk they are taking by engaging in sexual activities? Do they know when during the menstrual cycle they are at greatest risk? Zelnik, Young, and Kantner (1979) said that knowledge of the period of greatest risk is an important topic. A major reason given by sexually active teenagers for nonuse of contraceptives is that intercourse took place at a time of the month when they thought they could not become pregnant. In their 1977 study, Zelnik and Kantner asked 15-19 year old women when, during the menstrual cycle, they were at greatest risk of pregnancy. Less than one-half answered correctly in each age group, with Whites being more knowledgeable and more likely to answer correctly at each age level.

Eisen and Zellman (1986) conducted a study of 203 teenagers (aged 13-17) of both genders and mixed race to assess their preintervention sexual and contraceptive knowledge, attitudes toward pregnancy and contraception, prior sex education, and sexual activity experiences. Their results indicated that neither previous sex education nor personal sexual experiences were

significantly associated with specific knowledge areas, such as the menstrual cycle. They also found that age and gender were poor predictors of specific areas of knowledge, but minority status was consistently associated with less sexual and contraceptive knowledge. The sample age mean of 15.5 years showed that all subjects were rather evenly distributed across the 13-17 year criteria. Had the results of the study been analyzed by age level, the findings might have been more clear. One wonders how many 13 year olds have had both sex education and personal experiences. While most schools teach sex education (90 percent of large school districts in the U.S.), most found education occurs late (ninth or tenth grade) and, as Forrest and Silverman (1989) report, is often taught without conviction by teachers who fear adverse reactions from parents. The central problem, according to Eisen and Zellman, is that sex curricula are designed normatively (to teach teenagers what experts believe they should know) and consensually (to focus on topics that are accepted in the community). The hypothesis is that increased anatomical knowledge will decrease sexual risk taking. What are missing are the motivational and attitudinal factors that the young person brings to the risk taking situation. To develop more effective sex education curricula, experts need to understand how adolescent motivations and attitudes vary with gender, age, and ethnicity. Eisen and Zellman found that teenagers who regard pregnancy as a serious condition to which they feel susceptible are more likely to have acquired the knowledge that may help them avoid it. If minority membership is consistently associated with less sexual and contraceptive knowledge, could it be that pregnancy is not seen as a "serious condition" to many Blacks?

A recent analysis of 251 high risk 7th and 8th grade Black inner city adolescents by Herz and Reis (1987) revealed that less than 15 percent of both genders and grade levels know when pregnancy is most likely to happen in

relation to the menstrual cycle. Even fewer understood that pregnancy can happen at first intercourse. Other findings reinforced previous research; boys were more likely than girls to engage in unprotected intercourse (Clark, Zabin, & Hardy, 1984), and attribute responsibility to the female (Cohan & Rose, 1984). Yet, according to Cohan and Rose (1984), younger and older males seem willing to accept responsibility for pregnancy, even though they feel little motivation to prevent it.

To summarize, in studies involving both high school and junior high school students of mixed race and gender, sexual knowledge of the menstrual cycle and specifically, knowledge of when during the menstrual cycle they would be at greatest risk of pregnancy, is abysmal. Studies indicate that the range of correct responses to such questions is from 15 percent correct to approximately 40 percent correct. Blacks teens scored consistently lower than White teens on knowledge questions in all studies reviewed. Sexual education classes and even sexual experience were not associated with increased sexual knowledge in another study of mixed race and gender 13-17 year-old teens, but minority status was consistently associated with less sexual and contraceptive knowledge. Finally, teens who view pregnancy as a "serious" condition are more likely to acquire the knowledge to avoid it. The lack of knowledge associated with minority group status may be connected to a less serious view of pregnancy.

Socioeconomic Issues

Black adolescents become sexually experienced at a younger age than White adolescents; at every age, more Black than White teenagers are having intercourse (Zelnik et al., 1981). Some researchers attribute the disparity in large

part to socioeconomic factors. Reid (1981), utilizing U.S. Bureau of the Census information for 1970 and 1980, noted that 31 percent of Black families (contrasted with 9 percent of White families) were below the poverty line in 1981. If headed by a female, families are especially likely to be below the poverty line (53 percent in poverty among Blacks compared with 27 percent among Whites), or if the families are large (16 percent of Black families without children and 74 percent of Black families with 5 or more children are in poverty compared with 5 percent and 35 percent respectively among White families). Progress toward racial equality of family income has been limited and has even begun to reverse in the 1980's (Bianchi, 1980; Reid, 1982). Gibbs (1984) noted that an analysis of major social indicators showed Black youth are relatively worse off in the 1980's than they were in 1960 in rates of unemployment, delinquency, substance abuse, teenage pregnancy and suicide.

A growing awareness among many scholars is the increasing differentiation of the Black population by social class with the development of a distinct Black lower class excluded from socioeconomic progress (Hogan & Kitagawa, 1985). There has been limited empirical research on the role of socioeconomic conditions, family structure, and neighborhood environments on the fertility behavior of American teens (Moore and Hofferth, 1978; Zelnik, Kantner & Ford, 1981). In their 1985 study, Hogan and Kitagawa investigated ethnographic explanations of the fertility behaviors of Black adolescents utilizing data drawn from the 1979 Young Chicagoan Survey conducted by the Chicago Urban League. The 1,078 Black female respondents were selected by means of two randomly drawn two-stage area probability samples in Chicago. All females aged 13-19 who were residents of sample households were then interviewed.

The first sample (388 respondents) represented Black teenage girls living in the City of Chicago; the second sample (690 respondents) represented Black

teenage girls living in Chicago's poor, primarily Black areas. The survey nonresponse rate was less than 10 percent, probably due to the fact that the Urban League is well respected in Chicago. According to Hogan and Kitagawa, parental consent forms were not necessary because the survey was funded by a donation from a private foundation. The involvement of the Urban League and the use of private funds led to a high number of respondents, and because the interviewers were members of the community themselves, there was cooperation. Also, there was extensive survey coverage for Black girls aged 13-19 who were not sexually active prior to the survey.

Ethnographic studies of Black families have identified a number of factors that discourage young Black women from making the transition to adulthood through educational and career tracks. Hogan and Kitagawa tested these ethnographic findings with data from their Chicago sample. Their research improved on previous demographic research by "examining the total associations and effects of these variables on teenage fertility, in addition to decomposing the effects into differentials in sexual activity and rates of pregnancy among the sexually active" (Hogan & Kitagawa, 1985, p. 851). The research demonstrated that:

The risk of becoming pregnant is much greater for Black teenagers who are from a high-risk social environment (lower class, resident in a ghetto neighborhood, nonintact family, five or more siblings, a sister who became a teenage mother and lax parental control of dating). They have rates of pregnancy that are 8.3 times higher than girls from low-risk environments (upper class, resident in a good neighborhood, intact family, four or fewer siblings, no sister who became a teenage mother and strict parental control of dating). (Hogan & Kitagawa, 1985, p. 852).

Only 9 percent of the low-risk teenagers experience a pregnancy before age 18 as compared with 57 percent of the high-risk teenagers.

Three factors in the Hogan and Kitagawa study were statistically significant in affecting the rate of pregnancy: social class, the marital status of parents, and the number of brothers and sisters. Teens from the Black middle class have a rate of first pregnancy that is 53 percent higher than those from the upper class, and the pregnancy rate of the Black lower class is 95 percent higher than the upper class. Black teens whose parents were not married when they were eleven years- old had pregnancy rates 36 percent higher than those with intact families; girls with five or more siblings have pregnancy rates 55 percent higher than girls from smaller families (Hogan & Kitagawa. 1985). Additionally, it was found that social class, parents' marital status and neighborhood quality were statistically significant factors involved in contraceptive use at first intercourse.

The effects of socioeconomic status and its relationship to pregnancy were not originally noted in national pregnancy data. Generally, the higher the socioeconomic status of the Black woman, the fewer children she tends to have. This is true for adolescents in general (Perlman, Klerman & Kinard, 1981). Zelnik and Kantner (1977) found a positive relationship between socioeconomic status and contraceptive use among both Black and White teens, with nonuse concentrated in the lower income and educational groups. They also found an inverse relationship between sexual activity and socioeconomic status, with poverty status associated with higher activity. Washington (1982) replicated a Johns Hopkins study finding that social class has a stronger effect on the sexual behavior of Black teens than White teens.

Furstenberg, Brooks-Gunn & Morgan (1987) conducted a follow-up of a 1966-1972 study by Sinai Hospital in Baltimore. Initially, 404 first time pregnant teenagers were interviewed; 350 were reinterviewed one year after delivery, 363

three years afterward and 331 five years later. In 1984, 80% of the original sample were interviewed. They found that of all the family background variables studied, only two emerged as significant predictors of the adults' economic status 17 years later. The first and most significant was race, Whites were more likely to reach a higher economic level than Blacks. The second significant predictor was the educational level of the respondents' parents. The study found that adolescent mothers were four times as likely to be receiving welfare and have three or more children at the 17-year follow-up if their parents' education was 9th grade or less. Duncan and Hoffman (1990) recently reported that Black teen mothers who received Aid to Families with Dependent Children (AFDC) when they gave birth were... "more likely to be receiving AFDC at age 26 than other Black teenage mothers" (p. 16).

Taken separately, the social indicators paint a depressing socioeconomic picture for Black Americans. Statistics for 1980 show that 21 percent of all Blacks 18 and 19 years old and 25 percent of Blacks 20 and 21 years old had neither completed nor were presently enrolled in high school (Gibbs, 1984). Unemployment figures reported by the U. S. Labor Department showed (in 1983) a decline in overall national unemployment to 8.8 percent, but among Black youth it had risen to 48.3 percent, which was more than twice the 21.6 percent rate among all teenagers. The Uniform Crime Reports of 1981 noted that the rate of delinquency has increased to a level where nearly 15 percent of all Black adolescents in the 15-19 age group were arrested in 1979.

The National Institute on Drug Abuse reported in 1979 that non-White youth in the 18-25 age group have higher or equal rates of drug abuse than White youth in every major drug category except inhalants and hallucinogens. And finally, while suicide rates among Blacks are still lower than Whites of the same sex and age, Gibbs (1984) found that the suicide rate has increased three-

fold for Black males and doubled for Black females in the past 20 years. It should also be noted that the Black suicide rate is probably depressed due to the incidence of what might be called sub-intentional deaths. "For example, if suspected cases of suicide by single-car accidents, deliberate drug overdoses, victim precipitated homicides, and other violent accidents were included in the statistics, the suicide rates (for Blacks) would be significantly higher" (Gibbs, 1984, p. 11).

Socioeconomically, Black Americans, particularly adolescent Blacks, appear to be in a difficult position. Adding to, and perhaps because of these difficulties, the impact of Black children having children appears to have a cementing affect on what might be called the Black underclass. Chilman (1983) noted that teenage mothers more often drop out of school, go on welfare, have complications in pregnancy, have larger families and are less economically stable than adult women who bear their first child. Thus, the trend of more single Black mothers has become the latest cog in the socioeconomic wheel which appears to be rolling toward devastating long-term social and psychological effects on the structure and functioning of the Black family in America.

In summary, Blacks have been losing ground socioeconomically. Black youth are relatively worse off in the 1980's than they were in the 1960's in rates of unemployment, delinquency, substance abuse, teenage pregnancy and suicide. Studies consistently underscore the significance of social class as a predictor of teen pregnancy, lower educational attainment and poor future economic status. Very real differences exist between poor White and poor Black adolescents. For many Black females, the pool of available Black males who can provide stable companionship is shrinking due to factors mentioned above. White female teens are employed more often and have more opportunities to get involved with a male who is employed. Longitudinal studies of first time pregnant

teens of mixed races conclude that race was the most significant factor associated with poverty status 17 years later. Finally, social class has a stronger effect on the sexual behavior of Black teens than it does on White teens.

Research studies conducted in inner city environments have not done a good job of differentiating the effects of social class on Black and White populations since most of the large population studies include Blacks only. Longitudinal studies that include mixed class and race adolescents are needed to separate the variables of at-risk status by race and class. The remaining three sections covering developmental, psychological and parental issues are not as specific in detailing race and class differences as literature sections already covered, but are considered as essential variables in the prediction of risk status for pregnancy.

Developmental Issues

Adolescence is a time of profound physical change which increases the teen's awareness of and interest in sexual behavior. Black, a teacher-counselor with the Las Cruces (New Mexico) Public Schools and DeBlassie, Professor of Counseling at New Mexico State, see maturation as a three fold process, requiring growth in understanding oneself as a sexual being, growth in the ability to handle interpersonal relationships, and growth in the capacity to plan behavior in view of future outcomes and present problems.

Chilman (1980) believes adolescents are making life choices such as parenthood before they are developmentally ready. Darabi (1982) goes even further by saying that most teens become pregnant through gross misunderstandings and ignorance. In surveys conducted by Smith (1982) 64

percent of sexually active, contraceptive nonusers did not desire pregnancy, and were surprised at conception.

Kohlberg (1978) suggested that males may not be able to perceive a cause-effect relationship between their interests in sex, their sexual behavior, and pregnancy. Instead, they retain an egocentric childlike belief that they won't be held accountable. Gilligan, Kohlberg, Lerner and Belensky (1970) had previously noted that when teens' were given moral reasoning dilemmas, they obtained higher scores on nonsexual dilemmas than they did on sexual dilemmas, and the lower the socioeconomic level, the lower the level of moral reasoning.

Present then, is either a lack of ability or lack of desire in adolescents to plan behavior in view of future outcomes. This lack of ability or desire to plan is combined with a poor understanding of sexuality, especially among low income minority males and females. Again, as in the Eisen and Zellman findings, motivational factors can be seen as playing a vital role. Bassoff and Ortiz's (1984) study of 557 mixed race females from "high risk" high schools showed the conflicts between values teens say they hold and their behavior. They found that a good education, financial independence, a good marriage or relationship, and self worth were the most important values stated. These findings are remarkable in their lack of superficiality and goal orientation. Why then do many young women not act to prevent early pregnancy? Bassoff and Ortiz believe it centers on motivation or amotivation. They point to Seligman's (1975) work with the "learned helplessness" concept. They feel that these young women experience the consistent inability to exert control over events in their lives which often result in passive non-response to certain situations. The entire motivational framework is not one of active non-pursuit of knowledge about sexuality, but one of passive "it wouldn't matter if I did know" and acceptance of the "way things are".

What must not be overlooked are the positive cognitive values that teens consistently state (Bassoff, 1978). What adolescents actually want for their lives has generally been overlooked because of the disparity between these wants and the reality of their actions (or perhaps their opportunities).

