BARRIERS TO EFFECTIVE CONTRACEPTION
IN TEENAGE FEMALES

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BY
EMILY KEY

DR. DIANA BANTZ – ADVISOR

BALL STATE UNIVERSITY
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER I: INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Background and Significance</td>
<td>3</td>
</tr>
<tr>
<td>Problem</td>
<td>4</td>
</tr>
<tr>
<td>Purpose</td>
<td>4</td>
</tr>
<tr>
<td>Research Questions</td>
<td>4</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>5</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>5</td>
</tr>
<tr>
<td>Limitations</td>
<td>6</td>
</tr>
<tr>
<td>Assumptions</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER II: REVIEW OF LITERATURE</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>Purpose</td>
<td>7</td>
</tr>
<tr>
<td>Organization of Literature</td>
<td>7</td>
</tr>
<tr>
<td>Teenage Behavior and Risk for Pregnancy</td>
<td>8</td>
</tr>
<tr>
<td>Family Characteristics and Teenage Pregnancy</td>
<td>21</td>
</tr>
<tr>
<td>Services and Programs for Teenage Pregnancy Prevention</td>
<td>36</td>
</tr>
<tr>
<td>CHAPTER III: METHODOLOGY AND PROCEDURE</td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>50</td>
</tr>
<tr>
<td>Research Questions</td>
<td>50</td>
</tr>
<tr>
<td>Population, Sample and Setting</td>
<td>51</td>
</tr>
</tbody>
</table>
Chapter I

Introduction

Adolescent pregnancy prevention is important because of the immediate and long term costs it brings upon teens, their families and the country as a whole. The prevention of teenage pregnancy could save the country about $9 billion per year. These costs are related to lost education and jobs as well as those costs related to public service use during and after pregnancy (Centers for Disease Control and Prevention (CDC), 2009).

The effects of teenage pregnancy are social and economic costs as well as a risk to the health of these teen mothers. Teenage mothers face a higher risk of preterm birth and their babies are at a higher risk for low birth weight and infant death. Teenage mothers are more likely to drop out of school and remain single parents as compared to mothers in their early twenties (CDC, 2009).

The children of teen mothers face numerous risks as well. They are more likely to have lower cognition and proficiency scores as they enter kindergarten. These children are also more likely to display behavior problems, suffer from chronic illnesses and rely on publicly funded health care. The children of teen mothers are also much more likely to be incarcerated between adolescence and their 30th birthday. They are more likely to give birth themselves, as teenagers, drop out of high school and be unemployed in their young adulthood (CDC, 2009).
According to the Guttmacher Institute, between 1991 and 2003, U.S. birthrates among 15-19 year olds dramatically declined by 33%. This is the lowest rate ever recorded since 1940 when the National Center for Health Statistics began tracking this information. This is uplifting news because it reversed a 24% increase in adolescent births between 1986 and 1991. Until 2003, teen births were declining in every state in the U.S. and in all culture and socioeconomic classes. The decline in birth rates also means a drop in the number of miscarriages and abortions, both costing the country millions of dollars a year. The decline was thought to be due to an increase in teenage abstinence as well as an overall improvement in contraceptive use (Donovan, 1998).

Despite this substantial drop in the adolescent birthrate in the U.S., over 400,000 adolescent women give birth every year which translates to an annual birthrate of 4.2%. This teen birthrate is the highest of all developed countries in the world (Mead, Kershaw, & Ickovics, 2008).

The latest teen pregnancy statistics from the Center for Disease Control are from 2006 and show a rise in the adolescent birthrate in the U.S. This is a significant rise in birthrates among 15-19 year-olds in 26 states across the country. Each region is affected. The number of births among 15-19 year-olds rose 3% in 2006. This is the sharpest rise in a single year since 1989. The birth rate for 10-14 year-olds actually declined from 0.6 to 0.7 per 1,000 girls in the U.S (CDC, 2009).

The reason for the decade-long decline of adolescent pregnancy from 1991 to 2003 seems clear. Fewer teens are engaging in sexual intercourse and more are using effective contraception. According to two national surveys, The National Survey of Family Growth (NSFG) and the Youth Risk Behavior Survey, the number of high school
students in the U.S. that are having sex is declining. The number of high school students that reported ever having sexual intercourse decline by 11% between 1991 and 1997 (Donovan, 1998).

**Background and Significance**

The other reason for this decline lies in the form of improved contraception practices. According to the NSFG, contraceptive use at first intercourse among females age 15 to 19 rose from 48% in the early 1980s to 65% in the late 1980s up to 78% in 1995 (Donovan, 1998).

Over the last 30 years, contraceptive use has changed dramatically. During the 1970s, among young women, the birth control pill was the most popular form of contraception, followed by condoms and then withdrawal method. During the 1980s, the use of condoms increased substantially as the use of oral contraception declined, perhaps due to the introduction of HIV/AIDS. Since 1988, rates of condom use have continued to increase, and with the introduction of long-acting hormonal methods, teen pregnancy rates have continued to drop (Santelli, Morrow, Anderson, & Duberstein Lindberg, 2006).

Research on preventing pregnancy in the adolescent population usually focuses on the knowledge of contraception and its role in determining if teens will use contraception effectively. Nevertheless, research has found no correlation between contraceptive and reproductive knowledge and contraceptive behavior among adolescent women. Adolescent women tend to have more knowledge of contraception than older women, but use them inconsistently and have a higher number of unplanned pregnancies (Breheny & Stephens, 2004).
Adolescent mothers can be a valuable source in determining why there is an inconsistent use of contraceptives in the adolescent population. They are likely to be similar to other young women at risk for pregnancy and may be able to give insight as to the difficulties in accessing and utilizing contraception (Breheny & Stephens, 2004).

Problem

Research has shown that few pregnant adolescents attribute their pregnancies to a lack of contraceptive knowledge or difficulty accessing contraceptives. Researchers have found that most adolescent pregnancies can be attributed to positive or ambivalent feeling about pregnancy. These feeling towards pregnancy act as barriers to effective contraceptive use.

Purpose

The purpose of this research study is to discover whether adolescent mothers feel they faced barriers to effective contraception before or after the birth of their children. This study also aims to explore whether adolescent mothers used strategies to overcome these barriers to effective contraception.

Research Questions

Two questions will guide this study.

1. Do/did adolescent mothers face barriers to effective contraception before or since the birth of their children?

2. Do/did adolescent mothers utilize strategies to overcome barriers to contraceptive use?
**Theoretical Framework**

The theoretical framework that will guide this study is Icek Ajzen’s Theory of Planned Behavior. This theory has been extensively used to explain many types of health attitudes and actions. According to Ajzen’s theory, human action is guided by three beliefs: behavioral beliefs, normative beliefs and control beliefs. Behavioral beliefs induce a favorable or unfavorable attitude about a certain behavior. Normative beliefs produce a perceived social norm or social pressure. Control beliefs explain a person’s perceived control over such behavior. According to the theory, by determining these three beliefs a person holds in regard to a certain behavior, one can predict the person’s actual behavior in question (Ajzen, 2006). The Theory of Planned Behavior is appropriate to guide this study that intends to explore adolescent sexual behavior.

**Definition of Terms**

*Effective Contraception: Conceptual*

Ajzen defines effective contraception in terms of its Target, Action, Context and Time (TACT). The target of effective contraception would be avoiding pregnancy and STDs. The action of effective contraception includes correctly using a condom, oral/hormonal methods, injection, implants, etc. The context of effective contraception includes anytime or place that sexual intercourse happens. Finally, the time aspect of effective contraception is *every* time sexual intercourse takes place (Ajzen, 2006).

*Effective Contraception: Operational*

Effective contraception is the correct use of a woman’s chosen form of birth control to prevent unwanted pregnancy. This method can be hormonal, barrier, chemical or natural methods (Healthy Women, 2009).
Limitations

A limitation of this study may be the small sample size of 10 adolescent women. A larger group may give stronger results and with 10 participants, one woman’s responses may greatly alter the outcomes. This will hopefully be avoided by first conducting a pilot study. Another limitation may be the use of a qualitative study and researcher bias. The research cannot be quantified and the findings can be subjective. Attempts to avoid observer bias will be made by using several different observers or a panel of experts on the topic.

Assumptions

The researchers assume the participants will answer the interview question honestly. It is assumed that the interviewer has never met any of the study participants. It is also assumed that the participants understand that sexual intercourse causes pregnancy.
Chapter 2

Review of Literature

Introduction

The following 12 article summaries were utilized in the literature review for this study. The objective of this review was to analyze information on the current trends of adolescent sexual intercourse and the use of contraceptives. The review also focuses on possible barriers to contraceptive use in this age group and analyzes one alternative or supplemental program currently used that aims to reduce America’s teen birth rate.

Purpose

The purpose of this study is to examine the barriers to effective contraceptive use that adolescent women face. The study will explore whether adolescent mothers faced barriers to contraception either before or since the birth of their children and if they attempted to overcome these barriers. This is a replication of Breheny and Stephens (2004) study.

Organization of Literature

The literature to support this study is comprised of three categories, each containing four studies. The categories include: (a) teenage behavior and risk for pregnancy; (b) family characteristics and teenage pregnancy; (c) services and programs for teenage pregnancy prevention.

Teenage behavior and risk for pregnancy

Teen contraceptive use is often viewed negatively. Many people believe that providing information regarding contraception to young people encourages sexual
activity. However, many studies have found access to contraceptives neither encourages the initiation of sex nor increases the frequency of sex among teens. Access to contraceptives has become increasingly important for teens because many are sexually active at earlier ages than before. The delay in marriage age is another interesting trend that may affect unintended pregnancies (Kahn, Drindis, & Glei, 1999).

The purpose of this article is to estimate the number of adolescent pregnancies per year and pregnancy outcomes prevented by using contraceptives. The authors project the number of pregnancies that would occur if adolescents who currently use contraceptives, no longer had access to them. The researchers also analyzes the potential impact that different restrictions on contraceptive access might have on these outcomes, taking into account ways which teenagers might change their sexual and contraceptive practices in response to limited access to contraceptives. No framework is discussed in the article (Kahn et al., 1999).

Published estimates of contraceptive effectiveness were applied to the 1995 National Survey of Family Growth (NSFG) data on sexual and contraceptive practices. The population studied includes women in the U.S. ages 15-19 years. The final sample consisted of 651 civilian adolescent women that were interviewed between January and October 1995. These women were each determined to be “at risk” for pregnancy because they were sexually active during a particular month and had not been pregnant that month. The 12-month likelihood of averting a pregnancy was calculated for each woman. The national estimates of pregnancies prevented were then calculated, using sampling weights provided in the NSFG data (Kahn et al., 1999).
Data from the NSFG was applied to four different scenarios. These scenarios are hypothetical situations that may have an effect on the risk of pregnancy in this population of female adolescents. The scenarios included: no contraceptive method used, no use of prescription methods, no use of prescription or over-the-counter methods, but no increase in nonuse, and, finally, no use of prescription or over-the-counter methods, and an increase in nonuse (Kahn et al., 1999).

