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Contraceptive Self-Efficacy: Educational And Familial Influences

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CONTRACEPTIVE SELF-EFFICACY: EDUCATIONAL AND FAMILIAL INFLUENCES

By

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This thesis, submitted by Jenelle Swenberger in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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Jenelle Swenberger

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ABSTRACT

This thesis examines educational and familial influences on contraceptive self-efficacy among young adults. Self-efficacy theory states that beliefs about personal efficacy constitute the key factor behind human agency. Contraceptive self-efficacy refers to the belief in one's ability to utilize contraceptives in a sexual situation. Based on previous literature it is expected that young adults who have had comprehensive reproductive health education, report higher levels of individual educational attainment, and report higher levels of mothers' and fathers' educational attainment will report higher levels of contraceptive self-efficacy. To test these associations, data from a stratified random sample of undergraduate students enrolled at the University of North Dakota in the Spring of 2015 was used (N = 575). Findings support a link between reproductive health education and contraceptive self-efficacy, highlighting the importance of targeted information for students.

CHAPTER I

INTRODUCTION

Statement of the Problem and Research Focus

The present study examines educational and familial influences on contraceptive self-efficacy among young adults. Through the use of quantitative data collection and analysis the present research will attempt to gain an understanding of variation in levels of contraceptive self-efficacy through examination of the influence of reproductive health courses, individual educational attainment, and parental educational attainment.

Self-efficacy is defined by Bandura (1977) as, "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments" (p. 3). Contraceptive self-efficacy refers to the belief in one's ability to utilize contraceptives in a sexual situation. Previous research reports that condom use among women aged 15-19 years decreased from 36 percent in 1995 to 20 percent in 2006-2010. Hormonal methods of contraception have become more popular, especially in women under thirty years of age, with approximately 50 percent of women under the age of 25 using the oral contraceptive commonly referred to as "the pill" (Jones, Mosher, & Daniels, 2012). In order to use any type of contraceptive effectively, a person must have adequate contraceptive self-efficacy (Meekers & Klein, 2002).

Contraceptive self-efficacy is important for young adults. According to the Centers for Disease Control and Prevention (2013), teens are more likely to engage in high risk sexual

activities such as having unprotected sex, and having multiple sex partners. These activities have the potential to carry with them serious consequences including sexually transmitted diseases (STD) and sexually transmitted infections (STI). Indeed, in 2012 the Center for Disease Control and Prevention reported the largest number of cases of chlamydia trachomatis on record, a 9.6 percent increase in gonorrhea since 2009, and a 15 percent increase in syphilis among men having sex with men (CDC, 2012). In addition to increasing rates of STD/STI infection, unplanned pregnancies may also result from engaging in high risk sexual behaviors. From 2001 to 2006 approximately half of all pregnancies were reported as unplanned (Finer & Zolna, 2011). Teen pregnancy and birth rates are declining, and have been since the early 1990's. However, in the United States nearly three in ten young women will get pregnant by age twenty. It is estimated that a child born to a teen mother costs $1,682 to taxpayers each year from birth to age 15. Conservative estimates state that public costs associated with children of teen mothers amount to $2.1 billion in public sector health care costs, $3.1 billion in child welfare costs, and $2 billion in costs of incarceration (The National Campaign to Prevent Teen and Unplanned Pregnancy, 2014).

Previous research has shown that girls with high contraceptive self-efficacy believe that they can and should be responsible for their sexual activity, and thus act accordingly to achieve contraceptive protection (Levinson, 1986). Girls are more likely to report higher contraceptive self-efficacy than boys (Longmore, Manning, Giordano, & Rudolph, 2003; Rostosky, Dekhtyar, Cupp, & Anderman, 2008), but they are also more likely to be shy about buying condoms and are less likely to know how to use them correctly (Meekers & Klein 2002). Past work shows that there are social factors associated with increased contraceptive use and self-efficacy: maternal education is positively associated with adolescent use of contraception (Casper, 1990; Longmore

et al., 2003), and daughter's contraceptive self-efficacy (Kahn, Rindfuss, & Guilkey, 1990). However, less is known about the influence of fathers' education on children's contraceptive use and self-efficacy.

At the individual level, previous research has indicated a positive relationship between knowledge about sexually transmitted infections and the intention to use contraceptives (Burazeri, Roshi, & Tavanxhi, 2004). Generally, there are two types of reproductive health education courses taught to young adults; these include comprehensive reproductive health education and abstinence only education. Comprehensive reproductive health education includes information about abstinence, contraceptives, and the social pressures that influence the sexual behaviors of young adults. Abstinence only education refers to education that promotes abstaining from sexual intercourse and does not cover contraceptive use or other protective/preventative measures. Willams and Bonner (2006) reported that individuals receiving reproductive health education reported fewer pregnancies and abortions. Thus, there is an implied link between reproductive health education and contraceptive use. It is possible that reproductive health education also fosters contraceptive self-efficacy.

This thesis will examine the relationship between contraceptive self-efficacy in young adults and reproductive health education, individual educational attainment, and parental educational attainment of the mother and the father. Developing an understanding of educational influences on contraceptive self-efficacy will allow for the creation of strategies to foster contraceptive self-efficacy among young men and women. Effective strategies will help alleviate the social consequences that result from engaging in unprotected sexual activities by educating young adults in ways that promote self-efficacy.

Organization of Thesis

The following chapter, Chapter Two, will cover scholarly literature on each topic discussed above to provide justification for this thesis examination. Chapter Three provides information about the research method utilized for data collection and analysis. The fourth chapter details the findings of the data analysis. Chapter Five contains a discussion of the results within the context of the literature provided in Chapter Two.

CHAPTER II

LITERATURE REVIEW

The present study examines contraceptive self-efficacy of young adults and its association with reproductive health courses, individual educational attainment, and parental educational attainment. In this chapter, the theoretical approach applied to this research is discussed and relevant literature will be reviewed for each variable under study.