In summary, the ability to plan for the future, to handle interpersonal relationships and understand oneself as a sexual being are involved in the process of maturation for all teens. Many researchers believe adolescents are making life choices before they are developmentally ready to do so. Males retain an egocentric belief that they won't be held accountable for their behavior; females appear to state lofty values and ambitious goals but don't behave in a manner that is likely to lead to the attainment of those goals. The inability to perceive their own cause-effect behavior (males) and the lack of control that many female adolescents exhibit over their lives are issues that are exacerbated by the fact that these developmental problems are more strongly associated with low socioeconomic status. Research into developmental factors associated with teen pregnancy needs to be addressed both through mixed race and mixed socioeconomic status populations in order to clarify the reasons why developmental problems appear to affect low socioeconomic level teens more directly than middle and upper class teens.

Psychological Issues

Stiffman, Earls, Robins, Jung & Kulbok (1987) in a study of 1590 inner city females age 13-18 who used health clinics, found that sexually active teens came from more psychosocially disadvantaged family backgrounds (single parent, family member with mental health problems, foster or group home

experiences). The psychosocial information was obtained through interviews of a geographically diverse population of teens attending health clinics. However, considering the age of the participants, the information obtained about family history of mental illness from teens aged 13-18 would appear to be susceptible to bias and ignorance.

Ralph, Lochman and Thomas (1984) interviewed 19 pregnant and 20 nulliparous 15 and 16 year-old Black teenage women who were all patients at a West Dallas (Texas) Youth Clinic in order to determine psychosocial characteristics. They obtained a family history as well as scores on twelve scales of adolescent psychosocial adjustment. Their results do not indicate family or psychological disturbance in the pregnant group. This finding corroborates Brunswich's (1971) adolescent sample of low income Black youth where he found no consistent differences between pregnant and never pregnant adolescents with regard to self-esteem, general mood and outlook on life.

Zongker (1977) had found that compared to a control group of nulliparous teens, adolescent mothers evidenced poorer self-esteem and a greater feeling of inadequacy, although no information about socioeconomic status or ethnic group membership was reported. With the limitations of Zongker's study in mind, Segal and DuCette's (1973) earlier findings that low income Black pregnant females had a more internal locus of control than middle income White nonpregnant females suggests possible ethnic variability. It may be that pregnancy is a matter of choice with Black low income adolescents. One's perception of the deviance of pregnancy seems likely to be affected by the subculture of which one is a member.

The entire population (Black and White) of sexually active adolescents come from more psychosocially disadvantaged families than their sexually inactive peers. However, as Stiffman et al. (1987) noted, pregnant youths who

answered interview questions about family history, stressful events, relationships and physical health did not differ from never pregnant but sexually active groups. The effect of a psychosocially disadvantaged family background on a teen appears to be equivocal. Although some researchers find that sexually active Black and White teens come from psychosocially disadvantaged families, others note that youths who become pregnant do not experience more relational problems or stressful events than sexually active or non-sexually active teens. Self-esteem, general mood and outlook on life have been shown to be more positive with certain low socioeconomic Black pregnant teens than middle-class never-pregnant White teens.

The psychological literature regarding teen pregnancy suggests that adolescents manifest the need for love and affection that all people want. The fact that teens desire independence and must separate from parents in order to achieve autonomy makes this a most difficult transition. The desire for love and affiliation may place pregnancy in a positive light for some adolescents, particularly those whose psychological needs for love and affection are not met.

In summary, the effect of a psychosocially disadvantaged family background on a teen is equivocal. Although some researchers found that sexually active Black and White teens come from psychosocially disadvantaged families, others noted that youths who become pregnant do not experience more relational problems or stressful events than sexually active or non-sexually active teens. In fact, self-esteem, general mood and outlook on life have been shown to be more positive with certain low socioeconomic Black pregnant adolescents than middle-class never-pregnant White teens.

Psychological literature concerning adolescent pregnancy could benefit from studies that approach the issue more systemically; interviews with pregnant teens should be followed by interviews with parents or guardians, schools and

churches, in order to clarify or uncover any psychological problems. A systemic approach could further profit from longitudinally tracking pregnant teens for five or ten years in order to assess any evidence of psychological difficulties.

Parental Availability and Emotional Support Systems

If, as Kaplan, Smith, and Pokorny (1979) reported, teens often react to devaluating experiences in a rash manner, then their assessment of current conditions can result in periods of heightened risk-taking. One of Hogan and Kitagawa's (1985) findings was that girls who reported lax parental control of their dating (supervision of who they dated, where they went, and arrival time home) had pregnancy rates 64 percent higher than girls who were supervised. Another finding noted that teens who had sisters who became teen mothers were also at greater risk for pregnancy, which may be a further indication of lack of parental supervision. Again, all the environmental variables that affect the parents (their cultural background, SES, marital status, level of education) have an effect on their control of dating. A parent, because of these influences, may not have the energy, desire or the knowledge to be involved actively and meaningfully in their child's life.

Zelnik and Kantner (1977) noted that 75 percent of teens who stated that they were premaritally sexually active reported that "the initial event occurred at their partners' homes, their homes, or the homes of a friend or relative" (p. 77). These statistics suggest that the home, whatever the structure or marital situation, is not off limits for sex in a substantial number of homes regardless of ethnic background.

Parents, in general, are the preferred source of sexual information, especially for virgins; yet, parents are consistently listed by teens as behind teachers, peers and even the media as information sources (Bennett & Dickinson, 1980). It has been shown that adolescents gained more information from occasional casual conversations with peers than from fathers, ministers and physicians combined (Thornburg, 1982). Results of studies of parent-adolescent communication about sexual behavior have been equivocal. Although virgins and sexually active subjects didn't differ in the amount of conversation with parents (Cvetlavich & Grote, 1983), other studies found that communication with the mother about sex is related to less sexual activity and increased contraceptive use (Fox & Inazo, 1980). Perhaps the question is not where adolescents get the information but what needs are not being met when the preferred source of information, for both White and Black adolescents, doesn't meet their needs. (Handelsman, Cabral, & Weisfeld 1987).

Hoffman and Manis (1979), in a study of 1,569 married women under the age of 40 attempted to identify the psychological satisfactions of having children. Using a national probability sample and the facilities of the Institute for Social Research at the University of Michigan, they found that Primary Group Ties and Affection was the most important need that children satisfied. Blacks and Whites agreed that the affiliation value of children - their role in warding off loneliness and providing love and companionship was most important. This may be precisely what the adolescents are looking for when they increase sexual activity.

Olson and Worobey (1984) found differences in the relationship of nonpregnant and pregnant adolescent girls to their mothers in their perceptions of love, attention and interdependence; the pregnant group perceived far fewer of these factors. However, the 40 nonpregnant and 20 pregnant teens were not

matched on grade point average; the pregnant group had a significantly lower GPA than the nonpregnant group which opens speculation that poor academic success may indicate the presence of intervening variables that affect the perceived relationship a daughter has with her mother.

When parents do not take an active role in the supervision of dating, the onus falls on the adolescent herself, her friends or her partner. Franklin (1987) reported that the influences of a partner or one's friends are negatively related; if a woman is deeply involved with her partner, his influence is predominant, otherwise, she will rely on her friends for support or guidance. This finding supports Thompson and Spanier (1978) who found that persuasion of one's partner was the most powerful influence on contraception. Evans (1987) tested the attitudes of significant others in the lives of adolescents as risk factors associated with sexual activity. He reported "perceived attitudes (by the teen) of the adolescent female's mother, father, female friends, and teachers played a significant role in distinguishing those females who were childbearers, sexually active/never pregnant and never sexually active" (p. 91). Brittain (1963) proposed a situational hypothesis to explain the discriminant use of parents and/or peers as a reference group by adolescents. He suggests that teens will often refer to peers when current status and identity situations are implied, but will refer to parents when future (adult) roles are implied.

Without active parental supervision and support of their child's social life, the role models available to adolescents are their peers and partners. If parental control of dating is lax, and if this occurs at a time when a teen has perceived rejection by family and friends, then the opportunity for sex takes on added importance as a risk factor in teen pregnancy. Boxhill (1987) conducted clinical interviews with poor Black adolescent mothers and reported that they perceived

failure of their own parents and family life and a lack of satisfactory intimate relationships with peers and others.

Unfortunately, for many teens in less than ideal social settings, the positive options are few. If the family socioeconomic status is low, the parent(s) may be unemployed, on welfare, or may have been teen parents themselves. If the adolescent in this family turns to peers, many of whom are teen parents, again the positive role models are not available, leading to a sense of limited options from both reference groups. Fischman and Palley (1978) believe that this leads to a feeling of hopelessness and the possibility of early conception.

Bandura (1982), in discussing the psychology of chance opportunity encounters and life paths, suggested that there were two processes by which results of early development affect a person's current and future life paths. One process selects environments, activities and associates who share similar value systems; the second process produces environments in which the individual achieves some regularity of behavior. In both instances, the concept of continuity is central. As Bandura said, "The skills and interests people cultivate determine the circles in which they move and hence the kinds of social encounters they are most likely to experience" (p. 750). The chance opportunities and encounters that adolescents frequently refer to when they discuss reasons for not using birth control may not be that unpredictable. The standards people use to influence their own behavior are acquired through culture and the behavior of significant others. "The life paths that realistically become open to them (humans) are also partly determined by the nature of the cultural agencies to which their development is entrusted" (Bandura, 1982, p. 754).

In summary, lax parental control of dating has been associated with increased teen pregnancy among low income Black subjects. Teens of both races suggested that their initial sexual activity took place in their home or the

home of their partner. It appears that parents, as the preferred source of sexual information and as supervisors of their adolescents, have not been meeting their children's needs. Black and White couples agree that the affiliative value of children, providing love and companionship, was the paramount reason for having children. Yet, Black and White teens agree that communicating about sex with parents has been nearly impossible.

When parents do not communicate with their children and they do not take an active role in the supervision of dating, their adolescent children get information from less reliable sources and are at greater risk of pregnancy. In abandoning their supervisory role, parents force teens to select their own role models. In abandoning their emotional support role, parents force teens to get their needs met elsewhere. Lack of supervision and emotional support has been associated with increased risk of pregnancy in both Black and White adolescent populations. Because parents are powerful cultural agents in the lives of their children, they could greatly enhance their child's development by becoming more available informants and active supervisory agents.

Summary and Implications

A review of the literature indicates that there are differences in at-risk-for-pregnancy between Black and White adolescents. Black teens begin having sex earlier, get pregnant more often, use birth control less, demonstrate less knowledge about sexuality, and get married less than their White counterparts. White teens have sex more often and with more partners, have recently begun to keep their babies rather than give them up to adoption, and are responsible for most of the increase in adolescent sexuality during the past twenty years. For

Blacks, the teen pregnancy rate and the percentage of babies given to adoption by teens has remained relatively stable the past twenty years. What has increased for Blacks has been the number of pregnant teens who do not marry.

Culturally, Blacks have always made room for children within the extended family network. White families have shown less acceptance of out-of-wedlock births and White teens show less enthusiasm for the birth of a child to a teen mother. Consequently, White adolescents may view pregnancy as a serious situation to be avoided whereas Black teens may view childbirth as less serious, and under certain socioeconomic restrictions, a viable option.

Teens are generally not aware of the nature of the risk they are taking by engaging in sexual activities, with Black and low socioeconomic status adolescents at greater risk for pregnancy than White and higher socioeconomic status teens. While age and gender are considered poor predictors of specific areas of sexual knowledge, minority status is predictive of less sexual and contraceptive knowledge. Community input is essential in the design of effective curricula and the community, schools, and parents must work together with adolescents to detail the serious consequences of early pregnancy so that teens will be motivated to avoid it.

Socioeconomically, Blacks continue to fall behind Whites with the differentiation increasing the past ten years. Associated with a low socioeconomic status are the following: higher rates of teen pregnancy, more children, less education, earlier sexual activity, poor peer role models, less use of birth control and less knowledge of sex.

✦ Many teens are not developmentally ready to comprehend the seriousness of early sexual activity. Males often act as if they are not accountable for their behavior and the behavior of many female adolescents is counter to stated goals for themselves. Black and White differences are not explicit with regard to

developmental difficulties other than the supposition that Blacks, because they begin having sex earlier and suffer lower socioeconomic status, are more at risk.

The evidence of psychological difficulties in the lives of teens who become pregnant is equivocal. Self-esteem, general outlook on life and mood appear to have little effect on the prediction of pregnancy risk for adolescent females. The desire for love, affection and affiliation may drive adolescents who do not get these needs met at home to seek them in a manner that increases at-risk behavior.

The parents of both races seem to have difficulty communicating with their children and supervising their dating. Without such actions, parents may force their teens to rely on less knowledgeable sources for information and peers for behavior modeling. Again, Blacks may be more at risk in these situations due to socioeconomic factors.

In an effort to simplify the above-mentioned research identified differences between Black and White adolescents, the author proposes a model in order to provide a framework for the many variables that separate high-risk for pregnancy from low-risk for pregnancy for both adolescents in general, and Black and White adolescents in particular. The three proposed factor areas: Knowledge and Attitudes toward Sex and Childbearing (KASC), Current Life Situation (CLS), and Opportunity for Sex (OS), have been selected as factors because they appear to delineate the role of race and class in adolescent pregnancy. If Blacks and Whites differ significantly in their answers to questions about identified risk areas, then specific and pragmatic interventions can be designed to influence at-risk behavior. If risk status can be shown to be of similar derivation for both Whites and Blacks, then similar interventions can be designed for both races.

The Knowledge and Attitude toward Sex and Childbearing (KASC) proposed factor was chosen because it incorporates the issues of knowledge of

sex and cultural beliefs which research has identified as areas of consistent differences between Black and White adolescents. The KASC factor can assess cultural differences that affect beliefs about how many children to have, when to get married, use of birth control or specific knowledge about sexuality. The expectation is that Blacks will be assessed as more at-risk on this factor.

4 Current Life Situation is a proposed factor which attempts to understand the adolescent's satisfaction with family, friends, school and self. This factor assesses a teen's psychological need for affection, self-esteem and current mood. Socioeconomic issues of family size, number of parents and neighborhood are also questioned. If family relationships are poor and relationships with friends have deteriorated, then the adolescent is at greater risk for pregnancy. The at-risk assessment of this factor by race is difficult since it includes socioeconomic and psychological influences, areas that do not clearly differentiate low socioeconomic level Black and White teens. The expectation is that adolescents who score high on this factor will be at greater risk of pregnancy.

5 Opportunity for Sex is a proposed factor that assumes the opportunity to engage in sex for adolescents is a function of parental supervision and the standards that teens use, are forced to use, or are allowed to use to influence their own behavior. These standards are acquired through culture and the behavior of significant others such as parents, friends and partners. The opportunity for sex can also be mediated by one's knowledge of sex, feelings of self-worth, assertiveness and sense of control. This proposed factor is primarily associated with the last three areas covered in the literature review, areas which do not clearly differentiate at-risk status for pregnancy for Black and White adolescents. Therefore, no expectations for risk by race are offered, but high scores will be correlated with pregnancy.