The number of pregnancies prevented annually was calculated by using the number of months each respondent was sexually active. The authors estimate the failure rate with no method of contraception to be 90% for this age group. The reduction in the risk of pregnancy for a teenager who had sex every month for a year and who consistently used a contraceptive method with a 15% likelihood of failure would be calculated as $1.0 \times 0.9 - [1.0 \times 0.15] = 0.75$. The final sum represented the total number of averted pregnancies for 15-19 year old U.S. women. This number was then applied to the four possible scenarios. No reliability in the results was reported (Kahn et al., 1999).

Results show that the 651 respondents had been at risk for pregnancy 67% or 8 months out of the previous year. Contraceptives were used 80% of the time they were at risk. The first scenario calculates the number of additional pregnancies that would occur if contraceptives were completely absent among teens. The calculation shows that 1.65 million pregnancies would occur each year if this scenario were to happen (Kahn et al., 1999).

If all adolescents were forced to switch to over-the-counter contraceptives, the number of additional pregnancies each year would range from 160,000 if there were no changes in levels of sexual intercourse to 40,000 if levels decreased by 50%. The third
scenario estimates additional pregnancies if adolescents were denied access to over-the-counter and prescription methods and were forced to use other methods, such as rhythm or withdrawal. The researchers calculate that 400,000 more pregnancies would occur annually. The final scenario calculates the effect if the 81% of respondents that use over-the-counter and prescription methods would, instead, use no method. If this were to happen, the authors calculate another 1.37 million pregnancies would occur each year. Each 10% increase in abstinence would decrease this number by about 167,000 pregnancies (Kahn et al., 1999).

The authors estimate that every year, contraception prevents about 480,000 live births, 390,000 abortions, 120,000 miscarriages or stillbirths and 10,000 ectopic pregnancies. Also, due to these outcomes, 37 maternal deaths are prevented (Kahn et al., 1999).

These calculations show if access to contraceptives were restricted, the number of teenage pregnancies would rise significantly. There would possibly be 1.65 million more teen pregnancies a year. Adolescents’ strategies to reduce pregnancy risk would probably vary. Some would abstain from sexual intercourse completely while others would engage in alternate forms of sex, such as oral or anal (Kahn et al., 1999).

The authors also make note of the potential effect restricting contraceptives may have on sexually transmitted diseases (STDs). Since condoms reduce STD transmission by about 90%, restrictions on their availability would likely increase transmission (Kahn et al., 1999).

Cost savings are well documented for public funding of contraceptives. One analysis found that in 1988, 24% of U.S. women using a reversible method of
contraception received family planning services in publicly funded family planning clinics or with Medicaid reimbursement. Assuming a shift to less-effective contraceptive practices, about 1.3 million additional unplanned pregnancies would occur annually if these services were no longer available. These pregnancies would cost approximately $1.2 billion in public funds for pregnancy care and abortions, compared to only $412 million spent for the family planning preventative services (Kahn et al., 1999).

Previous research on adolescents and sexual activity show teens make decisions about contraceptives based on the type of relationship. For example, as the age difference between teenage partners increases, their odds of consistently using contraceptives decrease. Individual factors may also determine the likelihood of contraceptive use, such as personality or cultural background. This next article simply builds on previous research about adolescent sexual behavior (Manlove, Ryan, & Franzetta, 2004).

The purpose of this study was to determine teens’ contraceptive use and consistency in their most recent relationships. The authors also aimed to determine how characteristics of teen relationships can impact contraceptive use. A third goal was to determine how contraceptive use in teens’ first sexual encounter compares to their current practice. The final goal of this study was to compare males and females regarding contraceptive use. No framework is mentioned in this article (Manlove et al., 2004).

The target population included unmarried, sexually experienced American adolescents in grades 7-12. The sample group came from The National Longitudinal Study of Adolescent Health. The sample included 1,468 adolescents that reported having 2-10 sexual partners in the past. The researchers excluded those teens whose first sexual
encounter had occurred more than 18 months before their interview. Teens were also excluded if the information they provided was incomplete or inconsistent. This survey was administered in three steps, or waves, occurring in 1995, 1996 and 2002. Information was only used from the first two waves. The information was derived from a series of questions during these interviews. The questions focused on history of birth control use, characteristics of the most recent relationship and partner, sexual history, family and individual qualities and method of contraception used in the most recent relationship (Manlove et al., 2004).

To analyze the data, the researchers used the chi-square method to examine gender disparity in relationships and partner qualities. To analyze the full sample, logistic regression was used. To test for sample selection effects, the researchers used Heckman models. The rho values in these models were not significant which indicated the sample was similar to other sexually experienced adolescents. The researchers felt the information was reliable, and valid, and needed no adjustments (Manlove et al., 2004).

Most of the males (62%) and females (58%) in the sample described consistent contraceptive use in their most recent relationships. Twenty percent described no use of contraceptives and approximately 20% claimed inconsistent use. In their most recent relationship, the average teen reported a time span of four months before they began having sex. Females were more likely than males to initiate a contraceptive discussion with their partner. Ten percent of the respondents reported physical violence in their most recent sexual relationship. Sixty-six percent of the sample was 15 years or older at their first sexual experience. Most males (63%) and females (55%) claimed consistent
contraceptive use in their first sexual relationship. Thirty-four percent of females claimed the most effective method was hormonal, compared to 18% of males. The female respondents described more attendance at religious services than the male respondents (Manlove et al., 2004).

Many points are addressed after the analysis of the data. Some of the major points include:

1. The average respondents who had used contraception had higher cognitive scores and attended religious services more than those who had never used contraception.
2. Consistent male users were less likely to be white, had higher cognitive scores and attended more religious services than those males who were not consistent users.
3. Consistent female users were less likely to report physical violence in their relationship and reported fewer lifetime partners than those who were not consistent users.
4. Compared to Whites, Hispanic females were less likely to have had ever used contraception (odds ratio, 0.5).
5. Males living with an intact family had higher odds of always using contraception.
6. The odds of always using contraception decreased by 50% if there was physical violence in the relationship.
7. The older the teens were at their first sexual encounter, the lower their odds of ever having used contraception.
8. The odds of always using contraception were four times lower if the method was a condom as compared to a hormonal method (Manlove et al., 2004).

Many conclusions can be made by the findings of this study. Teens’ cognitive levels and religious connection seem to be linked to increased contraceptive use. This may mean that these teens are more aware of the consequences of adolescent sex or feel an increased level of negativity from society regarding premarital sex (Manlove et al., 2004).

Hispanic teens may need special attention since they are less likely to use contraception. Health care workers may need to increase their outreach to the Hispanic community to help decrease teen pregnancy. Teens growing up in a broken home have increased odds of becoming pregnant. These adolescents may also need special attention for pregnancy prevention (Manlove et al., 2004).

Because physical violence in relationships seems to impact the use of contraceptives, health care workers should explore teens’ needs regarding abuse prevention. Pregnancy prevention programs should be altered according to the needs of partners in abusive relationships (Manlove et al., 2004).

Teens using hormonal methods of contraception were more likely to consistently use contraception. This may mean that one key to decrease teen pregnancies is to make hormonal contraception easier and more affordable to obtain. Many teens may want this type of contraceptive but are afraid parents will find out or may have some misconceptions about the hormonal method (Manlove et al., 2004).

The authors recommend pregnancy prevention programs take in to account the findings of this study. They feel the positive effects of these programs may be short term,
and recommend booster sessions to continuously encourage contraceptive use. They also feel communication is a main factor of continuous contraceptive use in relationships. Therefore, programs need to focus more on teaching communication or negotiation skills and abuse prevention (Manlove et al., 2004).

Traditionally, more is known about the trends in teenage sexual intercourse than is known about teens’ use of contraceptives. Contraceptives are an important factor in preventing adolescent pregnancies, and this article sets out to examine the relationship between contraceptive use and the incidence of teenage pregnancy, (Santelli et al., 2006).

No framework was discussed in this study. The population studied was students in grades 9-12 in American public and private high schools between the years 1991 and 2003. Data from the national Youth Risk Behavior Survey was used to explain the relationship of contraceptive use and teenage pregnancy between the years 1991 and 2003. This survey has been conducted by the Center for Disease Control and Prevention (CDC) every two years since 1991. The survey was given to 9-12 graders in private and public schools sampled to resemble the national population of high school students. The sample size per year ranged from 2,271 to 3,133 females and between 2,129 to 3,204 males (Santelli et al., 2006).

The students completed the paper-and-pencil survey in the classroom after receiving parental permission. The teens must have been enrolled in school and present on the day the survey was administered or on a given make-up day. To be included in the study, the students had to be sexually active (Santelli et al, 2006).

The survey proposed two questions related to this study. These questions were: “The last time you had sexual intercourse, did you or your partner use a condom?” and
“The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy?” Sexually active individuals in this study were those who had sex within the past three months. The 1995 and 2002 National Survey of Family Growth (NSFG) was used for data on the use of hormonal contraceptive rates and failure rates for all types of contraceptives (Santelli et al, 2006). The researchers developed a pregnancy risk index to estimate the risk of pregnancy for the use and non-use of contraceptives. Weighted least-squares regression was used to find the change of pregnancy risk over time. Regression was calculated with SUDAAN software. A first-order Taylor series was used to find the “confidence intervals of the annual rates of change” (Santelli et al, 2006, p. 108). Lastly, the researchers performed t-tests to find the significant differences of rates of contraceptive use. The significance level was set at p<.05.

The use of contraceptives increased among sexually active American high school students between the years of 1991 and 2003. The number of females reported using condoms at last intercourse increased by 20% while the number of females that reported using the withdrawal method and no method decreased by 8% and 6% respectively. After injectable hormones were introduced, hormonal pill use decreased by 5%. Findings from the male respondents were similar. Between 1991 and 2003, women’s risk of pregnancy decreased by 21%. The groups with the largest increase in contraceptive use and the largest decrease in pregnancy risk were ninth graders, both white and black. The pregnancy risk for ninth-graders fell 28%. The pregnancy risk also fell 25% and 23% among whites and blacks, respectively. In 2003, the groups with the largest risk of pregnancy were those using no method of contraception, while 54% of the risks were
those that experienced contraceptive failure. The group with the highest risk of pregnancy during these years were Hispanics, probably because they were the least likely to use any method of contraception. Ninth-graders were the age group with the highest risk of pregnancy, probably due to health care access issues. Almost one-third of the female teens used a dual method. This is the use of a hormonal contraceptive along with a condom, which proves to be the most effective method of prevention (Santelli et al, 2006).