Theoretical Approach

Self-Efficacy

The guiding theory of this thesis is self-efficacy, developed by Bandura (1997). According to self-efficacy theory, beliefs about personal efficacy constitute the key factor behind human agency. In short, if an individual does not feel confident about their ability to produce results, they will not even attempt to make things happen. Self-efficacy does not measure the skills that one possesses. Rather, it is an attempt to understand the beliefs a person holds about their ability to do things under different sets of conditions. Beliefs about personal efficacy include courses of chosen action, personal effort, perseverance through obstacles and failures, resilience to adversity, and accomplishments attained. The perception of self-efficacy impacts the initiation and persistence of behaviors (Rosenthal, Moore, & Flynn, 1991) as shown in previous studies of behaviors from smoking cessation (Heale & Griffin, 2009; Patten et al., 2008) to the initiation of engagement in physical activity (Dutton et al., 2009; Lee, Kuo, Fanaw,

Perng, & Juang, 2011). For example, a high level of academic self-efficacy has been shown to be a predictor of academic success (Putwain, Sander, & Larkin, 2013; Richardson, Abraham, & Bond, 2012). Furthermore, individuals with low self-efficacy avoid difficult tasks and have weak commitment to their goals, whereas individuals with high self-efficacy set high goals with strong commitments (Bandura, 1997). Previous research has shown that higher levels of self-efficacy in one domain result in a higher capacity to understand concepts (Linnenbrink-Garcia, Pugh, Koskey, & Steward, 2012). At the same time, a high sense of self-efficacy in one domain is not necessarily accompanied by a high sense of self-efficacy in another (Bandura, 1997). For instance, a high level of sexual self-efficacy is not guaranteed to be accompanied by a high level of contraceptive self-efficacy.

In terms of contraceptive self-efficacy, it is expected that individuals with low contraceptive self-efficacy may be ineffective contraceptive users. In contrast, individuals with high contraceptive self-efficacy may be more effective at achieving contraceptive protection (Levinson, 1986). Research tends to support the application of self-efficacy theory to contraceptive use through examination of contraceptive self-efficacy as an independent variable influencing variation in contraceptive actions. Indeed, previous research has found contraceptive self-efficacy to be the crucial factor fostering contraceptive use among adolescents (Suvivuo, Tossavainen, & Kontula, 2009). Furthermore, examination of contraceptive self-efficacy as an independent variable has shown a positive association with taking the initiative to use a condom, and correct use of a condom among adolescents (Hendrickx, Philips, & Avonts, 2008). Thus, because of its importance to effective contraceptive use, it is the focus of this thesis. Instead of considering contraceptive self-efficacy as an independent variable, as much of the past research has done, this thesis examines contraceptive self-efficacy as a dependent variable. Knowing how

to foster contraceptive self-efficacy is an important step toward increasing the sexual health of young adults.

What can be done to foster contraceptive self-efficacy? Three potential factors will be examined in this thesis. They are: reproductive health education, individual educational attainment, and parental educational attainment.

Relevant Literature

Reproductive Health Education

It is known that reproductive health education impacts contraceptive use (Burazeri et al., 2004; Ryan, Franzetta, & Manlove, 2007). The present study hopes to gain an understanding of how reproductive health education may impact young adults' contraceptive self-efficacy. In 2015, 22 states and the District of Columbia mandated reproductive health education in high schools, 37 states required that abstinence be covered and in most, abstinence was to be stressed, and 19 required contraception to be covered (Guttmacher Institute, 2015). Previous research shows that teens residing in states that mandate abstinence education are more likely to become pregnant unintentionally with outcomes showing that abstinence education is ineffective at reducing teen pregnancy and birth rates across states (Stanger-Hall & Hall, 2011). Because abstinence only education does not include information about contraceptive use, it is expected that those with an abstinence only background will have less contraceptive self-efficacy. Moberg and Piper (1998) examined the impact of comprehensive reproductive health education programs. These are programs in which adolescents are provided with information on abstinence, contraceptives, and the social pressures that influence sexual behaviors. They found that only one out of 28 programs concluded that the initiation of sexual activity was hastened by the

educational program. Similarly, only one out of 19 programs reported an increase in the frequency of sexual behaviors. Together, these findings provide support for the claim that comprehensive reproductive health education does not increase the initiation or frequency of sexual activities among teens.

On the other hand, knowledge about reproductive health helps increase safe sex practices among those who are sexually active. Previous research has found that having knowledge about reproductive health is associated with greater odds of ever using contraception. Specifically, young men have increased odds of using contraceptives if they believe they have greater knowledge about reproductive health. Among young women the increased odds of using contraceptives comes from actual reproductive health knowledge (Ryan et al., 2007). Likewise, greater knowledge about sexually transmitted diseases is associated with consistent condom use among adolescents. Furthermore, knowledge about contraceptives has been positively associated with the development of contraceptive-self-efficacy (Burazeri et al., 2004). Reproductive health education is also associated with abortion. In 2006, Williams and Bonner found that both abstinence only and a combination of abstinence and contraceptive education programs were significantly correlated with fewer abortions, with a combination of abstinence and contraceptive education having slightly more influence on the decision to abort or not (Williams & Bonner, 2006). As well, even at the college level, receiving information regarding contraceptives increases levels of contraceptive self-efficacy (Moore, Smith, & Folsom, 2012). In sum, reproductive health education, and especially comprehensive programs, increase safe sex practices. Whereas previous research has examined specific behavioral outcomes associated with reproductive health education, the present study examines individual perceptions of how

prepared one feels to utilize contraceptives during a sexual situation as a potential outcome. Drawing on previous research I propose the following hypothesis:

> Hypothesis 1: Young adults who have had comprehensive reproductive health education will report higher levels of contraceptive self-efficacy.

Individual Educational Attainment

The millennial generation (1985-2000) is the most highly educated generation of young adults in U.S. history. Almost half (47%) of 25-34 year olds earned a postsecondary degree in 2013, and they were more likely to attend graduate school than those from previous generations (The Council of Economic Advisors, 2014). It is important to note that the millennial generation has higher rates of minority and low-income students enrolling in postsecondary education than previous generations (Bailey & Dynarski, 2011). The leading theory as to why this generation is more likely to earn a postsecondary degree states that during times of economic recession young adults will go to school in greater numbers and stay in school longer (Card & Lemieux, 2000).