In order to assess identified risk areas based on a review of the literature and a discussion of the factor model, the following hypotheses were proposed:

- (1) Students who become pregnant will have higher at-risk scores on the model variables than students who do not become pregnant. The model variables will predict which adolescents will become pregnant and which adolescents will not become pregnant.
- (2) An interaction of race and pregnancy will be realized on the proposed factor of Knowledge and Attitude toward Sexuality and Childbearing with Black subjects attaining higher mean scores for pregnancy than White subjects. The outcome of the interaction will result in Black pregnant subjects evidencing the highest risk scores followed by: White pregnant subjects, Black never-pregnant subjects and, finally, White never-pregnant subjects. On the remaining two proposed factors, no interaction of race and pregnancy status is predicted.
- (3) The model variables will differentiate Black pregnant from Black never-pregnant adolescents and White pregnant from White never-pregnant adolescents.

The purpose of this study was to design a questionnaire that was sensitive to racial differences and could predict at-risk status for pregnancy among adolescents. This study differs from previous work in that it investigates the attitudes, feelings, knowledge, etc., of never-pregnant teens and uses that information to predict pregnancy risk. Research into teen pregnancy has consistently used post hoc information, that is information offered by teens already pregnant, to predict at-risk status for certain populations. The thoughts and feelings of pregnant or parenting teens does not necessarily represent the thoughts and feeling of never-pregnant adolescents.

The next chapter describes the research design of the study including a discussion of the research hypotheses, subjects, instruments used, and procedures employed in the data collection and analysis.

CHAPTER III

METHODOLOGY

The purpose of this study was to delineate the role of race in the prediction of at-risk status for pregnancy among low socioeconomic level Black and White high school females. In order to assess these differences, the author designed a questionnaire based on research-identified areas that help differentiate teens who become pregnant from those who are not, and Black from White pregnant teens.

Research Hypotheses

At-risk status for teen pregnancy is hypothesized to be a function of race and class factors. This study controls for the social class factor by surveying students attending a high school at which 50 percent of the students live in neighborhood areas designated as below poverty level by census tract data. The research hypotheses of this study were as follows:

1. Students who become pregnant will have higher at-risk scores on the model variables than students who do not become pregnant. The model variables will predict which adolescents will become pregnant and which adolescents will not become pregnant.

2. An interaction of race and pregnancy will be realized on the proposed factor of Knowledge and Attitude toward Sexuality and Childbearing with Black subjects attaining higher mean risk scores for pregnancy than White subjects. The outcome of the interaction will result in Black pregnant subjects evidencing the highest risk scores followed by: White pregnant subjects, Black never-pregnant subjects and, finally, White never-pregnant subjects. On the remaining two proposed factors, Current Life Situation and Opportunity for Sex, no interaction of race and pregnancy status is predicted.

If, as predicted in hypothesis number 2, there is an interaction of race and pregnancy, then different patterns of variables could be used to predict risk status for each of the four groups (Black pregnant, White pregnant, Black never-pregnant, and White never-pregnant). If different patterns appear to differentiate groups, a third hypothesis will be pursued.

3. The model variables will differentiate Black pregnant from Black never-pregnant adolescents and White pregnant from White never-pregnant adolescents.

To test whether the groups (Black pregnant, Black never-pregnant, White pregnant, White never-pregnant) differed on the variables, a multivariate analysis of variance (MANOVA) was conducted to assess the main effects of race and pregnancy and the interaction of race and pregnancy.

If hypothesis number 1 is true, there will be a significant main effect for pregnancy. If hypothesis number 2 is correct, there will be a significant interaction effect for race and pregnancy on the proposed factor of Knowledge and Attitude toward Sexuality and Childbearing. The other two proposed factors will demonstrate a significant main effect for pregnancy (if hypothesis number 1 is correct) without prediction of a significant interaction effect. If hypothesis

number 3 is correct, a significant interaction effect of race by pregnancy status will have been realized on hypothesis number 2 and the use of different patterns of variables to predict pregnancy will improve accuracy in the prediction of pregnancy. Hypothesis number 3 will not be conducted if no interaction is found in hypothesis number 2.

Whenever a MANOVA results in a significant F score, a stepwise discriminant function analysis will be conducted in order to assess where the significant differences lie and to indicate the percent of subjects correctly classified by pregnancy status. The stepwise analysis will also be used to develop separate models of pregnancy risk for Black and White adolescents based on identified differences by race.

Subjects

The subjects for this study included 152 female adolescents attending an urban Western Massachusetts vocational public high school. The students (77 White; 75 Black) were asked to participate in a study conducted during their regularly scheduled science classes in which they would be asked questions about their attitudes and beliefs toward sexuality and pregnancy. All subjects and their parents were informed of the project and given the right to refuse participation, participate in a similar format but different study, not participate at all, or withdraw from participation at any time.

Both the high school (62 percent minority) and the school district as a whole contain a majority of minority students. Nearly 50 percent of the school

population lives in zip code areas designated as below poverty level neighborhoods (Brown, Roth, & Mogul, 1984) and 93 percent of the subject sample stated that they lived in mixed to mostly minority neighborhoods. Those mixed to mostly minority neighborhoods were identified by census track data as areas where 30-50 percent of the population live below the poverty level (Brown, Roth, & Mogul, 1984). Black subjects reported slightly higher levels of parental educational attainment than White subjects while the average grades ($M=2.06$ or a "C" average, $SD=.97$) and attendance ($M=2.07$ or 11-20 days absent, $SD=1.18$) were approximately equal for both races.

Table 1

Demographic Characteristics of Female Subjects

Grade	Age in years	Race
10	mean = 15.48	White = 40
	range: low = 14	Black = 35
	high = 17	
11	mean = 16.22	White = 29
	range: low = 15	Black = 28
	high = 18	
12	mean = 17.25	White = 8
	range: low = 16	Black = 12
	high = 19	
Totals	mean = 16.31 range: low = 14 high = 19	Students = 152

Note: All subjects were enrolled in regular education programs.

Instrument

The questionnaire consisted of 49 questions designed to cover research identified risk factors for pregnancy. It was originally piloted on a group of 20 female students who were enrolled in grade 11 of the target high school. The students gave their input about questions which seemed vague, confusing or poorly stated. Pilot subjects discussed the language of the questionnaire line by line with the author so that the question would generate the desired information.

Of the original 49 questions, 40 were used for analysis (see Appendix for questionnaire). Questions 6, 16 and 18 (the effect of AIDS, children and their relationship to femininity, and neighborhood racial makeup) were poorly designed and did not effectively assess risk. A few questions were demographic in nature such as number 22 which asked for race, number 48 and 49 which asked for age and grade, and numbers 28 and 29 which asked if the subject had ever been pregnant or had a child. Question 20, asking whether or not the student was living with her biological parents, proved to be too confusing as ascertained by the number of questions asked by subjects after testing.

The Knowledge and Attitude toward Sexuality and Childbearing factor was assessed through questions that attempted to evaluate the influence of family and culture on the subject's attitudes toward sexuality and childbearing as well as assessing her knowledge of sexuality. The number of children wanted, age to be married, age to parent, acceptance of abortion, belief that kids cure loneliness, and belief that sex is alright if two people are "in love", were seen as questions which tapped inculcated family beliefs and attitudes. The issue of sexual knowledge and activity was examined through the following areas: sexual activity, the use or non-use of birth control, knowledge of ovulation, the

possibility of a pregnancy outcome from first intercourse, and whether most pregnancies are accidental or planned. Finally, the influence of friends on sexual behavior and beliefs was assessed through questions about the number of friends who were sexually active, the number of friends who were pregnant and whether or not friends would want you to "keep" the baby if you got pregnant.

The Current Life Situation factor attempted to assess issues that impact an adolescent's everyday life both immediately and vicariously. Home situations such as: family size, mother's age, parents education, and the presence of a parenting older sister were seen as factors that influence the home environment. Absence from school, grades, repeat of a grade and satisfaction with school all appraised the current state of an adolescent's home away from home, the school. Relationships with parents, friends and partners were examined through questions that asked for ratings of satisfaction and importance. Finally, satisfaction with self was queried through questions about appearance and self image.

The Opportunity for Sex factor attempted to examine both the parent's and subject's overt and covert influences on the creation of opportunities for sex. Questions about parental rules and dating limits investigated the overt structures applied to dating. Whether parents met the dating partner or knew where their daughter was at any particular time assessed parental involvement in their adolescent's life. The amount of time spent by a parent at home or at work was asked in order to get an estimation of the amount of time a subject spends at home unsupervised. Questions about current dating and general activities were asked to help assess what the subject did with her spare or leisure time.

The following questions helped to examine the underlying element of control: "I'd rather go out with a guy I really don't like than not go out at all" (need to date), "I have been physically hurt by someone I dated" (hurt by a date), "It's

okay if a guy hits a girl every once-in-a-while, it just shows that he likes her" (ok date to hit), "If my boyfriend wanted sex and I didn't, I would:" (B wants G doesn't), and "If I got pregnant all my plans for the future would be ruined". Each question plumbs the emotional needs and strengths of a subject. If it was okay to be hit and hurt by a boyfriend, what wouldn't be okay? How much control was an adolescent willing to surrender to be with someone? The assumption was that less control was associated with greater risk.

Each questionnaire item received a score along a continuum from 0 to 4, with the number 4 representing high risk for pregnancy and 0 indicating low risk for pregnancy. Some questions were stated so that the answer was dichotomous, in which case the answer represented either a 4 or a 0 ("Are you now or have you ever been sexually active?"). For many questions, the degree of risk was arbitrarily assigned by the author according to an interpretation of the adolescent pregnancy literature. Some questions were designed in Likert scale form to assess attitudes ("Are you happy with the way you look?"). A few questions were designed to elicit information which was either demographic ("In what grade are you currently enrolled?") or exclusionary ("Have you ever had a child?") Responses to these questions were not used to assess risk.

Each of the three proposed factors assessed by the questionnaire was represented by at least 13 individual questions. Each question generated an at-risk score for item by item interpretation.

Data Collection and Analysis

Prior to the opening of school in September, all members of the science department of the target high school were contacted to enlist their support and participation in the study. Once the teachers agreed to participate, a meeting was scheduled to discuss procedures.

In the final week of September, the researcher, an assistant principal with 20 years of experience working with multi-racial and ethnic groups as a teacher, counselor and administrator, met with all ten classes to discuss the scientific method, the importance of observation and measurement, and the need to elicit valid information from students in order to develop more effective curricula. Two weeks to one-month later, the questionnaire was administered by the author to each of the classes over a two-week period. Students were asked to complete a questionnaire concerning teenage attitudes toward pregnancy. They were told that the results would be used to guide the staff of the science department in developing a more comprehensive and appropriate health curriculum.

Participants were asked to respond to questions seriously, since future students would be affected by the general findings of the questionnaire. The questionnaires were sequentially numbered and all subjects were asked their birthdates for future reference.

Most students completed the questionnaire within 25 minutes, with 95 percent of the subjects finishing within the 41 minute time period. However, since all science classes were scheduled as double periods, all students were given an uninterrupted time period for completion. Male students attending the science classes watched and discussed a film in another room, since the pilot suggested that male presence in the classroom affected some of the responses of female

subjects and also contributed to extraneous discussion and noise. Answers to questions about the questionnaire were handled individually by the author as they were presented. All completed questionnaires were handed directly to the researcher and were scored.

Students who became pregnant during the school year were asked if they had participated in the study. Names were then matched to birthdates on the numbered questionnaires. This study included all students who became pregnant during the school year ending in May 1990, a period of 8 months. The Pregnant Adolescent Girls Education Program (P.A.G.E.), an educational alternative for girls who become pregnant, provided the names of students who entered their program through alternative channels. Admission to the P.A.G.E. program is normally done through the counseling office of the sending high school with proof of being five months pregnant, however, some students obtain permission to enroll earlier. For pregnant girls who remain in the school, special permission must be obtained from the girl's doctor stating that the chemicals and/or physical demands of her shop will not be harmful to her. Therefore, identification of pregnant adolescents through shop permission forms and the P.A.G.E. program was not problematic.

More problematic were the teens who chose abortion as an alternative to childbirth. While the number of girls who aborted could not be known with certainty, it is known that few girls choose this option (Taborn, 1987) from populations similar to the target high school. The fact that only two percent of the population stated on the questionnaire that they would abort if they became pregnant was evidence that abortion was not a powerful alternative to this population. Only one subject admitted to having an abortion during the school year.

CHAPTER IV

RESULTS

This chapter presents the results obtained from the statistical analysis of the data and answers the research hypotheses. Both descriptive and inferential statistics are utilized in the analysis of results.

From October 20, 1989 to May 25, 1990, 29 of the adolescents who had not been pregnant prior to participation in the study admitted to becoming pregnant. Another 13 students (9 Black, 4 White), had acknowledged (questionnaire) that they either already had children or had been pregnant and were therefore excluded from further statistical analyses since the purpose of the questionnaire was to assess pre-pregnancy attitudes. The breakdown of the subject sample included in statistical procedures was as follows: Black pregnant subjects numbered 18, Black never-pregnant teens totaled 48, White pregnant students numbered 11, White never-pregnant totaled 62.

Overall, 75% of the students indicated that they were sexually active while only 45% said that they used birth control regularly. Ninety-three percent of the subjects stated that they have friends who were or are now pregnant and 86% said that their friends were sexually active. Thirty percent of the teens correctly answered a question about when ovulation took place in the menstrual cycle and only 2% said that they would terminate a pregnancy with an abortion. Forty-three percent of the sample had failed at least one school year and 17% stated that they had been pregnant before with 9% acknowledging parenthood. Responses to the other variables are reported in the sections that describe the factors.

The results of a multivariate analysis of variance (MANOVA) of the three proposed factors (Knowledge and Attitude toward Sexuality and Childbearing, Current Life Situation and Opportunity for Sex) are presented in Table 2.

Table 2

A MANOVA of Proposed Factor Scores: by Race (R), Pregnancy Status (P) and Race by Preg. Status (RxP)

Factor		Black		White		Manova \underline{F}		
		Preg. n=18	N-preg. n=48	Preg. n=11	N-preg. n=62	R	P	RxP
Knowledge and Attitude	M	33.77	32.6	36.36	30.3	0.01	6.78	3.21(*)
	SD	6.87	6.43	5.5	6.44			
Current Life Situation	M	22.83	19.18	22.27	19.3	0.03	7.35	0.07
	SD	5.97	5.07	6.05	5.99			
Opportunity for Sex	M	18.72	15.39	20.72	15.7	0.74	9.65	0.39
	SD	6.83	6.62	5.9	5.86			

Note: * = $p < .01$

(*) = approached significance at $p < .07$

All three factors were significant in their ability to predict pregnancy. The interaction of race and pregnancy on the Knowledge and Attitude toward Sexuality and Childbearing factor approached significance and may have reached significance if a larger sample had been included in the study. The \underline{F} test analyses indicated that the differences among the four groups are best explained by a combination of pregnancy status and race. White pregnant subjects were far more at-risk for pregnancy than White never-pregnant subjects. White pregnant subjects were at greatest risk followed by Black pregnant subjects, Black never-pregnant subjects, and finally, White never-pregnant subjects. The importance of interaction supersedes the main effect of

pregnancy status on this proposed factor. Race alone was not found to be significant across any of the proposed factors.

