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WOMEN'S CONTRACEPTIVE CHOICES: A LOOK INTO THE WOMEN OF
WARREN AND ALLEN COUNTIES, KENTUCKY

A Capstone Experience/Thesis Project

Presented in Partial Fulfillment of the Requirements for

the Degree Bachelor of Science with

Honors College Graduate Distinction at Western Kentucky University

By

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2015

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2015

ABSTRACT

According to the 2013 Census, 76.2 million US women of childbearing age (15 to 50). About half (51%) of the 6.6 million pregnancies in the United States each year (3.4 million) are unintended. Although there is an overwhelming need for contraceptives, not everyone has access. This study seeks to gain information on the motivation behind women's contraceptive choices in Warren and Allen County, KY. A questionnaire was created and distributed to patients in the clinic waiting rooms of Barren River District Health Department and Allen County Health Department, and additional surveys were sent to Western Kentucky University students enrolled in a Women's Health course through an online Qualtrics program. Findings revealed significant relationships between age and access to information ($p = 0.004$), permanent method use and age ($p = 0.035$), and current method and total annual income ($p = 0.008$). These findings as well as other findings regarding contraceptive barriers and their impacts will be presented and discussed.

Keywords: Contraceptives, Women's Health, Birth Control, Unintended Pregnancy, Contraceptive Choice

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CHAPTER 1

INTRODUCTION

As of 2013 there are 76.2 million US women of childbearing age (15 to 50) (Census, 2013). About half (51%) of the 6.6 million pregnancies in the United States each year (3.4 million) are unintended (Finer, & Zolna, 2014). According to the Intergenerational Panel Study of Mothers and Children, unintended and unwanted pregnancies can sometimes lead to nonpsychotic major depression (postpartum depression), feelings of powerlessness, increased time pressures, and a reduction in overall physical health (Kaunitz, 2008). Mothers who had an unwanted birth also had a poorer quality relationship with all their children, tending to spank them more and spend less leisure time with them (Kaunitz, 2008). The National Health Statistics Report from 2013 shows that the probability of a woman having an unintended pregnancy during one year of no contraceptive use is 85% (Daniels, Mosher, & Jones, 2013), while only 12% of women are expected to have an unintended pregnancy within a year of consistent contraceptive use (Daniels et al, 2013). Consistent use of effective contraceptives is the primary strategy for preventing unintended pregnancies among sexually active persons (Daniels et al, 2013).

There are many benefits to contraceptive use. Women's ability to obtain and effectively use contraceptives has a positive impact on their education and workforce

participation, as well as on subsequent outcomes related to income, family stability, mental health and happiness, and the well-being of their children (Sonfield, Hasstedt, Kavanaugh, & Anderson, 2013). Contraceptives allow women to be in control of their family size, to plan the timing and spacing of their births, to ensure a healthy pregnancy, and to prevent sexually transmitted diseases. Latex condoms, when used consistently and correctly, are highly effective in preventing the sexual transmission of HIV, the virus that causes AIDS. Condoms also reduce the risk of other sexually transmitted diseases (STDs), and may reduce the risk for genital human papillomavirus (HPV) infection and HPV-associated diseases, e.g., genital warts and cervical cancer (Alfonsi, & Shlay, 2005). Although the majority of women use contraceptives to prevent pregnancy, there are many non-contraceptive benefits as well. An estimated 1.5 million women rely on contraceptives solely for non-contraceptive purposes (Jones, 2011). Reasons for non-contraceptive use include cramps or menstrual pain, menstrual regulation, acne, hormone regulation, and endometriosis.

Since the modern birth control movement began in the early 1900s, contraceptive options as well as their level of effectiveness have increased drastically. This evolution in contraceptives, along with increased affordability and availability, has allowed for the number of users to grow. More than 99% of childbearing age women who have ever been sexually active have used at least one contraceptive method while 62% of women in this age range are currently using a contraceptive method (Daniels et al, 2013). The National Health Statistics Report 2012 found that women who are married or cohabitating are more likely to use contraceptives than non-married women. The percentage of women not using contraceptives declines with age, and white women are

more likely to be using a contraceptive compared with Hispanic or black women (Jones, Mosher, & Daniels, 2012). Another interesting finding from this report was that ninety-two percent of women with incomes of 300% or more of the federal poverty level are currently using contraceptives, compared with 89% among those living at 0–149% of the poverty line (Jones, Mosher, & Daniels, 2012). Among sexually experienced religious women, 99% of Catholics and Protestants have ever used contraception (Jones, & Dreweke, 2011).

Although contraceptives are used by the majority of U.S. reproductive age women, nonusers are still present. Reasons for nonuse vary. Women are nonusers most often because they are not sexually active, they are experiencing sexual intercourse on a limited basis, they are trying to become pregnant, have been told they are infertile, religious constraints, lack of availability of contraceptives, and income. Some women's nonuse is based on their ambivalence towards avoiding pregnancy. One study concluded that ambivalence about avoiding pregnancy is likely to be associated with imperfect use of contraceptives and the consequently higher risk of pregnancy. (Frost, Singh, & Finer, 2007).

At the national level, contraceptive nonuse increased between 1995 and 2002; moreover, this rise in nonuse occurred disproportionately among low-income and minority women (Frost et al, 2007). Older women, Hispanic and black women, and the least educated women were contraceptive nonusers all year, as compared to younger, white and college-educated women (Frost et al, 2007). Also, women who had not completed college experienced at-risk gaps in method use compared to college graduates. Compared with women having private insurance, those on Medicaid experienced an at-

risk gap of less than a year, and a higher proportion of those who were uninsured were nonusers all year (Frost et al, 2007). These demographic disparities illustrate the urgency that public health must address contraceptive availability and awareness.

Family planning is one of Public Health's top 10 greatest achievements of the 20th century (Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, 1999). Although the accessibility of contraceptives has increased, as of 2010 there were still 146 million women worldwide aged 15–49 years who were married or in a union that had an unmet need for family planning (Doskoch, 2013). Because of this lack of accessibility and subsequent nonuse, unintended pregnancy remains a problem in the United States; 51% of pregnancies are unintended and 40% of these end in abortion (Finer & Zolna, 2014). These rates remain significantly higher than rates of many other industrialized countries. According to worldwide estimates, some 600,000 women die each year of pregnancy-related causes with at least 200,000 of these maternal deaths attributable to the failure or lack of contraceptive services (Kaunitz, 2008). Increased access of contraceptives and knowledge of correct use can allow for a decrease in unmet need and prevention of unintended pregnancies while ensuring the health of women and children.

