

IMPACT OF SHARED DECISION-MAKING ON CONTRACEPTION CONTINUATION
RATES

by

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Abstract

Approximately fifty percent of all pregnancies in the United States are unintended each year. Reducing unintended pregnancy is a complex public health issue as identified in *Healthy People 2020* with the goal of a ten percent reduction in unintended pregnancy by the year 2020. The misuse and/or early discontinuation of contraception is one of the most common contributing factors to unintended pregnancy. These facts led to the project question: Will the use of a standardized shared decision-making process for contraception selection improve contraception continuation rates? The goal of the project was to improve contraception continuation rates. A standardized contraception selection process including shared decision-making, the use of the My Contraception Tool decision aid, and provider-patient counseling with verbal and written information was implemented at a rural, tri-county health department. Retrospective chart analysis was performed to evaluate the improvement process and contraception continuation rates at the follow up visit. The sample included 29 eligible family planning patients. MCT was administered to 16 of the total sample (55.2%). Shared decision-making and provider-patient counseling was documented on 100% of the sample. 60% of the sample followed up for a method evaluation with a 58.8% contraception continuation rate. Medroxyprogesterone acetate and combined oral contraceptive pills were the most common contraceptive methods chosen. Patients that received MCT prior to seeing the provider were more likely to follow up for the method evaluation visit and to continue with contraception for pregnancy prevention.

Key Terms: Contraception, Contraception Continuation, Contraceptive Counseling, Decision Aid, Patient Autonomy, Shared Decision-Making, Unintended pregnancy

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Chapter 1

Introduction

Nearly one half of all pregnancies in the United States are unintended each year (Dehlendorf et al., 2016). Pregnancies can be considered unintended when they are mistimed, unplanned, or unwanted at the time of conception (Mangone, Lebrun, & Muessig, 2016). Unintended pregnancy leads to an increase in adverse maternal and neonatal outcomes and costs the United States in excess of eleven billion dollars annually in direct costs for pregnancy and infant care (Mangone et al., 2016). Well-documented evidence correlates pregnancy intention status and behavioral health during pregnancy with increased adverse birth outcomes and continued adverse outcomes for mother and infant (Garbers, Meserve, Kottke, Hatcher, & Chiasson, 2012).

Reducing unintended pregnancy is a complex public health challenge and has been included as a public health goal in the US Department of Health and Human Services' *Healthy People 2020* campaign with an anticipated outcome of reducing unintended pregnancy by ten percent by the year 2020 (Mangone et al., 2016). The campaign also wants to increase family planning services with modern contraceptives to 120 million users by the year 2020 (Stover & Sonneveldt, 2017). The most common factor contributing to the high rate of unintended pregnancy is the underuse and inconsistent use of contraceptives (Dehlendorf et al., 2014). Other authors have identified that a large proportion of unintended pregnancies are due to inconsistent use of contraception, early discontinuation of contraception, and frequent changes in methods of contraception (French, Cowan, Wellings, & Dowie, 2014).

The decision-making process related to contraception is complex and contains a number of factors including access to care, cost, patient knowledge, and provider-patient communication

(Dehlendorf, Levy, Kelley, Grumbach, & Steinauer 2013). Health communication has been identified as an important marker in the quality of care by the Institute of Medicine (IOM) and is directly associated with patient outcomes (Dehlendorf et al., 2013). The provider/patient relationship is important in family planning. Improved patient satisfaction with contraception is associated with greater contraceptive continuation rates (Dehlendorf et al., 2013).

Although the provider-patient relationship in contraceptive selection is important, some counseling interventions have had limited success. This may be due to a lack of knowledge regarding what women value in their interactions with the healthcare provider, and how patients prefer to make decisions regarding contraception. There is also a gap in knowledge about what occurs during routine family planning counseling (Marshall, Guendelman, Mauldon, & Nuru-Jeter, 2016).

Women are commonly dissatisfied with the counseling they receive, and there is concern that providers do not fully disclose all of the potential side effects of contraception. Patients also feel that family planning counseling sessions are dominated by the providers, and they have little to no input in the decision-making process. Even when the patient is the ultimate decision maker, there is often minimal provider engagement with patients to determine the patient's preferences and/or concerns about methods, and how these issues relate to the available contraceptive options (Dehlendorf et al., 2014).

Problem Statement

The absence of shared decision making with contraception selection increases the risk of patient dissatisfaction with contraception and increases the risk of early discontinuation of the method (Dehlendorf et al., 2013). The project site, a tri-county health department in rural Eastern North Carolina, had no defined process in place to assist patients with shared decision making

with contraception selection, and the health department did not routinely provide patients with written information on the method of contraception chosen. The purpose of this project was to implement a sustainable contraception shared decision-making process and to improve contraception continuation rates with the use of a decision aid tool to identify individualized patient needs and written/verbal counseling on the method chosen. The clinical question asked: Will shared decision- making in the selection of contraception and focused patient counseling on chosen methods improve contraception continuation rates?

Justification of Project

This project provided a standardized process for shared-decision making in the selection of contraception for patients being started initially on a method of contraception or for patients switching methods. The project incorporated the patient's individualized needs into the decision-making process with the use of My Contraception Tool (MCT) as a decision aid. The purpose of MCT was to make suggestions of contraception methods based on each individual patient's preferences (French et al., 2014).

The results of MCT were compared with the US Medical Eligibility Criteria for Contraceptive Use, which provided evidence-based recommendations from the Centers for Disease Control and Prevention (CDC) for appropriate contraception for women with various medical conditions (Curtis et al., 2016). This comparison ensured patient safety and identified any undetected contraindications from the MCT questionnaire based upon the patient's past medical history.

The benefits of this project related to the shared-decision making process included increased patient autonomy which is defined as an individual's capacity to act or the obligation to make one's own decisions (Lindberg, Fagerstrom, Sivberg & Willman, 2014). Previous

studies indicated that women value autonomy in contraceptive decision making resulting in increased patient satisfaction (Dehlendorf et al., 2013). Another significant benefit was the increased rate of contraceptive satisfaction promoting improved continuation rates and ultimately decreased numbers of unintended pregnancy. Patients who took part in the decision-making process were more satisfied with their method of contraception, because they ultimately made the decision and were more likely to continue with the method for an extended period of time (Steiner et al., 2006).

Benefits related to patient counseling on the specific method of contraception chosen included an increase in knowledge regarding contraception. Patients with a higher level of knowledge related to their method of contraception were more likely to be satisfied with the method resulting in higher continuation rates (Hall, Castano, & Westhoff, 2014). This counseling included verbal and written information about most common side effects, any potential complications related to the method, and when to return for the follow up method evaluation visit (Hall et al., 2014). Patients preferred a written handout in addition to verbal counseling due to the amount of information provided during the visit (Dehlendorf et al., 2013).

The benefit of this project to healthcare providers included a standard process to assist patients with the selection of contraception. The use of MCT ensured that each patient received individualized care and, the US Medical Eligibility Criteria for Contraceptive Use ensured patient safety. Patient counseling became routine, and each patient automatically received written information on the method chosen. Verbal counseling included all of the components of the handout including side effects, potential complications, and when to return for the follow up visit (Hall et al., 2014).

Theoretical Framework

Theory of Planned Behavior (TPB) was originally started as The Theory of Reasoned Action in 1980 to predict an individual's intention to engage in certain behaviors (Myklestad & Rise, 2007). TPB suggests that health decisions are often influenced by the beliefs, attitudes, and intentions of the individual as well as their partner (Butts & Rich, 2015). The main component of this theory is that behavioral intentions are motivated by the likelihood that the behavior will result in an expected outcome (Turchik & Gidycz, 2012). These behavioral intentions are dependent on the person's motivation.

TPB contains six constructs that comprise an individual's actual control over behavior. The first construct, attitude, refers to whether the individual views the behavior as either favorable or unfavorable (Turchik & Gidycz, 2012). The individual must be able to consider the outcomes of the behavior in order to deem it favorable or unfavorable. According to TPB, the individual that views unintended pregnancy as unfavorable will be more likely to seek contraception. The second construct is behavioral intention which refers to the motivational factors that influence the behavior. This construct suggests that patients who are motivated to avoid pregnancy will be more likely to continue with their chosen method of contraception (Myklestad & Rise, 2007).

The third construct of TPB is related to subjective norms which predict if an individual will approve or disapprove of the behavior. This construct relies on the individual's personal beliefs to guide whether or not they participate in an activity. The individual that approves of pregnancy prevention will be more likely to seek contraception. This construct may be more difficult for the patient that does not want to become pregnant but cannot be on a method of contraceptive due to religious views. The fourth construct of social norms is similar to the third

construct but focuses more on the behaviors of a group of people rather than the individual (Myklestad & Rise, 2007).

Perceived power is the fifth construct and refers to the factors that either facilitate or impede the performance of the behavior. Factors to facilitate contraception may include family planning programs, shared-decision making, and, family or partner support. Factors to impede contraception may include access to care, cost, religious views, and partner conflict. The final construct is perceived behavioral control and this relates to the patient’s perceived ease or difficulty in performing the behavior. This construct is quite similar to the fifth construct in identifying what aspects related to the individual enable or impede the patient in obtaining contraception (Myklestad & Rise, 2007). Figure one below provides an illustration of TPB.