For each of the three proposed factors, a 2x2 MANOVA was conducted across the four groups and was followed by univariate one-way ANOVAs on all 13-14 variables associated with each proposed factor. Significant F results were followed by a Scheffe's comparison test where appropriate. The next three sections will include both a descriptive and statistical analysis of the variables as reported on Tables 3-5. The variables as presented are grouped by proposed factors.

Knowledge and Attitude toward Sexuality and Childbearing

Mean scores for variables related to Knowledge and Attitude toward Sexuality and Childbearing can be seen in Table 3. The groups of pregnant and never-pregnant students showed little difference in the number of children desired (a 2.50 mean represents 2.5 children), while White teens, particularly White pregnant teens, were significantly different from Black adolescents in their desire to get married earlier. Blacks appeared to put off marriage for the distant future with most scores in the "over 25" range.

Both Black and White subjects who got pregnant reported that they used birth control less and wanted to parent earlier than never-pregnant subjects. The fact that Black teens who became pregnant wanted children earlier, used birth control less, were less knowledgeable, and were more sexually active than never-pregnant teens clearly established an at-risk pattern. Interestingly, White subjects who got pregnant wanted children earlier, used less birth control, and were more sexually active than never-pregnant teens but, they were also the

Table 3

Comparisons of Black and White Subjects on the Knowledge and Attitude toward Sexuality and Childbearing Proposed Factor: Pregnancy Status(P), by Race(R), and Race by Pregnancy Status(RxP)

Variable		Black (n=66)		White (n=73)		Effects F(1,135 df)		
		Preg. n=18	Never- Preg. n=48	Preg. n=11	Never- Preg. n=62	P	R	RxP
No. kids wanted	M	2.55	2.37	2.54	2.40	.63		
	SD	.92	1.06	.93	.85			
Age to be married	M	1.44	1.31	2.09	1.69	1.76	6.65 ³	
	SD	.92	.90	1.04	.93			
Use birth control	M	2.22	1.77	<u>3.18</u>	<u>1.42</u>	8.92 ²		
	SD	1.76	1.92	1.47	1.60			
Age to parent	M	2.05	1.37	1.82	1.39	8.37 ²		
	SD	1.21	.87	1.08	.78			
Sexually active	M	3.55	2.67	4.00	2.70	8.40 ²		
	SD	1.29	1.91	0.00	1.60			
When you ovulate?	M	2.33	2.29	.72	1.61	1.96	14.40 ⁴	
	SD	1.41	1.49	1.00	1.39			
Pregnant at 1st sex?	M	.22	.75	.36	.25	.63		
	SD	.94	1.58	1.20	.99			
Are pregs. accidents	M	2.66	2.54	2.45	2.40	.37		
	SD	.84	.74	.52	.59			
Would you abort?	M	2.77	3.34	2.81	2.98	2.22		
	SD	1.21	.97	1.16	1.21			
Sex ok if in love?	M	2.44	2.58	3.27	3.03	.01		
	SD	2.00	1.93	1.61	1.73			
Friends sex act?	M	3.78	3.50	4.00	3.03	4.06 ¹		
	SD	.94	1.34	0.00	1.72			
Pregnant friends?	M	3.78	3.83	4.00	3.40	.99		
	SD	.94	.81	0.00	1.35			
Friends keep baby	M	2.61	3.02	3.09	2.76	.02		
	SD	1.19	1.34	1.04	1.07			
Kids cure loneliness	M	1.27	1.25	2.00	1.13	3.16		
	SD	1.17	1.26	1.16	1.12			

Note. A higher mean score indicates higher risk by variable on a 5 point (0-4) scale.

1=p<.05 for pregnancy

2=p<.005 for pregnancy

3=significance at p<.01 for race

4=significance at p<.005 for race

Underlined means (M) indicates Scheffe's identified differences

most knowledgeable group. A Scheffe's contrast found no significant differences between groups on age to parent but found that the differences among the groups on the use of birth control were best explained by the difference between White pregnant and White never-pregnant subjects. White pregnant teens were clearly most associated with non-use of birth control.

Sexual activity was clearly a predictor of pregnancy for Black and White teens. A few pregnant Black subjects indicated that at the time of testing, they were not sexually active. A 2.67 and 2.70 rating by Black and White never-pregnant subjects indicated that some 60% of those groups were also sexually active.

With an interaction F of 2.37 and with significance at $p < .12$ for the ovulation question, the issue of power deserves comment. Had the sample size been larger or the period of data collection longer, this knowledge question could have been seen as a stronger statement of Black and White differences. The second knowledge question about whether pregnancy could occur at first sexual intercourse did not differentiate Black and White students, with approximately 88 percent of all subjects responding correctly. There was considerable agreement by all groups that pregnancies are most often accidental (a 2.0 translated to half accident, half planned; a 3.0 meant mostly by accident).

As seen in Table 3, the question concerning abortion yielded no significant findings. A 3.0 score indicated that the subject would not have an abortion but would consider it under special circumstances and a 2.0 meant that the subject didn't know what she would do. Teens who became pregnant (2.0) were more ambivalent on the topic than never-pregnant teens (3.1).

White adolescents felt that sex was alright more often than Black teens in situations where couples stated that they were in love, which may indicate the desire of White subjects to attach sex to a committed relationship. White

teens who became pregnant indicated that they had "no opinion", on average, about whether or not kids cure loneliness while all other groups generally disagreed that children dispel loneliness.

The friends of teens who became pregnant were significantly more sexually active than friends of never-pregnant teens, although generally, all groups rated friends as active sexually (a 3.0 rating indicated most friends were active). Nearly all subjects said that they had friends who have been pregnant and most thought their friends would want them to keep their baby if they themselves became pregnant.

Current Life Situation

The figures presented in Table 4 begin by confirming Hogan and Kitagawa's (1985) research that found greater risk for pregnancy among teens who had a sister who became a teenage mother and who came from larger families. A 2.0 score for the pregnant sister question indicated that approximately 50% of the pregnant teens had sisters who also had been pregnant, a figure that reached significance. There was a tendency for never-pregnant teens to come from smaller families than teens who became pregnant. Absences from school (a score of 3.0 represents 20-30 absences, a 2.0 equals 11-20 absences) reached significance for both race and as an interaction of race by pregnancy status. Scheffe's results indicate that the real differences within the absences variable lies between Black pregnant and never-pregnant subjects. An attendance problem is a powerful indication of pregnancy risk, especially for Black teens.

Table 4

Comparisons of Black and White Subjects on the Current Life Situation
 Proposed Factor: by Pregnancy Status (P), Race (R), and Race by Pregnancy
 Status (RxP)

Variable		Black (n=66)		White (n=73)		Effects F(1,135 df)		
		Preg. n=18	Never- Preg. n=48	Preg. n=11	Never- Preg. n=62	P	R	RxP
Pregnant sister	M	2.00	.75	1.81	.77	9.99 ³		
	SD	2.05	1.58	2.08	1.59			
Size of family	M	2.83	2.48	2.54	2.02	2.36		
	SD	1.09	1.18	1.29	1.31			
Abs. from school	M	<u>3.00</u>	2.02	1.81	<u>1.90</u>	3.13	7.05 ⁴	4.73 ⁶
	SD	1.02	1.12	.98	1.21			
Grades	M	2.72	1.98	2.63	1.83	11.05 ³		
	SD	.82	.93	.8	.96			
Repeat a grade?	M	2.00	1.67	1.81	1.61	.03		
	SD	2.05	1.99	2.08	1.97			
School	M	1.55	1.46	1.54	1.65	.71		
	SD	.98	.71	.68	.87			
How I look	M	<u>.44</u>	1.21	1.27	<u>1.65</u>	4.69 ¹	5.06 ⁵	
	SD	.85	1.22	1.34	1.47			
Self image	M	1.15	1.5	2.09	1.62	1.66	4.44 ⁵	
	SD	.78	.82	.7	.79			
Import of boyfriend	M	2.88	2.83	3.54	2.77	4.65 ¹		
	SD	1.02	.93	.52	.88			
Friend relations	M	<u>1.38</u>	.98	<u>.45</u>	.74	.12	11.49 ⁵	4.07 ⁶
	SD	1.14	.76	.52	.77			
Mom's age	M	1.5	1.1	1.45	.9	6.28 ²		
	SD	1.09	.88	1.03	.78			
Parents educ.	M	1.33	.93	1.36	1.32	.32		
	SD	.97	.69	.67	.88			
Parent relations	M	1.16	1.36	1.36	1.4	.26		
	SD	1.2	1.06	1.12	1.13			

Note. A higher mean score indicates higher risk by variable on a 5 point (0-4) scale.

1= p<.05 for pregnancy

2= p<.01 for pregnancy

3= p<.005 for pregnancy

4= p<.01 for race

5= p<.005 for race

6= p<.05 for race by preg. status

Underlined means (M) indicates Scheffe's identified differences

Grades in school were the most significant finding related to pregnancy status. Higher mean scores on absences from school and repeat of a grade together with lower school grades attained by students who became pregnant underlines the importance of school performance as a risk factor for pregnancy. Overall satisfaction with school was rated "satisfied" by all four groups.

The significance of "How I Look" is of interest because of the direction of risk. What appears to be significant is the fact that Black teens who became pregnant were very satisfied with the way they looked, not that White pregnant and never-pregnant teens felt very dissatisfied with their looks (a 0 represented always; a 1, most of the time). The Scheffe's result indicated that the differences lie specifically between Black pregnant and White never-pregnant teens, but results are also significant by race in general. White teens expressed less satisfaction with self than Black teens on the self image question, with Blacks subjects reporting that they are generally happy and satisfied and White subjects saying that they have good and bad days. The combination of "How I Look" and "Self Image" questions clearly differentiate White and Black subjects. The racially significant finding that White pregnant teens appear to "need" a boyfriend more than other groups may further the at-risk status of this group.

The significant result attached to friend relations by race and the interaction of race by pregnancy supports Boxhill's (1987) research that showed that Black adolescents evidenced poor friend relationships and less relationships prior to becoming pregnant. A score of 1.33 (Black pregnant) falls between saying "I like a few friends" (1), to "it doesn't matter if I have friends or not"(2). Scheffe's test shows that the difference is largely between Black pregnant subjects and White pregnant subjects (who generally felt that they could not have enough friends).

The question concerning mother's age proved significant in discriminating pregnant from never-pregnant subjects. A score of 1.0 translates to an age of 36-40 while a 2.0 corresponds to ages 33-35. Therefore many of the subjects who became pregnant have moms who were also pregnant as teens. The questions concerning parent's education and relationship with parents showed that all groups reported "good" relationships and that parents were generally high school graduates.

Opportunity for Sex

According to Table 5, parents do appear to know where their children are at any time. Parents also spend a considerable amount of time at home, meet their daughter's dates, and generally do set rules for dating. Parent work schedules ("Parents at work") are arranged so that at least one parent is at home from late afternoon through the evening. Significance was attained between Black and White teens on the question of specific parental limits on dating. White parents were reported by their daughters as setting fewer limits on dating in terms of who their daughter sees, at what time she needs to be home and the age at which she is allowed to date.

Students who became pregnant were significantly different from students who did not become pregnant on: involvement in outside activities, whether they were currently involved with someone, and whether or not pregnancy would ruin their lives. The result of a Scheffe's test indicated that Black pregnant teens differed mostly from White never-pregnant teens on the question of whether or not they were currently dating. Pregnancy risk is clearly greater for this population of students when they spend most of their leisure time with a

Table 5

Comparisons of Black and White Subjects on the Opportunity for Sex Proposed Factor: by Pregnancy Status (P), Race (R), and Race by Pregnancy Status (RxP)

Variable		Black (n=66)		White (n=73)		Effects F(1,135 df)		
		Preg. n=18	Never- Preg. n=48	Preg. n=11	Never- Preg. n=62	P	R	RxP
Rules of dating?	M	1.77	1.41	2.54	1.87	.09		
	SD	2.04	1.93	2.01	2.01			
Par. Lim. on dating	M	1.88	1.83	2.45	2.21	.00		
	SD	1.41	1.42	.69	1.23			
Par. meet date	M	1.22	1.16	.91	.95	.00		
	SD	1.51	1.39	.83	1.10			
Par. at home	M	1.16	1.08	1.09	1.01	.41		
	SD	1.33	1.26	1.30	1.06			
Par. can find me	M	1.16	1.00	1.18	1.17	.08		
	SD	1.04	.89	.60	.95			
Par. at work	M	1.33	1.14	1.36	.87	.23		
	SD	1.02	1.38	1.50	.89			
Need to date	M	.67	.42	0.00	.38	.31		
	SD	1.53	1.23	0.00	1.19			
Activity you do	M	2.28	2.06	2.64	1.85	4.98 ¹		
	SD	1.13	.99	1.21	1.02			
Currently dating	M	<u>3.33</u>	2.08	2.45	<u>1.91</u>	6.35 ²		
	SD	1.08	1.71	1.69	1.73			
Preg ruin life?	M	2.72	1.94	2.45	1.76	6.76 ²		
	SD	1.49	1.31	1.29	1.30			
Hurt by a date	M	.89	.92	2.55	1.16	.29	6.17 ³	
	SD	1.71	1.69	2.01	1.83			
Ok date to hit	M	.28	.33	.73	.27	.33		
	SD	.82	.90	1.10	.70			
B wants G doesn't	M	0.00	0.00	.36	.26	.46	3.82 ³	
	SD	0.00	0.00	1.20	.99			

Note. A higher mean score indicates higher risk by variable on a 5 point (0-4) scale.

1= p<.05 for pregnancy

2= p<.01 for pregnancy

3= significance at p<.05 for race

Underlined means (M) indicates Scheffe's identified differences

boyfriend, are not involved in other activities, and believe that pregnancy will not ruin their lives.

Apparently White teens, especially White teens who became pregnant, have been physically hurt by someone they have dated. A score of 2.55 signifies that more than 50% of White subjects who became pregnant have been hurt by their dates. Although no group felt that it was alright for a date to hit them, the pregnant White group again scored slightly higher (not significantly) than other groups. Finally, in response to the question about a boy wanting to have sex when the girl didn't, all groups generally indicated that the girl should not have sex. However, a number of White teens stated that they would have sex with the boy while no Black subject answered that they would have sex. This significant difference between Black and White adolescents is the third significant difference by race on the Opportunity for Sex factor, with all differences attributed to higher scores by White teens.