Education and college enrollment are among the most important factors influencing contraceptive use and fertility regulation among women (Frisco, 2005; Goni & Rahman, 2012). Frisco (2005) found that women who enroll in a four year university the year after high school are 2.5 times more likely to use condoms, 2.5 times more likely to use oral contraceptives, and 4.5 times more likely to use multiple contraceptive methods than their non-enrolled counterparts. Individual education also leads to a reduction in the number of live births and promotion of reproductive health practices (Samarakoon & Parinduri, 2014). Scholars have compared birth rates between high school drop outs and college educated individuals. These researchers found that high school drop outs have 1.28-2.22 more unplanned, mistimed, and unwanted births than

those who are college educated (Musick, England, Edington, & Kangas, 2009). Previous research indicates that lower reports of contraceptive self-efficacy are accompanied by the use of drugs or alcohol, the preference of a partner to forego contraceptive use, and the perception of a low-risk situation (Tung, Cook, & Lu, 2011, 2012).

According to the theory of self-efficacy, the school functions as one of the primary settings for the development of cognitive and problem-solving skills, and is a socializing institution. A fundamental goal of the educational system is to teach students the skills that enable them to educate themselves (Bandura, 1997). Previous research has found that self-efficacy is developed through having learning experiences that lead to confidence in personal ability (Mata-Segreda, 2015). Much learning occurs outside of formal instruction, however students engage in more learning on their own if they have a stronger sense of self-efficacy instilled through instructional influences (Bandura, 1997). Thus, we can expect that contraceptive self-efficacy can be explained in part by educational attainment. Previous research has found a positive association between contraceptive use and education. Guided by previous literature and the theory of self-efficacy, I propose the second hypothesis:

> Hypothesis 2: Individual educational attainment will be positively associated with contraceptive self-efficacy.

Parental Educational Attainment

Previous research has found connections between parental education and contraceptive self-efficacy. For example, when mothers have more education, their daughters are more likely to use condoms, and they have higher contraceptive self-efficacy as adolescents (Kahn et al., 1990; Longmore, Eng, Giordano, Manning, & Buehler, 2009; Longmore et al., 2003).

Furthermore, lower parental education levels have been associated with an increased likelihood of sexual activity and a higher likelihood of contraceptive nonuse among adolescents (Cubbin, Santelli, Brindis, & Braveman, 2005). Knowledge about contraceptives fosters the development of contraceptive self-efficacy, and previous research has shown that parental education has a positive influence on the contraceptive knowledge of adolescents (Burazeri et al., 2004). Family communication regarding contraceptives increases with age of the child, sexual experience, individual educational attainment of the child, and mother's education (Stidham-Hall, Moreau, & Trussell, 2012).

While the connections between mothers' education and children's contraceptive use and self-efficacy has been documented, we know less about the impact of fathers' education. This may be caused in part by research on child outcomes historically focusing on mothers and their role as caretakers, while only recently beginning to examine the role of fathers in child outcomes. In this thesis, the educational attainment of both parents will be considered. The assumption is that the family is the first socializing institution, and variation in contraceptive self-efficacy will be explained in part through differing educational attainment of parents. Although not empirically documented, we may assume that fathers' educational experiences work in much the same way as mothers'. However, it may be the case that while this process is similar, the role played by mothers is more influential. For instance, gendered expectations regarding contraceptive use and responsibility for contraceptives, hold women more responsible for contraceptive use than men (Brunner Huber & Ersek, 2011). This emphasis on the role and responsibility of women in reproductive health could potentially mean mothers' education is more influential than that of fathers. And although it is commonly believed that many parents oppose comprehensive reproductive health programs for teens, an overwhelming majority (93%)

support comprehensive sex education and believe young people should be provided with the necessary information to protect themselves from the negative repercussions of sexual activity. If given the choice, only 1-5% of parents would remove their children from comprehensive sex education programs (Hoff & Greene, 2000).

According to the theory of self-efficacy, the family is the first socializing institution (Bandura, 1997). Because parental education positively influences the contraceptive knowledge of adolescents, which in turn fosters the development of contraceptive self-efficacy, we can expect that contraceptive self-efficacy is associated with parental educational attainment. Although previous literature focuses solely on the education of mothers, the educational attainment of both parents will be examined in this thesis. Based on the previous literature, I propose the third and fourth hypotheses:

> Hypothesis 3: Mothers' educational attainment will be positively associated with young adults' contraceptive self-efficacy.

> Hypothesis 4: Fathers' educational attainment will be positively associated with young adults' contraceptive self-efficacy.

In sum, contraceptive self-efficacy refers to the beliefs an individual holds regarding their perceived ability to effectively use contraceptives. Contraceptive self-efficacy is positively associated with taking the initiative to use a condom, and the correct use of condoms (Hendrickx et al., 2008). Research indicates that contraceptive self-efficacy is a crucial factor fostering contraceptive use (Suvivuo et al., 2009). Reproductive health education programs, especially comprehensive programs, increase safe sex practices by providing knowledge about contraceptives, which is positively associated with the development of contraceptive self-

efficacy (Burazeri et al., 2004; Ryan et al., 2007; Williams & Bonner, 2006). As well, individual educational attainment has been positively associated with contraceptive use (Frisco, 2005), the promotion of reproductive health practices (Samarakoon & Parinduri, 2014), and the development of skills that allow young adults to teach themselves (Bandura, 1997). The family is the first socializing institution (Bandura, 1997) and previous research has shown that parental education positively influences contraceptive knowledge, which also fosters the development of contraceptive self-efficacy (Burazeri et al., 2004). The relationship between these three factors, reproductive health education, individual educational attainments, and parental educational attainment, and contraceptive self-efficacy is explored in this thesis among a sample of college undergraduate students. This is an important population to study because college is a time of newfound freedom and exploration for many young adults who are learning to navigate sexual relationships. For example, Chickering & Reisser (1993) described the theory of identity development involving seven vectors through which students develop their self-identity in college. These seven vectors include developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. Knowing which factors promote contraceptive self-efficacy is important for many of the reasons outlined in this chapter.