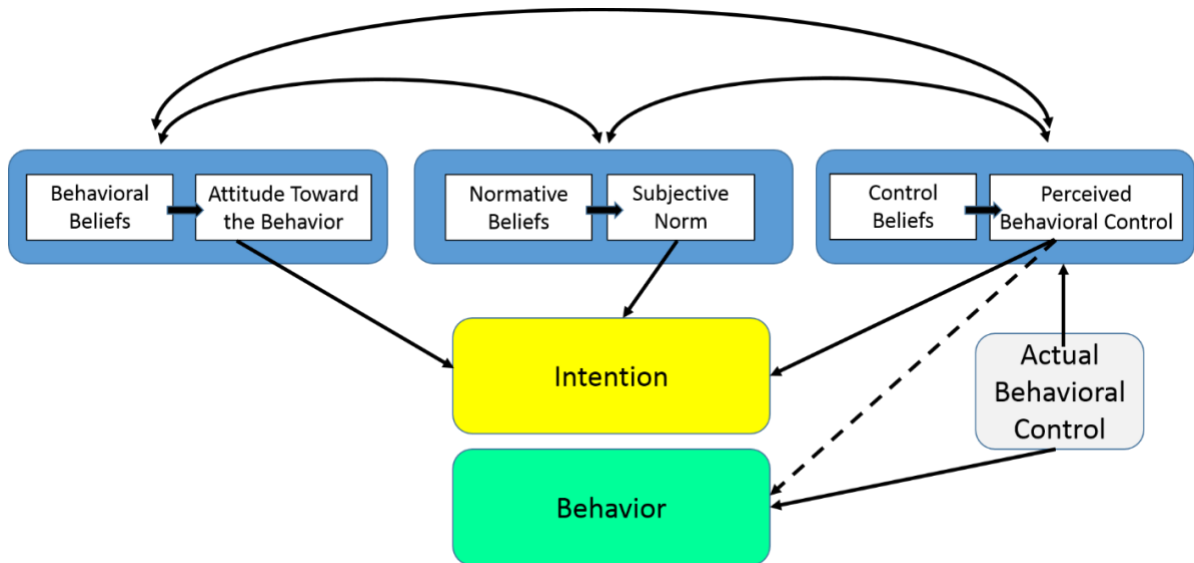


Figure One (Ajzen, 1991)

TPB has been used in numerous studies to explain why patients choose or do not choose to prevent pregnancy with contraception. Researchers used TPB to determine patient intention in the use of long acting contraception and used the constructs of TPB in the development of a questionnaire. Health care providers should identify perceived barriers when counseling patients

on long acting contraceptives and promote them as reliable methods of contraception (Roderique-Davies, McKnight, John, Faulkner, & Lancaster, 2016). Hall et al., (2014) noted that according to TPB, comprehension of information about contraception shapes women's contraceptive decision-making and behaviors. The higher the individual's level of contraception knowledge, the more able she is to make an informed decision regarding contraception.

Hanson et al., (2015) used TPB to identify behavioral determinants of contraceptive use. The study focused on direct versus indirect measures related to the theory. Direct measures were focused on behavior and indirect measures focused on the factors that made the behavior easy or difficult to perform (2015). Direct and indirect measures were directly correlated, and there was a strong relationship between contraceptive behavioral intention and contraceptive use suggesting that TPB is useful in predicting contraceptive use with a focus on behavioral intention (Hanson et al., 2015).

TPB has also been used in studies related to unintended young pregnancy. Compernelle (2017) noted there are two reasons TPB is useful in the study of unintended pregnancy. The first reason is that young adulthood is often characterized by frequent transitions and the nature of uncertainty. Consideration of these ever-changing dynamics in combination with the social environment is key to understanding decision-making related to fertility. Females in the young adult age group from eighteen to twenty-four years old often act upon their perceptions of what other people are thinking or doing (2017). These other people may include parents, other family members, or friends. Secondly, emphasis must be placed on the complexity of intentions and reasoned action during the time when the individual makes the decision to have unprotected intercourse. These factors are likely to offer additional explanation of the high rate of unintended pregnancy in the United States (2017).

Assumptions

This project contained three assumptions. The first assumption was that misuse or early discontinuation of contraception increased the risk of unintended pregnancy. The second assumption was that shared-decision making in contraception selection increased patient autonomy and method specific satisfaction. The final assumption of this project was that patients that were satisfied with the method of contraception chosen remained on the method for a longer period of time.

Project Questions

This Quality Improvement (QI) project question asked: Will the use of a standardized shared decision-making process for contraception selection contribute to patients continuing their contraception? This question was measurable with descriptive statistics by monitoring contraception continuation within the medical record.

Definitions of Terms

The following definitions are provided to ensure uniformity and understanding of these terms throughout the project. Contraception is defined as the deliberate prevention of conception or impregnation (Encyclopedia Britannica, 2017). Contraception continuation refers to the length of time a patient uses a consistent method of contraception (Hall et al., 2014). Contraceptive counseling is defined as the information sharing of contraceptive knowledge from provider to patient (French et al., 2014).

A decision aid is a comprehensive framework for patients to evaluate their medical options and to select the option that is most consistent with their needs (Dehlendorf et al., 2016). Patient autonomy is known as the capacity to act or the ability to make one's own decisions (Linberg, Fagerstrom, Sivberg, & Willman, 2014). Shared-Decision Making is the process whereby a

person makes decisions with a healthcare professional, considering evidence-based information along with the patient's individual needs, values, and preferences (Wyatt et al., 2014).

Unintended Pregnancy is defined as a pregnancy that is mistimed, unplanned, or unwanted at the time of conception (Mangone et al., 2016).

Summary

Unintended pregnancy is a significant problem in the United States and is often related to misuse or early discontinuation of contraception (Dehlendorf et al., 2013). Patients identify side effects as the one of the most common reasons for early discontinuation (Hall et al., 2014). The use of shared decision-making in contraceptive selection provides a patient centered approach to family planning by enabling the patient to make a decision with input from the provider. The use of decision aids individualizes the selection process for each patient based upon their unique needs and circumstances (Dehlendorf et al., 2013).

Providers can ensure patient safety by comparing the decision aid results with the US Medical Eligibility Criteria for Contraceptive Use. Intensive patient counseling is also important in increasing contraceptive knowledge in the patient population. Verbal and written information provided to each patient on the specific method chosen will discuss most common side effects, potential complications, and when to return for a follow up visit. Each step of the project was important to ensure the patient was satisfied with their decision and contraception continuation was achieved.

Chapter 2

Literature Review

This literature review was conducted to determine the current evidence related to contraception continuation rates, decision aids, shared-decision making, and provider-patient counseling. The sources used for the literature search included Medline via Pubmed, CINAHL, Clinical Key, Science Direct, Proquest, and Clinical Key for Nursing. The initial literature search yielded a total of 320 journal articles from these sources with the combination of keywords including contraception, contraception continuation, unintended pregnancy, shared-decision making, decision aids, contraception knowledge, and contraception counseling. Literature search results were limited to no more than ten years old and English language when possible. Following exclusion of articles not directly related to the project question and exclusion of duplicate resources, 76 full-text journal articles were reviewed for eligibility. A total of 24 articles were found to be potentially significant in providing evidence related to shared-decision making and contraception continuation rates. See Appendix M for Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) chart.

Unintended pregnancy has been defined as pregnancy that is mistimed, unplanned, or undesired at the time of conception (Mangone et al., 2016). Of all the pregnancies in the United States, almost half of them are considered unintended (Wyatt et al., 2014). The US has a higher percentage of unintended pregnancy rates when compared to several other industrialized countries (Clarke, Gold, Simon, Roberts, & Stein, 2012). Unintended pregnancy is a major public health issue and financial burden on the US costing more than eleven billion dollars annually in direct and indirect costs (Clarke et al., 2012).

Unintended pregnancy leads to worse maternal and neonatal outcomes when compared to intended pregnancy (Levy, Minnis, Lahiff, Schmittiel, & Dehlendorf, 2015). Women with unintended pregnancy may not be at optimal health at the time of conception or throughout pregnancy. In addition, they may delay prenatal care or healthy behaviors such as folic acid supplementation and abstaining from illicit substances (Centers for Disease Control and Prevention, 2016). Adverse neonatal outcomes from unintended pregnancies can include birth defects and low birth weight (Healthypeople.gov, 2017). These negative outcomes can affect the individual throughout life causing poor mental and physical health as well as lower educational attainment and behavioral issues (2017). Adverse maternal outcomes can include postpartum depression, and an increased risk of physical violence during pregnancy (2017). All adverse maternal outcomes have the potential to negatively impact the mother's ability to care for her infant including a reduced likelihood of breastfeeding (2017).

Unintended pregnancy affects younger women age eighteen to twenty-four years old more commonly and lower-income women have disproportionately higher rates of unintended pregnancy (Mangone et al., 2016). Approximately eighty-two percent of unintended pregnancies are mothers age fifteen to nineteen years old (Healthypeople.gov, 2017). Statistics show one in five unintended pregnancies in the US each year occur in a female that is less than twenty years old (2017). Teen mothers are less likely to graduate from high school or obtain a GED (2017). This results in fewer employment opportunities and significantly lower earned income annually (2017).