Subsequent Analyses

The second hypothesis had predicted that an interaction of race and pregnancy status would occur on the Knowledge and Attitude of Sexuality and Childbearing proposed factor and that such an interaction would portend different patterns of risk (by variables) for each of the four identified groups. Although the interaction was not in the direction predicted, the possibility of observing different risk patterns remained because an interaction was recorded. The multivariate analysis conducted item by item in Tables 3-5, identified 8 variables that were significantly different for Black and White subjects. Because

of these differences, it appeared beneficial to examine the degree to which each of these items was weighted in the prediction of pregnancy for both Black and

Table 6

Discriminant Function Analysis of Student Pregnancy: Groups Defined by Pregnant and Never-pregnant

Discriminant function analysis

Structure Matrix

Age to be married	0.23
Preg. ruin life	0.21
Sexually active	0.21
Pregnant sister	0.19
Age to parent	0.18
Grades	0.17
Activity you do	0.15
How I look	-0.14
Size of family	0.14
Use birth control	0.13
Would you abort	-0.13
Parents education	0.12
Absence from school	0.12
Importance of boyfriend	0.11
Parent relations	0.11
Are pregnancies accidental?	0.1
Parents meet date	0.1

Note: Loadings <.10 have been eliminated.

Classification analysis

Actual group	n	Not pregnant	Pregnant
Not pregnant	110	70(63.6%)	40(36.4%)
Pregnant	29	6(20.7%)	23(79.3%)

Percent correctly classified 66.91%

White subjects. To that end, a discriminant function analysis was performed to assess the loadings of variables that differentiate pregnant from never-pregnant subjects (see Table 6). In addition, a stepwise discriminant analysis was conducted to develop independent profiles of pregnancy risk that discriminate Black pregnant and never-pregnant subjects and White pregnant and never-pregnant subjects.

The variables listed in Table 6 were best at discriminating pregnant from never-pregnant students. The classification analysis in Table 6 presents the percent of correctly classified students. The variables correctly classified 66.91% of cases with a sensitivity (proportion of pregnant teens correctly identified) of .36 and a specificity (proportion of teens not pregnant who were correctly identified) of .92.

A stepwise discriminant function analysis (see Table 7) was used to assess all model variables in order to identify variables that differentiate pregnancy risk within each race. Variables that differentiate should do a better job of predicting pregnancy within each race. Table 7 lists the 23 variables that discriminate Black pregnant teens from Black never-pregnant teens. The importance of school attendance and achievement figured prominently into the risk status of Black subjects. The environmental influences of having a parenting sister and actively dating while engaging in few other activities also separated pregnant and never-pregnant Black teens. Interestingly, confidence in the "way you look" and ambivalence about abortion were also associated with risk. When these variables were used to assess the pregnancy status of Black subjects, the analysis was able to correctly classify 98.48% of the cases with a sensitivity (proportion of pregnant teens correctly identified) of .94 and a specificity (proportion of not pregnant teens who were correctly identified) of 1.0.

For the population of White subjects, the stepwise analysis identified 14 variables that differentiate pregnant from never-pregnant students. As can be seen in Table 8, the stepwise analyses for both White and Black subjects identified grades, activity, sexual activity, whether or not you are currently dating and absence from school as factors that discriminate in each racial population. Although currently dating and absence from school are not powerful predictors

for the White population, the issue of grades is a strong predictor of pregnancy for each group. Interestingly, White pregnant teens enjoyed school more and

Table 7

Stepwise Discriminant Function Analysis of Black Female Adolescents: Best Predictor Variables for Pregnancy

Discriminant function analysis

Structure Matrix	
Abs. from school	0.23
Grades	0.21
Currently dating	0.2
Pregnant sister	0.19
Age to parent	0.18
How I look	-0.17
Activity you do	0.15
Preg. ruin life	0.15
Would you abort	-0.14
Parent education	0.13
Sexually active	0.13
Mom's age	0.09
Preg. at 1st sex?	-0.09
Friends keep baby	-0.08
Rules of dating	0.04
Par. can find me	0.04
Are pregs. accidents?	0.04
No. kids wanted	0.04
School	0.03
Sex ok if in love?	-0.01
Ok date to hit	-0.01
When you ovulate?	0
Hurt by a date	0

Classification analysis

<u>Actual group</u>	n	<u>Predicted Group Membership</u>	
		<u>Not-pregnant</u>	<u>Pregnant</u>
Not pregnant	48	47 (97.9%)	1 (2.1%)
Pregnant	18	0 (0.0%)	18 (100.0%)
Percent correctly classified 98.48%			

were absent less than never-pregnant White teens, although they did have lower grades. Mother's age proved to be the strongest predictor of pregnancy risk among White subjects with nonuse of birth control close behind. If the importance of having a boyfriend is high and participation in activities is low, the

risk factor for White teens appears great, especially combined with nonuse of birth control and high sexual activity.

Table 8

Stepwise Discriminant Function Analysis of White Female Adolescents: Best Predictor Variables for Pregnancy

Discriminant function analysis			
Structure Matrix			
Age of mom		0.36	
Use birth control		0.33	
Import. of boyfriend		0.28	
Grades		0.25	
Kids cure loneliness		0.23	
Hurt by date		0.22	
Activity you do		0.22	
Sexually active		0.22	
Size of family		0.12	
Need to date		-0.1	
Currently dating		0.09	
School		-0.03	
Are pregs. accidents		0.02	
Abs. from school		-0.02	
Classification analysis			
Actual group	n	Predicted Group Membership	
		Not pregnant	Pregnant
Not pregnant	62	58(93.5%)	4(6.5%)
Pregnant	11	0(0.0)	11(100.0)
Percent correctly classified 94.52%			

The size of the family figures into risk for White teens and may be reflected in the belief by White pregnant subjects that kids do cure loneliness. Pregnant teens may not have expressed as great a need to date as never-pregnant teens, but pregnant subjects did state that having a boyfriend was more important to them than it was to never-pregnant teens.

When the identified 14 variables were used to predict pregnancy from the sample of White students, 94.52 % of the cases were correctly classified with a sensitivity of .73 and a specificity of 1.0.

Since the prediction of pregnancy was enhanced through the use of discriminant analysis weighted variables, why not create a new model of pregnancy risk utilizing the discriminating variables? To that end, a factor analysis of significant variables for each group was conducted (see Table 9-10). For both Black and White subjects, a two, three, four, and five factor varimax rotation factor analysis was conducted to assess cross loadings and meaningfulness. A three factor principle component analysis was the choice for Black adolescents. The three factor model made the most sense in that it had the most interpretable factors, accounted for the most variance and evidenced the least amount of cross loading by factors.

Table 9 presents a three factor model of pregnancy risk for Black subjects. Factor 1, labeled Management of Time, includes three variables related to school and activities associated with dating, leisure time and sex. All, except for the pregnant sister variable, relate to the successes and failures of good time management. The variables which have the heaviest loadings (greater than .50) are clearly management issues, especially related to school where poor grades and excessive absences lead to dissatisfaction with school. This factor reflects questions asked in the Current Life Situation factor.

Factor 2, labeled Attitudes toward Childbearing, includes the beliefs about sexuality and childbearing that an adolescent assimilates from family, friends and partners. This factor is similar in content to the Knowledge and Attitude toward Sexuality and Childbearing factor.

Factor 3, which loads heavily on the variable about whether it is alright to have sex if "in love", has been labeled Dating Beliefs. With two of three variables relating to dating behavior, the proposed factor appears to concern itself with dating despite the inclusion of the parental education variable (the lower the education level of parents, the more likely the subject is to agree with the other

two variables). This factor is most associated with Opportunity for Sex because of the focus on dating behavior.

For White subjects, a four factor model of pregnancy risk was selected (see Table 10). The first factor, labeled Risk Behaviors, is focused on behaviors that create risk both overtly and covertly. School absence and grades are directly

Table 9

Varimax Rotated Factor Matrix of a Black Three Factor Model of Pregnancy Risk: by Discriminant Analysis Identified Factors

Variable	Factor 1	Factor 2	Factor3
<u>Management of Time</u>			
Grade	68		
School	63		
Abs. from school	62		
Sexual activity	55		
Activity you do	52		
Currently dating	42		
Preg. sister	40		
<u>Attitudes toward Childbearing</u>			
Would you abort		66	
Friends keep baby		61	
Age to parent	40	57	
Preg. ruin life		57	
Preg. at 1st sex		-46	
<u>Dating Beliefs</u>			
Sex ok if in love			80
Parent educ.			-49
Ok date to hit			41

Note. Decimal points have been omitted. All factor loadings <.40 have been omitted.

associated as overt risks and the use of birth control and the belief that pregnancies are accidental both covertly create risk.

Factor 2, labeled Attitude and Achievement, includes a teen's attitude about the importance of a relationship and the effect that children have on their lives. An achievement variable, school, relates to a sense of satisfaction about

what may be the second most important environment in an student's life. This factor does not appear to be associated with any particular proposed factor used in this study.

Factor 3 is concerned with issues of dating. The two variables combine to form a powerful risk factor. If one is currently dating and sexually active, the only way to avoid pregnancy is by overt effort. This factor is associated with the Table 10

Varimax Rotated Factor Matrix of a White Four Factor Model of Pregnancy Risk: by Discriminant Analysis Identified Factors

Variable	Factor 1	Factor 2	Factor 3	Factor 4
<u>Risk Behaviors</u>				
Abs. from school	62			
Use birth control	61			
Are pregs. acc.	-61			
Grade	57	48		
<u>Attitude and Achievement</u>				
Import of boyfriend		73		
School		65		
Kids cure loneliness		52		
<u>Dating</u>				
Currently Dating			79	
Sexually active			65	
<u>Home Environment</u>				
Age of mom				63
Need to date				-60
Size of family				-47

Note. Decimal points have been omitted.

Knowledge and Attitude and Opportunity proposed factors of the study model.

The fourth factor, labeled Home Environment, is concerned with mostly demographic areas. Size of family and age of mom are a reflection of the family and the influence it has on the adolescent. The inclusion of the need to date variable may be an affiliation issue that stems from the lack of an emotional

support system. This proposed factor is closely aligned to the Current Life Situation factor of the study model.

For both groups, dating behavior and school related issues appear important. For Black subjects, the management of time and attitudes toward childbearing identified risk. For White subjects, the influence of the home environment and the risk of non-use of birth control for sexually active subjects identified risk.

The ability to predict pregnancy status for all subjects by the questionnaire variables was 66.91%. This ability to predict status was increased to approximately 95%-98% when specific discriminant analysis identified variables were used with almost no overlap of variables by race. Clearly, the prediction of pregnancy in such a high-risk environment is good.

CHAPTER V

CONCLUSIONS AND DISCUSSION

This chapter summarizes the study by reviewing the purpose, design and theoretical framework; evaluating the findings relative to previous work; deriving conclusions from the results; discussing practical implications and limitations of the study, and recommending future research.

Summary

Black adolescents make up approximately 27 percent of the teen population in the United States, but have roughly 40 percent of the adolescent births and 57 percent of the births to unwed teens (Ladner, 1987). Franklin (1987) has complained that studies of adolescent pregnancy circumvent the concerns of race, gender and socioeconomic class, and that what is needed is an investigation of race and class specific aspects of adolescent pregnancy to identify practical intervention strategies.

The purpose of this study was to delineate the role of race in the prediction of at-risk status for pregnancy for low socioeconomic status Black and White high school females. Research findings were assimilated into a proposed three factor model of pregnancy risk which included: Knowledge and Attitude toward Sexuality and Childbearing, Current Life Situation, and Opportunity for Sex. A questionnaire was developed to assess at-risk status for pregnancy and was administered to 152 high school females aged 14-19. It was hypothesized that: pregnancy status was associated with high risk scores on the questionnaire variables and the model factors; an interaction effect would be realized on the proposed factor entitled Knowledge and Attitude toward Sexuality and

Childbearing with Black subjects attaining higher mean risk scores than White subjects. On the remaining two proposed factors, Current Life Situation and Opportunity for Sex, no interaction was predicted; and if different patterns of risk are found (hypothesis 2), then the model variables would differentiate Black pregnant from Black never-pregnant subjects and White pregnant from White never-pregnant subjects.

Students who became pregnant attained higher at-risk scores on the questionnaire than never-pregnant students and the questionnaire variables reached significance in predicting pregnancy. Pregnancy status interacted with race on the Knowledge and Attitude toward Sexuality and Childbearing factor, with differences nearing significance, $p < .07$. White pregnant subjects had the highest scores followed by Black pregnant and never-pregnant subjects, while White never-pregnant subjects obtained the lowest risk scores. This finding was not predicted and indicated that the most acute at-risk group for pregnancy in this sample was White, since they possessed the knowledge to avoid pregnancy but appeared to choose pregnancy. Scores on the Current Life Situation and Opportunity for Sex proposed factors were higher for students who became pregnant, with no differences by race.

Since a number of interactions and race differences were evident on the variable items, a stepwise discriminant analysis was run on all variables to predict pregnancy separately by race. Prediction of pregnancy, utilizing the separate race models, was 98.48% correctly classified for Black subjects and 94.52% correctly classified for White subjects. Since these results utilized only discriminant analysis identified variables that related to a specific population with a relatively small sample size, inflated results were expected. The results need to be cross validated on a similar population of adolescents.

One unique contribution of this study to the adolescent pregnancy literature was the a priori prediction of pregnancy risk among never-pregnant adolescents. Previous studies had compared profiles of never-pregnant subjects with those of pregnant adolescents to establish degrees of risk. Secondly, the identification of variables that are race specific to assess pregnancy risk is unique in the literature and could be a valuable tool for pregnancy intervention in multi-racial schools and community agencies.

Discussion of Findings

Yes, pregnancy prevention programs do need to be tailored to the population of adolescents they are intended to serve! Franklin (1987) was correct that race and class specific aspects of pregnancy need to be investigated. The beliefs and opinions of this researcher, after twenty years of work with multi-racial groups, have been verified. As anticipated, this study confirmed that there are observable differences between populations of adolescents concerning pregnancy risk. What was not anticipated was the fact that White students scored the highest risk scores on a proposed factor that was designed to assess the reasons why Black teens appear more at-risk than White teens. Also not anticipated was the fact that within all four groups (Black pregnant and never-pregnant, White pregnant and never-pregnant) high at-risk scores were evident. The eight subjects with the highest risk scores had not become pregnant as of June, 1990.

These and other findings will be discussed sequentially by hypotheses, beginning with comparisons between pregnant and never-pregnant subjects and then proceeding to a discussion of differences by race.

The questionnaire was developed with the assumption that the instrument could: effectively identify students whose behavior, beliefs, and actions place them at greater risk of pregnancy than their peers, and identify differences between Black and White adolescents relative to at-risk for pregnancy status. The first hypothesis was correct. A combination of variables that included: knowledge of sexuality, developmental and psychological questions, relationship and family influences were identified that did distinguish potentially pregnant from never-pregnant teens.