Controls

In addition to the primary independent variables, several control variables have been integrated into the statistical model tested in this thesis. Control variables include gender, age, number of sex partners in the past 12 months, and relationship status. These variables were chosen because evidence suggests a documented or potential link to contraceptive self-efficacy. For example, gender is controlled for because young men and young women encounter different

experiences with contraception. Previous research shows that girls are more likely to report higher contraceptive self-efficacy than boys (Longmore et al., 2003), but are less likely than boys to know correct condom use (Meekers & Klein, 2002). Furthermore, age was controlled for due to previous findings indicating that contraceptive self-efficacy increases with age (Longmore et al., 2003).

In order to control for potential experience using contraception- contraceptive "opportunities" – two variables were included: relationship status and number of sex partners. Mixed evidence exists with respect to relationship status. Some literature shows that those who are in a romantic relationship are more likely to use contraception in that relationship (Ford, Sohn, & Lepkowski, 2001; Kusunoki & Upchurch, 2011). Others report a negative association between relationship status and contraceptive consistency among those in relationships (Manlove, Ryan, & Franzetta, 2007). Furthermore, individuals in relationships tend to switch from a barrier method of contraception to an oral method, a more effective contraceptive method, indicating an increased level of contraceptive self-efficacy through experience (Reed, England, Littlejohn, Bass, & Caudillo, 2014). Additionally, number of sex partners was controlled for because previous studies have found that teens who are less likely to use condoms tended to only have had one partner (Mackellar, Valleroy, Hoffman, & Glebatis, 2000), indicating a lack of experience and opportunities to use contraceptives effectively. Other studies indicate that individuals in any type of sexual relationship were more likely to use a dual method of contraception, meaning that they will pair a hormonal method of contraception with a barrier method, compared to their non-coupled counterparts (Kusunoki & Upchurch, 2011). These studies provide evidence there is an element of practical experience that affords young adults opportunities through which to develop contraceptive self-efficacy.

Summary

This chapter provided evidence of a potential link between individual and parental educational attainment, comprehensive reproductive health education, and contraceptive self-efficacy. Bandura's (1997) theory of self-efficacy was used as a framework and four hypotheses were proposed. The following chapter, Chapter Three, will detail the research method utilized in the study of educational and familial influences on the contraceptive self-efficacy of young adults.

CHAPTER III

RESEARCH METHOD

According to the Centers for Disease Control and Prevention (2015) teens are more likely to have multiple sex partners, engage in unprotected sex, and choose high risk sex partners than the general population. It is the aim of this study to better understand factors that influence contraceptive decision making among those age 18-25. Past work has shown that contraceptive self-efficacy is one important factor associated with having safe sex. The present study will examine the relationship between individual educational attainment, parental educational attainment, high school reproductive health education, and contraceptive self-efficacy.

Data

Data for this study were collected through a stratified random sample (N = 575) of undergraduate students enrolled at the University of North Dakota in the Spring of 2015. The majority of the student population at the university is white (78.95%), while the largest minority population on campus is Hispanic American (2.82%), followed closely by individuals of two or more races (2.71%). Through a list of all courses offered during the spring semester at the university (excluding independent study, practicum, part-term, and professional courses), every tenth course was selected for participation in the study. The instructors of the 124 selected courses were contacted through campus mail with details about the study, and then a follow-up email was sent a week later containing the web link for the survey. In an effort to minimize user error, instructors were asked to share the web link with their students through campus email or

the Blackboard operating system. The questionnaire included a variety of items related to college students' stress and health behaviors, including measures related to sexual beliefs and behaviors. For this study, only respondents between the ages of 18 and 25 are included in the analysis, resulting in a final sample of 575 cases.

Measures

Dependent Variable

Contraceptive self-efficacy was measured using a scale created by adapting items from a larger measure of sexual self-efficacy. Only items related to contraceptive use were included (Buzwell & Rosenthal, 1996; Rosenthal et al., 1991). Students were asked to identify how confident they felt performing contraceptive related activities through the use of ten questions: "(1) Saying "no" to unwanted sexual activity; (2) Putting a condom on a penis; (3) Discussing the use of condoms and/or other contraceptives with a potential partner; (4) Asking a potential partner to wait if precautions are not available at the time; (5) Purchasing condoms/contraceptives; (6) Discussing precautions with a doctor or health professional; (7) Discussing with a partner the use of condoms for STI/STD/HIV/AIDS protection when other means of contraception are already being used; (8) Researching contraceptives on the internet; (9) Researching safe sex practices on the internet; and (10) Carrying condoms around with you in case." Responses were coded using a Likert scale from 1 to 5, 1 equating to very unconfident and 5 equating to very confident. Items were summed and then averaged to conform to the original coding scheme. The alpha reliability coefficient for the scale was .932.

Independent Variables

Variation within the dependent variable will be assessed through analysis of three independent variables. The first independent variable is type of *reproductive health education*. Respondents were given three options from which to choose the best description of their own reproductive health experience during high school. These included: "(1) Yes, comprehensive sex education (includes abstinence, contraceptives, and addressing social pressures that influence sexual behavior); (2) Yes, abstinence only (promotes abstaining from sexual intercourse, did not cover contraceptive use or other protective/preventative measures); and (3) No, we did not have reproductive health education." This variable was then recoded as a dichotomous variable, including (0) No comprehensive reproductive health education; and (1) Yes, comprehensive sex education.

The second independent variable *individual educational attainment*, is operationalized as the number of college credits completed. The categories and associated number of credits were coded so that: (1) = 0-23 freshman, (2) = 24-59 sophomore, (3) = 60-89 junior, and (4) = 90+ senior.

The final independent variable is *parental educational attainment*. Respondents were asked to identify a level of educational attainment for both parents when applicable. The options provided for respondents were: "(1) Less than a high school diploma; (2) High school diploma or GED; (3) Some college or technical schooling beyond high school; (4) Four year college degree; and (5) Graduate or professional degree."

Control Variables

Four control variables are considered in the analysis. *Gender* was coded 1 for male and 2 for female. *Relationship status* was coded 1 for single and 2 for in a relationship. *Age* and *number of sex partners* were interval ratio variables.