CHAPTER 2

BACKGROUND

Review of the Literature

Numerous studies have been conducted about contraceptive choice and effectiveness. These studies seek to understand the many factors that influence contraceptive choice and what that choice means for the future of those women. This literature review concentrates on literature exploring women's beliefs and attitudes towards contraception and explanatory factors that are of interest to the outcome variable of this study: women's contraceptive choice.

Women's Contraceptive Choice

Many factors influence a woman when choosing a contraceptive. Factors include personal beliefs and attitudes about contraception, preferences towards a certain contraceptive, and the barriers women face when choosing a contraceptive. These factors not only influence what contraceptive a woman chooses or doesn't choose, but also determines the effectiveness of that chosen method. Choosing one contraceptive method over another can ultimately alter the outcome of a woman's life.

Personal Beliefs and Attitudes

Personal beliefs and attitudes about contraceptive methods and their effectiveness influence women's use of contraceptives. Ambivalence towards pregnancy is an attitude that influences contraceptive use (Frost, Singh, & Finer, 2007). The Association of Reproductive Health Professionals found that 62% of women consider it very important to avoid pregnancy, with 20% considering it only somewhat important, and 18% saying it was of little or no importance (Frost, Singh, & Finer, 2007). Women who are ambivalent towards avoiding pregnancy are less likely to use contraception and more likely to have gaps in contraceptive use thus putting them at risk for unintended pregnancy (Nettleman, Chung, Brewer, & Ayoola, 2007).

Higher likelihood for unintended pregnancy, and subsequent nonuse of contraceptives, can also be found in women who have a low perception of their risk for pregnancy (Frost, Darroch, & Remez, 2008). When analyzing data from the 2000-2002 Pregnancy Risk Assessment Monitoring System (PRAMS) it was revealed that "lack of preparation" or "perceived low risk of pregnancy" was cited as the reason for unintended pregnancy in more than half of the 1,429 women who participated in PRAMS (Nettleman et al, 2007). Women who perceived a low risk of pregnancy included those with infertility problems, had been told by a health provider they were unable to get pregnant, were breastfeeding or had a recent miscarriage, thought their partner was sterile, believed a condition such as endometriosis or diabetes put them at a low risk, or thought that their age made them unable to become pregnant (Nettleman et al, 2007). These findings highlight the importance of women receiving clear messages about their risk for pregnancy.

Historical, cultural, and religious beliefs as well as the social norms that surround contraception vary among women. Such beliefs can have a huge impact on the type of contraceptive chosen, if a contraceptive is chosen, and why contraception is used. Beliefs include “women must bear children to please their husbands”, “only promiscuous women use contraceptives”, “contraceptives are a means to control the African American population”, and “all sexual acts must be open to procreation” (Breaking the Contraceptive Barrier: Techniques for Effective Contraception Consultations, 2008). There are numerous social norms that influence contraceptive use. These often include the age at which women should begin having children, acceptability of unplanned pregnancy, and lack of partner support for contraceptive use (Breaking the Contraceptive Barrier, 2008). The women who have any of these beliefs, much like women who have a perceived low risk for pregnancy, need clear messages from their healthcare provider about contraception, the benefits, and the risks of nonuse.

A 2005 study about contraceptive use explored the historical beliefs and attitudes of African Americans. The U.S. has a long history of efforts to control the fertility of African American women, from slave masters’ control of Black women’s reproduction during the time of slavery, to government-sponsored family planning programs that encouraged and coerced Black women to get sterilized as recent as the 1970s, to policies intended to promote the use of Norplant among poor women (Roberts, 1998). This historical context may help explain why some African Americans have concerns about contraceptive methods and hold negative beliefs about the role of government in contraceptive policy, programs, or practice (Thorburn, & Bogart, 2005). African American women who distrust medical and public health institutions and the government

when it comes to the safety and testing of birth control methods may be choosing less effective birth control methods (Thorburn & Bogart, 2005). A study of primarily African Americans in the southeastern United States found that participants were distrustful of the medical system and the pharmaceutical companies who manufacture contraceptives (Woodsong, Shedlin, & Koo, 2004). The importance of addressing contraceptive safety and contraceptive purpose conspiracy beliefs when discussing contraceptive choice, as well as understanding the historical past of contraceptives that African Americans have experienced, will allow for African American women to make better choices regarding their reproductive health.

Contraceptive Preference

Contraceptive preference is heavily influenced by the barriers women face when choosing a contraceptive and their beliefs and attitudes about contraceptives. It is unwise to analyze a woman's contraceptive preference without first looking at her beliefs and attitudes and the barriers she faces. Barriers include the amount of knowledge regarding contraceptive methods and their effectiveness, availability, and cost, all of which contribute to the contraceptive a woman chooses. Among women who use reversible contraception, most choose less effective methods such as condoms and oral contraceptive pills (Eisenberg, Secura, Madden, Allsworth, Zhao, & Piepert, 2012). This less effective method choice, along with variation in method use across race and education groups, has allowed for a substantial difference in unintended pregnancy rates between groups (Daniels, Mosher, & Jones, 2013). Sixty-four percent of women who practice contraception currently use nonpermanent methods, primarily hormonal methods (the pill, patch, implant, injectable, and vaginal ring), the IUD, and condoms (Daniels et

al, 2013). Furthermore, male condom ever-use has increased from 52% in 1982 to 93% in 2006-2010 (Daniels et al, 2013).

The National Health Statistics Report 2012 shows that Asian and Hispanic women are less likely to have ever used highly effective, reversible methods compared with women of other racial backgrounds (Daniels et al, 2013). This report also indicates that female sterilization is approximately four times as common among women without a high school diploma or GED compared with those with a bachelor's degree (Daniels et al, 2013). Female sterilization varies among population subgroups but is most common among African Americans and Hispanics, women 35 or older, ever-married women, women with two or more children, women living below 150% of the poverty level, and women living outside of metropolitan areas (Daniels et al, 2013).