Hogan and Kitagawa (1985) reported that adolescent females from high risk environments (lower class, ghetto neighborhood, a sister who became a teen mother, five or more brothers and sisters, a non-intact family (divorce) and lax parental control of dating) were at significantly greater risk of pregnancy than teens who came from low risk (without the above factors) environments. The majority of students in this study (93%) claimed that they lived in mixed to mostly minority neighborhoods that have been identified as high poverty level areas (30-50%) by census track data. While the student population in general can be classified as low income, it should be noted that 73% of Black students lived in the same zip code area; White students were evenly dispersed among four zip codes, including the predominantly Black area. Therefore, socioeconomically, by zip code, the Black and White sample of students were similar. However, the issue of ghetto residence for each subject has not been confirmed and should be considered when comparing the results of this study to the study of Hogan and Kitagawa.

Having a sister who became pregnant as a teen was a significant portend of pregnancy. Pregnant subjects were also from slightly larger families, but neither family size nor parental control were significant variables in this study.

The reason many sexually active teens got pregnant was that they did not use birth control. These sexually active teens had sexually active friends, sexually active older sisters (who became pregnant) and for the majority of teens who became pregnant, a mother who gave birth as a teen. This group of pregnant adolescents were not involved in many activities other than dating. They believed in parenting earlier than never-pregnant teens and did not believe that an early pregnancy would ruin their lives. Finally, the grades attained by students who became pregnant were significantly lower than those of never-pregnant teens.

Teens at high risk for pregnancy appear to be so preoccupied with their relationships or so bored at school that they neglect schoolwork and are involved in little other than dating. This preoccupation with dating and early sexual activity may be tacitly condoned by a home environment characterized by early sexual activity (mother and sister). This type of environment parallels the literature related to Black low socioeconomic level families. The difference in this study is that the cultural and familial influences relate to both White and Black subjects. While there has been much interest in the emergence of a Black underclass, little attention has been given to the fact that the differentiation between the onset of sexual activity for Black and White teens has been decreasing and that, in metropolitan areas, the increase in sexual activity by teens has been mostly attributed to White adolescents.

The fact is that low income White teens are an emerging population of teens at-risk for pregnancy. These White adolescents are no longer giving their babies up for adoption so the results of early sexual activity are no longer separated from the creative act, a situation that has always existed in the Black community. Another fact is that the similarities between Black and White pregnant teens in this study far outnumber the differences between them.

The second hypothesis predicted that Black adolescents would attain higher risk scores on the proposed factor called Knowledge and Attitude toward Sexuality and Childbearing. Butts (1981) suggested that the Black community posits a "sex positive" nature, that children are seen as more special (Thompson, 1980) and accepted regardless of the marital situation (Ladner, 1987). Zelnik and Kantner (1977) and Eisen and Zellman (1986) found that Black teens demonstrate less knowledge of sexuality, use birth control less and use it less effectively than White teens. The proposed factor of knowledge and attitude attempted to assess such research data.

The second hypothesis was rejected. While Blacks did score higher on the proposed factor than White students, the importance of the scores was in the fact that an interaction of the race and pregnancy effects was nearly significant at $p < .07$. The interaction was the result of White pregnant subjects obtaining the highest risk scores and White never-pregnant subjects obtaining the lowest risk scores.

White pregnant subjects had the highest risk scores on the proposed factor because they were all sexually active (100%) at the time of testing, and they rarely, if ever, used birth control [a 3.18 score was between rarely (3.0) and never (4.0)]. White teens who became pregnant had more sexually active friends and more friends who had been pregnant than any group. They also wanted to marry early and believed that saying one was "in love" was reason enough to have intercourse.

This group of pregnant White teens may not only be the most at-risk group but may also be the most difficult group to change. They know about sexuality and how to avoid pregnancy but appear to choose pregnancy. They have little in common with White never-pregnant subjects and these differences portend the use of different patterns of risk for each group.

Findings on the proposed factor relative to Black subjects showed clear support of the literature on the knowledge question about when, during the menstrual cycle, you are most apt to get pregnant if sexually active. Black subjects, both those who became pregnant and those who didn't, were significantly less knowledgeable about ovulation than White teens. However, Black teens were not more sexually active than White teens, and they used birth control more than White teens. Yet there were some additional differences by race.

What may be the pivotal risk factor difference between White and Black teens related to the second hypothesis was an issue that was not included under the Knowledge and Attitude toward Sexuality and Childbearing proposed factor, namely, absence from school. This variable registered a significant interaction between pregnancy and race.

When Black female teens are not in school, where are they and what are they doing? This is not an instance of missing school for a few days. The average number of absences reported by Black teens who became pregnant was 25 days, compared to an average of 10 or less days for pregnant and never-pregnant White teens. When a student misses 25 days of school or more there is a good chance of failing the school year or dropping out of school. Fifty percent of pregnant Black teens and about 40% of pregnant White teens reported that they had repeated at least one grade.

Zelnik and Kantner reported that 75% of teens who were sexually active reported that the initial event took place at their own homes or the home of a partner. When a Black adolescent skips school and is in the presence of a sexual partner, other variables take on added importance. Black teens, and especially Black pregnant teens, identified age to parent as younger than age to be married; White teens place marriage and childbirth at the same approximate

time. This finding supports Chilman (1983) and Washington (1982) in their contention that historically, Blacks have not tied childbirth to marriage in the same way as the majority White culture.

Even though Black teens were slightly less sexually active and used birth control slightly more than White teens, most Black teens were sexually active and admitted to using birth control "sometimes". When such facts are combined with a generally poor knowledge of pregnancy risk related to the menstrual cycle and increased opportunity (absences), Blacks teens increase their risk status.

Differences between Black and White teens that relate to cultural attitudes were more obscure. Black teens, at least at the high school level, were not more sexually active than White teens as might be expected if raised in a "sex positive" culture (Butts, 1981). Scott (1983) had observed that 89% of White teens and 80% of Black teens in his study suggested that being "in love" was associated with sexual activity and pregnancy. Results of this study indicated that 80% of White teens and about 60% of Black teens felt that statements of love validated sexual intercourse. One White teen remarked that "couples are obviously having sex if they say they are in love!" Black teens did not admit to wanting larger families than did White teens. Chilman (1983) remarked that the value of a woman (in African culture) was tied to her ability to raise children. Black students in this study show evidence of their cultural heritage and the exigencies of living today. Ignorance of the role and timing of ovulation may be tied to a more laissez-faire attitude toward pregnancy or sexuality for Black teens; one Black subject remarked during testing that "nobody wants to know about all that month stuff (menstrual cycle), it's disgusting!" However, feeding many children is not a situation these teens want any more than White teens. The influence of cultural history may be attenuated by more pressing

socioeconomic needs of today. Perhaps a similar population of Black and White students tested ten years from now would demonstrate even less diversity.

Scores on the Current Life Situation and Opportunity for Sex proposed factors were successful in predicting pregnancy (as discussed earlier), but were not able to differentiate students by race, as was predicted. The literature concerning developmental, psychological, and parental influences on adolescents either related to a specific racial group or to pregnancy risk in general without much regard for differences by race. The results of this study suggested that the differences between Black and White subjects on these proposed factors were few. However, there were some differences.

The Opportunity for Sex factor was centered on the parents. Were parents at home, did they have rules about dating? Perhaps researcher bias obscured the realization that school absences can provide an excellent opportunity for sex and not be recorded as an issue of lax parental control of dating. Likewise, the involvement in many different activities appeared to have a strong influence on the current life situation of a subject. Black subjects devalued friends more than White subjects but White subjects devalued themselves more than Black subjects. Perhaps the use of an interview format would have done a better job of assessing the subtle differences by race on the topics of friends and self.

While the second hypothesis had to be rejected as stated (the highest mean risk scores were attained by white pregnant subjects not Black pregnant subjects) an interaction was observed, and the fact that White pregnant and never-pregnant teens differed dramatically by risk scores was a predictor that different patterns of risk existed by race. Therefore the third hypothesis was pursued.

The third hypothesis stated that variables will differentiate Black pregnant from Black never-pregnant and White pregnant from White never-pregnant

subjects. This hypothesis is essentially the cornerstone of the study as it is an assessment of the ability of the instrument to identify race factors in the population of students tested.

First of all, differences between pregnant Black and pregnant White subjects deserve consideration. Differences focused on the ovulation question, the absence from school question, and the relationships with friends question. Black subjects knew less, were absent more, and had fewer friends. White subjects evidenced a poorer self-esteem or confidence than Black subjects on questions related to how they look, how they feel about themselves, and how often they have been hurt by someone they dated. So, pregnant White teens knew a lot but lacked self-confidence; Black teens knew little about sexuality but were confident in themselves. With both of these groups ending up pregnant, it appears to this researcher that Black teens get pregnant as a matter of course, that pregnancy is neither a show of individual strength or weakness but just something that happens sooner or later and it really doesn't matter much when it happens. That is why learning about ways to avoid pregnancy (like the ovulation question) for many low socioeconomic level Black teens just isn't that important. White pregnant teens appear to be lacking the self-confidence to have any direction at all; their needs appear so great that satisfying a boyfriend or a date at any particular time becomes most important, even though they know it may lead to pregnancy.

For Black subjects, the major difference between pregnant and never-pregnant teens was absenteeism. Absence from school and its corollary, poor grades, were a combination which strongly influenced other observed differences between Black pregnant and Black never-pregnant subjects.

Black pregnant teens dated more often and for longer periods of time than did Black never-pregnant teens. Half of the Black pregnant teens had sisters

who were also teen mothers; less than 20% of the never-pregnant Black teens had sisters who were mothers. The pregnant subjects believed that the age to begin having children was as a teenager, while never-pregnant subjects thought age 22-23 was the correct age. Never-pregnant Blacks stated that they would definitely not have an abortion if pregnant but Blacks who became pregnant were ambivalent about abortion. Finally, pregnant subjects were very pleased with their appearance while never-pregnant Black subjects were mostly pleased.

Essentially, Black pregnant teens appear to have their lives focused around dating. Friends appear to be of diminished importance to Black teens who became pregnant. Boxhill (1987) discussed the lack of satisfactory relationships with peers, parents and family members in her sample of Black adolescent mothers. It is not possible (from this study) to determine the etiology of why some teens shut out friends from their lives, but it appears to be happening with Black teens who are at-risk for pregnancy.

The discussion regarding the third hypothesis began with the observation that absenteeism was the focal issue. Having differentiated Black pregnant from Black never-pregnant teens on several issues, the role of school absence becomes clearer. School absence provides the setting for other risk factors to be of greater influence.

A young adolescent who is: dating, sexually active, uses some birth control but probably doesn't know how or what to use, has a sister (probably at home) who has had a child, and who isn't getting along well with her friends, is an adolescent at-risk for pregnancy. The fact that Black pregnant teens reported that their parents set more limits on their dating than White teens may have been obviated by excessive school absences.

The issues which separate White teens who became pregnant from White never-pregnant teens appear to be focused on the issue of intentionality. White

pregnant teens were, by far, the most knowledgeable of all groups on the question of when ovulation occurs in the menstrual cycle and they almost never use birth control, although they are 100% sexually active. In short, they know what they are doing and appear to want to get pregnant.

White pregnant teens reported a greater need to date and have a boyfriend, which may be supported by the fact that 65% of White pregnant teens stated that they have been hurt by a date. Dating isn't seen as just a good thing, but as a necessary part of their lives regardless of costs. The pregnant subjects reported that they are involved in few activities other than dating and that they date more times per week than never-pregnant White teens. The mothers of White pregnant subjects were much younger (33-35 years old) than the mothers of never-pregnant White subjects (40 years and older).

Mother's age had the greatest loading (.36) of any factor that separated White pregnant from White never-pregnant teens. With mothers aged 33-35, it is virtually certain that pregnant students were themselves the child of a teenage mother. Again, as with Black pregnant teens, environmental influences create a sense that getting pregnant as a teen is not only not bad, but may be the thing to do. Approximately 40% of White pregnant teens have sisters who were pregnant as teens and most have moms who were teen parents. The parents of White pregnant teens were given the highest risk scores of any group concerning rules and limitation of dating. Perhaps a sense of approval and agreement of behavior is transmitted by parents who exhibit lax control of dating. Never-pregnant teens felt that pregnancy would ruin their lives and that having children would not save them from loneliness; pregnant teens indicated the opposite in each case.

The results appear to indicate that having a child is a desirable outcome of dating for a number of White adolescents. The literature often depicts Black teens as disenfranchised, with no hope for future employment or avenues to

success, so they use pregnancy as a viable option to hopelessness. The case of White teens choosing pregnancy is not well documented, if at all. The situation may come down to individual teens asking themselves "why not get pregnant?" Often the same factors are involved for Black and White teens. If adolescents do not have a future vision that is strong enough to render the thought of having a child as unacceptable, then pregnancy will become a viable option.

As Eisen and Zellman (1986) reported, teens who regard pregnancy as a serious condition to which they feel susceptible are more likely to acquire the knowledge (and adequate protection) that may help them avoid it. It may be nothing more than a cost-benefit analysis in the mind of an adolescent. Pettapiece (1988) asked his students (all inner city Black students) to develop a stress scale as a class project. Number one stressor was death of a parent. Second was the death of a sibling; third was divorce of parents; fifteenth was going on your first date; forty-third was that stories were being spread about you at school. The last stressor choice (forty-ninth) was that you became pregnant or your girlfriend became pregnant. It would have been interesting to do the same project with inner city White students. Judging from the results of this study, the findings would be similar.

An important goal for the education and parenting of adolescents should be to operationalize the benefits of avoiding pregnancy rather than preaching the costs of pregnancy, which teens may have a more difficult time understanding. If teens actually believed that pregnancy was accompanied by a loss of some desired "thing", then perhaps many more Black teens would have reason to delay, and many White teens would not choose to become pregnant.

A three factor analysis of risk for Black subjects and a four factor analysis of risk for White subjects was conducted with the hope that it would serve as a beginning point for future research. The individual variables that were included

under each proposed factor have already been discussed in connection to the third hypothesis. The proposed factors for Black subjects included Management of Time, Attitudes toward Childbearing and Dating Beliefs. For White students, Risk Behaviors, Attitude and Achievement, Dating and Home Environment were identified as proposed factors. Black teens appeared to have trouble managing their time in non-risk ways and White teens seemed to have trouble managing their dates in a non-risk manner. Attitudes and beliefs related to risk were about different issues for each population and the influence of the home environment also appeared to vary. How these proposed factors would be effected by researching subjects from different socioeconomic levels, races, or even school districts, could only serve to increase our knowledge of the specificity of pregnancy risk.