Reducing unintended pregnancy is a complex public health challenge and a national public health goal (Mangone et al., 2016). In the *Healthy People 2020* campaign, the US Department of Health and Human Services (USDHHS) aims to reduce the rate of unintended

pregnancy ten percent by the year 2020 (Mangone et al., 2016). To accomplish this goal, actual and/or perceived barriers to family planning must be identified.

One of the most common reasons noted for unintended pregnancy is the misuse or inconsistent use of contraception. Ninety-five percent of unintended pregnancies are due inconsistent contraception use. Contraception use in the US is widespread with almost ninety-nine percent of sexually active women having used some form of contraception at one point. Evidence suggests that approximately sixty-two percent of child bearing aged women in the US are currently using a method of contraception, while eleven percent of women at risk for unintended pregnancy are on no method of contraception (Wyatt et al., 2014).

The use of contraception is affected by a complexity of circumstances including access to family planning services, cost, lack of insurance coverage, and patient knowledge (Dehlendorf et al., 2013). All of these factors impact an individual's ability to either obtain contraception or continue the method they are currently on. Another important factor to consider is the provider-patient relationship. Health communication is considered an important indicator of the quality of care by the IOM and is very closely associated with patient outcomes (2013).

When addressing the issue of access to care, USDHHS's *Healthy People 2020* campaign moves to increase the awareness of preconception care which helps women address any health issues or concerns before pregnancy (Healthypeople.gov, 2017). Preconception care focuses on the individualized reproductive life plan of the patient and provides counseling based upon the needs of the patient (2017). Increased awareness of preconception care will result in increased patient participation as only thirty percent of women in the US currently take part (2017).

Lack of insurance coverage and cost of contraception can greatly impact an individual's ability to consistently prevent pregnancy. Many programs have been developed to help women

prevent pregnancy such as publicly funded family planning programs that provide pregnancy prevention services. According to the Guttmacher Institute (2017), publicly funded family planning programs helped women avoid approximately two million unintended pregnancies in 2014. Women with private insurance have seen benefit from the Affordable Care Act which requires most private health insurance plans to cover a designated list of preventative services with no out of pocket cost for the consumer (2017). These preventative services include all Food and Drug Administration (FDA) approved contraceptive methods as well as contraceptive counseling (2017).

The provision of no cost contraception has also been investigated and found to have significant impact not only on unintended pregnancy rates but induced abortion rates (Peipert, Madden, Allsworth, & Secura, 2012). Providing no cost long acting reversible contraception (LARC) has the potential to greatly reduce the numbers of unintended pregnancies and induced abortions. One study enrolled over nine thousand women at high risk for unintended pregnancy into a program in which they received the LARC of their choice for no cost (Peipert et al., 2012). There was a significant reduction in abortion rates, repeat abortions, and teen pregnancies with no cost contraception (2012).

The patient's knowledge level regarding contraception also has a significant impact on contraception continuation rates (Hall et al., 2014). In a randomized controlled trial, daily educational text messages were sent to the mobile phones of all members of the experimental group. The study took place at an urban family planning center with a population consisting of 659 women ages thirteen to twenty-five (2014). Contraceptive knowledge was directly related to contraceptive continuation and interventions should be implemented to increase contraceptive knowledge including provider-patient counseling to increase contraception continuation rates

(2014). Hall et al., (2014) also noted that additional studies would be needed to fully analyze this complex relationship between family planning knowledge, decision-making, and patient behaviors.

Patients most commonly stopped contraception due to unpleasant side effects (Hall et al., 2014). In fact, fifty percent of women who discontinued oral contraception did so because of side effects noting weight gain and mood swings as the most common (Marshall et al., 2016). Knowledge deficit and unrealistic patient expectations due to the knowledge gap increase the patient's risk of early contraception discontinuation (Hall et al., 2014). This knowledge deficit problem can be resolved by increasing contraceptive knowledge and making patients more aware of potential side effects for each method of contraception (Hall et al., 2014).

Women are often concerned the healthcare provider is not fully disclosing all of the potential side effects of the contraceptive method, and they have a hard time making a sound decision on the method best for them (Dehlendorf, Kimport, Levy, & Steinauer, 2014). Provider-patient interactions have been studied including counseling approaches and patterns of use (2014). Dehlendorf et al., (2014) concluded that most of the family planning visits lacked adequate provider-patient engagement which can negatively affect the patient contraception decision making process (2014).

History of the Problem

Health communication has been identified as one of the most significant barriers to contraceptive use (Dehlendorf et al., 2013). Health communication is a broad term that includes many different factors including the provider-patient relationship, counseling, and the decision-making process. Development of a therapeutic relationship is an important step in the successful implementation of a patient-centered approach to care. Morse, Ramesh, and Jackson (2017) note

that earning patient trust, acknowledging the values of each patient, and providing continuity of care are important components needed to improve patient satisfaction and outcomes. Though health communication is important, Dehlendorf et al., (2013) noted that provider-patient counseling interventions alone are not effective in improving contraception continuation rates. A possible explanation for this finding is the lack of research regarding what women value in their interactions with the family planning provider (2013).

In the past, family planning has placed more of an emphasis on the autonomous or “informed choice” model of decision making (Dehlendorf et al., 2013). Within this model, the provider’s role is to present objective information to the patient which facilitates the patient in choosing the preferred method of contraception and assessing the patient for medical contraindications (2013). There is a gap in literature regarding whether or not this model is effective. Previously women have voiced that they do value autonomy in deciding their method of contraception, and the vast majority do feel that they should make the final decision about which method they choose. However, almost half of these women desire some input from the provider in the decision-making process (2013).

Dehlendorf et al., (2013) noted that providers often expressed a specific preference or suggestion which influenced the patient’s final decision (2013). The majority of these suggestions were welcomed, especially if they included an explanation of the underlying reason behind the suggestion such as patient safety (2013). Other patients noted that provider input was appreciated when patients asked specifically for it (2013). Patients that felt negatively towards the provider input felt that the provider did not present factual information but presented their opinion or anecdotal experience about whether a particular method was good or bad (2013).

Overall, with the absence of medical contraindications, women prefer that providers participate in the contraception decision making process within limits (2013).

Family planning sessions dominated by the provider allow minimal opportunity for patients to truly engage and express their preferences and concerns regarding contraception methods. Patient perceptions of the interpersonal provider-patient relationship have been directly linked to contraceptive use and continuation (2014). Despite this evidence, women are often dissatisfied with the contraception counseling they receive with specific concerns that providers do not fully disclose all of the information needed to make an informed contraception decision including potential side effects (2014).

The method in which contraception counseling is presented also impacts patient satisfaction and patient knowledge level. Patients appreciate verbal counseling, but they also prefer to have written information to take home (Dehlendorf et al., 2013). Patients feel that they are presented an overwhelming amount of information needed to make an informed decision on contraception, and they often cannot not remember all of the facts without written information (2013). Some patients also preferred to obtain written information prior to the visit, so they could be better prepared to interact with the provider (2013).

Present Status of the Problem

A large proportion of the unintended pregnancies in the US have been linked to inconsistent use of contraception (French et al., 2014). The end result of poor contraceptive decision making can lead to negative social and health consequences (2014). Improvement of the contraceptive decision-making process is needed to increase uptake and consistency of contraception (2014). Several interventions are needed to improve this process including the use of decision aids, implementing a shared decision-making model, and improving provider-patient

counseling. Each of these components are significant in improving patient satisfaction with contraception and ultimately reducing unintended pregnancy rates (2014).

Decision aids have been used frequently to assist patients with health care related decision making (French et al., 2014). They provide a structured framework of options that are analyzed and selected based on possible outcomes in relation to each patient's needs and values (2014). Decision aids also assist in identifying risks and benefits of a particular health related issue (2014). The use of decision aids in family planning helps patients to determine the most appropriate methods of contraception based on a number of factors and patient preferences (2014).

My Contraception Tool (MCT) is one of the most frequently used decision tools for contraception (French et al., 2014). MCT was developed collaboratively between the London School of Hygiene and Tropical Medicine, Brook, Family Planning Association (FPA), and Maldaba, LTD. French et al., (2014), developed an online pilot study in which 78 individuals including 12 contraception experts completed the MCT questionnaire. The findings from this study included that decision aids are acceptable for use in contraception consultations, and decision aids such as MCT may be valuable in reaching patients who have not yet accessed sexual health services (2014).

Wyatt et al., (2014) sought to determine what attributes were important to women when deciding upon a method of contraception. A systematic review of decision aids, structured interviews, and questionnaires were analyzed to determine the most important contraceptive characteristics to women (2014). Decision aids focused more often on individual attributes of contraception methods, and they should be tailored to include the preferences that are most

important to the patients (Wyatt et al., 2014). Additional research needs to be done to provide continuous improvement to decision aids, and their impact on contraception selection (2014).