Contraceptive Barriers

Contraceptive barriers can include anything from knowledge regarding contraceptives, availability, cost, and misuse. Barriers can also be previous attitudes and beliefs about contraceptives as well as the source in which the woman is receiving the contraceptive method.

Knowledge

General contraceptive knowledge varies widely across populations, with notable disparities among minority and younger populations who have less awareness and understanding of various contraceptive methods (Eisenberg, Secura, Madden, Allsworth, Zhao, & Piepert, 2012). Significant knowledge gaps regarding contraceptive effectiveness play an important role in determining what contraceptive method is chosen

and the subsequent risk of unintended pregnancy. According to the CHOICE study when asked the risk of failure for the pill, patch, or ring, less than 1 in 5 women could correctly identify it (Eisenberg et al, 2012). This study also highlights the impact of the media and direct-to-consumer advertising of perfect-use failure rates on women's knowledge and perception of contraceptives (Eisenberg et al, 2012).

Satisfaction

The level of satisfaction with a contraceptive method can ultimately influence the effectiveness. Unfortunately, for many women, the choice of a method is not a positive one, but is made out of frustration or dissatisfaction with available options or after a negative experience with a method. (Frost, Darroch, & Remez, 2008) Nearly 40% of women were not satisfied with their current method for reasons such as reduced sexual pleasure, anticipated side effects, and worry about effectiveness (Frost, Darroch et al, 2008). An additional 38% of women chose their current contraceptive method primarily because they did not like any other method (Frost, Darroch et al, 2008). Women who were not completely satisfied with their method tended to have gaps in use and to use methods incorrectly or inconsistently, putting them at risk for unintended pregnancy (Frost, Darroch et al, 2008). A 2004 study found a clear link between satisfaction with one's health care provider and method satisfaction (Thorburn, & Bogart, 2005). The level of satisfaction, and its critical role in influencing attitudes and beliefs about contraceptives, draws attention to the importance of removing contraceptive barriers.

Use/Misuse

According to the National Health Statistics Report 2012), 99.1% (53 million) of sexually experienced women had used at least one contraceptive method (Daniels et al, 2013). Of these sexually experienced women, about 4 of every 5 have ever used the pill (Daniels, Mosher, & Jones, 2013). The pill and female sterilization have been the two most commonly used methods since 1982 (Sonfield, Hasstedt, Kavanaugh, & Anderson, 2013). With the creation of new hormonal method options in recent years the number of women using hormonal methods is on the rise. One of those methods is the injectable which had an increase in ever-use from 4.5% in 1995 to 23% in 2010 (Daniels et al, 2013). Ever-use of the male condom has increased from 52% in 1982 to 93% in 2010 (Daniels et al, 2013), with some 6.2 million women relying on it as their source of contraception (Mosher, & Jones, 2010). Women in their 20s, women with one or no children, and women with at least a college education are more likely to use condoms frequently (Mosher, & Jones, 2010).

The two-thirds of women (68%) at risk for unintended pregnancy who use contraceptives consistently and correctly throughout the course of any given year account for only 5% of all unintended pregnancies (Sonfield, Hasstedt, & Gold, 2014). The 18% of women at risk who use contraceptives but do so inconsistently account for 41% of unintended pregnancies (Sonfield et al, 2014). Those women who do not use contraceptives at all, or have a gap in use of one month or longer, account for 54% of all unintended pregnancies (Sonfield et al, 2014). For both perfect use and typical use, the contraceptive implant and IUD are the most effective methods available with failure rates of less than 1% (Kost, Singh, Vaughan, Trussel, & Bankhole, 2008). Oral contraceptive

pills, the patch, and the ring all have failure rates of less than 1% with perfect use and are 91% effective with typical use (Kost et al, 2008). Maintaining perfect use is more difficult with coitus-related methods (Frost, & Darroch, 2008). With a typical use rate of only 80%, withdrawal, periodic absence, and spermicides had the lowest percentage of preventing unintended pregnancy (Daniels et al, 2013). The male condom is 98% effective with perfect use however the method failure rate increases to 18% with typical use (Kost et al, 2008). Not having one available or not expecting to have sex was the most common reason for not using a condom consistently (Frost, & Darroch, 2008).

According to a 2004 study partnership, characteristics and women's experiences and attitudes were related to inconsistent oral contraceptive use (Frost, & Darroch, 2008). The study showed a greater proportion of women who had two or more partners in the past year used the pill inconsistently compared to women with only one partner (Frost, & Darroch, 2008). Inconsistent use of the pill was more common among women who were not completely satisfied with their method, among women who were not completely satisfied with their provider, and among women who usually did not see the same clinician at every visit (Frost, & Darroch, 2008). Having the method less than two years was positively associated with inconsistent pill use (Frost, & Darroch, 2008).

Cost

The cost of contraceptive services and supplies can be considerable (Guttmacher Institute., 2011). The most effective, long-acting methods can cost hundreds of dollars up front and even costs for methods that are relatively inexpensive on an individual basis (such as condoms) can add up substantially over a year (Guttmacher Institute., 2011). In

the United States currently less than 3% of women use a LARC, long-acting reversible contraceptive, methods (Secura, Allsworth, Madden, Mullersman, & Peipert, 2010). LARC methods are the most effective reversible contraceptive method available, but many women cannot afford the high initial up-front cost associated with this method (Secura et al, 2010). The CHOICE study found that when this barrier was removed and the women were educated about LARC methods, there was an overwhelming interest in them. Additionally previous studies have found that a reduction of the financial barrier is associated with increased use of intrauterine contraception (IUC) (Secura et al, 2010). Thirty-one percent of women would change methods if not for the cost (Frost, & Darroch, 2008). If financial barriers were removed so that women could afford LARC and IUC, the most effective reversible contraceptive methods, it would have the potential to dramatically reduce unintended pregnancy while reducing long-term costs associated with contraception (Frost, & Darroch, 2008).