Implications of Findings for Intervention

Black and White subjects of this study appear to be at-risk for pregnancy for some different reasons. The use of all the variables to predict pregnancy was approximately 67% effective; the use of separately developed instruments to effectively predict pregnancy status improved to approximately 95%. The separate stepwise discriminant analyses for Black and White teens can be used as a blueprint for intervention by teachers, counselors or administrators.

Each variable that effectively discriminates pregnant from never-pregnant teens by race or for the entire student population needs to be assessed as to its potential for use in program interventions. In this study, the best predictor variables for pregnancy among Black teens included: absence from school, grades, dating, having a sister who became pregnant as a teen, age to parent,

and others. Certainly, there is not much a school can do about an older sister, but interventions around absenteeism, grades and dating are topics for discussion and instruction in schools.

For White students, the best predictor variables for pregnancy included age of mother, use of birth control, importance of a boyfriend, and others. Again, some issues are not subject to school based interventions (age of mother) but most are topics for school intervention. Health courses, which are required for all high school students, could include a unit on pregnancy related interventions. These interventions could incorporate issues of feminism, violence toward women, and assertiveness. Findings of this study could also be used to screen health students as to their at-risk status for pregnancy.

Counselors, who deal more intimately with students, could use the results of this study to assess risk status with students around such non-intrusive topics as absenteeism or grades. With the knowledge that groups have different risk patterns, counselors could be more attuned to risk behaviors of individuals. Peer groups of parenting teens (teen mothers are always anxious to discuss the drawbacks of teen pregnancy) could be organized by counselors and schooled to identify and discuss at-risk behaviors with teens who find it difficult to talk with different race and sex counselors.

Schools today need to accept the premise that there are no throw-away children. No longer are there manufacturing companies down the street where drop-out teens can discover themselves and build a life. The same is true for adolescent females. Society needs the productivity and minds of all students, and students need help in developing a future perspective in order to obviate self-destructive behavior of any sort, including pregnancy.

Limitations of Study

The findings presented here should be interpreted with caution on several counts. First, the school and population sample were not randomly chosen but were an available population. The school population was weighted with greater numbers of low income and low achievement students than the other available high schools, so the results are not likely to be directly applicable to schools with different ethnic and socioeconomic populations. Low income status attributed to the sample population was assessed through census track data without direct evaluation of family income for each student. An appropriate next step would be validation of economic status so that the effect of class could be more decisively eliminated

The group questionnaire format used here is subject to the biases of self-report procedures which, for this population, may have included understanding of questions and honesty. Group testing by class session within a specific time period resulted in the exclusion of many students from the study because of absenteeism. Since absenteeism proved to be an important variable in the assessment of at-risk behavior, the possibility exists that students at greater risk of pregnancy were not included in the study. Also, the arbitrary stopping point (seven months) biased the study results. The number of students who became pregnant and the racial proportion of pregnancies changed almost daily so that the findings after five months may have looked quite different from the findings after ten months

Age was found to be a factor associated with Black pregnant teens and could be considered a confounding variable. Perhaps different patterns of risk are evident by age as well as race. The influence of maturation and privilege

(older students have more freedom) could be assessed as well. If each population studied was sub-grouped by age, interventions by grade could be developed

Finally, the fact that the researcher is a white middle-class male warrants consideration. Attitudes and beliefs of the researcher such as the belief that delayed pregnancy is beneficial to the lives of adolescents, may not be universally accepted or believed. The possible and permissible ways to construct a life are subject to many interpretations. The possibility of racial bias in the characterization of populations and the analysis of results deserves careful scrutiny.

Suggestions for Future Research

This study needs to be replicated with a similar population of subjects and with different populations. The results of this study are provocative; they suggest that at-risk status for pregnancy is not of homogeneous derivation. Therefore, the results should be interpreted as a statement that differences in pregnancy risk among diverse populations do exist and that risk status for pregnancy is amenable through research identified interventions. A suggestion for modification of the present study would be to extend the time of data collection to a calendar year, thereby ensuring a greater number of pregnancies and increasing the power of the findings.

Hispanic students were also administered the questionnaire with results not included in analyses. The pattern of sexual activity and pregnancy risk appeared to be quite different for Hispanics than either the White or Black students. Far fewer Hispanic females admitted to being sexually active while

quite a large number of subjects did become pregnant (11). The intervention strategies for Hispanic students may look very different from Black or White strategies. This example is discussed to emphasize the importance of continuing work on the development of specific pregnancy intervention strategies.

6. Has the threat of AIDS had any effect on your sexual behavior?
- It has definitely changed my behavior
 - It has somewhat changed my behavior
 - It has had little effect on my behavior
 - It has had no effect on my behavior
7. Are most of your friends sexually active?
- Yes
 - No
8. Do you have a friend who became pregnant as a teenager?
- Yes
 - No
9. If a couple says that they are "in love", do you feel it is alright for them to have sexual intercourse?
- Yes
 - No
10. If you were pregnant would your friends want you to keep the baby?
- None would
 - Some would
 - Half would/half wouldn't
 - Most would
 - All would
11. If sexually active, at what time are you more likely to get pregnant if you do not use birth control?
- One week after your period
 - Two weeks after your period
 - Three weeks after your period
 - During your period
12. You can get pregnant the first time you have sexual intercourse?
- True
 - False
13. Do you think pregnancy occurs more by accident or because it is planned?
- Always by accident
 - Mostly by accident
 - Half by accident, half planned
 - Mostly planned
 - Always planned

14. Would you consider having an abortion if you were pregnant?
- No, not under any circumstance
 - No, but I would consider it under certain circumstances.
 - I don't really know
 - Yes, I would consider it
 - I would definitely have an abortion
15. Having children is the only sure way of avoiding loneliness in later years.
- Strongly agree
 - Agree
 - No opinion
 - Disagree
 - Not true
16. The number of children a woman has is one sign of her motherliness and basic femininity.
- Definitely agree
 - Agree
 - No strong opinion either way
 - Disagree
 - Definitely disagree
17. What is your mother's age?
- Under 30
 - 30-32
 - 33-35
 - 36-40
 - Over 40
18. How would you describe the racial makeup of your neighborhood?
- All Black
 - All white
 - All Hispanic
 - Mostly Black
 - Mostly White
 - Mostly Hispanic
 - Mixed race
 - Other (explain) _____
19. Do you have a sister who became a mother as a teenager?
- Yes
 - No
20. Are you now living with your biological mother and father?
- Yes
 - No
- If not, who are you living with? Circle the answer.
- Mother alone
 - Father alone
 - Mother and step-father
 - Father and step-mother
 - Guardians
 - Other

21. How many brothers and sisters do you have?

- a. ___ None d. ___ Three
b. ___ One e. ___ Four
c. ___ Two f. ___ Five or more

22. Check your race.

- a. ___ Black c. ___ Hispanic e. ___ Other
b. ___ White d. ___ Mixed race

23. Check your parents' educational level: (highest grade)

- | | | | |
|--------|-------------------------|--------|-------------------------|
| Father | a. ___ 8th grade | Mother | a. ___ 8th grade |
| | b. ___ 8-12th grade | | b. ___ 8-12th grade |
| | c. ___ high school grad | | c. ___ high school grad |
| | d. ___ college | | d. ___ college |

24. Check the number of days you missed school last year.

- a. ___ 1-5 days
b. ___ 6-10 days
c. ___ 11-20 days
d. ___ 21-30 days
e. ___ Over 30 days

25. My average grade in school is:

- a. ___ A
b. ___ B
c. ___ C
d. ___ D

26. I have repeated a school year (stayed back).

- a. ___ Yes
b. ___ No

27. Are you happy with the way you look?

- a. ___ Always
b. ___ Most of the time
c. ___ Sometimes yes, sometimes no
d. ___ Rarely
e. ___ Never

28. Have you ever been pregnant?

- a. ___ Yes
b. ___ No

29. Have you ever had a child?

- a. ___ Yes
b. ___ No

30. How important is it to you to be in a relationship with a boyfriend?

- a. ___ Very important
- b. ___ Important
- c. ___ Don't care one way or the other
- d. ___ Not important
- e. ___ Would rather not be in a relationship

31. Which statement best describes your relationship with friends.

- a. ___ One can't have enough friends, they're great
- b. ___ I like having a few close friends
- c. ___ I can have friends or no friends, it doesn't matter
- d. ___ I used to have friends but not anymore
- e. ___ I stay away from close relationships

32. Which statement best describes your relationship with your parents.

- a. ___ I have a great relationship with my parents
- b. ___ I have a good relationship with my parents
- c. ___ I have an ok relationship with my parents
- d. ___ I do not have a good relationship with my parents
- e. ___ I have a terrible relationship with my parents

33. Overall, I would rate my satisfaction with school as:

- a. ___ Very satisfied
- b. ___ Satisfied
- c. ___ Sometimes it's good, sometimes it's not
- d. ___ Not satisfied
- e. ___ Very dissatisfied

34. Which statement best describes you.

- a. ___ I'm very happy with life
- b. ___ I'm generally a happy and satisfied person
- c. ___ I have my good and bad days
- d. ___ Most of the time I'm unhappy
- e. ___ I'm very unhappy

35. Do your parents have rules about dating?

- a. ___ Yes
- b. ___ No

36. Do your parents limit:

- a. Who you see Yes ___ No ___
- b. What time you must be home. Yes ___ No ___
- c. How old you must be to date. Yes ___ No ___
- d. Where you can go. Yes ___ No ___

37. I'd rather go out with a guy I really don't like than not go out at all.

- a. True
- b. False

38. Place a check next to activities you are involved in:

- a. Sports (at school or in your neighborhood or church)
- b. Work (I work at least 10 hours per week)
- c. Television (I watch more than 3 hours/day)
- d. Hobbies (I spend at least 1 hour/day with a hobby)
- e. Child care (I spend more than 10 hours/week caring for a child)
- f. Dating (I am with my date more than two nights/week)

39. If you are currently dating someone, please answer the following questions. If you are not dating, please skip this question.

- a. How long have you been dating? _____
- b. What is your partner's age? _____
- c. How often do you see each other in a week? _____
- d. Does your partner attend this school? _____
- e. Is your partner attending any school? _____

40. I have been physically hurt by someone that I dated.

- a. True
- b. False

41. It's okay if a guy hits a girl every once in a while, it just shows that he likes her.

- a. Definitely true
- b. Probably true
- c. No opinion
- d. Probably not true
- e. Definitely not true

42. If my boyfriend wanted to have sex and I didn't, I would:

- a. Have sex so I wouldn't lose him
- b. Get out of the relationship
- c. Try to discuss it with him

43. My parents meet the people I date:

- a. Always
- b. Most of the time
- c. Sometime
- d. Rarely
- e. Never

44. There is at least one parent at home in the evening
- a. ___ All the time
 - b. ___ Most of the time
 - c. ___ Sometimes
 - d. ___ Rarely
 - e. ___ Never
45. If I got pregnant all my plans for the future would be ruined.
- a. ___ Definitely
 - b. ___ Probably
 - c. ___ Maybe
 - d. ___ Probably not
 - e. ___ Not at all
46. My parents know where I am:
- a. ___ All the time
 - b. ___ Most of the time
 - c. ___ Sometimes
 - d. ___ Rarely
 - e. ___ I never see my parents
47. At least one of my parents works during the following times:
- a. ___ From around 8:00 to around 4:30
 - b. ___ From around 3:00 to around 11:00
 - c. ___ From around 11:00 to around 7:00
 - d. ___ From around _____ to around _____ (fill in)

Thank you again for the time and energy you put into completing this questionnaire.

REFERENCES

- Alan Guttmacher Institute. (1981). Teenage pregnancy: The problem that hasn't gone away. New York: Guttmacher Institute.
- Alexander, C. S., Ensminger, M. E., Kim, Y. J., Smith, B. J., Johnson, K. E., & Dolan, J. D. (1989). Early sexual activity among adolescents in small towns and rural areas: Race and gender patterns. Family Planning Perspectives, 21, 261-266.
- American Psychological Association. (1982). Ethical principles in the conduct of research with human participants. Washington, D. C.: American Psychological Association.
- Arney, W. R., & Bergen, B. J. (1984). Power and visibility: The invention of teenage pregnancy. Social Science and Medicine, 18, 11-19.
- Backrack, C. A. (1986). Adoption plans, adopted children, and adoptive mothers. Journal of Marriage and Family, 48, 242-253.
- Baldwin, W. H. (1976). Adolescent pregnancy and childbearing-growing concerns for Americans. Population Bulletin, 31, 1-36.
- Bandura, A. (1982). The psychology of chance encounters and life paths. American Psychologist, 37, 747-755.
- Bassoff, B. (1978). Unplanned pregnancy in adolescents: Constructing a social learning theory. Journal of Applied Social Science, 3, 125-133.
- Bassoff, B., & Ortiz, E.T. (1984). Teen women: Desparity between cognitive values and anticipated life events. Child Welfare, 63, 125-138.
- Bauman, K., & Udry, J.R. (1981). Subjective expected utility and adolescent sexual behavior. Adolescence, 14, 527-538.
- Benedict, R. (1950). Patterns of culture. New York: Mentor Books.
- Bennett, S. M., & Dickinson, W. B. (1980). Student-parent rapport and parent involvement in sex, birth control and venereal disease education. Journal of Sex Research, 16, 114-130.
- Bianchi, Suzanne M. (1980). Racial differences in per capita income. 1960-76: The importance of household size, headship, and labor force participation. Demography, 17, 129-43.

- Black, C., & DeBlassie, R. R. (1985). Adolescent pregnancy: Contributing factors, consequences, treatment, and plausible solutions. Adolescence, 20, 281-290.
- Blos, P. (1979). The adolescent passage. New York: International Universities Press.
- Boxhill, N. (1987). "How would you feel...?" Clinical interviews with Black adolescent mothers. In S. F. Battle (Ed.), The Black adolescent parent (pp 41- 51). New York: The Haworth Press.
- Brittain, C. (1963). Adolescent choices and parent-peer cross-pressures. American Sociological Review, 28, 385-391.
- Brown, B., Roth, M., & Mogul, J. (1984). All our children. Springfield, MA: Springfield Area Council for Children.
- Brunswick, A. F. (1971). Adolescent health, sex and fertility. American Journal of Public Health, 61, 711-729.
- Butts, J. D. (1981). Adolescent sexuality and teenage pregnancy from a black perspective. In T. Ooms (Ed.). Teenage pregnancy in a family context. Philadelphia: Temple University.
- Chilman, C. S. (1980). Toward a reconceptualization of adolescent sexuality. Adolescent Pregnancy and Childbearing. U.S. Department of Health and Human Services.
- Chilman, C. S. (1983). The development of adolescent sexuality. Journal of Research and Development in Education, 16, 16-25.
- Clark, S. D., Zabin, L. S., & Hardy, J. B. (1984). Sex, contraception and parenthood: Experience and attitudes among urban black young men. Family Planning Perspectives, 16, 77-82.
- Cohen, D. D., & Rose, R. D. (1984). Male adolescent birth control behavior. Journal of Youth and Adolescence, 13, 239-252.
- Coombs, M.W., & Welsh, S. (1982). Blacks, whites, and attitude toward abortion. Public Opinion Quarterly, 46 (4), 510-520.
- Crockenberg, S. B. (1981). Infant irritability, mother responsiveness, and social support influences on the security of infant-mother attachment. Child Development, 52, 857-865.