Analytic Strategy

Univariate analysis will include frequencies and measures of central tendency and variation for all variables, as appropriate. Bivariate analysis will include two strategies. First, a *t* test comparing those with and without reproductive health education will be used to show potential differences in average contraceptive self-efficacy between the two groups. Then, Pearson's correlation will be used to examine bivariate relationships between the variables included in analysis, both the dependent and independent variables as well as the control variables. Finally, multiple regression will be performed using all variables in order to consider the simultaneous effects of more than one variable on contraceptive self-efficacy. Means substitution is used to preserve cases for which there are missing data.

CHAPTER IV

RESULTS

Organization of Chapter

In this chapter will be a discussion of the major findings of this research. First, the descriptive statistics including means and standard deviations for all variables will be presented. Then, a discussion of the bivariate correlations and *t* test results for contraceptive self-efficacy by reproductive health education will be given. Subsequently, there will be a description of the results from the multivariate analysis conducted using ordinary least squares (OLS) regression. Finally, an examination of whether the results provide support for the hypotheses is presented.

Descriptive Statistics

Table 1 reports descriptive statistics for all variables included in the analysis. There were slightly more female (59.1%) respondents than male (40.3%) respondents in the sample. The average age of respondents was 20 years (*SD* = 1.83). A majority of respondents (43%) reported only having one sexual partner in the past 12 months with the average being 2.32 (*SD* = 1.69). Just under half (49.2%) of respondents reported currently being in a relationship, while just over half (50.8%) reported being single. By class level, 20.5% were freshmen, 31.5% were sophomores, 22.6% were juniors, and 25.4% were seniors. The majority (62.1%) of respondents had comprehensive reproductive health education while in high school, while only 27.6% did not receive comprehensive reproductive health education. The most frequent level of educational

attainment for both mothers (38.1%) and fathers (36.2%) was a four year college degree. The average reported level of contraceptive self-efficacy was high: 3.8 on the 5 point scale (*SD* = .97).

Table 1. *Descriptive Statistics* (*N* = 575)

Variables	*M*	*SD*
Gender	1.59	.49
Age	4.46	1.84
Relationship Status	1.49	.50
Sex partners in the past 12 months	2.30	1.69
Individual educational attainment	2.52	1.08
Mothers' educational attainment	3.54	.95
Fathers' educational attainment	3.52	.98
Reproductive health education	.73	.44
Contraceptive self-efficacy	3.80	.97

Bivariate Statistics

Table 2 reports bivariate correlations for the study variables. Only one of the three independent variables was found to have a statistically significant association with contraceptive self-efficacy. Individual educational attainment was positively associated with contraceptive self-efficacy ($r = .104$, $p < .022$). Thus, the bivariate analysis provides support for Hypothesis 2: Individual educational attainment will be positively associated with contraceptive self-efficacy. Comprehensive reproductive health education, mothers' educational attainment, and fathers' educational attainment were not significantly associated with contraceptive self-efficacy. Thus, bivariate analysis did not support Hypothesis 1: Young adults who have had comprehensive reproductive health education will report higher levels of contraceptive self-efficacy; Hypothesis 3: Mothers' educational attainment will be positively associated with young adults' contraceptive

self-efficacy; or Hypothesis 4: Fathers' educational attainment will be positively associated with young adults' contraceptive self-efficacy.

Among control variables, a significant positive relationship was found between relationship status and contraceptive self-efficacy (r = .193**, p < .000), indicating that those in committed relationships reported higher levels of contraceptive self-efficacy.

Next, a *t* test was performed to see whether reproductive health education fostered the development of contraceptive self-efficacy. The *t* test for contraceptive self-efficacy by reproductive health education course indicated that there was not a significant difference in average level of contraceptive self-efficacy for those who had *(Mean* = 3.8, *SD* = .97*)* and had not (*Mean* = 3.6, *SD* = .95) received comprehensive reproductive health education. However, the relationship between the variables was approaching significance *(t* = 1.767, *p* < .078*)* and it is possible that with a larger sample this relationship may have been significant.

Table 2. *Bivariate Correlations* (*N* = 575)

	1	2	3	4	5	6	7	8	9
1. Contraceptive Self-Efficacy	-								
2. Gender	.014	-							
3. Age	.140**	-.145**	-						
4. Relationship Status	.193**	.081	.082	-					
5. Sex Partners	.071	-.034	.017	-.090*	-				
6. Individual education	.104*	-.012	.670**	.043	-.01	-			
7. Mothers' education	-.072	-.040	-.145**	-.072	-.012	-.021	-		
8. Fathers' education	-.056	-.078	-.090*	-.031	-.079	-.024	.353**	-	
9. Reproductive Health	.081	-.008	-.012	-.011	-.001	.018	.015	-.029	-

* p < .05. ** p < .01. *** p < .001

Multivariate Analysis

OLS regression analysis was performed with contraceptive self-efficacy as the dependent variable and four independent variables: comprehensive reproductive health education,

individual educational attainment, mothers' educational attainment, and fathers' educational attainment. Four control variables were also included: gender, age, relationship status, and number of sexual partners in the past 12 months (see Table 3). All variables were entered into the regression simultaneously. Contraceptive self-efficacy was positively associated with relationship status (β = .17, p < .000). Also significant was number of sexual partners in the past 12 months (β = .08, p < .048). Finally, comprehensive reproductive health education (β = .08, p < .048) was found to have a significant association with contraceptive self-efficacy among young adults in this sample when other factors were controlled for. Thus, the multivariate analysis provides support for Hypothesis 1: Young adults who have had comprehensive reproductive health education will report higher levels of contraceptive self-efficacy. Results indicate that 6% of the variation in levels of contraceptive self-efficacy (R^2 = .060) is explained by the independent and control variables, and the model was significant (F = 4.496, p <.000)

Table 3. *OLS Regression for the Effects of Educational and Familial influences on Contraceptive self-efficacy* (*N*=575)

	B	*SE*	*β*
Gender	.024	.076	.013
Age	.046	.028	.095
Relationship Status	.305	.074	.171***
Sex partners in past 12 months	.038	.019	.081*
Individual educational attainment	.019	.046	.023
Mothers' educational attainment	-.032	.042	-.034
Fathers' educational attainment	-.015	.040	-.016
Reproductive Health Education	.174	.088	.081*

* p < .05. ** p < .01. *** p < .001

Summary of Findings

The overarching purpose of this thesis was to investigate educational and familial influences on contraceptive self-efficacy among young adults. Young adults were the focus of

this thesis because they are more likely to engage in high risk sexual activities, (CDC, 2013) and contraceptive self-efficacy has been linked to safer sex practices (Hendrickx et al., 2008; Suvivuo et al., 2009). Data for this study were collected through a stratified sample of undergraduate students enrolled at the University of North Dakota in the Spring of 2015 and was used to answer the research question: Do educational and familial influences impact contraceptive self-efficacy among young adults? More specifically, this research sought to confirm relationships between individual educational attainment, parental educational attainment, and reproductive health education and contraceptive self-efficacy.