Contraceptive Use in Kentucky as Compared to the United States

In 2012, 38 million women in the US were in need of contraceptive care (Sonfield, Hasstedt, & Gold, 2014), with 474,780 of those women residing in Kentucky (State Reproductive Health Profile., 2015). Of those in Kentucky, 64,380 were under the age of 20 and 410,400 were aged 20–44 (State Reproductive Health Profile., 2015). Among Kentucky women aged 20–44, 98,950 were below 100% of the federal poverty level (State Reproductive Health Profile., 2015). In terms of race and ethnicity, 396,660 were non-Hispanic white, 42,950 were non-Hispanic black, and 16,810 were Hispanic (State Reproductive Health Profile., 2015). In 2012, Kentucky safety net health centers provided contraceptive care to 98,050 women, serving a total of 35% of all women in

need of publicly supported contraceptive services and supplies compared with 31% met by family planning centers nationally (Frost, Zolna, & Frohwirth, 2014). As of 2010 in Kentucky, \$196 of public funded money was spent on contraceptive services and supplies per woman in need (State Reproductive Health Profile., 2015).

In 2010, 47% of all pregnancies (34,000) in Kentucky were unintended (Kost, 2015). The publicly funded family planning services provided by safety-net health centers helped avert 1.5 million unintended pregnancies nationwide in 2012 (Frost, Zolna et al, 2014). About 24,000 of those were averted unintended pregnancies in Kentucky, and would likely have resulted in 11,900 unplanned births and 8,200 abortions (Frost, Zolna et al, 2014). In 2010, without publicly funded family planning services, the number of unintended pregnancies and abortions occurring in the United States would be 66% higher among women overall; the number of unintended pregnancies among poor women would be 70% higher, and among teens, 73% higher (Frost, Zolna et al, 2013). By averting unintended pregnancies and other negative reproductive health outcomes, publicly funded family planning services in Kentucky helped save the federal and state governments \$204.7 million in 2010 (Frost, Sonfield, Zolna, & Finer, 2014).

Intent of Study

Based on this review of the literature, this current study seeks to determine what motivates the women of Warren and Allen County, Kentucky to choose a particular contraceptive method and whether or not age, race, education level, or socioeconomic status influence that choice. This study is crucial to identifying the barriers that women in Kentucky face when choosing a contraceptive so that removal can begin. Removal of

these barriers could potentially provide availability and affordability of all methods to every woman, increase LARC method use, and reduce inconsistent and incorrect method use, all of which could reduce unintended pregnancy rates and increase the health of women in Kentucky.

This study seeks to answer three questions:

- Do contraceptive choices vary among women in Warren and Allen County?
- Does satisfaction (or lack of satisfaction) with current contraceptive use vary among these women?
- What influences women's choices most and do these influences vary?

CHAPTER 3

METHODOLOGY

Target Population

The population included 43 women ages 18 to 44. These women were clients of the Allen County Health Department (n = 16) and the Barren River District Health Department (n = 12). The remaining 15 women were Western Kentucky University students enrolled in a Women's Health course.

Instrument Development

The first step to this project was instrument development. The questionnaire was developed with information gained from the literature review and then pilot tested with five Western Kentucky University students. After improvements were made, an application and study protocol was submitted to the WKU IRB. Approval was received on March 5, 2015. Data collection began March 12, 2015 and ended April 17, 2015. Questionnaires were disseminated to clients at two local health departments, Allen County Health Department and Barren River District Health Department. Because data collection lagged, additional surveys were sent to Western Kentucky University students enrolled in a Women's Health course through an online Qualtrics program.

Procedures

Questionnaires were handed out to women ages 18-44 in the waiting rooms of the two health departments on their designated family planning clinic days. Each questionnaire was placed in a manila envelope and given to the woman to provide increased anonymity. The questionnaires were completed voluntarily and contained no personal identifying information. Completed questionnaires were returned in a sealed manila envelope. They were then coded for data entry. For the WKU students, each was sent an email that explained the survey and contained a link they could click on to take the survey. The Qualtrics survey was set up so that no identifying information was given and was anonymous.

Measures

Demographic Variables

Age was measured continuously and then recorded into categories of (1) ≤ 25 years and (2) ≥ 26 years for descriptive purpose. Race was measured categorically as white, Hispanic or Latina, Black or African American, Native American or American Indian, or Asian or Pacific Islander. It was then recoded into (1) White, (2) Hispanic or Latina, and (3) other. Education level was measured categorically as those receiving an 8th grade education, some high school but no diploma, high school diploma or equivalent, some college credit but no degree, bachelor's degree, master's degree, or a doctorate degree. It was then recoded into (1) high school diploma or less (2) some college credit but no degree, and (3) bachelor's degree or higher. Total household income was measured categorically beginning with those making less than \$10,000 a year and

continuing to increase by \$19,999 until those who make \$150,000 or more annually.

This was then recoded into (1) low income (less than \$10,000 to \$19,999), (2) middle income (\$20,000 to \$49,999), or (3) high income (\$50,000 to \$150,000).

Outcome Variables

The outcome variable this study is interested in is contraceptive choice and satisfaction. Contraceptive choice was measured by circling all contraceptives that had ever been used or tried of those listed; Birth control pills, condom, implants, IUD, vaginal ring or patch, female sterilization, injectables, diaphragm, fertility awareness methods, spermicides, withdrawal, emergency contraception, or other. These were then recoded into four categories: hormonal methods (birth control pills, implants, vaginal ring or patch, injectables, emergency contraception), barrier methods (condom, IUD, diaphragm, spermicides), permanent methods (female sterilization), and other methods (fertility awareness methods, withdrawal). Each new category was coded for (1) yes they had used or (2) no they had not.

Satisfaction with current method was measured categorically as (1) yes or (2) no. Lack of satisfaction was measured categorically as (1) too expensive, (2) insurance did not cover it, (3) too difficult to use, (4) your partner did not like it, (5) you had side effects, (6) you were worried the method may not work, (7) the method did not protect against disease, (8) too difficult to obtain the method, (9) did not like the change to your menstrual cycle, or (10) other. Source of influence to change methods if current method was different from previous was measured categorically as (1) medical provider, (2) cost,

(3) side effects, (4) difficulty in use, (5) partner dissatisfaction, (6) became pregnant, (7) other.