The decrease in pregnancy risk and increase of condom usage among American adolescents during these twelve years is certainly uplifting; however, there remains much more room for progress. The authors suggest that sexually active teens not using contraceptives need to hear the message why contraceptives are important in the prevention of pregnancy and STDs. Teens may require counseling to strengthen their social skills if they have a partner that objects to contraceptive use. Teens that do use condoms need to know the correct usage and hear why dual use is the best method of prevention. If a fear of side effects is a reason teens do not use hormonal prevention, this needs to be addressed. Though condoms do fail, they are the most popular method of contraception with sexually active high school students. The authors give several reasons why condoms are the most widely used. Condoms are easily accessible through retail stores, clinics, community-based programs, and other ways. Concern about contracting STDs, including HIV, is a major driving force for teens to use condoms. As condom usage has increased over this twelve year span, the use of hormonal contraception has not changed. Since prescriptions are needed for this type of contraception, this may indicate that teens have poor access to health care services. This suggests barriers need to be
broken for teens to access health care. Along the same lines, teens in the lower grades use less hormonal contraceptives and, therefore, have a higher risk of pregnancy than teens in the upper grades. This may be due to barriers in health care access or may be due to less planning among teens in the lower grades (Santelli et al, 2006).

In the 1990s, research found a substantial proportion of children born to teenage mothers were fathered by adult males. According to the research, the youngest teenage mothers were the most likely to have had a much older male partner. However, limited information exists on the characteristics of teenagers who had sex for the first time at an early age with an older partner. The purpose of this study was to examine teenagers whose initial sexual intercourse occurred at a young age with an older partner (Manlove, Terry-Humen, & Ikramullah, 2006).

The researchers used data from the 2002 National Survey of Family Growth (NSFG), conducted by the National Center for Health Statistics, which interviewed 7,643 females and 4,928 males aged 15-44 who responded to questions about their first sexual relationship prior to age 18. Individuals aged 25 or older were excluded to reduce recall bias. The overall sample included 1,838 females and 1,426 males aged 18-24. For analyses of contraceptive use at first sex, the authors further restricted the sample to the 1,113 females and 869 males who had had intercourse before age 18. To provide complete information on whether respondents had experienced a teenage birth, the researchers further restricted the sample to 808 females and 576 males aged 20-24 (Manlove et al., 2006).

Three dependent variables were measured. These included respondents’ age at first sex and age difference with their first sexual partner, contraceptive use at first sex
and having or fathering a baby before age 20. Family and individual characteristics were also measured. These included mother’s education level, family structure at age 14, and whether the respondent’s mother had her first birth as a teenager. Individual characteristics measured included race, ethnicity, immigrant status, early menarche, and religious attendance at age 14. The first sexual relationship was also examined for each of the respondents. Questions were asked such as “Did you choose to have sex on your own free will?” and “How much did you want your first vaginal intercourse to happen?” Relationship type at first sex was categorized as cohabitating or engaged, going steady, going out once in a while, just friends, just met or other (Manlove et al., 2006).

A combination of bivariate chi-square analyses, multinomial logistic analyses, logistic regression analyses and contrast analyses were used to figure the outcomes. Measures of significance ranged from p<.05 to p<.001 depending on the category (Manlove et al., 2006).

The researchers found that among 18-24 year-olds, 14% of females and 6% of males had had their first sexual relationship before age 16 with a partner at least three years older, and 5% of females had first sex before age 16 with a partner five or more years older. Because adolescents with much older partners are at risk for poor reproductive health, almost two million females and 782,000 males in this cohort have an increased risk of poor reproductive health outcomes (Manlove et al., 2006).

Family and individual factors were associated with having sex at a young age with an older partner. Hispanic males and females, black males and those who lived at age 14 with no biological parent had increased odds of having had sex at a young age with an older partner. Early menarche was associated with women’s elevated odds of
having sex at a young age with an older partner, whereas religious attendance was associated with reduced odds. The combination of young age at first sex and having had an older partner was associated with especially high odds of teenage birth. Interestingly, females with partners 3-4 years older had greater odds of using contraceptives than those with similarly aged partners. Among males, early age at first sex, but not age difference, was associated with reduced contraceptive use and elevated odds of fathering a child as a teenager (Manlove et al., 2006).

According to the bivariate analyses, greater proportions of males and females who had first sex at a young age with an older partner, categorized their first sexual relationship as casual. A greater proportion of those females reported their first sexual relationship had been unwanted. In fact, one in four first sexual relationships between females younger than 16 and partners five or more years older were classified as non-voluntary (Manlove et al., 2006).

Sex in a casual relationship was associated with reduced contraceptive use at first sex for males and females. Unwanted first sexual experiences were associated with reduced odds of contraceptive use among females and greater odds of involvement in a teenage birth among males (Manlove et al., 2006).

These findings stress the importance of preventing early sex, regardless of partners’ age difference, and of preventing sex with an older partner, especially for females. The research suggests parents should monitor teens’ sex partners and intervene if a partner is much older or younger. The findings also underline the importance of culturally appropriate interventions for Hispanic and black families and communities to
address potential risks associated with sex at a young age and with older partners (Manlove et al., 2006).

Effective pregnancy prevention programs incorporate role-playing exercise to help teenagers negotiate decisions about whether to have sex and practice contraception with partners. This research suggests it may be appropriate to incorporate exercises on how to deal with the pressures from an older, higher status partner. Prevention efforts should attempt to reach teenager and adults, to educate them about the legal and ethical implications of age differences within sexual relationships (Manlove et al., 2006).

Family characteristics and teenage pregnancy

The next article focuses on the Hispanic culture and possible communication tendencies that may lead to increased teen pregnancies. Every year about 840,000 teen girls between the ages of 15 and 19 become pregnant in the U.S. Twenty-five percent of newly reported cases of STDs in the United States afflict teenagers. This dilemma has influenced countless research studies in the past. The Latino youth population is particularly at risk and accounted for 20% of AIDS cases reported in 2003. Research shows Latinos are less likely to seek preventative medical care and have limited access to health care and health education than people of other cultures. Research also shows parental communication may have a large impact on the incidence of teenage pregnancies. Previous studies on the association between parent-adolescent communication and sex in Latino families produced mixed results (Guilamo-Ramos et al., 2006).

There exists limited information on the content of parent-adolescent communication about sex in the Latino culture. Also unknown are the barriers to
effective communication about sex topics in the Latino family. Some studies have explored communication with female adolescents, but not male adolescents. This study was conducted to examine the content of Latino families’ communication about sex, identify any barriers to talking about sex and determine whether culture or the inner-city environment effects communication about sex (Guilamo-Ramos, Dittus, Jaccard, Goldberg, Casillas, & Bouris, 2006).

No framework was directly mentioned in this study. However, this study was part of a five-year project called the Linking Lives Health Education Program. This is a sexual risk reduction program aimed at Dominican and Puerto Rican families in the South Bronx of New York. This program helped guide the research in the study. Also, two studies cited in this article show that focus groups can be very useful in exploratory research. They can help identify themes and provide sources of complex behaviors and thoughts. Therefore, the focus group method was used in this particular study (Guilamo-Ramos et al., 2006).

The targeted population in this study was Latino parents and adolescents living in an urban environment. Participants in the study were Latino families residing in the South Bronx that included sixth, seventh and eighth graders attending a public middle school. The participants were randomly selected from the total school population of about 500 students. Of the 82 selected families, 63 mother-adolescent couples chose to participate in the study. Families selected had to be of Latino origin and had to have a mother figure residing in the adolescent’s home. Participants had to attend a weekend focus group lasting between 1.5 to 2 hours at the school the adolescent attended. There were English and Spanish-speaking moderators at each focus group. An equal number of
male and female adolescents attended each group. Mothers attended one group while the adolescents attended a separate focus group (Guilamo-Ramos et al., 2006).

For the study, eight open-ended questions were delivered to the focus groups to explore the communication between the mothers and their adolescents. The dialogue was tape recorded and transcribed. Spanish dialogue was translated using a forward-backward system. Transcripts were examined for accuracy and themes were identified. Reliability checks and frequency counts were performed to demonstrate an overall agreement rate of 90% within the groups. The results to this study seem to be valid and reliable (Guilamo-Ramos et al., 2006).

The mothers’ focus groups resulted in the emergence of 5 themes. Three themes were associated with the content of communication about sex, and the other two were related to the process of communication. These themes were: (a) communicating the importance to wait to have sex, (b) communicating the consequences of sex to the adolescent, (c) the difficulties of conveying specific sex-related information to the adolescent, (d) type of discussion on sex can depend on the adolescent’s gender, and (e) the effect that culture and environment can have on the discussion about sex. The themes offered by the adolescents were very similar (Guilamo-Ramos et al., 2006).

The findings are as follows:

1. *Wait to have sex*. Most of the mothers agreed it was important to urge the adolescent to wait to have sex and stay focused on their studies. Some mothers said they urge daughters to save sex until marriage. For the most part, the adolescents agreed with mothers. The adolescents stated that the future could be ruined by having sex and that it was important to wait. The adolescents listed some reasons to wait: difficulties of
becoming a teenage parent, unable to finish school, forced to move out of parents’ house, and requiring welfare assistance (Guilamo-Ramos et al., 2006).

2. Discussing consequences. The mothers believed that teaching the teens the consequences of early sexual behavior was very important, and most mothers claimed they were comfortable doing this. Many mothers explained to their children ways to protect against the negative consequences if they were to have sex. They mostly spoke about condoms and oral contraceptives. Some mothers expressed uneasiness in providing condoms or birth control for fear that it may support premature intercourse. However, most mothers realized the consequences of adolescent sex are too great not to mention protection. Most of the adolescents stated they would listen to their mothers’ advice about the consequences and thought mothers should begin at an early age discussing this matter. While most reported that teen pregnancy should be avoided, only some adolescents spoke of STDs (Guilamo-Ramos et al., 2006).

3. Barriers to discussion about sex and contraception. Almost every mother reported discomfort in discussing the facts of intercourse and contraceptives. The mothers explained they and the adolescents were embarrassed talking about sexual behavior and cultural tradition makes the topic taboo. Some mothers believed they did not know enough of the issues facing their children and felt incompetent teaching them about sex. The adolescents all said they would feel embarrassed, ashamed and fearful talking to their parents about this matter. They believed their parents might perceive they were having sex, when, in fact, they were not. Adolescents suggested parents should not jump to conclusions; they should welcome open conversation and use language the
adolescent can understand or give the teens literature on the topic (Guilamo-Ramos et al., 2006).