The Cochrane Review, a systematic review of decision aids performed in 2003, assisted patients in contraception decision making in thirty-four randomized controlled trials (Steiner et al., 2006). The use of decision aids improved overall contraceptive knowledge, and patients had more realistic expectations of risks and benefits of contraception as well decreased decisional conflict related to knowledge deficit (Steiner et al., 2006). An accurate understanding of pregnancy risk is also required for patients to make informed contraceptive decisions (2006). Decision aids and provider-patient counseling assist in providing patients with this knowledge (2006).

The process of choosing a method of contraception is complex. With the absence of adequate decisional support, many patients choose a method that does not optimally fit their preferences and unique circumstances (Wyatt et al., 2014). The Shared Decision-Making (SDM) Model has been incorporated into family planning to assist patients (2014). SDM is defined as a process in which the patient makes a decision with the healthcare provider including consideration of the patient's unique needs, preferences, and circumstances. An increasing number of women request SDM when choosing contraception (2014).

Within SDM, the provider and the patient each contribute to the choice of contraception. There are variations in the amount of provider input based on the preference of the patient. Some patients choose to make the final decision autonomously after receiving provider input and counseling (Dehlendorf et al., 2013). Other patients rely more heavily on the provider to assist in making the final decision (2013). Each patient situation is different, and the provider has to be sensitive to this fact and provide the amount of input the patient requests (2013). Providers that

facilitate the patient's preferred method of decision making are more likely to improve patient outcomes (2013).

There are three distinct phases of SDM including information sharing, deliberation, and decision making (Dehlendorf et al., 2013). In SDM, all three of these phases are shared interactions between the provider and the patient. Active participation by both parties in all three phases ensures a consistent method of decision making, which has been shown to be more effective for contraceptive selection than the use of the informed choice model (2013). SDM is an example of patient-centered care which focuses on the needs and preferences of the individual patient (2013). Providers must be aware of this and strive to include the patient in all aspects of care in order to meet the goals of patient-centered care (2013).

Provider-patient communication has been shown to have a significant impact on women's contraceptive use (Dehlendorf et al., 2014). The preferred methods of counseling and how much information they expect to receive from the healthcare provider are varied from patient to patient (2014). Women are more likely to be dissatisfied with contraceptive counseling if they feel they are not receiving enough information such as full disclosure of potential method specific side effects (2014). Women also value the comprehensiveness of counseling and appreciate learning about alternative methods of contraception even if they came into the visit with a particular preference (Dehlendorf et al., 2013).

The provider-patient relationship also has implications on contraception selection and continuation. Patients that are not comfortable with the provider may not ask necessary questions and as a result may not select the best method for them (Dehlendorf et al., 2013). Some patients describe the ideal provider-patient relationship as familial or friend-like (2013). Patients tended

to prefer a less formal provider when discussing sensitive issues such as sexual history and risk of pregnancy (2013).

Patients also felt that a long-standing relationship with the same provider influenced their comfort level and enabled them to speak more freely and ask more questions regarding contraception (2013). Provider personal opinion regarding methods of contraception was appreciated by some patients and not by others. Some patients reported they appreciated provider opinion if it was warranted or requested (2013). Other patients felt pressured into a particular method if the provider thought it was a better choice, or the provider had personal experience with it (2013).

Patient centered care and shared decision making including decision aids works well to assist patients in choosing a method of contraception (Wyatt et al., 2014). These processes make patient care individualized and allow patients to decide the best method of contraception based upon a number of factors along with provider input. As always, patient safety is a major concern and many studies recommend comparing decision aid results with the US Medical Eligibility Criteria for Contraceptive Use to ensure the method chosen is safe for the patient (Curtis et al., 2016).

Summary

Contraception decision making is a complex process with many factors to consider. Current literature suggests that the use of decision aids and shared decision making ensure the patient's needs and preferences are identified and taken into consideration when the patient selects their desired method of contraception. Provider counseling is also important in this process in that patients with a higher level of contraception knowledge feel better prepared to make sound decisions and remain on the same method of contraception for longer periods of

time (Hall et al., 2014). With the combined use of decision aids, shared decision making, and provider counseling, individual patient needs and preferences are identified, and the best method for the patient is chosen. Patients that are satisfied with the provider-patient encounter and the method of contraception are more likely to remain on the same method of contraception and less likely to have unintended pregnancy.

Gaps in Literature

A gap in literature can be defined as missing or inadequate information in research that limits an individual's ability to make a conclusion to the research question or problem statement (Cary, Yon, Beadles, & Wines, n.d.). One gap in literature identified was the lack of objective assessment of contraception visit content. Dehlendorf et al., (2013) noted their findings were subjective, because the study consisted of patient interviews. A more objective assessment would be helpful in assessing women's experiences with provider-patient counseling and the resulting impact on patient contraception decision-making (2013).

The use of decision aids in contraception counseling and decision-making are relatively new. French et al., (2014) noted a gap in literature regarding the impact decision aids have on decision quality, sustained knowledge, contraceptive use, and sexual health outcomes. Additional research with decision aids will be needed to determine their full impact. Similarly, the Steiner et al., (2006) study, which compared different patient approaches to increase contraception knowledge and effectiveness, was not able to fully evaluate whether improved contraceptive knowledge resulted in improved health outcomes due to the type of study.

Garbers et al., (2012) noted a gap in knowledge related to the long-term implications of individualizing health materials and the effects on contraceptive continuation. The study was completed in a four-month period, so there is uncertainty in whether the interventions can be

generalized for periods of time longer than four months, and if the interventions will continue to be effective for time periods longer than four months (2012). Additional research will be needed to determine if the interventions are effective for long-term use.

Limitations

Many of the studies in the literature review noted the setting as a possible limitation. One study was conducted exclusively in the United States, and the authors felt counseling preferences may not be applicable in all other settings due to differing cultural expectations (Dehlendorf et al., 2013). Another study was conducted in a single metropolitan area in the US. The authors were unsure if the contraception counseling could be generalized to other parts of the US (Dehlendorf et al., 2014). In addition, the Sundstrom et al., (2015) study took place in the southeastern portion of the US and authors noted that findings may not be generalizable to other populations.

Another limitation identified was that counseling sessions were only done with a licensed health professional such as a physician or nurse practitioner (Dehlendorf et al., 2014). The authors were unsure if this type of counseling could be generalized to peer counseling-type settings (2014). In the Langston et al., (2010) study, the health care providers were aware of the study and may have changed the way they provide patient counseling to possibly include more information. The providers were asked not to alter the way they presented the information to the patients, but the authors were unsure if they did or not causing study limitations (2010).

Lopez et al., (2009) used theory-based strategies to improve contraceptive continuation. When theories or models were only partially implemented their effectiveness may be limited and thus outcomes may be limited. They also noted that using parts of different theories combined together limits the user's ability to determine which parts of what theory worked best, because

individual theories could not be evaluated when used in combination with others (2009). Lopez et al., (2009) also noted that interventions were emphasized over the theory or model in some trials which limits the validity of the results related to theory-based strategy effectiveness.

Summary

Almost fifty percent of all pregnancies in the United States are unintended (Wyatt et al., 2014). The majority of these pregnancies are related to contraception misuse or early discontinuation (2014). Throughout the literature, the use of decision aids and shared decision-making in combination with provider-patient counseling have been proven effective in assisting patients to make sound contraceptive decisions (French et al., 2014).

Patients with increased contraceptive knowledge and patients who take part in the decision-making process are more satisfied with their method of contraception and are more likely to continue this method for a longer period of time (Hall et al., 2014). This literature review supports the hypothesis which states that the use of shared decision-making, decision aids, and provider-patient counseling improves contraceptive continuation rates and ultimately decreases unintended pregnancy rates.

Chapter Three

Overview

The process of contraception decision-making is complex and dependent upon a number of factors (Dehlendorf et al., 2013). This quality improvement project was designed to improve the process of contraception selection using the shared decision-making model, My Contraception Tool decision aid, and provider-patient counseling to assist patients in selecting the most appropriate method of contraception based upon the unique needs and preferences of the patient.

Design

The process chosen for this DNP project was based on the assumption that implementing a shared decision-making model including decision aids and provider-patient counseling would result in increased contraception continuation rates. The project was designed as a performance improvement project with a standardized plan for patient counseling on contraception using the PDSA rapid cycle of improvement. The data collection included retrospective chart analysis of family planning patients initially starting on contraception or switching methods between the months of January 2018 and February 2018. The chart review was considered retrospective because the data was not collected until after the project was implemented. The chart review was used to assess adherence to the newly implemented shared decision-making model and to assess contraception continuation rates at method evaluation visit.

Setting

This quality improvement project was implemented at a tri-county health department system in rural, Eastern North Carolina. The health department system consists of three separate health departments in neighboring counties underneath leadership of a solitary health director.

The healthcare providers included one physician, one midwife, and one women's health nurse practitioner. The project setting did not have a standardized process to assist in contraception decision-making. They also did not routinely provide patients with written information on contraception unless specifically requested. See Appendices F and G for letters of support from the project site and the site champion.

Sample

The sample consisted of sexually active females of child bearing age and ability that were participating in the family planning program at one of the three project sites. The females had to be actively seeking contraception for the purpose of preventing unintended pregnancy and were being initially started contraception or changing contraception methods.