Explanatory Variables

Personal beliefs and experiences were measured using a variety of questions.

Women were asked whether they had ever been pregnant and answered (1) yes or (2) no.

If answered (1) yes, the number of pregnancies was asked using a continuous scale.

Women were also asked if they were currently using or had ever used contraceptives: (1)

yes or (2) no. If they answered (2) no, why was asked. Options included (1) currently

pregnant, (2) hoping to become pregnant, (3) too expensive, (4) lack of availability, (5)

too many side effects, or (6) not sexually active. Length of contraceptive use was

measured on a continuous scale and answered in years or months. Why they chose

current or most recent contraceptive method was measured categorically with (1) being

pregnancy prevention, (2) acne treatment, (3) regulate menstrual cycles, (4) relieve

menstrual cycle cramps, (5) cheapest, (6) only method available, or (7) suggested by the

medical provider. These were then recoded into (1) pregnancy prevention, (2) regulate

menstrual cycles/relieve menstrual cycle cramps, (3) cheapest, (4) only method available,

or (5) suggested by the medical provider. What matters most when choosing a

contraceptive method was measured on a continuous scale from 1-7 with 1 being most

important and 7 being least important. Options included preventing disease, what your

medical provider suggest, cost, preventing pregnancy, possible side effects, what your

partner wants, availability, and other.

Source of contraceptive care was measured categorically with (1) private doctor, (2) public hospital or health center, (3) family planning clinic, (4) government hospital or health center, (5) school or school-based clinic, or (6) other. This was then recoded into categories of (1) private or (2) public. Source of advice or knowledge was measured categorically. Categories included (1) friend, (2) family member, (3) healthcare provider, (4) partner, (5) social media, (6) other. These were then recoded into (1) friend/family member, (2) healthcare provider, (3) partner, or (4) themselves.

Analysis

After all data were collected, they were analyzed using SPSS-21, a predictive statistical software. Descriptive statistics consisted of, univariate analysis, and bivariate analysis. These were conducted with ANOVA and chi-square tests to determine findings.

CHAPTER 4

RESULTS

Descriptive Analysis Results

Table 1 shows the demographic characteristics of the sample. The study sample consisted of 43 women between the ages of 18 to 44. Among these women more than half were 25 years of age or less (57.9%). The majority of responders (78.6%) reported having a total annual income of “low” or “middle” (less than \$10,000 to \$49,999). The average participant was 26 years old, white (85.7%), had some college credit but no degree (46.2%), with an income from less than \$10,000 to \$19,999 (40.5%).

Explanatory Variables

As shown in Table 2, of the 27 women in the sample who had ever been pregnant (62.8%), there was an average of 2.2 births per woman. 7 years was the average length that a woman had been using contraceptives. The majority of women received their contraception from a private source (76.9%) and 51.3 % reported a healthcare provider as their source of information regarding contraceptives. Information from a family member or friend was also common with 43.6% of women identifying that as their source. Pregnancy prevention (61%) was found to be the main reason why women were using contraception

Table 1

Demographic Characteristics of Study Population (n = 43)

	n	% (M) [SD]
Demographics		
Age	38	(26) [6.7]
≤ 25	22	57.9
≥ 26	16	42.1
Race		
White	36	85.7
Hispanic or Latina	2	4.8
Other	4	9.5
Education		
High school diploma or less	9	23.1
Some college, but no degree	18	46.2
Bachelor's degree	12	30.8
Income		
Low income	17	40.5
Middle income	16	38.1
High income	9	21.4

Table 2

Frequencies for Explanatory Variables within Sample Population (n = 43)

	n	% (M) [SD]
<u>Personal beliefs and experiences</u>		
Ever been pregnant	27	62.8
Number of pregnancies	25	(2.2) [.83]
Length of contraceptive use (years)	39	(7) [6.0]
Access to contraception		
Private	30	76.9
Public	9	23.1
Access to information		
Friend or family member	17	43.6
Healthcare provider	20	51.3
Partner	1	2.6
Self	1	2.6
Reason for choosing contraceptive		
Pregnancy prevention	25	61.0
Regulate menstrual cycle/relieve menstrual cramps	9	22.0
Cheapest	1	2.4
Only method available	2	4.9
Suggested by medical provider	4	9.8

Table 3 shows what matters most and least when choosing a contraceptive, measured on a scale of 1 to 7 with 1 being the most important and 7 being the least important. “Preventing pregnancy” (78.6%) was identified as the most important (1) factor. Also noteworthy, “preventing disease” was important among 50% of the women who identified it as the most important (1). The least important factor (7) identified was “what your partner wants” (26.2%). Medical provider, cost, and availability as factors when considering a contraceptive were considered least important (7) by 6 women, but considered most important (1) by 32 women. On the scale of 1 to 7 the mean response for possible side effects was 1.9. Availability, preventing disease, and medical provider were all similar to each other in importance with means of 2.7, 2.5, and 2.9 respectively.

Outcome Variables

As Table 4 shows, 90.7% of women have ever used or are currently using a hormonal method of contraception (Birth control pills, Implants, Vaginal ring or patch, Injectables) and 76.7% had ever used or are currently using a barrier method of contraception (condom, IUD, Diaphragm, spermicides). The majority of women (79.1%) reported that they were satisfied with their current contraceptive method. For the women who were dissatisfied, 12.8 % were due to side effects. Side effects (39.3%) were also the largest reported reason for changing methods. 17.9% of women were influenced to change methods after becoming pregnant.