4. Differences in gender. The mothers claimed that fathers should talk to sons and mothers should talk to their daughters about this topic. They were also more concerned about female pregnancy than their sons becoming fathers. Adolescents felt that parents were more lenient on sons rather than daughters. The teens also felt negative consequences were greater for girls than boys. They also felt male and female adolescents should be taught about every type of birth control and should each be taught about self control (Guilamo-Ramos et al., 2006).

5. Cultural background or urban influence? Most of the mothers expressed concern living in a country with such openness about sexuality (i.e. media, peer pressure and ease to buy condoms) and they felt this promoted adolescent sexual activity. Mothers also felt since their past Latino culture did not talk about sex in the home, they were not prepared to bring it up with their children. They also felt that “living behind closed doors” in apartments may promote adolescent sexual activity, compared to being outdoors frequently in the Dominican Republic. The adolescents did not speak about this theme in their discussions (Guilamo-Ramos et al., 2006).

The findings from this study provided information that previous studies were unable to provide. It was previously thought that Latina mothers did not talk to their children about sex. However, this study shows that Latina mothers do speak to their children about sex and are relatively comfortable expressing the need to wait to have sex, and communicating the consequences of early sexual behavior. Both mothers and adolescents wish to gain knowledge and skills to communicate about sex easier. This
study also shows a gender bias in the way Latina mothers discuss sex with adolescents (Guilamo-Ramos et al., 2006)

Latina mothers seem to realize the need to communicate about sex since they are living in a high risk, urban inner-city environment. Since they believe there is more sexual openness in the U.S., this poses a conflict with the appropriateness of sexual discussion they grew up with (Guilamo-Ramos et al., 2006).

The researchers recommend further studies conducted with Latino fathers and their perceptions on communication about sex to their children. They also recommend studies on more than these two Latino subgroups (Puerto Rican and Dominican). The researchers recommend health practitioners encourage Latino parents to increase their frequency and quality of discussion about sex to their children. They also recommend distributing written material on sex topics to Latino parents. Health care workers should work on breaking down the barriers to communication about sex within these families. Parents should also be urged to communicate about sex to males as well as females (Guilamo-Ramos et al., 2006).

The following research article also focuses on family communication as a means to encourage contraceptive use and prevent teenage pregnancies. Family planning clinics play an important role in the prevention of adolescent pregnancies in the U.S. These clinics treat many sexually active teens by providing STD testing, contraceptives, counseling, and help with other family planning issues. Much of the funding for these clinics comes from the federal government program, Title X of the Public Health Service Act, which was enacted in 1970. This act strongly urges the clinics to promote family communication and participation when minors seek family planning assistance.
According to the article, little is known of how these family planning clinics approach and promote the topic of family participation. This is an exploratory study that set out to determine the types of procedures these family planning clinics have for promoting family communication to service-seeking adolescents. No framework is mentioned throughout the research article (Jones, 2006).

A random sample of publicly funded clinics was selected from a database held by the Guttmacher Institute. According to the database, 2,442 clinics were eligible for the study. A total of 81 facilities participated in this exploratory study. These facilities were mostly Planned Parenthood clinics, health departments or hospital clinics. Each participating facility must have served at least 200 teen contraceptive clients in 2001. The sample excluded clinics in Texas and Utah because many clinics in these states were responsible by law to acquire parental consent if they were providing family planning services to minors (Jones, 2006).

A 12-page questionnaire was mailed to the various family planning clinics. The questionnaire included closed and open-ended questions regarding clinic characteristics, counseling policies and practices, community affairs, and actions to improve communication between the adolescent patient and their parents. Analysis of the responses included only frequency distributions. Cross-tabulations were performed only on the activities that the majority of clinics offered. Weights were not created, nor were statistical significance of the differences established (Jones, 2006).

The results indicated that almost 95% of the clinics routinely counseled the adolescents about the importance of communicating with their parents or guardians during a visit for contraceptives. Nearly 80% of the clinics reported counseling teens to
speak with their parents during any type of health service visit. Planned Parenthood clinics and health department clinics reported a higher incidence of urging teens to speak with their parents (97%) than other types of clinics (85%) (Jones, 2006).

Clinics that receive Title X funding reported a higher incidence of counseling teens to speak with their parents than did clinics that did not receive this special funding. Sixty-one percent of southern clinics reported counseling minors who were there for any type of visit, while 75-80% of clinics from all other regions reported teen counseling. Thirty-six percent of clinics reported counseling teens on the importance of parental involvement for visits regarding abnormal Pap tests, positive pregnancy tests or for clients at high risk (e.g. multiple sex partners, mental health problems, etc.) (Jones, 2006).

Only eight of the clinics in the study reported no type of information distribution on the importance of communication with parents. Eighty-four percent of the clinics reported distribution of pamphlets. The second common type of information distribution was appearing at health fairs or open houses. More than 50% of the clinics reported having a collection of materials at the site, posters, or information on a Web site. Forty percent of the clinics participated in radio ads, hotlines or newsletters (Jones, 2006).

Forty-three percent of the clinics reported a total of 72 educational programs that encouraged parental communication. The programs were categorized in several different types: child-centered, parent-centered and joint-centered (education aimed at both the minor and the parent). Child-centered programs were the most common type and focused on minors of all ages. Parent-centered programs were the second most common type of education. Sixty-six percent of the Planned Parenthood clinics offered education to other
health professionals to teach better methods of encouraging parent-child communication in their own clinics. Overall, each of the clinics in the sample offered some type of counseling/education on parent-child communication (Jones, 2006).

From these findings, one can conclude that U.S. family-planning clinics take parental involvement seriously. Each of the clinics report some form of parental communication encouragement, whether they are funded by Title X, or not. A wide range of activities to encourage parental involvement were reported, and this is good news. For the few clinics that reported limited activities, inadequate funding and/or staffing are probable reasons (Jones, 2006).

The researchers suggest further studies to be conducted on the type of education among U.S. family planning clinics (child-centered, parent-centered, or both). They also suggest further research on the reasons some clinics don’t encourage parental involvement (low funding, low staffing). They believe these clinics would profit from further research exploring the content, type, and various approaches to encourage parental involvement and determine which type minors and parents are most receptive to (Jones, 2006).

Over 400,400 teenage women give birth each year, representing an annual teenage birthrate of 4.2%, the highest of all developed countries in the world. Pregnant teens are more likely to receive late or no prenatal care, have a preterm delivery and low birth weight, increasing the risk of child developmental delay, illness, and mortality. Pregnant and teen mothers are also at exceptionally high risk for STDs and rapid repeat pregnancy. Studies have consistently documented that children of teenage mothers are more likely than children of older mothers to become teenage parents themselves, thus
perpetuating an intergenerational cycle. Using the Ecological Systems Theory, this study examined risk factors for teenage childbearing among a national sample of adolescent girls (Meade, Kershaw & Ickovics, 2008).

Data for this study came from the National Longitudinal Survey of Youth 1997. This is an ongoing survey that sampled adolescents who were born in the early 1980s and residing in the U.S. After restricting the sample to only those who were 13 or 14 years of age on December 31, 1996, there were 1,430 girls in the final sample. Round 1 of the survey took place in 1997. Trained interviewers visited these households and administered a screening interview that gathered the information. Adolescents were tracked and completed follow-up interviews yearly. Adolescents and parents were reimbursed $10-$20 for each completed interview (Meade et al., 2008).

At each interview, participants reported whether or not they had ever been pregnant, were pregnant in the past year, or were currently pregnant. Participants reported their first menstrual period, history of poor school performance, history of depression, history of delinquency and substance abuse. Parents reported the educational history of the biological mother, age of biological mother at first birth, number of children in the home, and parental marital status at the youths’ age of 2. The adolescents reported their degree of parental monitoring and their maternal relationship quality. The youth also reported the characteristics of their peers and whether they were more deviant (smoked cigarettes, gang activity, etc.) or were more inspiring (college plans, volunteer work, etc.). The participants also reported their dating history and their environmental characteristics, such as race and poverty. A combination of survival analysis, $x^2$ tests for categorical variables and $t$ tests for continuous variables and hierarchical Cox regression
analysis were used to derive the results. All analyses were conducted using SPSS for Windows 12.0 (Meade et al., 2008).

The study found daughters of teenage mothers were at a considerable increased risk for teenage childbearing compared with daughters of older mothers. Survival analysis found that maternal birth age was a significant predictor of teenage pregnancy across all developmental stages of adolescence. Daughters of teenage mothers were at least three times more likely than daughters of older mothers to have given birth (Meade et al., 2008).

Consistent with Ecological Systems Theory, individual, family, peer, and environmental factors predicted teenage childbearing, with each contributing significantly to the final model. Many risk factors were similar for all girls, regardless of maternal birth age. These shared risk factors were: poorer school performance, lower maternal education, parents not married at age 2, greater number of children in the household, dating in early adolescence, African American race, and a less enriching environment. A number of risk factors were predictive of teenage childbearing among daughters of teenage mothers only. These included: lower parental monitoring, more deviant peer norms, Hispanic race, and poverty. Interestingly, early age at menarche was a significant predictor of teenage childbearing among daughters of older mothers only (Meade et al., 2008).

This study supports the use of multidimensional approaches to pregnancy prevention. To be maximally effective, interventions must begin in preadolescence, before the exponential rise in teenage birthrates. Girls who are struggling academically might be targeted for individual-level intervention, including tutoring to improve school
performance. Teenage mothers may benefit from interventions that improve parenting practices, including greater parental involvement in their adolescents’ development. Mentoring programs, such as Big Brothers Big Sisters, that emphasize positive adult role models and supervise activities may be particularly helpful for daughters of teenage mothers. Prevention programs may also need to incorporate cultural-specific education and address life experiences unique to daughters of teenage mothers (Meade et al., 2008).

An expanding research base has shown families influence teenagers’ decisions about having sex and using contraceptives, and can, consequently, affect their risk of pregnancy and STDs. However, longitudinal research on the influence of family religiosity on adolescent sexual behavior has been limited. Although fundamental religious beliefs have been associated with reduced sexual activity in some studies, other research has found little or no relationship between the two. Relatively little research has examined the relationship between religiosity and contraceptive use, and the results generally have shown either no association or a negative association. The goal of this study was to gain a better understanding of whether and how family religiosity is associated with adolescents’ sexual behavior and contraceptive use. No framework is discussed in the article (Manlove, Logan, Moore, & Ikramullah, 2008).