Methods

This DNP project implemented a shared decision-making process to use with all family planning patients being initially started on contraception or changing methods. All of the members of the healthcare team including the physician, midwife, women's health nurse practitioner, and eight registered nurses attended a training session prior to implementation. Three training session were held, one at each of the project sites.

During each training session, each step of the process was reviewed using the staff training PowerPoint located in Appendix K. Administration of MCT was demonstrated with the use of simulated patients. Instruction was given on how to access the website, complete the survey, and print the results page. The MCT link was given to all staff for easy access to the correct website. Staff and providers were educated on the location in the patient's EHR to document each step of the process.

Throughout project implementation, bi-weekly meetings were conducted and to evaluate the project using the Plan-Do-Study-Act Cycle (PDSA Cycle). This tool was obtained from the Institute of Healthcare Improvement and was used to determine whether the change implemented in the project led to improvement (Institute for Healthcare Improvement, 2018). Each step of the PDSA cycle was thoroughly reviewed and written out and provided to the site champion prior to the first bi-weekly meeting.

During the first meeting, the PDSA cycle was reviewed and feedback was obtained from the site champion. Meetings were held every two weeks for the duration of project implementation to review the progress of the project and to determine any limitations or challenges. The PDSA cycle was used during each meeting to evaluate the project and to determine any needed changes to improve the process. Appendix P Contains the original PDSA cycle that was created prior to project implementation. Bi-weekly meetings were held to review the project using the PDSA cycle. With each meeting, the process was evaluated and feedback was obtained from the nurses and providers.

A copy of the CDC's US Medical Eligibility Criteria for Contraceptive Use was given to each provider prior to implementation. Time was allowed throughout each training session and at the end of each session for questions or comments. Each person in attendance was given a copy of the PowerPoint which included all of the steps of the process, the direct link to MCT, and contact information for the DNP student and site champion. A follow up email was sent to all members of the healthcare team with the date of implementation a week prior to the start of data collection with a digital copy of the training PowerPoint. Implementation was initiated on the same day at all three health departments.

The process began with a registered nurse administering the short version of the My Contraception Tool (MCT) decision aid to all family planning patients seeking contraception. This web-based decision aid took approximately five minutes to administer and was done during the time when the nurse collected the patient history. The results of the MCT were printed and given to the healthcare provider to review and sign. Providing the healthcare provider with a printed copy of the results made reviewing the recommendations easier and allowed the provider to take the results into the room to review with the patient. After the provider reviewed the printed MCT results, the nurse scanned the document into the patient's record and attached it to current visit.

Prior to going in to see the patient, the healthcare provider reviewed the patient's medical history, sexual history, and other pertinent information along with the results of MCT. The provider compared MCT's recommendations with the patient's history and CDC's US Medical Eligibility Criteria for Contraceptive Use to ensure the method was safe and would be the most effective for the patient (Curtis et al., 2016). After the chart review, the healthcare provider reviewed the MCT results with the patient and engaged the patient through the shared decision-making process by providing information on the methods of contraception the patient was interested in and provided as much or as little input as desired by the patient in making the final decision.

The patient then made the final decision on the method of contraception, with assistance as needed from the healthcare provider. Once the patient and provider were satisfied that the method of contraception was the best choice, the provider counseled the patient on the most common side effects of the method, signs of complications, when to return for a follow up visit, and addressed any additional questions or concerns the patient had.

Each patient received the ‘Birth Control Facts’ pamphlet in addition to verbal counseling from the healthcare provider and registered nurse. This pamphlet was produced by Education, Training, and Research (ETR) which is a non-profit organization with the mission of providing science-based education to individuals, families, and communities (Education, Training, and Research, 2017). This handout was not new to the project site but had not been routinely distributed to patients receiving contraception. The handout contained side effects, effectiveness, and general information on the nine most common methods of contraception, in an organized table format. This pamphlet contained illustrations of each method and was available in English and Spanish (2017). Appendix C contains a copy of the interior of the pamphlet.

The pamphlet was provided during the follow up time with the nurse after the provider saw the patient and developed an individualized plan of care for the nurse to review with the patient. The nurse reviewed all warning signs of potential complications and reiterated side effects and provided specific instructions on how to start the contraceptive method as applicable. The nurse scheduled the patient a follow up appointment to return for a method evaluation. The duration of time before the follow up depended on the contraceptive method chosen and/or healthcare provider preference.

Patients that chose oral contraceptive pills, patches, or rings followed up in one to three months. Patients that chose LARCs which included an intrauterine device or subdermal implant followed up in four to six weeks. Patients that chose condoms were only included in the initial data collection but not included in the follow up data. Patients that chose condoms as the method typically followed up only on an annual basis. Patients started on medroxyprogesterone acetate routinely did not return until the next injection was due. This time frame was between twelve to fourteen weeks. The date and time of the method evaluation appointment was given to the patient

on a card and also documented in the patient's electronic health record. At the method evaluation appointment, the healthcare provider determined if the patient continued the method.

Evaluation of the project outcomes included retrospective chart review of the newly implemented process and whether each step was followed for every family planning patient initially being started on contraception or switching methods. To evaluate this, the chart was reviewed for clear EHR documentation of the patient's MCT results, the contraceptive method chosen, documentation that the patient received the 'Birth Control Facts' pamphlet along with verbal counseling, and the date and time of the method evaluation appointment. Evaluation of contraception continuation rates were obtained by retrospective chart reviews at the method evaluation visit. Clear documentation of whether or not the patient remained on the same method as the previous visit were present in the chart along with patient feedback on satisfaction of the method. See Appendix H for the retrospective chart review data collection form.

Protection of Human Subjects

An overview of the project was submitted to the Doctor of Nursing Practice (DNP) faculty for approval. The project was deemed a quality improvement project by Suzanne Sparrow from the East Carolina University Institutional Review Board (IRB) and the DNP student was waived from going through the entire IRB process. See Appendix L for the IRB waiver form. In order to track when patients returned for follow up appointments, the patient's medical record number was recorded along with the initial date of visit and the date of the follow up appointment. This information was recorded in a patient tracking tool that was used only at the project site. This tool was not removed from the project site and was destroyed when data collection was complete.

The information was secured in a locked cabinet in the locked provider's office when not in use by the DNP student. None of this information was included for data. See Appendix J for the patient tracking tool. This information was used strictly to identify which charts to review. Contraception continuation rates were evaluated by retrospective chart review without involving any protected health information which ensured privacy protection. MCT did not require any type of identifying information for the patient to complete the survey. IRB approval was obtained to use the patient tracking tool, the data collection tool, and MCT. The signed approval from IRB is located in Appendix L.

Instruments

My Contraception Tool (MCT) is an interactive, online decision aid that was developed by the London School of Hygiene and Tropical Medicine, Maldaba, and two of the United Kingdom's leading sexual health programs, Family Planning Association (FPA) and Brook (London School of Hygiene & Tropical Medicine, 2010). Maldaba is a software company that specializes in web applications for health research (Maldaba, 2010). MCT is a free web-based questionnaire that provides contraception recommendations based on the patient's health, lifestyle, preferences and how they weight certain issues such as sexually transmitted diseases (Family Planning Association, 2017).

Permission was obtained from the MCT team via email to use the tool in the project. See Appendix D for the email correspondence. MCT was accessed from the Brook website. Two questionnaires were available on the Brook website. The longer survey took fifteen minutes to complete and asked more detailed questions about the patient's past medical history. The shorter survey contained around twelve questions depending on the individual's responses and took five minutes to complete. The shorter questionnaire did not ask specific questions regarding the

patient's past medical history or past sexual history. The short version of the questionnaire was used for this project, because health history information was routinely collected and updated at each family planning visit in the patient's electronic health record.

MCT was developed either for healthcare professionals to ask the patient each question of the decision aid or for patients to self-administer. MCT allowed the user to skip questions and still receive contraceptive recommendations. The survey also allowed the user to go back and change answers if needed. MCT did not ask for personal identifiers such as name or date of birth. The first several questions were constant and did not change based on patient responses (Family Planning Association, 2017). See Appendix E for a sample list of possible questions from MCT.

The final step of the survey involved the patient indicating how much they were concerned with the attributes selected such as pregnancy, sexually transmitted diseases, or acne. The results screen listed the methods of contraception recommended for the patient with bars indicating which methods were more compatible based on the individual preferences of the patient (Family Planning Association). Appendix F provides an illustration of an MCT results page.

Limited information was available regarding the applicability of MCT in the health department setting. This tool was developed and released in 2010. French et al., (2014) noted that decision aids have the potential to help patients make better contraceptive choices while taking into account individual patient preferences and circumstances. These findings were not specified to a particular healthcare setting. MCT is a valuable decision aid that is applicable for lay and professional contraception selection scenarios (2014). French et al., (2014) concludes that MCT has been shown to be acceptable for assisting patients in the contraceptive decision-

making process, but more research is needed to study decision quality and contraceptive continuation rates.