Table 3

Explanatory Variables within Sample Population Cont. (n = 43)

	1		2		3		4		5		6		7		
	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(n)	%	(M)
<u>What matters most/least</u>															
Preventing disease	(21)	50.0	(7)	16.7	(2)	4.8	(4)	9.5	(2)	4.8	(2)	4.8	(4)	9.5	2.5
Medical provider	(9)	21.4	(13)	31.0	(8)	19.0	(5)	11.9	(1)	2.4	(4)	9.5	(2)	4.8	2.9
Cost	(11)	26.2	(5)	11.9	(8)	19.0	(7)	16.7	(3)	7.1	(6)	14.3	(2)	4.8	3.2
Preventing pregnancy	(33)	78.6	(5)	11.9	(3)	7.1	--	--	--	--	--	--	(1)	2.4	1.4
Possible side effects	(19)	45.2	(13)	31.0	(5)	11.9	(4)	9.5	--	--	(1)	2.4	--	--	1.9
What partner wants	(2)	4.8	(4)	9.5	(7)	16.7	(9)	21.4	(4)	9.5	(5)	11.9	(11)	26.2	4.6
Availability	(12)	28.6	(12)	28.6	(5)	11.9	(6)	14.3	(3)	7.1	(2)	4.8	(2)	4.8	2.7

Table 4

Outcome Variables within Sample Population (n = 43)

	n	%
<u>Contraceptive choice</u>		
Hormonal	39	90.7
Barrier	33	76.7
Permanent	4	9.3
Other	17	39.5
<u>Satisfaction</u>		
Satisfaction with current method		
Yes	34	79.1
No	9	20.9
Cause of dissatisfaction		
Partner did not like it	1	2.6
Experienced side effects	5	12.8
Other	3	7.7
Reason for influence to change		
Medical provider	3	10.7
Cost	1	3.6
Side effects	11	39.3
Difficulty in use	3	10.7
Partner dissatisfaction	2	7.1
Became pregnant	5	17.9
Other	3	10.7

Bivariate Analysis

As shown in table 5, a one way ANOVA test was performed to examine whether age was associated with access to information responses, contraceptive choice, or satisfaction. Women 25 years of age or younger (41.2%) said they relied on a family member or friend for contraceptive information made. The relationship between age and access to information was significant ($F = 5.478, p < 0.05$). Hormonal methods of contraception were the most popular among women 25 years of age or less (55.3%) as well as with women 26 years of age or older (34.2%). A one way ANOVA was performed on each contraceptive option to determine the association between those options and age. No association was found for hormonal methods ($p = 0.168$), barrier methods ($p = 0.363$), or other methods ($p = 0.837$) by age. However, permanent methods and age were found to have a significant association ($F = 4.810, p < 0.05$). The majority of women 25 years of age or less were satisfied with their current contraceptive method. However, the association between satisfaction of contraceptive method and age, was not significant ($F = 0.356, p \geq 0.554$)

Table 5

Bivariate Results for Associations Between Access to Information, Contraceptive Choices, and Satisfaction by Age

	Age ≤ 25		Age ≥ 26				
	n	(%)	n	(%)	df	F	P
<u>Access to information</u>					3	5.478	0.004
Friend or family member	14	(41.2)	2	(5.9)			
Healthcare provider	5	(14.7)	11	(32.4)			
Partner	1	(2.9)	--	--			
Self	1	(2.9)	--	--			
<u>Contraceptive choice</u>							
Hormonal	21	(55.3)	13	(34.2)	1	1.984	0.168
Barrier	18	(47.4)	11	(28.9)	1	.849	0.363
Permanent	--	--	3	(7.9)	1	4.810	0.035
Other	9	(23.7)	6	(15.8)	1	.043	0.837
<u>Satisfaction with current method</u>					1	.356	0.554
Yes	16	(42.1)	13	(34.2)			
No	6	(15.8)	3	(7.9)			

Table 6 shows that younger women rated “what your partner wants” as what matters most/least when choosing a contraceptive, a 3 (13.5%) or 4 (13.5%) on a scale of 1 to 7. Women 26 years of age or older ranked “what your partner wanted” the least important (7) factor (13.5%) when choosing a contraceptive. A one way ANOVA was performed to examine the association between what a partner wants when choosing a

contraceptive and age. Results showed a tendency towards significance ($F = 4.058$, $p > 0.05$)

Table 6

Bivariate Results for Association Contraceptive Choices, and What Matters Most by Age

	Age ≤ 25		Age ≥ 26				
What matters most/least	n	(%)	n	(%)	df	F	P
<u>What partner wants</u>					1	4.058	0.52
1	1	(2.7)	1	(2.7)			
2	3	(8.1)	--	--			
3	5	(13.5)	2	(5.4)			
4	5	(13.5)	3	(8.1)			
5	3	(8.1)	1	(2.7)			
6	1	(2.7)	4	(10.8)			
7	3	(8.1)	5	(13.5)			

Table 7 shows that in regards to what matters most/least when choosing a contraceptive, most women who reported “preventing pregnancy” as the most important factor (36.8%) had some college credit but no degree. A one way ANOVA was performed to examine the relationship between “preventing pregnancy” in regards to what matters most/least when choosing a contraceptive and education. No significant relationship was found ($F = 3.154$, $p > 0.05$). The majority of women (66.6%) who used

a private source to receive their contraception had either some college credit but no degree or a bachelor's degree.

Table 8 shows the association between access to contraception and education was examined but was not significant ($F = 0.561, p > 0.05$). Most women who had a high school diploma or less chose hormonal methods (20.5%) of contraception. However, no associations between contraceptive choice and education were identified: hormonal ($F = 0.183, p = 0.834$), barrier ($F = 0.692, p = 0.507$), permanent ($F = 0.872, p = .427$), and other ($F = 0.692, p = 0.507$). Additionally no association between satisfaction and education was found ($F = 0.561, p = 0.575$).