For the study, data was used from the 1997 cohort of the National Longitudinal Survey of Youth (NLSY), a nationally representative longitudinal study of adolescents born in the U.S. in 1980-1984, who were aged 12-16 on December 31, 1996. In face-to-face interviews, the 8,984 respondents provided information on the timing and situation of their first sexual experience, on their contraceptive use at first sex and on family background measures. The adolescents were first surveyed in 1997 and annually
thereafter (continuing to the present). Also, one parent of each of the respondents, usually the biological mother, was interviewed in 1997 to gather information about parent religiosity. The sample for the study was limited to respondents aged 12-14 who reported in 1997 they had not had sex and who provided information on family mediators. The researchers examined sexual activity and contraceptive use at age 17, because at that age, most teenagers still live with their parents but many are also sexually active (Manlove et al., 2008).

The dependent variables include three measures of sexual activity and contraceptive use at age 17. These variables are, sexual activity at age 17, the number of opposite-sex partners the respondent has had in the past 12 months, and consistency of contraceptive use at age 17 among teens who have been sexually active in the past 12 months. Family religiosity was also measured based on the responses from the parents during 1997 interviews. These questions involve parental attendance at religious services, parental prayer, parental religious beliefs and familial religious activities. Also being measured are several family and peer characteristics that may mediate the relationship between family religiosity and the dependent variables. These measurements include parental monitoring and awareness of the adolescent’s activities, family routines, peers with positive behaviors (i.e. church attendance, involvement in extracurricular activities, intentions to attend college and volunteerism) and peers with negative behaviors (i.e. drinking, drug use, gang involvement and skipping school) (Manlove et al., 2008).

The researchers used bivariate generalized linear model analysis to examine whether measures of family religiosity and mediators are associated with sexual activity
and/or contraceptive use. The researchers used structural equation modeling for multivariate analyses. They estimated fit statistics to assess the acceptability of model fit, using cutoffs of 0.06 for the mean square error of approximation, 0.90-0.95 for the comparative fit index and 0.06 for the standardized root mean square residual (Manlove et al., 2008).

The results show sexually active teenagers take part in family religious activities less frequently, and report lower levels of parental monitoring and awareness, less frequent participation in family routines and lower levels of mother-adolescent quality, than teenagers who are not sexually active. Also, sexually active teens report fewer peers who attend church regularly or planned to attend college, and they report higher levels of all negative peer behaviors (Manlove et al., 2008).

Having multiple sex partners is associated with lower levels of maternal monitoring and awareness, a lower likelihood of wanting to imitate one’s mother and lower levels of positive peer behaviors. Sexually active teenagers who use contraceptives during each sexual encounter and those who are inconsistent users or nonusers did not differ on any measure of family religiosity (Manlove et al., 2008).

Family religiosity in early adolescent has both direct and indirect effects on adolescent sexual activity at age 17. Family religiosity is indirectly associated with sexual activity through measures of family and peer environments. The research found higher levels of family unity and positive family processes in more religious families. Adolescents from religious families tend to have peers who exhibit high levels of positive behaviors and low levels of negative behaviors (Manlove et al., 2008).
The researchers also found indirect effects are concentrated among females. More mediators (close parent-adolescent relationships, family activities and negative peer behaviors) were significantly associated with sexual activity for females. There was no direct effect of family religiosity on teenagers’ number of sexual partners or contraceptive consistency. In fact, among sexually active males, family religiosity has a direct negative effect on contraceptive consistency (Manlove et al., 2008).

The study also found that both positive and negative peer environments are related to adolescent sexual and contraceptive use outcomes. Negative peer behaviors are related to a greater risk of sexual activity and an earlier age at first sex among sexually experienced teenagers, reinforcing findings from previous research. They also found an association between positive peer behaviors and having fewer sexual partners (Manlove et al., 2008).

Parents should recognize that monitoring and staying aware of their children’s activities, engaging their families in regular activities and nurturing strong parent-teenagers relationships can help decrease the odds that their children will engage in risky sexual behaviors. Parents can also help by monitoring their adolescents’ peers and promoting a positive peer environment (Manlove et al., 2008).

Programs also play a role. Pregnancy and STD prevention programs are more and more incorporating parental involvement to help parents communicate with their children. Future development and evaluation of parental involvement aspects of these programs, as well as ample funding for these initiatives, may help reduce high rates of teenage pregnancy and STDs in the U.S. (Manlove et al., 2008).
Religious organizations should understand their potential role in reducing adolescent sexual activity. In addition to discouraging sex outside of marriage, religious organizations may reduce risky sexual behavior by promoting opportunities for parents and teenagers to interact in activities, promoting stronger family cohesion and potentially increasing awareness of peer networks (Manlove et al., 2008).

*Services and programs for teenage pregnancy prevention*

The next article focuses on a school program created to encourage contraceptive use as well as abstinence. There are many high school programs that attempt to educate students about the reality and risks of teenage pregnancy. One such program, the Baby Think it Over (BTIO) program, involves a computerized infant that is designed to react with unpredictable behavior just as a real infant would act. The students are to care for the baby simulator for a time and this is thought to deter the teens from having sexual intercourse. While this is a popular and widespread type of program, little is known about the true effects it has on the students. Also, it is unknown whether the benefits of BTIO outweigh the cost ($250–$500 per baby). The purpose of this study was to examine whether the BTIO program actually changes the attitudes and actions of teens. No framework for the study is mentioned in the article (Somers & Fahlman, 2001).

The target population in this study was teens that participate in the BTIO program through schools, both nationally and internationally. The sample consisted of an experimental and a control group. The experimental group had 151 participants from three high schools. The students all enrolled in a class that participated in the BTIO program. There were 11 males, 133 females, and 7 students that did not disclose their
gender. The average age was 15.98 years, and they were evenly divided between 10\textsuperscript{th}, 11\textsuperscript{th} and 12\textsuperscript{th} grades (Somers & Fahlman, 2001).

The control group consisted of 62 students from one high school. The students were chosen from a social studies class and would not otherwise participate in the BTIO program. There were 23 males, 36 females and 3 students that didn’t disclose a gender. The average age was 16.76 and the students were evenly divided among 11\textsuperscript{th} and 12\textsuperscript{th} grades. Each of the high schools lies in suburban areas of a large Midwestern city. Students from both groups were mostly white and middle class (Somers & Fahlman, 2001).

Questionnaires were developed using previous data collection instruments by the authors. All students were given pre-tests before the BTIO program was initiated. Approximately 10-12 weeks after the pre-test, after each of the experimental students cared for the baby simulator, a post-test was administered. To measure sexual attitudes of the students, a 20-item five-point scale portion was administered during class. In order to measure sexual behavior, a shorter version of the Sex Knowledge and Attitudes Test for Adolescents, developed in 1990 by Leif, Fullard and Devlin, was administered. This portion contained ten questions inquiring about the students’ frequency of different sexual behaviors. An additional portion asked about such things as students’ age at first sexual intercourse and future plans regarding sex. The post-test also contained a separate narrative page that asked how the students’ felt the BTIO program affected their outlook and attitude (Somers & Fahlman, 2001).

The attitude portion of the test included Cronbach alpha coefficients and Spearman-Brown corrections for pre and post-tests. The Spearman-Brown formula did
project internal consistency. For the behavior portion, Cronbach’s alpha coefficients were consistent showing .88 on the pre and post-tests. The additional portion of the tests showed a pre-test alpha score of .86 and post-test alpha score of .88 demonstrating internal consistency. To determine if the uneven balance of males and females skewed the results, one-way ANOVAs were conducted. This showed no significant differences in the results due to unbalanced genders groups. Two separate MANCOVAs were conducted; one on the experimental group and one on the control group. The first test indicated that the assumption of homogeneity of variance was not violated. The second MANCOVA score indicated that the assumption was violated. The authors warn that these results should be read with caution (Somers & Fahlman, 2001).

The results of each of these MANCOVA scores show no significant differences between the pre-tests and post-tests. On the additional portion of the questionnaires, a mean comparison test was performed. Again, the results yielded no significant change from pre-test to post-test for the experimental and control group. The narrative portion of the questionnaire showed that 79% of the experimental group believed the BTIO program made them either more concerned or completely afraid of becoming a teen parent. However, 21 students felt the program did not affect them at all and one teen claimed it made them want to become a teen parent (Somers & Fahlman, 2001).

Several limitations to this study were listed by the authors. They claim that the questionnaire could use further development. Or, perhaps, the teens would benefit from a longer time period with the baby simulators (they only spent three days and two nights with the infants). The sample was primarily white and middle class. Perhaps the simulators would bring better results to other cultures or economic classes. They also
point out that the gender imbalance could have skewed the results. The teens’ teachers note the possibility that students did not treat the simulators as real babies (Somers & Fahlman, 2001).

It is, however, possible this program just does not have the desired effect on the teens. Simply caring for an infant simulator for 3 days may not be enough to change the teens’ attitudes or behaviors when it comes to adolescent pregnancy. The authors recommend further research on this topic with an attempt to control for the many possible flaws (Somers & Fahlman, 2001).

This second article also touches upon the issue of teens’ access to health care. It studies an issue related to the growing trend of health care access within schools.

There are approximately 800,000 American adolescents that become pregnant each year. Greater than 75% of these pregnancies are unwanted and are due to no contraceptive use or misuse of the contraceptive. Abortions account for the ending of approximately 33% of these pregnancies. According to the researchers, emergency contraception has the power to deeply reduce the number of unwanted adolescent pregnancies (McCarthy, Telljohann, Coventry, & Price, 2005).

Surveys show adolescents are not aware of emergency contraception and, therefore, often do not seek it. Many adolescent health care providers claim they know about emergency contraception but fail to educate their patients about the drug. School-based health care clinics could be an effective means to educate adolescents about contraceptives and/or emergency contraception, and give referrals and prescriptions. The purpose of this study was to examine how many school-based health centers in the U.S.
give education, referrals and/or prescriptions for emergency contraception (McCarthy et al., 2005).

The researchers briefly discussed the use of the Stages of Change Model (Prochaska & Velicer, 1997) to guide their study. This model was initially developed to assess a person’s willingness to change a behavior. More recently the model has been used to assess an organization’s willingness to change concerning emergency birth control. Perceived benefits and barriers to change are also examined (McCarthy et al., 2005).

The population consisted of health centers within public high schools across America. A mailing list from a professional marketing service was used to identify these health centers. Any schools with students under grade nine were exempt from the study. There were 364 centers contacted to participate, and 250 centers returned a complete questionnaire. The sample represented 36 states around the country, including the District of Columbia. Questionnaires were sent through the mail and completed at the health centers (McCarthy et al., 2005).