Despite the absence of specific validity and reliability testing, MCT was chosen as a tool for this DNP project because of the accessibility of the tool being web-based and all of the preferences included for the patient to select when looking for a method. With the selection of preferences and the option to grade the most significant preferences as more significant or less significant, MCT provided an in-depth look at contraceptive options and provided a score for every method of contraception applicable for the patient and not just the methods the patient was most interested in. The professional staff at the health department reviewed the tool and considered it to be consistent with the evidence provided by the current sources such as Centers for Disease Control and Prevention and the American Congress of Obstetricians and Gynecologists.

The results page occasionally encouraged patients to seek a method they had not considered but may be a good fit for them (French et al., 2014). MCT was also chosen because the survey did not require any demographic information from the patient except for gender and age. There were no identifying factors to cause concern of privacy invasion. The survey does have an option to finish later and in that case the patient would be required to provide a password to reopen the survey at a later time (Family Planning Association, 2017).

Data Collection

Data was collected by retrospective chart review. An initial chart review was completed by the DNP student on each eligible patient following the initial family planning visit. Patients were deemed eligible if they were using family planning services to prevent pregnancy and were either starting on contraception for the first time or switching from one method to another. Data

collected from this initial encounter indicated whether this was an initial start or a method change, if the MCT was completed, the provider reviewed the MCT results, SDM was utilized by the provider, the type of contraception chosen, education and handout provided to the patient, and the follow up appointment date and time documented in the chart and provided to the patient. Data was recorded on the data collection form found in Appendix I.

Each eligible patient was added to the patient tracking tool in Appendix J to assist with identifying the correct patients for the final chart review. The DNP student completed the final chart review after the patient's follow up visit to determine if the patient followed up and if they remained on the method of contraception chosen in the initial visit. This data was added to the data collection form found in Appendix I. Once data collection was complete, the patient tracking tool was destroyed by shredding on site to ensure protection of confidential patient information. The data collection form, which did not contain any patient identifying information, was retained for data analysis.

Data Analysis

The quantitative data collected was analyzed with descriptive statistics utilizing measures of central tendency. Initial data was entered into the data collection tool during the first chart review. Data collected during this chart review included initial start on contraception or method change, if the MCT was completed, if the provider reviewed the MCT, if the MCT was documented in the electronic health record, whether or not the patient took place in shared decision-making, the contraceptive method chosen, if counseling was provided, if the "Birth Control Facts" brochure was provided, and if the patient was given a follow up appointment date and time.

Patient numbers were recorded into the patient tracking form during the initial chart review to ensure the correct patients would be included in the second chart review. This information was locked inside of a filing cabinet and stored in a locked office at the project site when not in use. The second chart review was completed after the patient's follow up appointment that was documented in the patient's note. During the second chart review, data regarding whether or not the patient kept the follow up appointment and if they continued their current method of contraception was added to the data collection form. Following the second chart review, the patient tracking form was shredded on site to ensure security of patient information.

Limitations

A number of limitations to the project were identified. On the first day of data collection, several members of the project site staff noted difficulty with printing the results page of MCT. When this difficulty arose, the nurses manually typed the MCT results into the patient's note and the provider reviewed the results inside the patient's electronic health record. The majority of the nurses working in the three clinics cited forgetfulness as one of the main reasons for not completing the survey with eligible patients and when they thought of the survey, it was too late for them to ask the questions.

Nurses also noted that if they considered themselves busy they were more likely to forget to survey eligible patients. Another limitation was time. Some of the nurses felt the survey was too time consuming for the nurse to ask the questions and felt if the survey was on paper the patient could complete the survey while in the waiting room and the nurse could score the results before the provider reviews the information. One final limitation was that patients often did not discuss contraception concerns until they saw the provider and the provider did not feel they had

time to stop and do the survey. Instead, the providers proceeded on with SDM to help the patients decide on an appropriate method of contraception.

Chapter Four

Results

Quantitative data was collected from the months of January to May of 2018. Raw data was collected in the data collection form. See Appendix N data collection forms with raw data.

Sample Characteristics

The final sample size included 29 patients (n=29). Of the sample, 11 patients were being initially started on contraception (37.9%) and 18 patients were changing from one method to another (62%). Two chart reviews were completed for each patient in the sample. Data related to the follow up visit and contraception continuation was lost on 10 patients, because they were not present for the follow up appointment. Data was lost on 13 patients that were not administered the MCT prior to seeing the provider. See Appendix O for a table of summary data.

Major Findings

Of the total sample, 16 patients completed the MCT prior to seeing the provider (55.2%) and 13 did not complete the MCT (44.8%). Of the completed MCT's, the provider reviewed all 16 of them (100%) and MCT was documented 100% of the time when completed prior to the subject seeing the provider. All of the patients regardless of whether MCT was completed or not had documentation of contraceptive shared decision-making between the subject and the provider (100%) and all of the patients received contraceptive specific counseling by the provider regardless of MCT status (100%).

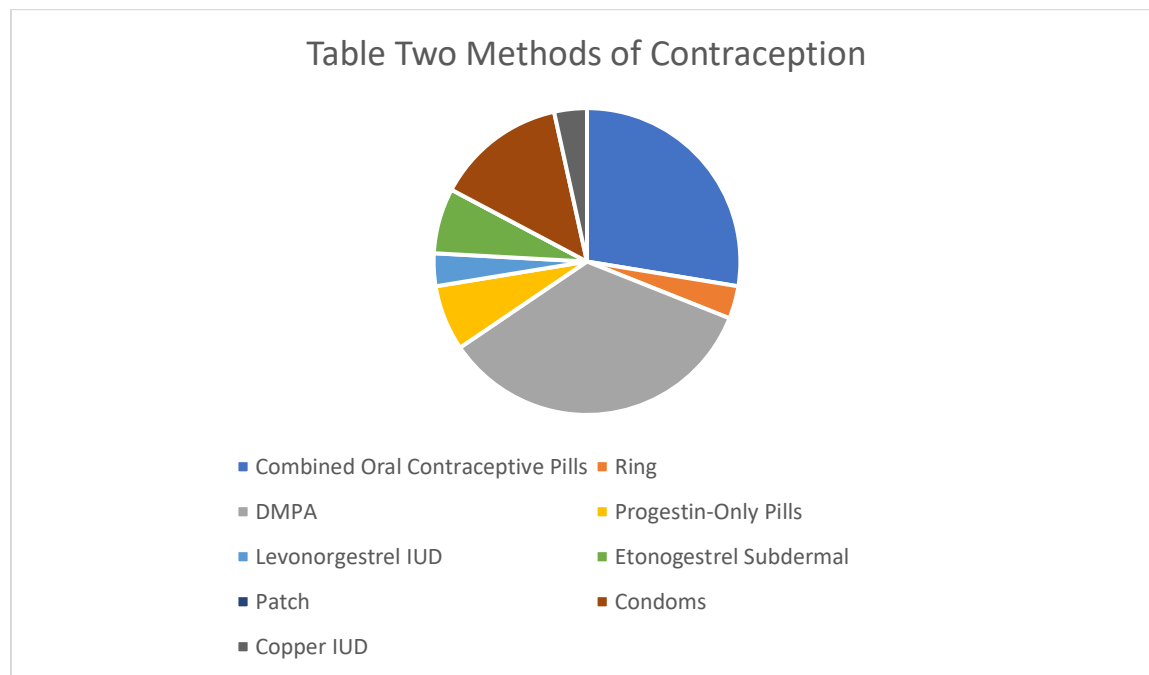
All subjects included in the sample were provided with the "Birth Control Facts" brochure regardless of MCT status (100%). Of the sample, 28 patients had a follow up appointment date and time documented in the EHR (96.6%). Seventeen of the patients kept the follow up appointment as scheduled (60.7%) and 2 patients did not keep the follow up

appointment (7.1%). Of the 17 that kept the follow up appointment, 10 subjects (58.8%) were satisfied with the method of contraception chosen at the previous visit and remained on the method. Table one contains a chart summarizing the types of visits.

Table One

Type of Visit	Total Numbers
Initial Start	11
Method Change	18
Total Number of Visits	29

The most common contraceptive methods chosen were medroxyprogesterone acetate and combined oral contraceptive pills. Ten patients chose medroxyprogesterone acetate as their method of choice (34.5%) and 8 chose combined oral contraceptive pills (27.6%). The next most common method chosen was condoms by 4 patients (13.8%). All of the other contraceptive methods including LARCs were chosen at least by one subject with the exception of the patch which was not chosen (0%). Table two below contains a summary of the methods chosen.



Greater adherence with follow up appointments was a trend seen with patients that chose LARCs. Medroxyprogesterone acetate was the contraceptive method with the highest number of follow up visits. Of the 10 patients that chose this method, 7 of them kept the follow up appointment which enabled them to get the next injection and continue pregnancy prevention. There was 100% adherence to the follow up appointment for all of the patients that chose either an IUD or subdermal implant.

Table 3 in Appendix P contains a summary and comparison of the total numbers chosen and follow up appointments by type of contraception. Follow up adherence was also higher with patients that received MCT prior to seeing the healthcare provider. Of the total number of 16 patients that were administered MCT, all but 6 (62.5%) of them kept the follow up appointment and 9 (56.3%) continued the method of contraception.