Two of the proposed hypotheses were partially confirmed in the analysis. Comprehensive reproductive health education was found to have a significant relationship with the development of contraceptive self-efficacy in the multivariate analysis, meaning that targeted education programs that provide specific information about contraceptives do foster the development of contraceptive self-efficacy among young adults. Contraceptive self-efficacy was related to individual educational attainment in the bivariate analysis, but not in the multivariate analysis. There were no differences in contraceptive self-efficacy found on the basis of parental educational attainment; both mothers' and fathers' educational attainment were found to be insignificant in the bivariate and regression models. Findings indicate that practical experiences were associated with higher levels of contraceptive self-efficacy among young adults, as opposed to the assumed educational influences. Implications of these findings will be discussed in the next chapter, Chapter Five.

CHAPTER V

DISCUSSION

This chapter will summarize and discuss the results of this thesis. In doing so, the findings will be tied to self-efficacy theory and past literature regarding contraceptive self-efficacy among young adults. Limitations of this thesis will then be discussed along with suggestions for future research. Finally, a conclusion will be provided that briefly summarizes the findings of this thesis along with implications.

Discussion of Results

Educational and Familial Influences and Contraceptive Self-Efficacy

The results of this thesis showed a significant positive relationship between comprehensive reproductive health education and contraceptive self-efficacy. This finding is consistent with past research indicating that knowledge about contraceptives leads to the development of contraceptive self-efficacy (Burazeri et al., 2004). Furthermore, greater knowledge about sexually transmitted diseases is associated with consistent condom use among adolescents (Ryan et al., 2007). National data shows that states in which abstinence only education is emphasized have higher teen birth rates when compared with states that prescribe comprehensive reproductive health education (Stanger-Hall & Hall, 2011), and that comprehensive reproductive health education reduces the number of sex partners, increases condom use, and contraceptive use in general (Kirby, Laris, & Rolleri, 2007). This finding shows

that comprehensive reproductive health education can potentially increase safe sex practices among young adults through the development of contraceptive self-efficacy.

This thesis also revealed unexpected findings. Contrary to past research, individual educational attainment and parental educational attainment were not significantly associated with contraceptive self-efficacy among young adults. The school serves as a socializing institution whose fundamental goal is to teach students the skills that enable them to teach themselves (Bandura, 1997). It may be that a lack of variation among respondents, all of whom were in college, is the issue. Perhaps with a wider range of educational attainment within the sample, including representation from those with less than high school, high school, and graduate degrees, may provide more insight into how individual educational attainment is associated with contraceptive self-efficacy. A college student currently navigating through the developmental changes discussed by Chickering and Reisser (1993) may report higher self-efficacy than a high school student who has not yet reached a point in development where such factors impact their identity. As well, because just under half of female (44%) and male (47%) teens aged 15-19 have experienced sexual intercourse (CDC, 2015), extending the age range of the sample may be more ideal to study the development of contraceptive self-efficacy. The current study only included individuals between 18 and 25 years who were enrolled in college. Additionally, a more thorough examination of the type of education received while in college, such as the difference between liberal arts and science majors, would show greater variation among levels of contraceptive self-efficacy reported by college students.

Inconsistent with previous research, this thesis revealed no significant relationship between parental educational attainment and contraceptive self-efficacy among young adults. Previous research showed that when mothers have more education, their daughters have higher

contraceptive self-efficacy as adolescents (Kahn et al., 1990; Longmore et al., 2003, 2009). Further, parental education has been found to have a positive influence on the contraceptive knowledge of adolescents (Burazeri et al., 2004). However, the sample lacked variation in mothers' and fathers' educational attainment, as most had four year degrees. It is possible that with a more diverse sample this relationship could be significant. Additionally, little previous research examined the role of fathers' educational attainment in addition to mothers' educational attainment, though neither was found to have a significant relationship with contraceptive self-efficacy among college students. This lack of significant relationship could also be attributed to the extensive media influence on the lives of young adults and the role of peers in teaching and learning. In other words, perhaps peers and media matter more than parents. Finally, it could be that education simply does not influence levels of contraceptive self-efficacy.

Control Variables and Contraceptive Self-Efficacy

It is important to discuss the significant control variables. Results show that individuals in committed relationships reported higher levels of contraceptive self-efficacy. This finding is consistent with previous literature that discusses a dual method of contraception and increased experience (Kusunoki & Upchurch, 2011; Reed et al., 2014). Additionally, number of sex partners had a significant association with contraceptive self-efficacy among young adults, further indicating a significant practical experience element in the development of contraceptive self-efficacy. Simply, more opportunities to use contraception can lead to higher contraceptive self-efficacy.

Implications

The main contribution of this thesis is the continued argument for comprehensive reproductive health education for young adults. Results indicated a positive association between comprehensive reproductive health education and contraceptive self-efficacy. Appropriate actions should be taken to ensure access to information and education so as to allow the development of contraceptive self-efficacy among young adults. This may increase safe sex practices, reducing STD/STI transmission and unplanned pregnancies.

Because beliefs about personal efficacy constitute the key factor behind human agency (Bandura, 1997), and previous research has found contraceptive self-efficacy to be the crucial factor fostering contraceptive use among adolescents (Suvivuo et al., 2009), efforts should be made to ensure the development of contraceptive self-efficacy, including the use of comprehensive reproductive health education programs. Specifically, these programs should target individuals prior to the onset of sexual activity as this thesis indicated a practical element in the development of contraceptive self-efficacy through number of sex partners in the past 12 months and relationship status. It would be ideal if contraceptive self-efficacy were to be developed before these life experiences occurred in order to reduce risk.