Table 7

Bivariate Results for Associations Between What Matters Most and Access to Contraception by Education

	Education			df	F	P
	High school diploma or less	Some college credit, but no degree	Bachelor's degree			
	n (%)	n (%)	n (%)			
<u>What matters most/least</u>						
Preventing Pregnancy				2	3.154	0.55
1	5 (13.2)	14 (36.8)	11 (28.9)			
2	2 (5.3)	3 (7.9)	-- --			
3	1 (2.6)	1 (2.6)	-- --			
7	1 (2.6)	-- --	-- --			
<u>Access to contraception</u>				2	2.266	0.120
Private	5 (13.9)	12 (33.3)	12 (33.3)			
Public	2 (5.6)	5 (13.9)	-- --			

Table 8

Bivariate Results for Associations Between Contraceptive Choice and Satisfaction With Method by Education

	Education			df	F	P
	High school diploma or less	Some college credit, but no degree	Bachelor's degree			
	n (%)	n (%)	n (%)			
<u>Contraceptive choice</u>						
Hormonal	8 (20.5)	16 (41.0)	12 (30.8)	2	.183	0.834
Barrier	6 (15.4)	14 (35.9)	9 (23.1)	2	.692	0.507
Permanent	1 (2.6)	2 (5.1)	-- --	2	.872	0.427
Other	2 (5.1)	8 (20.5)	6 (15.8)	2	.692	0.507
<u>Satisfied with current method</u>				2	.561	0.575
Yes	8 (20.5)	13 (33.3)	10 (25.6)			
No	1 (2.6)	5 (12.8)	2 (5.1)			

Table 9 shows that most women currently satisfied with their method (35.7 %) are of middle income. Women who were not satisfied were mostly low income. A one way ANOVA was performed to examine the relationship between satisfaction with current method and total annual income. A significant association was determined ($p = 0.008$). Women with low income (40.5%) reported currently using or have previously used hormonal methods of contraception. Women of a higher income were the least likely to use or have ever used a barrier method (14.3%). However, the association between each contraceptive method and income was not significant.

Table 9

Bivariate Results for Associations Between Contraceptive Choice, and Satisfaction With Method by Income

	Income			df	F	P
	Low income	Middle income	High income			
	n (%)	n (%)	n (%)			
<u>Satisfied with current method</u>				2	5.482	0.008
Yes	10 (23.8)	15 (35.7)	9 (21.4)			
No	7 (16.7)	1 (2.4)	-- --			
<u>Contraceptive Choice</u>						
Hormonal	17 (40.5)	13 (31.0)	8 (19.0)	2	1.716	0.193
Barrier	14 (33.3)	13 (21.0)	6 (14.3)	2	.461	0.634
Permanent	1 (2.4)	2 (4.8)	1 (2.4)	2	.212	0.810
Other	8 (19.0)	6 (14.3)	3 (7.1)	2	.261	0.771

CHAPTER 5

DISCUSSION

Discussion

Most American families want two children. To achieve this, the average woman spends more than three-quarters of her reproductive life trying to avoid unintended pregnancy (AGI, 2000). Unintended pregnancies are often associated with increased risk for maternal and child health due to delayed prenatal care, closely spaced pregnancies, premature birth, and negative physical and mental health effects. Contraception can prevent unintended pregnancy. Although contraception is available for use, many women face barriers when trying to obtain it. This study examines the degree to which Allen and Warren County, Kentucky women face the barriers of knowledge, access, age, race, education level, and income and how those influence their contraceptive choices, satisfaction with their current contraceptive, and what matters most/least to them when choosing a contraceptive.

Contraceptive Choice

The results of this research indicate that variations between age, race, education level, and socioeconomic status exist when it comes to contraceptive choices. Hormonal methods of contraception, which include birth control pills, implants, vaginal ring or

patch, and injectables, represent what 90.7% of women in this sample are currently using or have ever used. This is supported by similar studies in which both hormonal and barrier methods are well represented. In the National Health Statistics Reports 2012, research from 2006-2010 showed that 81.9% of the 53, 475 sexually experienced women nationwide had ever use birth control pills (Daniels et al, 2013). Other hormonal methods ranged from 1.9% for the implant to 24.8% for the injectable (Daniels et al, 2013).

Representing that same group of women, barrier methods of contraception, which include condoms, IUD, diaphragm, and spermicides, represent nearly 77 percent of what they are currently using or have ever used. This is supported by similar studies in which barrier methods of contraception were among the most popular. The most common type of barrier method is the condom which the National Health Statistics Reports 2012 found that, from 2006 to 2010, 93.4% of women reported having ever used (Daniels et al, 2013). Another popular method, IUD, only had 7.7% of women report that they had ever used (Daniels et al, 2013). This finding is similar to that of the present research in which the majority of women using barrier methods are using condoms. The current study found women used permanent methods and other methods the least, compared to hormonal and barrier methods. These findings coincide with the National Health Statistics Reports 2012 and also may be due to a younger age sample.

The results of this research are promising, given the types of contraceptives the study sample women chose. Hormonal methods, which are the most effective reversible methods that exist, were frequently cited by women in this sample as ever used or currently using. Although the IUD, a barrier method, is deemed one of the most effective

contraception methods available, and results from this study found that barrier method use was reported in the majority of women, it is not necessarily a promising finding. Condom use is also a method in the barrier category and many of the women in this study reported using only that method. Thus the majority of them are using a contraceptive method that is not always reliable especially if used incorrectly or sporadically. Furthermore, the number of women reporting use of “other methods” is somewhat alarming. Over a third of these women said they had used or currently used withdrawal and emergency contraception as methods of contraception. Withdrawal is one of the least effective methods of contraception and is not a suitable option for preventing pregnancy. Emergency contraception is a solution for a short-term situation and is not intended to be used frequently or as a full time contraceptive option.

Variation in Contraceptive Choice and Demographics

Not surprisingly, the results indicate that age influences permanent contraceptive method use. All of the women who chose permanent methods of contraception, i.e. female sterilization, were older. This coincides with another study in which higher age is associated with the desire to prevent additional pregnancies thus resulting in female sterilization (Jones et al, 2012). Age was not found to be an influencing factor on hormonal method use, barrier method use, or other method use in this population.

Nor did race influence any type of contraceptive method choice. The study data suggest a relationship between white women and hormonal method use. However, because 85.7% of the sample was white it is not a valid significant relationship. With that said, a similar study of women in the United States found that the oral contraceptive

pill is most widely used by white women, women in their teens and 20s, never-married and cohabitating women, childless women, and college graduates (Jones et al, 2012). This study also found that reliance on female sterilization was most common among African Americans and Hispanics, women over 35 years of age, women with two or more children, women living below 150% of the federal poverty level, women with less than a college education, women living in rural areas, and women that are publicly insured or are uninsured (Jones et al, 2012).