A 19-item questionnaire set in a four-page booklet was sent to these health care centers. The questionnaire was developed by the researchers and included questions regarding how emergency contraception was handled, perceived barriers, characteristics of the school and who was completing the form (McCarthy et al., 2005).

Two experts on emergency contraception and two experts on the Stages of Change Model evaluated the questionnaire to promote content validity. A test-retest was completed to determine the reliability of the survey. This was done using 24 high school health centers found on the National Assembly on School-Based Health Care Web site.
Nineteen centers completed the test and re-test to give a general percentage agreement of 92% (McCarthy et al., 2005).

Other instruments and analyses included the calculation of frequencies, cross-tabulations, logistic regression using SPSS version 10.0, multivariate logistic regression, a check for multicollinearity, and Nagelkerke’s R2 (McCarthy et al., 2005).

The surveys indicated that 60% of the centers provided education regarding emergency contraception while 59% gave referrals. Thirty percent of the centers supplied the students with prescriptions (McCarthy et al., 2005).

Most of the centers identified the prevention of pregnancy (75%) as their leading benefit. The second benefit was the ability to help students with contraception methods (70%). The third and fourth most perceived benefits were greater access to emergency contraception (69%) and an increased probability of students using them if desired (65%). Others mentioned were an increased awareness of emergency contraception, and offering an effective and safe method (McCarthy et al., 2005).

The barriers to offering emergency contraception services included parental opposition and pills considered as a form of abortion (50%). The concern that emergency contraception would encourage adolescent sexual behavior (33%) and that it would decrease traditional contraceptive use (25%) were also perceived barriers to offering this service (McCarthy et al., 2005).

Centers that reported higher odds that students would use the emergency pill had a higher prevalence of education, more opportunities to discuss contraception, and they offered general reproductive services (McCarthy et al., 2005).
The health care centers that reported pregnancy prevention had higher odds of providing referrals for the pills. Some school policies didn’t allow these referrals so, obviously, their odds of offering referrals were very low. Also, the schools that had staff objections to these pills, were not located in the Western region, were found in rural settings and had lower odds of providing referrals (McCarthy et al., 2005).

The centers that provided pregnancy prevention and offered reproductive services had elevated odds of writing prescriptions for the emergency contraceptive. Centers with low odds of ever distributing these prescriptions were the centers that sited concern that it is a form of abortion, and had concern about legal responsibility. The centers situated in the Northeast or South and those centers whose main funding source was the school system were also less likely to provide prescriptions (McCarthy et al., 2005).

The findings suggest a few points:

1. The staff at these centers recognized education is related to the use of emergency birth control.
2. The centers having the opportunity to discuss different contraceptives are determined to prevent adolescent pregnancy and not just in emergency situations.
3. Many misconceptions and confusions exist regarding emergency pills and the way they work. With the proper education about this method, the odds increase that more centers will provide or prescribe this method.
4. Centers in the West may tend to be more liberal regarding emergency contraception compared to centers in other regions of the U.S.
5. Centers in rural America had decreased odds of providing referrals than those in urban or suburban areas. Students from small towns may be concerned that their parents or friends would find out about their contraceptive use.

6. The researchers suggest further studies should examine the specific reasons some centers sited liability as a barrier and the reasons some staff object to offering referrals (McCarthy et al., 2005).

To help adolescents have greater access to contraceptive methods, outreach and educational efforts should be attempted to make certain staff at these health centers are delivering a wide array of reproductive services to the adolescents. This access can be greatly enhanced if more centers were willing to prescribe this method of contraception (McCarthy et al., 2005).

Public family planning facilities are essential to the access of reproductive health services, particularly to women who are teenagers, unmarried or without private health insurance. The number of Planned Parenthood sites and local health department clinics are declining and the adequacy of public facilities has recently been questioned. Family planning services are an essential answer to the constant problems of unintended and teenage pregnancy. Although studies have generally suggested public family planning programs lead to reduction in unplanned pregnancies, births, and infant mortality, few researchers have associated specific characteristics of facility accessibility to reproductive outcomes. The purpose of this study is to test the hypothesis that greater geographic access to family planning facilities is linked with lower rates of unintended and teenage pregnancies. No framework is discussed in this article (Goodman, Klerman, Johnson, Chang, & Marth, 2007).
For this study, data was used from the 1999 and 2000 Pregnancy Risk Assessment Monitoring System (PRAMS) from four states in the U.S. These states include: Alabama, Ohio, Oklahoma and Washington State. Surveys were sent to mothers 2 to 6 months after delivery through mailings and telephone follow-up. The sample sizes vary from 1,175 to 1,822 in 1999 and from 1,553 to 1,960 in 2000. There are two cohort groups. The first group is the unintended pregnancy cohort and the second being the teenage pregnancy cohort. For the later cohort, mothers were aged 15-17 in the year 2000 (Goodman et al., 2007).

The geographic availability of family planning services for the years 1999 and 2000 are studied. Only four states (Alabama, Ohio, Oklahoma and Washington) are used for this information. Data on public family planning facilities were obtained by a broad census of sites in the four states, starting with lists provided by the federal Office of Family Planning, Bureau of Primary Health Care, and Bureau of Indian Affairs, and the American Hospital Association. The websites for the National Women’s Health Resource Center and Planned Parenthood were also used for data. Six measures of geographic availability were developed. The first two are travel times from the cohorts’ zip code to the nearest family planning facility and to the nearest Title X facility. The third and fourth measures are the presence or absence of any family planning facility or a Title X-funded facility in the residential area. The fifth and sixth measures are the availability of private physicians providing services, by calculating the physician-to-population ratios for primary care physicians and for OBGYNs (Goodman et al., 2007).

Unintended births were examined using logistic regression in SUDAAN with a separate model for each of the six measures of geographic accessibility. The unit of
analysis was the PRAMS sampled birth. The two dependent variables, mistimed and unwanted births, are represented separately and combined as unintended pregnancies. Teenage births were analyzed using a Poisson model. The unit of analysis was the race-ethnicity zip code strata and the dependent variable was the number of live births to teenage women. Reliability was not reported (Goodman et al., 2007).

The largest proportion of the 725 family planning facilities is in local health departments sites (32%), followed by federally qualified health centers (31%), Planned Parenthood sites (13%), hospitals and other sites (24%). Forty-nine percent of the facilities receive Title X funding. Most study women reside within a short driving distance of a publicly available family planning facility. Overall, 83% of women in the PRAMS cohort and 80% in the teenage cohort live within 15 minutes or less of a facility and virtually no women live more than 30 minutes away (Goodman et al., 2007).

There is no significant relationship between the geographic accessibility of family planning facilities and the risk of unintended pregnancies. This lack of association is true for all facilities, including those funded by Title X (Goodman et al., 2007).

Risks of teenage pregnancies are significantly lower with further distance from family planning sites. For example, teens living more than 30 minutes from the nearest facility are 26% less likely to become pregnant. Similar significant associations are noted with an absence of a facility in the zip code of residence. The supply of OBGYNs and primary care physicians is not significantly associated with decreased teen pregnancies. In fact, a higher supply of OBGYNs is associated with a higher relative rate of pregnancy (Goodman et al., 2007).
Although in much of the 20\textsuperscript{th} century the absence of family planning facilities was undeniably associated with unintended births, the passage of the Family Planning Act in 1970 and the availability of Medicaid funds for family planning services have made family planning services more widely available. This study indicates that these programs have resulted in higher levels of geographic access and that long travel times may no longer contribute to unwanted or teenage births. These results do not mean that family planning facilities are ineffective or that geographic access is not important. Instead, they indicate that geographic access is not a barrier, across the range of access present in these four states. Further efforts to reduce unplanned pregnancies must look beyond simply increasing the number of sites to other factors that improve the utilization of contraceptive services (Goodman et al., 2007).

The final research study set out to answer the question, “What public services do teenage mothers use and what are their costs in the decade after the major policy changes to public assistance programs?” If teenage unintended pregnancies can be avoided, women are more likely to achieve their life goals and infant birth outcomes will likely improve. In turn, costs for Medicaid and other public services should be reduced (Adams, Gavin, Ayadi, Santelli, & Raskind-Hood, 2009).

An older study of the costs of teenaged pregnancy estimates them at nearly $7 billion in 1993. These costs include public assistance benefits, welfare and food stamps, medical expenses, as well as lost tax revenues. Both the 1996 welfare reform and later changes to the Medicaid program have affected the access of low-income adolescents to public assistance programs. In turn, these changes have affected teenaged mothers and
their infants and the costs that taxpayers incur in the 50 states. No framework was discussed in this article (Adams et al., 2009).

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a state-level, population-based surveillance system that uses 52 core questions to assess maternal behavior, experiences, and insurance coverage before and during a woman’s pregnancy and during the early infancy of her child. New mothers are randomly selected monthly from birth certificates by stratified systematic sampling. Mothers under than 20 years old at the time of birth are used for the sample. A comparison group of mothers age 20 to 24 years old were also used for the study. Sampled mothers are sent a self-administered questionnaire two to six months after delivery. State sample sizes range from 1,300 to 3,000 women annually. Survey weights are provided for analysis; measures of variance are adjusted for the complex sampling design (Adams et al., 2009).

Questions used from the PRAMS data ask the mothers about their use of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), use of Temporary Assistance for Needy Families (TANF), welfare, public assistance, food stamps and Supplementary Security Income (SSI). Questions are asked about the mothers’ main source of income and how their prenatal care and delivery were paid for. Answers ranged from Medicaid, to private/other, and uninsured. Reliability was not reported (Adams et al., 2009).

Among all teenaged mothers (<20), the percentage of services use range from a low of about 18% for cash assistance to a high of 85% for WIC benefits during pregnancy. The resulting average costs per teenage mother are $117 for cash assistance and $322 for WIC. Costs are averaged over users and nonusers and, therefore, combine
the effects of rates of use and costs per user. Medicaid coverage is the highest cost service per user and almost 73% of teens report Medicaid at delivery in 2001 (Adams et al., 2009).

Younger teens (<16 years) are more likely to use each of the public services than other teens and mothers 20 to 24 years old. However, the average costs for all public services are not especially different for teens <16 years ($6,270) versus those age 18 to 19 years ($6,219). Teenage mothers are more likely to report using at least one service (53%) than older mothers (35%). PRAMS data indicate 64% of teenaged mothers and 45% of older mothers were in households with incomes under $16,000. The greatest difference was in WIC nutritional counseling services; 85% of all teenage mothers versus 64 percent of older mothers report use. Total public service costs per teenage mother equal $6,349 or almost $1,500 more than older mothers. Medicaid costs for all teen mothers in the study states are $5,555 versus $4,269 for older mothers (Adams et al., 2009).