Implications for college health care providers and student health centers include the importance of providing information regarding all types of contraceptives, the necessity for practical experience (e.g., "how to" sessions for condom use), and the importance of targeting young adults prior to sexual intercourse to better equip them with the knowledge and skills needed to practice safe sex. This can be done through the use of speakers who come to universities to speak to students about safe sex, formal educational programs as part of the

general education curriculum, informal educational programs done through student organizations or campus healthcare providers, or individually with a health care provider.

Limitations

A few limitations of this thesis should be noted. Because the design of the study was cross-sectional, direction and causality cannot be established. The sample came from a single Midwestern college campus, thus the generalizability of the findings is limited. The sample lacked racial variation, consistent with the student profile of the university. Additionally, although quantitative research has many strengths, qualitative research, such as conducting interviews and focus groups, could offer further insight into factors associated with the development of contraceptive self-efficacy. Finally, there was limited variation in the educational attainment measures, both individual and parental. Individual educational attainment only measured variation of current college students, thus an examination of a wider range of educational attainment, including high school and graduate degrees, may illuminate different patterns. Furthermore, the lack of variation among mothers' and fathers' educational attainment could explain the lack of significance, contradictory to previous findings.

Suggestions for Future Research

Future research on this subject could examine the association between relationship status and number of sex partners with contraceptive self-efficacy more in-depth to distinguish causality, as well as find possible alternatives to the "learn as you go" style which seems to be present. Furthermore, a more diverse sample in terms of individual educational attainment may help to further explain the development of contraceptive self-efficacy through formal educational institutions, including high school and graduate school. Finally, an examination of the influence

of religion, political affiliation, and income on contraceptive self-efficacy could illuminate other factors potentially associated with contraceptive self-efficacy.

Conclusion

Self-efficacy is not a measure of skill, but rather a measure of the beliefs an individual holds about their ability to carry out certain tasks in different situations. This thesis examined contraceptive self-efficacy, defined as the belief in one's ability to find contraceptive information when needed, discuss contraceptive use with a partner, and use contraception during sexual activity. Findings from this research add to previous ideas about self-efficacy and formal education by highlighting the importance of targeted information sharing through comprehensive reproductive health education for students. Thus, while educational institutions play an important role for the development of self-efficacy more generally and may foster the development of different types of efficacy, like the ability to teach oneself, they play only a minor role in the development of contraceptive self-efficacy. In sum, this research provides a continued argument for comprehensive reproductive health education for young adults.

REFERENCES

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215.

Bandura, Albert. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.

Bailey, M. J., & Dynarski, S. M. (2011). *Gains and gaps: Changing inequality in US college entry and completion* (No. w17633). National Bureau of Economic Research.

Brunner Huber, L. & Ersek, J. (2011). Perceptions of contraceptive responsibility among female college students: An exploratory study. *Annals of Epidemiology, 21,* 197-203.

Burazeri, G., Roshi, E., & Tavanxhi, N. (2004). Does knowledge about sexually transmitted infections increase the likelihood of consistent condom use*? Preventative Medicine, 39,* 1077-1079.

Buzwell, S. & Rosenthal, D. (1996). Constructing a sexual self: Adolescents' sexual self-perceptions and sexual risk-taking. *Journal of Research on Adolescence, 6,* 489-513.

Card, D., & Lemieux, T. (2000). *Can falling supply explain the rising return to college for younger men? A cohort-based analysis* (No. w7655). National Bureau of Economic Research.

Casper, L. (1990). Does family interaction prevent adolescent pregnancy*? Family Planning Perspectives, 22,* 4.

Centers for Disease Control and Prevention (CDC). (2012). National overview of sexually transmitted diseases (STDs), 2012. Retrieved from: http://www.cdc.gov/std/stats12/natoverview.htm

Centers for Disease Control and Prevention (CDC). (2013). Adolescents, technology and reducing risk for HIV, STDs and pregnancy, 2013. Retrieved from: http://www.cdc.gov/std/life-stages-populations/adolescents-tech.htm

Centers for Disease Control and Prevention (CDC). (2015). Sexual activity, contraceptive use, and childbearing of teenagers aged 15-19 in the United States, 2015. Retrieved from: http://www.cdc.gov/nchs/data/databriefs/db209.htm

Chickering, A., & Reisser, L. (1993). The seven vectors: An overview. *Education and Identity*, 43-52.

The Council of Economic Advisors. (October, 2014). 15 economic facts about millennials. Retrieved from: https://www.whitehouse.gov/sites/default/files/docs/millennials_report.pdf

Cubbin, C., Santelli, J., Brindis, C., & Braveman, P. (2005). Neighborhood context and sexual behaviors among adolescents: Findings from the national longitudinal study of adolescent health. *Perspectives on Sexual and Reproductive Health*, *37*, 125-134.

Dutton, G., Tan, F., Provost, B., Sorenson, J., Allen, B., & Smith, D. (2009). Relationships between self-efficacy and physical activity among patients with type 2 diabetes. *Journal of Behavioral Medicine*, *32*, 270-277.

Finer, B., & Zolna, M. (2011). Unintended pregnancy in the United States: Incidence and disparities. *National Institute of Health, Contraception, 84 (5),* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3338192/ (online periodical)

Ford, K., Sohn, W., & Lepkowski, J. (2001). Characteristics of adolescents' sexual partners and their association with use of condoms and other contraceptive methods. *Family Planning Perspectives, 33,* 100-105.

Frisco, M. (2005). Parental involvement and young women's contraceptive use. *Journal of Marriage and Family, 67,* 110-121.

Goni, A., & Rahman, M. (2012). The impact of education and media on contraceptive use in Bangladesh: A multivariate analysis. *International Journal of Nursing Practice, 18,* 565-573.

Guttmacher Institute. (2015). State policies in brief: Sex and HIV education, 2015. Retrieved from http://www.guttmacher.org/statecenter/spibs/spib_SE.pdf

Heale, R., & Griffin, M. (2009). Self-efficacy with application to adolescent smoking cessation: A concept analysis. *Journal of Advanced Nursing, 65,* 912-918.