This study did not find any relationship between education and contraceptive method choice. Results did show that of the 3 women who reported using a permanent method of contraception, i.e. female sterilization, none had received a college degree. This is supported by the National Health Statistics Report 2012 which found that the greater the educational attainment of women, the less likely they are to use female sterilization as a contraceptive method. Similar to education, income did not influence contraceptive choice in this study. Most studies find that it does influence contraceptive choice especially in terms of affordability of the contraceptive. This study did find that most women are using hormonal and barrier methods which include numerous highly effective methods of contraception.

Although race, education, and income did not appear to directly affect contraceptive choice in this study, it often does in other studies. When these variables are combined with other factors such as availability, affordability, knowledge about contraceptives, and beliefs and attitudes, its influence can be seen. If a woman is unable to afford a contraceptive method, it would imply that her income is not sufficient. If a woman is lacking knowledge about contraceptives, it would imply that she chooses a less

effective method. The results from this study depict a population that is majority white, of a decent income, has some college credit, and chooses highly effective reversible methods. If this were an actual representation of Warren and Allen County, Kentucky, unintended pregnancy rates would be drastically low.

Satisfaction

The results indicate that nearly 4 out of 5 women in this sample are satisfied with their current method of contraception. Those who were dissatisfied most often reported dissatisfaction with side effects. Side effects were also the main reason why women reported they changed methods of contraceptives. Age, race, and education do not influence a woman's satisfaction with their contraceptive method in this study. Other studies show that if a woman is satisfied with her healthcare provider she is often more likely to be satisfied with her method as well (Frost et al, 2007).

This study indicates a relationship between income and satisfaction. Roughly 4 out of 5 women reported being satisfied with their current method. Of the women about 60 % reported being of low or middle income, a significant finding for this study. This relationship is exciting because if these women are able to afford the contraceptive method they prefer and be satisfied there is a greater likelihood for consistent use and less unintended pregnancy. This also could mean less speculation that lower income women are unable to receive their desired method.

Other Influences on Women's Contraceptive Choices

Preventing pregnancy, preventing disease, and possible side effects were the top 3 factors that matter most to study participants when choosing a contraceptive. Results also showed that what a partner wants was the least important factor to consider when choosing a contraceptive. Of the women who rated preventing pregnancy as the most important choice factor, 2 out of 3 had at least some college education. One quarter of younger women ranked their partner wishes as a 3 or 4 on the importance scale. This was not the case for older women, for some, ranked it as the least important factor when choosing a contraceptive. None of these influences showed significance by demographics.

These findings about other influences on choice offer results that are encouraging. When older women rank partner influence as the least important factor when choosing a contraceptive, it implies that these women are taking ownership over their bodies and their future. Using contraception is the best way to prevent unintended pregnancy and with these women becoming educated and taking ownership over their own bodies that risk decreases. The relationship between preventing pregnancy and education depicts the importance of contraceptive knowledge. Knowledge about different contraceptive methods and the perfect use and typical use rates are extremely important. Knowing what methods of contraception are available is critical to a woman finding the best method for her. If taking a pill is something a woman can't see herself remembering to do, she can use an IUD instead. If this woman is only aware of birth control pills she may go ahead with her decision and be at greater risk for an unintended pregnancy. If a woman is unaware that the method of contraception she is using has a drastically lower

rate of pregnancy prevention if not used consistently and correctly, she has increased odds that she will have an unintended pregnancy.

Preventing pregnancy is key to not only a healthier future but also a more financially stable one. It is promising that the majority of women reported that cost was not the most important factor when choosing contraceptives meaning that these women felt that it was beneficial to spend the money contraceptives in order to reap the benefits. For women who don't think contraceptives are worth the money, unintended pregnancy is much more expensive. The total public costs for unintended pregnancies in 2010 were \$442 per woman aged 15 to 44 in the state of Kentucky compared with \$201 per woman nationally (State Reproductive Health Profile., 2015). Not only is unintended pregnancy expensive for women on a national level, but for women in Kentucky it's twice as expensive.

One study analyzed the savings that contraceptives provide. Contraceptives from publicly supported family planning clinics averted an estimated 2.2 million unintended pregnancies in 2010, 1.1 million of which would have resulted in an unplanned birth, thus saving the U.S. \$15.7 billion (Frost et al, 2014). Publicly supported family planning efforts in the U.S. serve millions of women each year and provided contraception to nearly 9 million women in 2010 (Frost et al, 2014). This family planning effort saves \$7.09 for every public dollar spent (Frost et al, 2014). This illustrates the importance for contraceptive methods and their ability to not only protect the future health of women, but also save them and our country money in the long run.

Limitations

Limitations of this study center on sample size and data collection length. Data collection only occurred for the timespan of a month. This length of time led to a small sample size. Because of this, significance levels between variables were hard to identify. Another limitation was the survey instrument language. Many of the patients at the Barren River District Health Department did not speak English making them unable to complete the questionnaire. If this questionnaire had been translated to multiple languages more data could have been collected. An additional limitation was one of the important outcome questions on the survey. Since this question about contraceptive choice allowed for multiple responses, it violated a principal of most inferential statistical tests. This, along with small sample size, hampered our ability to study contraceptive choice in its totality. The final limitation of this study was the locations used to collect data. Only the online survey on Qualtrics of WKU students allowed for women who did not receive services from a health department to complete the questionnaire. A variety in the locations of obtaining racially diverse participants was also a limitation.

Future Research

Future research would consist of a sample size of at least 100 women. Additionally, it would include women from every public and private source providing contraceptives within the area. It would be extremely beneficial to the state of Kentucky if this survey was completed on a state level. With that said it would also be interesting to compare the difference in contraceptive method choice and demographics found

between Northern, Eastern, Western, and Southern Kentucky. Completing this survey on a state level would allow for the comparison of barriers affecting contraceptive choice between the four different parts of the state, and would begin the process of eliminating them.

CHAPTER 6

CONCLUSION

Women's contraceptive choices involve many barriers and influences. The amount of education that a woman receives, an explanatory variable to the barrier of knowledge, influences where she goes to obtain her contraceptives. The age of a woman influences who she seeks for advice regarding contraception. Women's satisfaction with their current method is influenced by their level of income, an explanatory variable to the barrier of cost. By reducing the influence of satisfaction and the barriers of knowledge and cost women in Kentucky can begin to improve upon their contraceptive choices.

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