Chapter Five

Introduction

The shared decision-making process for contraception selection was completed on a sample of 29 patients. The majority of the sample had previously been on some type of contraception and were dissatisfied and wanted to switch to a different method. The MCT decision aid was not administered to all eligible family planning patients. The most common method of contraception chosen was medroxyprogesterone acetate followed by combined oral contraceptive pills. All methods were chosen by at least one patient except for the birth control patch. Greater adherence to follow up method evaluations was seen with patients that chose long acting reversible contraceptives. Patients that received the MCT prior to seeing the provider were more likely to follow up for the method evaluation appointment than those that did not receive the decision aid.

Significance of Findings

The decision-making process related to contraception has been identified as complex and contains a number of factors that must be considered in order for patients to make the best decision. The use of decision aids in healthcare provides a structured framework of options that are chosen by the patient based upon their responses to specific questions and/or preferences. MCT is one of the most common decision aids used aid in contraception selection.

MCT was administered to a little over half of the sample. A larger number of patients with MCT results was anticipated during chart reviews than was observed. MCT as well as all other aspects of the project seemed well received during each of the three training sessions, and the providers as well as nursing staff verbalized commitment to using MCT with every family planning patient that was not satisfied with their current method of contraception. Several factors

were identified as barriers to the nurse not administering MCT to eligible patients including time and forgetfulness.

The majority of the patients that were guided through MCT by the nurse were starting on contraception for the first time. French et al., (2014) noted in their study that the use of decision aids, specifically MCT, may be valuable in the use of patients that are accessing sexual health services for the first time. MCT provided a thorough look into each patient's preferences for a number of factors including the timing of future pregnancies, monthly menses, and convenience of the method. The nursing staff noted that LARCs, specifically IUDs, seemed to be common MCT recommendations, but the patients did not always want to choose these methods and went with a different method instead.

The use of shared decision-making has been shown to increase patient autonomy in the selection of contraception which results in increased patient satisfaction and continuation of the contraceptive method (Dehlendorf, et al., 2013). Each patient in the sample participated in shared decision-making with the provider. The majority of the sample opted to continue with the method of contraception at the follow up visit which suggests the patients remained satisfied with the method, and they continued to have dependable pregnancy prevention.

Provider-patient counseling also has a significant impact on contraceptive use. Providers documented contraceptive specific counseling on all patients in the sample as well as documentation that the nurses provided each patient with the "Birth Control Facts" brochure and additional verbal instructions per the provider's plan of care. The brochure contains comprehensive information on all of the methods of contraception available at the project site. Dehlendorf et al., (2013) noted that women value the comprehensiveness of counseling and are

more likely to be dissatisfied if they feel they are not getting full disclosure of information.

Written handouts also provide a reference that patients can go back to.

The findings of this project related directly back to the Theory of Planned Behavior. TPB suggests that health decisions are often influenced by the beliefs, attitudes, and intentions of the individual and their partner (Butts & Rich, 2015). Each of the patients in the sample receive care in the family planning program and presented to the project site to obtain contraception in order to prevent unintended pregnancy. Each of the six constructs related directly to the outcomes of the project. Specifically, patients who are motivated to avoid pregnancy will be more likely to continue with their chosen method of contraception and that increased satisfaction in the contraceptive making decision process improves contraception continuation rates.

Patients that were administered MCT by the nurse prior to seeing the provider regardless of whether they were starting contraception for the first time or switching methods were more likely to follow up for the method evaluation appointment. This suggests that the use of the decision aid increased the patient's contraceptive knowledge and assisted the subject in making a sound contraceptive decision. All of the patients included in the sample participated in shared decision-making with the provider, but the patients that used MCT had a more personalized approach to contraception, because the methods suggested for them were selected based upon each individual patient's responses to the decision aid questions.

Limitations

This quality improvement project had several limitations. MCT was not administered to every eligible family planning patient prior to provider seeing the patient. The MCT results screen had to be printed to be reviewed by the provider and included in the patient's electronic health record. MCT results that were not printed were not included in the project results which

potentially resulted in the number of patients in the sample with MCT results being lower than the actual number was due to no record of MCT when chart reviews were completed.

An additional limitation was nursing staff participation. The majority of MCT results were obtained from one particular clinic in the tri-county health department system. This was the clinic the project lead visited more frequently. Increasing the number of visits to the other two clinics may have encouraged the nursing staff to increase participation in the project. Other reasons obtained for eligible family planning patients not receiving MCT included lack of time by the nurse to complete the survey and forgetfulness of the nurse to complete MCT before the provider saw the patient.

Finally, each of the three clinics had a significant number of missed follow up appointments for the method evaluation. The data collected in each chart review only indicated whether or not the subject kept the follow up appointment. Information was not available to determine if patients that did not come back on the date provided to them at the initial visit were rescheduled, or if they were contacted prior to the appointment to remind them of the upcoming appointment.

Delimitations

This project had several delimitations. The implementation of the project was limited to 60 days to ensure all of the patients had a follow up method evaluation within the time frame of project implementation. The sample only included patients that were actively seeking to prevent pregnancy with contraception. Also, the project was limited to a tri-county public health department setting.

Recommendations

Several modifications could be implemented to optimize the findings of similar quality improvement projects in the future. A longer implementation phase would allow a larger sample size of eligible subjects to be included in data collection. A larger sample size would increase validity of the project findings. A longer implementation phase may also allow the project to focus on long-term contraception continuation rates as well as the impact of contraception continuation on unintended pregnancy rates. Expanding the setting to include additional public health departments as well as other family planning clinics would also increase the sample size and improve validity of the project findings.

Self-administration of MCT by the patient prior to seeing the provider is an additional modification that could optimize findings. Patients could use clinic owned tablets or computers to complete the decision aid while in the waiting room. This modification would save the nurse time in the process of getting the patient ready to see the provider and would also decrease the risk of the nurse forgetting to administer the decision aid. Having the patient complete MCT independently would also increase patient autonomy by allowing the patient to take an active role in their care.

Summary

Almost half of all pregnancies in the United States are unintended with an estimated \$21 billion dollar financial burden annually (Guttmacher Institute, 2018). The most common reasons cited for unintended pregnancy include the underuse and inconsistent use of contraception (Dehlendorf, et al., 2014). Increasing the patient knowledge and autonomy in the contraception decision-making process has a great potential to increase contraceptive continuation and ultimately unintended pregnancy rates. The use of shared decision-making and decision aids

increase patient contraception knowledge and positively impact contraceptive satisfaction and continuation rates.

Chapter Six

The Essentials of Doctoral Education

The Essentials of Doctoral Education for Advanced Nursing Practice were developed by the American Association of Colleges of Nursing as a set of specific elements that are required to be present in the curriculum of every accredited DNP program. The DNP Essentials outline core foundational principles to all advanced practice nursing roles (American Association of Colleges of Nursing, [AACN], 2018). Within the DNP Essentials, there are eight foundational outcome competencies that must be met by the DNP graduate regardless of advanced practice role of specialty (2018). This chapter describes each of the DNP Essentials, and how they were met within the process of planning, implementing, analyzing, and evaluating the project.

Essential I

Essential I, Scientific Underpinnings for Practice, ensures the DNP graduate has the ability to integrate science and conceptual based theories in to practice as well as incorporating new practice approaches based upon nursing and other disciplinary theories to enhance healthcare (AACN, 2018). This Essential was met by the use of The Theory of Planned Behavior (TPB) as the theoretical framework for the DNP project. The use of TPB in the project also integrates knowledge from other sciences into nursing as this theory was based upon the foundation of social psychology and provides an interdisciplinary approach to the enhancement of healthcare.

Essential II

Essential II, Organizational and Systems Leadership for Quality Improvement and Systems Thinking, enables the DNP student to develop and evaluate approaches to quality care and outcomes based upon the needs of the population (AACN, 2018). This essential utilizes a

number of principles including finance, economics, business, and health policy to improve practice initiatives. In addition, course outcomes from the DNP Project courses progress through the entire process of planning, developing, implementing, analyzing, and evaluating care delivery approaches to meet the needs of a specific population. This DNP project was developed and implemented to meet the specific need of contraception knowledge and shared-decision making for the population of women at the project site.

Advanced communication skills were used during the development of the relationship with the project site and the discussions related to planning and implementing the project as well as throughout the entire implementation process. Advanced communication was also used during the education of all members of the project team on their duties and expectations during implementation as well as during the bi-weekly meetings to evaluate the progress of the project. Financial implications of the project were analyzed prior to implementation including possible cost savings related to an increase in contraceptive continuation and a decrease in unintended pregnancy. The management of ethical dilemmas was considered and strategies were implemented to protect human subjects with the protection of health information. This Essential outcome was met with IRB approval.

Essential III

Essential III, Clinical Scholarship and Analytical Methods for Evidence-Based Practice, enables the DNP to engage in evidence-based practice by translating research into practice and improving the quality and safety of health care practice and patient outcomes (AACN, 2018). Synthesis of literature to determine the best evidence for research was an outcome completed in Nursing 8269, DNP Project I. Appraisal of the most up-to-date literature has been performed throughout the entire DNP project to ensure the best evidence was obtained to support the

project. Relevant findings from the literature review were incorporated into the DNP project to improve best practice for the project site and to promote safe, effective, patient-centered care.