Hendrickx, K., Philips, H., & Avonts, D. (2008). Correlates of safe sex behavior among low-education adolescents of different ethnic origin in Antwerp, Belgium. *The European Journal of Contraception and Reproductive Health Care, 13,* 164-172.

Hoff, T., & Greene, L. (2000). *Sex education in America*: *A series of national surveys of students, parents, teachers, and principals.* Menlo Park, CA: Kaiser Family Foundation.

Jones, J., Mosher, W., & Daniels, K. (2012). Current contraceptive use in the United States 2006-2010, and changes in patterns of use since 1995. *National Health Statistics Report, 60*, 1-25.

Kahn, J., Rindfuss, R., & Guilkey, D. (1990). Adolescent contraceptive method choices. *Demography, 27*, 323-335.

Kirby, D., Laris, B., & Rolleri, L. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health, 40*, 206-217.

Kusunoki, Y., & Upchurch, D. (2011). Contraceptive method choice among youth in the United States: The importance of relationship context. *Demography, 48*, 1451-1472.

Lee, L., Kuo, Y., Fanaw, D., Perng, S., & Juang, I. (2011). The effect of an intervention combining self-efficacy theory and pedometers on promoting physical activity among adolescents. *Journal of Clinical Nursing, 21*, 914-922.

Levinson, R. (1986). Contraceptive self-efficacy: A perspective on teenage girls' contraceptive behavior. *The Journal of Sex Research, 22*, 347-369.

Linnenbrink-Garcia, L., Pugh, K., Koskey, K., & Steward, V. (2012). Developing conceptual understanding of natural selection: The role of interest, efficacy, and basic prior knowledge. *The Journal of Experimental Education, 80*, 45-68.

Longmore, M., Manning, W., Giordano, P., & Rudolph, J. (2003). Contraceptive self-efficacy: Does it influence adolescents' contraceptive use? *Journal of Health and Social Behavior, 44*, 45-60.

Longmore, M., Eng, A., Giordano, P., Manning, W., & Buehler, C. (2009). Parenting and adolescents' sexual initiation. *Journal of Marriage and Family, 71*, 969-982.

MacKellar, D., Valleroy, L., Hoffman, J., & Glebatis, D. (2000). Gender differences in sexual behaviors and factors associated with nonuse of condoms among homeless and runaway youths. *AIDS Education and Prevention, 12*, 477-491.

Manlove, J., Ryan, S., & Franzetta, K. (2007). Contraceptive use patterns across teens' sexual relationships: The role of relationships, partners, and sexual histories. *Demography, 44*, 603-621.

Mata-Segreda, A. (2015). The promotion of vocational self-efficacy in adolescents. *Policy and Practice*, 25-31.

Meekers, D., & Klein, M. (2002). Understanding gender differences in condom use self-efficacy among youth in urban Cameroon. *AIDS Education and Prevention, 14*, 62-72.

Moberg, D., & Piper, D. (1998). Healthy for life project: Sexual risk behavior outcomes. *AIDs Education Prevention, 10*, 128-148.

Moore, E., Smith, W., & Folsom, A. (2012). F.O.R.E.play: The utility of brief sexual health interventions among college students. *Journal of American College Health, 60*, 175-177.

Musick, K., England, P., Edington, S., & Kangas, N. (2009). Education differences in intended and unintended fertility. *Social Forces, 88*, 543-572.

Patten, C., Decker, P., Dornelas, E., Barbagallo, J., Rock, E., Offord, K., Hurt, R., & Pingree, S. (2008). Changes in readiness to quit and self-efficacy among adolescents receiving a

brief office intervention for smoking cessation. *Psychology, Health & Medicine, 13*, 326-336.

Putwain, D., Sander, P., & Larkin, D. (2013). Academic self-efficacy in study-related skills and behaviours: Relations with learning-related emotions and academic success. *British Journal of Educational Psychology, 83,* 633-650.

Reed, J., England, P., Littlejohn, K., Bass, B., & Caudillo, M. (2014). Consistent and inconsistent contraception among young women: Insights from qualitative interviews. *Family Relations, 63,* 244-258.

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin, 138,* 353-387.

Rosenthal, D., Moore, S., & Flynn, I. (1991). Adolescent self-efficacy, self-esteem, and sexual risk-taking. *Journal of Community & Applied Social Psychology, 1,* 77-88.

Rostosky, S., Dekhtyar, O., Cupp, P., & Anderman, E. (2008). Sexual self-concept and sexual self-efficacy in adolescents: A possible clue to promoting sexual health*? Journal of Sex Research, 45,* 277-286.

Ryan, S., Franzetta, K., & Manlove, J. (2007). Knowledge, perceptions, and motivations for contraception. *Youth & Society, 39,* 182-208.

Samarakoon, S., & Parinduri, R. (2014). Does education empower women? Evidence from Indonesia. *World Development, 66,* 428-442.

Stanger-Hall, K.F., & Hall, D.W. (2011). Abstinence-only education and teen pregnancy rates: Why we need comprehensive sex education in the U.S. *Plos ONE, 6,* 1-11.

Stidham-Hall, K., Moreau, C., & Trussell, J. (2012). Patterns and correlates of parental and formal sexual and reproductive health communication for adolescent women in the United States, 2002-2008. *Journal of Adolescent Health, 50,* 410-413.

Suvivuo, P., Tossavanien, K., & Kontula, O. (2009). Contraceptive use and non-use among teenage girls in a sexually motivated situation. *Sex Education, 9,* 355-369.

The National Campaign to Prevent Teen and Unplanned Pregnancy. (2014). *The public costs of teen childbearing: Key data.* Washington D.C.

Tung, W., Cook, D., & Lu, M. (2011). Sexual behavior, stages of condom use, and self-efficacy among college students in Taiwan. *AIDS Care, 23,* 113-120.

Tung, W., Cook, D., & Lu, M. (2012). Sexual behaviors, decisional balance, and self-efficacy among a sample of Chinese college students in the United States. *Journal of American College Health, 60,* 367-372.

Williams, M., & Bonner, L. (2006). Sex education attitudes and outcomes among North American women. *Adolescence, 41,* 1-14.