- Cvetkovich, G., & Grote, B. (1983). Psychosocial maturity and teenage contraceptive use: An investigation of decision making and communication skills. Population and Environment, 4, 211-226.
- Cvetkovich, G., Grote, B., Lieberman, K. J., & Miller, W. (1978). Sex role development and teenage contraceptive use. Adolescence, 13, 231-236.
- Darabi, K. F., Jones, J., Varga, P., & House, M. (1982). Evaluation of sex education outreach. Adolescence, 17, 57-64.
- Day, L. H. (1984). Minority group status and fertility: A more detailed test of the hypothesis. The Sociological Quarterly, 25, 456-472.
- DeAmicis, L. A., Klorman, K., Hess, D. W., & McAnarney, E. R. (1981). A comparison of unwed pregnant teenagers and nulliparous sexually active adolescents seeking contraception. Adolescence, 6, 11-20.
- Dryfoos, J. (1985). School-based health clinics: A new approach to preventing adolescent pregnancy? Family Planning Perspectives, 17, 70-76.
- Dryfoos, J. G., & Bourque-Scholl, N. (1981). Factbook on teenage pregnancy. New York: Guttmacher Institute.
- Duncan, G. J., & Hoffman, S. D. (1990). Teenage welfare receipt and subsequent dependence among Black adolescent mothers. Family Planning Perspectives, 22, 16-22.
- Edwards, E. E., Steinman, K. A & Hananson, E. Y. (1980). Adolescent pregnancy prevention services. Family Planning Perspectives, 12, 8-15.
- Eisen, M., & Zellman, G. L. (1986). The role of health belief attitudes, sex education, and demographics in predicting adolescents' sexuality knowledge. Health Education Quarterly, 13, 9-22.
- Evans, R. C. (1987). Adolescent sexual activity, pregnancy, and childbearing: Attitudes of significant others and risk factors. In S. F. Battle (Ed.), The Black adolescent parent. (pp. 75-93). New York: The Haworth Press.
- Farley, R. (1970). Growth of the black population. Chicago: Markham.
- Fischman, S. H. & Palley, H. A. (1978). Adolescent unwed motherhood: Implications for a national family policy. Health and Social Work, 3 (1), 30-46.

- Fisher, S. M., & Scharf, K. R. (1980). Teenage pregnancy: An anthropological, sociological, and psychological overview. In Fernstein, S. C., Giovacchini, P. L., Looney, J. G., Schwartzberg, A. Z., & Sorosky, A. D. (Eds.), Adolescent Psychiatry. Chicago: University of Chicago Press.
- Fogel, W., & Engerman, L. (1974). Time on the cross: The economics of American Negro slavery. Boston and Toronto: Little, Brown & Co.
- Forrest, J. D., & Silverman, J. (1989). What public schools teachers teach about preventing pregnancy, AIDS and sexually transmitted diseases. Family Planning Perspectives, 21, 65-72.
- Fox, G. L., & Inazu, J. K. (1980). Patterns and outcomes of mother-daughter communication about sexuality. Journal of Social Issues, 36, 7-29.
- Franklin, D.L. (1987). Black adolescent pregnancy: A literature review. In S. F. Battle (Ed.), The Black adolescent parent (pp. 15-37). New York: The Haworth Press.
- Frazier, E. F. (1969). The Negro family in the United States. Chicago: University of Chicago Press.
- Furstenberg, F. F. (1976). Unplanned parenthood: The social consequences of teenage childbearing. New York: Free Press.
- Furstenberg, F. F., & Brooks-Gunn, J. (1985). Adolescent mothers in later life. New York: The Commonwealth Fund.
- Furstenberg, F. F., & Brooks-Gunn, J., & Morgan, S. P. (1987). Adolescent mothers and their children in later life. Family Planning Perspectives, 19, 199.
- Furstenberg, F. F., & Crawford, A. G. (1978). Family support: Helping teenage mothers to cope. Family Planning Perspectives, 10, 322-333.
- Gabriel, A., & McAnarney, E. R. (1983). Parenthood in two subcultures: White, middle class couples and black, low income adolescents in Rochester, New York. Adolescence, 18, 595-608.
- Gallup, G. (1977). Reflects epidemic of teenage pregnancy: Growing numbers of Americans favor discussions of sex in classrooms. News release. Princeton, N.J.: The Gallup Poll.
- Gibbs, J. T. (1984). Black adolescents and youth: An endangered species. American Journal of Orthopsychiatry, 54, 6-19.

- Gibson, W. (1980). Family life and morality: Studies in black and white. Washington, D. C.: University Press of America Inc.
- Gilchrist, L. D., & Schinke, S. P. (1983). Coping with contraception: Cognitive and behavioral methods with adolescents. Cognitive Therapy and Research, 7, 379-388.
- Gilligan, C., Kohlberg, L., Lerner, J., & Belensky, M. (1970). Moral reasoning about sexual dilemmas: The development of an interview and scoring system. In Commission on Obscenity and Pornography Technical Reports, 1. Government Printing Office, Washington, D.C.
- Glasgow, D. G. (1980). The black underclass. San Francisco: Jossey-Bass.
- Gutman, H. G. (1976). The black family in slavery and freedom: 1750 to 1925. New York: Pantheon Books.
- Handelsman, C. D., Cabral, R. J., & Weisfeld, G. E. (1987). Sources of information and adolescent sexual knowledge and behavior. Journal of Adolescent Research, 2, 455-463.
- Harlan, W. G., Grille, J., Carononi-Huntley, J., & Leaverton, P. (1980). Secondary sex characteristics of boys 12-17 years of age: The United States health examination survey. Journal of Pediatrics, 95, 293-297.
- Hauser, P. M. (1965). Demographic factors in the integration of the Negro. Daedalus, 94, 847-877.
- Hayes, C. D. (Ed.). (1987). Risking the future. Washington, D.C.: National Academy Press.
- Herskovits, M. J. (1958). Myth of the Negro past. Boston: Beacon Hill Press.
- Herz, E. J., & Reis, J. S. (1987). Family life education for young inner-city teens: Identifying needs. Journal of Youth and Adolescence, 16, 361-377.
- Hoffman, L. W., & Manis, J. D. (1979). The value of children in the United States: A new approach to the study of fertility. Journal of Marriage and the Family, 41 (3), 589-596.
- Hofferth, S. L. (1981). Effects of number and timing of births on family well being over the life cycle. Final report to the National Institute of Child Health and Human Development. Washington, D.C.: Urban Institute.
- Hofferth, S.L., & Moore, K. A. (1979). Early childbearing and later economic well-being. American Sociological Review, 44, 784- 815.

- Hogan, D.P., & Kitagawa, E. M. (1983). Family factors in the fertility of black adolescents. Paper presented at the meeting of the Population Association of America, Pittsburgh.
- Hogan, D. P., & Kitagawa, E. M. (1985). The impact of social status, family structure, and neighborhood on the fertility of black adolescents. American Journal of Sociology, 90 (4), 825-855.
- Jones, E. F., Beniger, J. R., & Westoff, C. F. (1980). Pill and IUD discontinuation in the U. S., 1970-1975. Family Planning Perspectives, 17, 169-174.
- Jones, E. F., & Forrest, J. D. (1989). Contraceptive failure in the United States: Revised estimates from the 1982 national survey of family growth. Family Planning Perspectives, 21, 103-109.
- Kaplan, H., Smith, P., & Pokorny, A. (1979). Psychosocial antecedents of unwed motherhood among indigent adolescents. Journal of Youth and Adolescents, 8 (2), 181-207.
- Kohlberg, L. (1978). Revision in the theory and practice of moral development. New Directions for Child Development, 2, 83-88.
- Ladner, J. (1987). Black teenage pregnancy: A challenge for educators. Journal of Negro Education, 56, 53-63.
- McAdoo, H. P. (1981). Black families. Beverly Hills: Sage Publications.
- McAnarney, E. R. (1982). Adolescent pregnancy: Psychological and social antecedents and prevention. Rochester, N.Y.: University of Rochester Medical Center.
- Magdol, E. (1977). A right to the land: Essays on the freedman's community. Westport, Conn.: Greenwood Press.
- Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. Journal of Youth and Adolescence, 14, 267-283.
- Marecek, J. (1987). Counseling adolescents with problem pregnancies. American Psychologist, 42, 89-93.
- Marsiglio, W. (1985). Confronting the teenage pregnancy issue: Social marketing as an interdisciplinary approach. Human Relations, 38, 983-1000.

- Martin, J. M., & Martin, E.P. (1985). The helping tradition in the black family community. Silver Springs, Md.: National Association of Social Workers.
- Moore, K A., & Hofferth, S. L. (1978). The consequences of age at first childbirth: Family size. Working Paper 1146-02. Washinton D.C.: Urban Institute.
- Morris, L. (1974). Estimating the need for family planning services among unwed teenagers. Family Planning Perspectives, 6, 91-97.
- Mott, F. L., & Marsiglio, W. (1985). Early childbearing and completion of high school. Family Planning Perspectives, 17, 234-237.
- Newcomer, S. F., & Udry, J. R. (1983). Parent-child communication and adolescent sexual behavior. Family Planning Perspectives, 17, 169-174.
- Olson, C. F., & Worobey, J. (1984). Perceived mother-daughter relations in a pregnant and nonpregnant adolescent sample. Adolescence, 19, 781-794.
- Pettapiece, R. (1988). Developing a stress scale for high school students. Psychology Teacher, 19, 8-10.
- Perlman, S. B., Klerman, L. V., & Kinard, E. M. (1981). The use of socioeconomic data to predict teenage birth rates. Public Health Reports, 21 (5), 658-673.
- Ralph, N., Lochman, J., & Thomas, T. (1984). Psychosocial characteristics of pregnant and nulliparous adolescents. Adolescence, 19, 283-294.
- Reid, John. 1985. Black America in the 1980's. Population Bulletin, 37, 1-39.
- Rindfuss, R. R. (1980). Minority status and fertility revisited again: A comment on Johnson. American Journal of Sociology, 86 (2), 372-375.
- Rodman, H., & Trost, J. (1986). The adolescent dilemma. Westport, Conn.: Praeger.
- Scales, P., & Gordon, S. (1979). Preparing today's youth for tomorrow's family. Journal of the Institute for Family Research and Education, 1, 3-8.
- Schinke, S. P., Barth, R. P., Gilchrist, L. D., & Maxwell, J. S. (1986). Adolescent mothers, stress, and prevention. Journal of Human Stress, Winter, 162-167.
- Scott, J. W. (1983). The sentiments of love and aspirations for marriage and their association with teenage sexual activity and pregnancy. Adolescence, 18, 889-897.

- Segal, S. M., & DuCette, J. (1973). Locus of control and pre-marital high school pregnancy. Psychological Reports, 33, 887-890.
- Seligman, M. E. (1975). Helplessness: On depression, development and death. San Francisco, CA.: W.H. Freeman Co.
- Singh, S. (1986). Adolescent pregnancy in the United States: An interstate analysis. Family Planning Perspectives, 18, 210 -220.
- Smith, D. P. (1982). A needs based curriculum for teenage mothers. Education, 102, 90-93.
- Sonenstein, F. L., & Pittman, K. J. (1984). The availability of sex education in large city school districts. Family Planning Perspectives, 16, 19-27.
- Stack, C. (1974). All our kin: Strategies for survival in a Black community. New York: Harper and Row, Inc.
- Stevens, J. H. (1983). Black grandmothers' and black adolescent mothers' knowledge about parenting. Developmental Psychology, 17, 1017-1025.
- Stiffman, A. R., Earls, F., Robins, L. N., Jung, K. G., & Kulbok, P. (1987). Adolescent sexual activity and pregnancy: Socioenvironmental problems, physical health, and mental health. Journal of Youth and Adolescence, 16, 497-509.
- Taborn, J. (1987). The Black adolescent mother: Selected, unique issues. In S. F. Battle (Ed.), The Black adolescent parent. (pp. 1-13). New York: The Haworth Press.
- Thompson, K. (1980). A comparison of Black and White adolescents beliefs about having children. Journal of Marriage and the Family, 1 (42), 133.
- Thompson, K., & Spanier, G. (1978). Influence of parents, peers and partners on the contraceptive use of college men and women. Journal of Marriage and Family, 3 (40), 481-492.
- Thornburg, H. D. (1982). Development in adolescence. Monterey, CA.: Brooks/Cole.
- Vincent, C. E. (1961). Unmarried mothers. New York: The Free Press of Glencoe.
- Washington, A. (1982). A cultural and historical perspective on pregnancy-related activity among U. S. teenagers. Journal of Black Psychology, 9, 1-28.

- Websters New Collegiate Dictionary. (1977). Springfield, MA: Merriam Company.
- White, J.L. (1984). The psychology of blacks. Englewood Cliffs, NJ: Prentice-Hall.
- Willie, C. U. (1970). The family life of black people. Columbus, OH.: Merrill.
- Zellman, G. L., & Goodchilds, J. D. (1983). Becoming sexual in adolescence. In E. R. Allgeier & N. B. McCormick, (Eds.), Changing boundaries: Gender roles and sexual behavior (pp. 113-135). Palo Alto, CA: Mayfield.
- Zelnik, M., & Kantner, J. F. (1977). Sexual and contraceptive experiences of young unmarried women in the United States, 1966-1971. Family Planning Perspectives, 9, 55-73.
- Zelnik, M., & Kantner, J. F. (1978). Contraceptive patterns and premarital pregnancy among women aged 15-19 in 1976. Family Planning Perspectives, 10, 135-142.
- Zelnik, M., & Kantner, J. F. (1978). First pregnancies to women aged 15-19: 1976 and 1971. Family Planning Perspectives, 10, 11-20.
- Zelnik, M., & Kantner, J. F. (1980). Sexual activity, contraceptive use and pregnancy among metropolitan- area teenagers: 1971-1979. Family Planning Perspectives, 12, 230-237.
- Zelnik, M., Young J. K., & Kantner, J. F. (1979). Probabilities of intercourse and conception among U.S. teenage women, 1971 and 1976. Family Planning Perspectives, 11, 177-183.
- Zelnik, M., Kantner, J. F., & Ford, K. (1981). Sex and Pregnancy in Adolescence. Beverly Hills, Calif.: Sage.
- Zongker, C. E. (1977). The self-concept of pregnant adolescent girls. Adolescence, 12, 477-488.