There is wide state variation in use rates and total costs. The lowest Medicaid costs occurred in upstate NY (excludes NYC) at $3,630 per teen mother, and 42.9% of teen mothers report using Medicaid coverage. The highest Medicaid costs per teen mother are in WV ($7,001), AK ($6,913), and NC ($6,964). In each study state, teenage mothers are more likely to use public services than older mothers, but patterns vary by state (Adams et al., 2009).

These estimates provide new information concerning the extent of teen pregnancy costs, the importance of medical expenses, and state variation. It also points to a significant difference in the costs of these public services for teenage mothers and
mothers in their early twenties. Data indicate that these costs exceed $0.5 billion in the first year alone. If this spending occurs in other states, total ‘birth year’ costs for these public services could easily exceed $2.5 billion per year. Data indicates that if all of the teen births in the study were postponed, $90 million in public costs would be avoided in one year in these ten states alone. All teen pregnancies will never be prevented, but implementing and evaluating programs aimed at reducing unintended teen pregnancy is a top public health objective (Adams et al., 2009).

The role that Medicaid coverage plays is striking; its costs account for almost 90% of all ‘birth year’ costs per teen mother. This finding may not have emerged in earlier studies because Medicaid coverage for pregnant women was greatly expanded in the 1980s and coverage of adolescents was expanded in 1997 (Adams et al., 2009).
Chapter III

Methodology and Procedure

Introduction

More than 75% of the 800,000 American teen pregnancies every year are unintended. These are due to a failure, or incorrect use of, contraception (McCarthy, Telljohann, Coventry & Price, 2005). Research tends to focus on the trends of adolescent sexual intercourse and not on contraceptive use (Santelli et al., 2006). More research is needed that focuses on factors leading to adolescent contraceptive use. With a better understanding of adolescent contraceptive use, nurses can identify strategies that promote consistent contraceptive use among adolescents. The purpose of this study is to determine whether adolescent mothers face barriers to effective contraceptive use and what attempts were made, if any, to overcome these barriers. This study is a replication of Breheny and Stephen’s 2004 study.

Research Questions

Two questions will guide this study.

1. Do/did adolescent mothers face barriers to effective contraception before or since the birth of their children?

2. Do/did adolescent mothers utilize strategies to overcome barriers to contraceptive use?
Population, Sample and Setting

The population being studied includes American women that have experienced an unintended pregnancy and subsequent childbirth as an adolescent. The sample will include approximately 10 women from central Indiana that experienced an unintended pregnancy and childbirth as an adolescent. The women will be under 20 years of age and must have given birth within the past 18 months. These women will be notified of the study through their obstetrician offices, new mother groups, local newspapers and flyers posted in physician waiting rooms. The study interviews will likely take place in each woman’s home.

Protection of Human Subjects

This study will be submitted for approval by the Institutional Review Boards of Ball State University and any medical facilities or clinics involved in the study. Consent is assumed when the patient calls the phone number given and arrives for the interview. The study is voluntary to protect the rights of the participants. Each participant’s name will remain anonymous and no risks have been identified to participating in the study. The study will be briefly explained on the flyers posted in the OB clinics. Further explanation will be given over the phone and detailed written information will be handed to the participants at the time of the interview. Benefits to the study include more detailed, in-depth information regarding the non-use or misuse of contraceptives within the teenage population. This information will likely be used to tailor pregnancy prevention efforts and contraceptive access to prevent future unwanted adolescent pregnancies.
Procedure

Each woman will be interviewed in her home by a trained and certified interviewer. A semi-structured interview format will be followed to induce an open and relaxed atmosphere and to allow the women to unreservedly speak about their experiences. The same interviewer will conduct each interview session to promote reliability. The discussion will center on the women’s contraceptive experiences, however, other issues may be discussed. The women’s contraceptive practices before and after childbirth is the focus of the study. Contraceptive practices after childbirth may shed some light on the risks of rapid repeat childbirth. Demographics such as age, ethnicity, number of pregnancies, living situation and age at first pregnancy will be collected.

If the subjects allow, the interviews will be audio-taped and transcribed. To promote content reliability, the women will be sent a copy of the transcription to make any comments or changes to their answers. The subject will be given $15 for their time and participation in the study. If budgeting allows, a pilot study will be conducted before the actual study to ensure reliability of the questions asked in the interviews.

Research Design

This study will employ a qualitative case-study design using a grounded theory strategy. According to Rowan and Huston, qualitative research is “designed to observe social interaction and understand the individual perspectives,” and “provides insight into what people’s experiences are, why they do what they do, and what they need in order to change” (1997). A qualitative study is important to explore the adolescents’ perception of contraception barriers and their individual experiences with teen pregnancy. The case
study design is helpful to explore this complex issue and to extend and strengthen what is already known about adolescent pregnancy and contraception use. A grounded theory strategy aims to discover the thought processes and interactions of a certain population and aims to develop a theory about the interactions being discussed (Rowan & Huston, 1997).

Instrumentation

To guide the interviews, 15 open-ended questions will be developed and presented to the subjects. The questionnaire will be developed using Icek Ajzen’s paper on constructing a questionnaire based on his Theory of Planned Behavior (Ajzen, 2006). A tape-recorder will also be used with every subject, if they allow, to transcribe the interviews at a later date.

Measures of Data Analysis

After all interviews are conducted, recurrent themes will be extracted from the interview answers. This will be done by an expert panel of researchers, including the authors to promote content validity. The panel will identify reasons for use and non-use of contraceptives before and after childbirth. Commonalities between the subjects’ answers will be identified. Strategies used by the women to overcome contraception barriers will be organized into themes.

Summary

The intent of this study is to give the medical community more information regarding teen contraceptive use and ways to prevent future teen pregnancies. The results of the study may open up more specific areas needed for research and may shed some light on how to create more effective pregnancy prevention programs in the community.
U.S. teenage birthrates have declined since 1991 but the numbers continue to surpass those of other developed countries (Santelli et al., 2006). These adolescent women are a valuable source of information as to why this is so. With a qualitative case study of this nature, perhaps the solutions will expound.
## Literature Review Table

<table>
<thead>
<tr>
<th>Source</th>
<th>Problem</th>
<th>Purpose</th>
<th>Sample</th>
<th>Frameworks/Concepts</th>
<th>Design</th>
<th>Instruments</th>
<th>Results</th>
<th>Implications</th>
</tr>
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<tbody>
<tr>
<td>Kahn, Brindis &amp; Glei (1999)</td>
<td>Access to contraceptives has become more crucial for teens because many are sexually active at younger ages than in the past</td>
<td>To estimate the number of U.S. teen pregnancies per year that are prevented by contraceptive use</td>
<td>651 adolescent women (age 15-19 in 1995), non-institutionalized, civilian who had ever had sexual intercourse</td>
<td>No framework is mentioned</td>
<td>Quantitative, descriptive, correlational, predictive</td>
<td>National Survey of Family Growth</td>
<td>Contraceptives prevent approx. 480,000 live births, 390,000 abortions, 120,000 miscarriages, 10,000 ectopic pregnancies and 37 maternal deaths every year; if access to contraceptives were reduced teen preg. rates and STD transmission would increase substantially</td>
<td>Access to reproductive health services continues to be important for teens in all socioeconomic groups, but especially for those who may not be able to pay for such services and supplies; reinforces the importance of continuing education, counseling and support services to assist teens in contraceptive choices</td>
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<tr>
<td>Manlove, Ryan &amp; Franzetta (2004)</td>
<td>Most teen pregnancies are unintended, partly due to inconsistent or no use of contraceptives.</td>
<td>To examine contraceptive use in teen relationship, examine relationship characteristics that lead to poor contraceptive use.</td>
<td>1,468 adolescents that reported 2-10 lifetime sexual partners; unmarried and in grades 7-12 in 1995.</td>
<td>No framework mentioned</td>
<td>Longitudinal descriptive, analytical, hypothesis-testing</td>
<td>National Longitudinal Study of Adolescent Health</td>
<td>Having a physically violent partner is associated with decreased consistency of contraceptive use among females, females with more lifetime partners is associated with decreased off of always using contraception, males with higher cognitive test scores have a greater incidence of contraceptive use, only half of teens report discussing</td>
<td>More preg. prevention programs should add booster sessions to help sustain positive outcomes over time, programs should address communication and power issues in relationships which may compromise negotiating skills</td>
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**Concepts:** Teen pregnancy, contraceptive use, birth control, personal relationships, STDs

**Designs:** Quantitative, descriptive, correlational, predictive

**Instruments:** National Survey of Family Growth, National Longitudinal Study of Adolescent Health

**Results:** Contraceptives prevent approx. 480,000 live births, 390,000 abortions, 120,000 miscarriages, 10,000 ectopic pregnancies and 37 maternal deaths every year; if access to contraceptives were reduced teen preg. rates and STD transmission would increase substantially.

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**Access to reproductive health services continues to be important for teens in all socioeconomic groups, but especially for those who may not be able to pay for such services and supplies; reinforces the importance of continuing education, counseling and support services to assist teens in contraceptive choices.**
<table>
<thead>
<tr>
<th>Candidate</th>
<th>Summary</th>
<th>Methods</th>
<th>Concepts</th>
<th>Data Source</th>
<th>Findings</th>
<th>Recommendations</th>
</tr>
</thead>
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<tr>
<td>Santelli et al (2006)</td>
<td>Teen birthrates have surprisingly declined since 1991 but researchers are unsure exactly why; trends in teen contraceptive use have not received much attention. Explore pregnancy risk and contraceptive use over time among sexually active high school students between 1991 and 2003; The male sample ranged from 2,129 to 3,204 U.S. high school students per year. No framework mentioned; Concepts: contraceptive use, teenage pregnancy, teen birthrates, dual-method contraception. Longitudinal, quantitative, descriptive, retrospective. National Youth Risk Behavior Survey. Between 1991 and 2003 the proportion of sexually active high school students that reported using withdrawal or no method of contraception at all declined from 19% to 11%; the proportion who use condoms increased from 38% to 58%; the risk of pregnancy among sexually active high school females declined 21% between 1991 and 2003; contraceptive use showed an obvious difference between grades-in 2003 67% of 9th and 10th graders used condoms while only 56% of 11th graders and 49% of 12th graders reported condom use; use of hormonal contraception has shown little change. U.S. teens continued to face barriers to accessing health care services; the U.S. has made progress toward improving contraceptive use among teens with continued room for improvement; if non-users would use any method, this would greatly reduce teen preg. rates even further; promoting dual use (condom and pill) would reduce risk of preg. and STDs.</td>
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<td>Manlove, Terry-Humen, Ikramullah (2006)</td>
<td>One in four 16 year olds have had sexual intercourse; sex at a young age and with an older partner. To examine teens whose first sex was at a young age and with an older partner. Overall sample of 1,838 females and 1,426 males aged 18-24. No framework mentioned; Concepts: young teens, older sex partners, unintended. Analytical, predictive correlational; hypothesis-testing. 2002 National Survey of Family Growth. Hispanic males and females, black males and those that lived at age 14 with no Reinforce the importance of preventing early-age sex, and preventing sex with an older partner.</td>
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partner has been associated with an increased risk of teen pregnancy and STDs

pregnancy, STDs, reproductive health, family characteristics, individual characteristics

biological parent had higher odds of having sex at a young age with an older partner, early menarche was linked to having sex at a young age with an older partner, first sex at a young age for males was linked with reduced contraceptive use and increased odds of teenage fatherhood

parents should monitor teens’ partners and intervened is a partner is much older; efforts should be made to reach teens and adults to educate them on the legal and ethical issues of age differences in sexual relationships

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| Guilamo-Ramos et al (2006) | Latino parents discuss sexual topics with their children less often than parents from other ethnic groups; communication about sex in Latino families is not well understood; Latino youths may be particularly at risk for teen pregnancies and STDs | To better understand parent-adolescent communication about sex in order to inform the design and development of a parent-based intervention for urban Latino families | 63 adolescent-mother pairs recruited from a South Bronx public middle school | No framework mentioned Concepts: adolescent sexual behavior, Latino families, mother-adolescent communication | Qualitative ethnographic, focus group | Semi-structured interview guide, Linking Lives brochures | Latina mothers appear open to discuss certain aspects of sex with their teens; mothers expressed relative comfort with communicating the need to wait to have sex and the risks associated with having sex; Latina mothers also indicated a desire to gain the knowledge and skills necessary to address these topics | Nurses should recognize communication differences between Latinos and other groups; intervention development should focus on assisting Latina mother and teens overcome barriers to parent-adolescent discussion about sex; parents’ concern that talking about sex and contraception will encourage their teens to
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<tr>
<th>Source</th>
<th>Focus</th>
<th>Methods</th>
<th>Framework</th>
<th>Concepts</th>
<th>Sample Size</th>
<th>Results</th>
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<tr>
<td>Jones (2006)</td>
<td>Little is known about how family planning clinics encourage parent-child communication for minors seeking services. This is mandated in clinics that receive Title X funding.</td>
<td>This study presents information about family planning clinics and their focus on programs and policies that improve and promote parent-child communication.</td>
<td>No framework mentioned.</td>
<td>Parent-child communication, family planning clinics, parenting, contraception,</td>
<td>81 family planning facilities that are publicly-funded and serve &gt;200 adolescent contraceptive clients in 2001.</td>
<td>Clinics that received Title X funding had higher rates of counseling teens about speaking to their parents, only eight clinics did not distribute information aimed at improving communication between teens and parents, counseling was the highest reported approach to encourage communication.</td>
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<td>Meade, Kershaw &amp; Ickovics (2008)</td>
<td>Studies consistently show that children of teen mothers are more likely than others to become teen mothers themselves.</td>
<td>Examine the rate of childbirth across the teen years; identify predictors of teen childbirth and determine whether maternal age continues to be a significant risk of teen pregnancy.</td>
<td>1,430 adolescents, 13 or 14 years old on December 31, 1996 and living in the U.S.</td>
<td>Ecological Systems Theory, Teenage motherhood, teenage childbearing, intergenerational cycle, risk factors</td>
<td>Consistent with the Ecological Systems Theory, maternal birth age was a significant predictor of teen pregnancy across all developmental stages of adolescence; daughters of teen mothers were more than three times as likely to have given birth compared to daughters of older mothers; several other risk factors were associated with teen preg., such as poor school performance, low maternal education, parent unmarried at age 2, larger #</td>
<td>The most effective interventions must begin in pre-adolescence; girls who are academically struggling should be targeted for direct intervention, including academic tutoring; teen mothers might benefit from interventions that improve parenting practices that teach them to have greater parental involvement in their adolescents’ development; mentoring programs for daughters of teenage mothers that emphasize mentoring.</td>
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Manlove et al (2008) | Few studies have examined how family religiosity is linked to teenage sex and contraceptive practices | To obtain a better understanding of how family religious practices is linked to adolescent sex and contraceptive practices | 1,722 adolescents for analyses on number of sexual partners, 1,465 for analyses of contraceptive use; all had sex by age 17 and were between ages 12-16 on December 31, 1996 | No framework mentioned | Non-experimental, correlational, analytical | 1997 National Longitudinal Survey of Youth | There is a negative association between family religiosity and adolescent sexual activity; many indirect effects had a negative association as well, such as: positive peers, close parent-adolescent relationships, family activities and parental monitoring; family religiosity was indirectly associated with having fewer sex partners and using contraceptives consistently; higher levels of family cohesion and positive family processes were more likely in the religious families; negative peer behaviors were associated with increased risk of sexual activity and an earlier age for first sex | Parents should see that monitoring and being aware of their adolescents’ activity and friends produce stronger parent-child relationships and reduce odds they will partake in risky sexual behaviors; development of pregnancy and STD prevention programs should include parental involvement components to reduce rates of teen preg. and STDs; religious organizations should recognize their potential in reducing odds of teen pregnancy and decreasing risky sexual behavior in adolescents
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<td>Somers &amp; Fahlman</td>
<td>Over ½ of U.S. teens have had sex in their lifetime and almost 10% have had sex by age 13. In 1999, 42% of sexually active high school student reported not using a condom during their last sexual intercourse; For the last 20 years U.S. teens have led the world in rates of pregnancy, abortions and births</td>
<td>To determine if the Baby Think It Over program changed high school students’ attitudes towards sex and contraceptive use (This is a program designed to simulate parenthood for the high school student)</td>
<td>151 high school students in experimental group and 62 in control group, not randomly assigned; primarily white and middle class with an average age of 16.2</td>
<td>No framework mentioned Concepts: Teenage parenthood, teen pregnancy, sex education, simulation activities, stress management</td>
<td>Quasi-experimental, comparison</td>
<td>Shortened version of the SKAT-A or Sex Knowledge and Attitudes Test of Adolescents</td>
<td>The study failed to reveal a significant effect the Baby Think It Over simulator had on this group of teens compared to the control group</td>
<td>The program may not be the ideal way to influence teens’ attitudes and actions regarding teen pregnancy; the school systems should evaluate the benefits compared to the lack of effectiveness the study has shown the simulators to have; future more detailed research should be done to get a better understanding of the effect of the Baby Think It Over program</td>
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<td>McCarthy et al</td>
<td>800,000 American 15-19 year-olds become pregnant each year; Adolescent females in the U.S. are the ideal group for emergency contraception</td>
<td>Examine the distribution of education, referral and prescription services for emergency contraceptive pills by high school-based health centers</td>
<td>364 health centers located within public high schools in the U.S., respondents were from 36 states plus D.C.</td>
<td>Stages of Change Model Concepts: health care networks, birth control, teen pregnancy, sexual behavior, secondary schools</td>
<td>Non-experimental comparative</td>
<td>19-item closed-format questionnaire developed on the basis of the Stages of Change Model</td>
<td>60% of centers offered education and referrals for emergency contraception; centers in rural setting had lower odds of providing referrals than those in suburban areas; centers that voiced liability concerns had lower odds of offering prescriptions; many reported school policy</td>
<td>Educational and outreach efforts to health providers should be strengthened to ensure that contraceptive services are available to all students; access to emergency contraceptives can be greatly improved by increasing the number of centers that provide prescriptions for the method; barriers to</td>
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<tr>
<td>Study</td>
<td>Family Planning Facilities</td>
<td>Test Hypotheses</td>
<td>Mothers</td>
<td>No Framework Mentioned Concepts: Family Planning, Unintended Births, Teen Births, Geographic Proximity</td>
<td>Non-Experimental Predictive Correlational</td>
<td>Pregnancy Risk Assessment Monitoring System, 2000</td>
<td>Geographical Proximity to Family Planning Sites Had No Relation to the Number of Unintended Pregnancies in a Community. The Relative Risk of Teen Births Was Significantly Lower with Further Distance from Family Planning Sites. Teens Living More Than 30 Min. from the Nearest Facility Were 26% Less Likely to Become Pregnant</td>
<td>Geographic Proximity to Family Planning Clinics is Not a Barrier. Further Efforts to Reduce Unplanned Pregnancies Must Look Beyond Simply Increasing the Number of Sites</td>
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<td>Goodman et al (2006)</td>
<td>Family planning facilities are an essential aspect of pregnancy prevention but limited information exists linking accessibility to these sites and reproductive outcomes</td>
<td>Test the hypotheses that greater geographic access to family planning facilities is associated with lower rates of unintended and teenage pregnancies</td>
<td>Mothers from four states; Numbers range from 1,175 to 1,822 in 1999 and from 1,553 to 1,960 in 2000. Mothers in the teenage pregnancy cohort were age 15-17 in the year 2000</td>
<td>No framework mentioned Concepts: family planning, unintended births, teen births, geographic proximity</td>
<td>Non-experimental Predictive correlational</td>
<td>Pregnancy Risk Assessment Monitoring System, 2000 US census, digital road networks from the Geographic Data Technologies, SUDAAN, Poisson model</td>
<td>This study implies that geographic access to family planning clinics is not a barrier. Further efforts to reduce unplanned pregnancies must look beyond simply increasing the number of sites</td>
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<td>Adams et al (2009)</td>
<td>Teen pregnancy incurs direct and indirect costs totaling approx. $7 billion in the U.S. in 1993, and has probably increased after</td>
<td>Provide data on the cost of teenage pregnancy post Welfare-reform</td>
<td>Females in 10 states who gave birth when they were &lt;20 years old and a comparison group of mothers age 20-24; State sample sizes</td>
<td>No framework mentioned Concepts: teenage pregnancy costs, Welfare-reform, public assistance programs</td>
<td>Non-experimental comparative</td>
<td>Pregnancy Risk Assessment Monitoring System, Consumer Price Index</td>
<td>The costs per teenage mother exceed those for older mothers by almost $1500. The largest component of the costs is Medicaid. Teens are</td>
<td>Implementing programs aimed at reducing teen pregnancy should be a top public healthcare goal</td>
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<td>healthcare reform</td>
<td>range from 1,300 to 3,00</td>
<td>more likely to use public assistance</td>
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References