The DNP student has functioned as a practice specialist throughout the planning, implementation, and evaluation of the project. Collaboration occurred with training of the nurses and providers before implementation began and every two weeks with quality meetings with the site champion and nursing staff. Collaboration with the site champion and nurses has been a valuable part of gathering information for limitations and strategies to improve the data collection process for additional research in the future.

Essential IV

Essential IV, Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Care incorporates the use of technology and the knowledge and skills related to patient care into improving individual and aggregate health (AACN, 2018). The use of My Contraception Tool as a patient decision aid allowed the DNP student to select and evaluate a program to improve consumer use of health care. Implementation of the DNP project included data extraction from the project site's electronic health record system and security of protected health information to prevent ethical or legal dilemmas and to ensure anonymity of each patient in the sample.

Essential V

Essential V, Health Care Policy for Advocacy in Health Care, prepares the DNP graduate take an active role in the development, implementation, and advocacy of health care policy specifically addressing issues in equity and equal access to health care (AACN, 2018). This essential was considered greatly during the selection process of the project site. The use of a public health site allowed for greater access to patients with potentially limited resources and

access to health services. Education was provided to all members of the project team regarding the implications of access to contraception, patient-centered care, and the impact of the project on patient outcomes. Each member of the project team including the site champion, nurses, and providers were encouraged to be an advocate for the nursing profession and for the patient population.

Essential VI

Essential VI, Interprofessional Collaboration for Improving Patient and Population Outcomes, ensures the DNP student is prepared to effectively communicate within interprofessional dimensions of healthcare as well as assume leadership roles when needed (AACN, 2018). Interprofessional collaboration was used throughout all aspects of the project. Successful collaboration with MCT team enabled the DNP student to gain permission to use the tool in the project. The DNP student assumed a leadership role within the project team to plan, implement, and evaluate the project to create change in the project site's delivery of care. The use of the PDSA cycle enabled the DNP student to lead the DNP project team and to set specific goals and identify areas of needed improvement throughout the project implementation period.

Essential VII

Essential VII, Clinical Prevention and Population Health for Improving the Nation's Health, ensures the DNP student is aware of national health concerns and is able to implement strategies directly related to addressing gaps in care to specific individuals and/or populations (AACN, 2018). Underuse of contraception was identified as a problem at the project site leading to higher numbers of unsatisfied family planning patients as well as higher numbers of unintended pregnancies. Unintended pregnancy has been directly related to misuse and/or underuse of contraceptives. Unintended pregnancy was identified as a complex public health

issue and was included in *Healthy People 2020* as a Family Planning metric to prevent unintended pregnancy (Healthypeople.gov, 2017). Once the problem was identified, the project was planned and implemented to address contraception misuse in the project site's population in an effort to increase contraception use and ultimately decrease unintended pregnancy.

Essential VIII

Essential VII, Advanced Nursing Practice, ensures the DNP student has advanced knowledge in complex areas of nursing practice including interdisciplinary approaches to the improvement of patient outcomes and health delivery (AACN, 2018). The DNP project provides a complete process of improvement including planning, implementation, and evaluation of the decision making process of selecting contraception. The project includes evidence-based interventions based in nursing and other sciences. The DNP student developed therapeutic relationships with all members of the project team to facilitate the improvement of patient outcomes and to achieve excellence in nursing practice.

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Appendix A. Literature Matrix

Student: Caddie Cowin	Course: DNP I	Faculty Lead: Dr. King	Date: Summer 2017	Project: Impact of Shared Decision-Making Model on Contraception Continuation Rates
Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan (Include your evaluation, strengths/limitations, and relevance)
Barr, N. (2010). Managing adverse effects of hormonal contraceptives	Level VII	No study, expert opinion on the management of adverse effects of hormonal contraceptives	Educating patients about common adverse effects of hormonal contraceptives helps the patient to establish realistic expectations.	Article contains information regarding the percentage of women who discontinue hormonal contraception because of adverse effects and patient education helps patients to know what to expect.
Carter, M., Bergdall, A., Henry-Moss, D., Hatfield-Timajchy, K., & Hock-Long, L. (2012). A qualitative study of contraceptive understanding among young adults	Level VI	16 focus groups with 53 interviews of Puerto Rican and African American men and women aged 18-25. Participants felt use of contraception was worth it but felt that every method had risks of side effects and contraceptive failure. Men were more knowledgeable about condoms and withdrawal than women.	Contraceptive understanding is an important indicator of contraceptive use and limits the options perceived by young adults to prevent pregnancy	This article stresses the importance of increase the contraceptive knowledge level of the patient. It also demonstrates that misunderstanding can lead to more risk of unintended pregnancy. Limitations: <ul style="list-style-type: none"> No standardized format due to no questionnaire but open-ended questions instead.

<p>Compernelle, E. (2017) Disentangling perceived norms: Predictors of unintended pregnancy during the transition to adulthood</p>	<p>Level VI</p>	<p>A non-mother’s risk of unintended pregnancy is largely influenced by friend’s approval, whereas parents’ approval best predicts that of young mothers’ Young women’s perceptions of what is normal among important others influence a consequential early-life event such as becoming a parent</p>	<p>A young woman’s perception of other’s attitudes and behaviors rather than her own attitudes help explain the continued high rates of pregnancies occurring among young adults who do not want to get pregnant</p>	<p>This article identifies the need to analyze what the perceives of others rather than what her personal beliefs are, because often females are doing what others feel is right or appropriate rather than what they feel should be done.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • This study does not investigate the role of partners and how their perceptions and attitudes may play into non-marital unintended pregnancy
<p>Dehlendorf, C., Kimport, K., Levy, K., & Steinauer, J. (2014). A qualitative analysis of approaches to contraceptive counseling</p>	<p>Level VI</p>	<p>Providers employed three counseling approaches (foreclosed, informed choice, and shared decision-making) on a random sample of 50 family planning visits The majority of visits had the foreclosed approach (48%), the provider discussed few contraceptive methods and the patient had to make the decision with no provider input. 30% of visits were informed choice and 22% were shared decision-making</p>	<p>Most visits did not include interactive engagement of the provider and patient. Contraceptive counseling providers should engage the patient in conversation and the decision-making process</p>	<p>Provider counseling approaches represent an important opportunity to meet patients’ contraceptive needs and involve the patient in all aspects of the decision-making process. There must be a balance between respecting patient autonomy and facilitating the ongoing use of effective contraception.</p> <p>Limitations</p> <ul style="list-style-type: none"> • The sample was restricted to a single metropolitan area and it is unknown if results of the study are generalizable • The sample was restricted to sessions with licensed healthcare professionals and results may not be generalizable to peer counseling context • The analysis does not address whether patients found the counseling approach their provider used helpful in the contraceptive decision-making process.
<p>Dehlendorf, C., Levy, K., Kelley, A.,</p>	<p>Level VI</p>	<p>The vast majority of women feel it is</p>	<p>Providers of contraceptive counseling can participate</p>	<p>Using the concept of shared decision making between the patient and the provider when</p>

<p>Grumbach, K., & Steinauer, J. (2013) Women’s preferences for contraceptive counseling and decision making</p>		<p>appropriate for them to make the final decision regarding contraception. However, many women wanted their provider to participate in the decision-making process in a way that emphasized the women’s values and preferences</p>	<p>in the decision-making process within limits. Decisions in preference by race/ethnicity illustrate the importance of individualized patient counseling to match the women’s contraception preferences</p>	<p>choosing method of contraception as well as using a decision aid to assist patient in determining best method for them.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • The study was conducted exclusively in the US and results may not be generalizable to other settings due to cultural differences. • Comparison of groups in this qualitative study poses challenges due to differences in age, education level, and ethnic/racial groups
<p>Dehlendorf, C., Levy, K., Kelley, A., Grumbach, K., & Steinauer, J. (2014). Women’s preferences for contraceptive counseling and decision making</p>	<p>Level VI</p>	<p>This study found that while women wanted control over the ultimate selection of contraception method, most also wanted their provider to have some part in the decision-making process. Of the 42 participants, the majority wanted the provider to have some participation in the decision-making process. Women desired an intimate, friend-like relationship with their provider and wanted to receive comprehensive information about the method</p>	<p>The results of this study indicate that providers of contraceptive counseling can participate in the decision-making process within limits.</p>	<p>Providers can have a role in the decision-making process for contraception selection in the absence of medical contraindications. However, the ultimate decision should be made by the patient after she has received comprehensive information and had all of her questions answered appropriately.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Study was exclusively conducted in the US. Findings regarding contraception preferences may not be applicable elsewhere.
<p>Egarter, C., Tirri, B., Blitzer, J.,</p>	<p>Level VI</p>	<p>According to questionnaire results</p>	<p>In order for the provider to be supportive in the</p>	<p>In order for the provider to present effective patient counseling, he or she must first know what</p>

<p>Kaminskyy, V., Oddens, B., Prilepskaya, V., Yeshaya, A., Marintcheva-Petrova, M., & Weyers, S. (2013). Women's perceptions and reasons for choosing the pill, patch, or ring in the choice study: A cross-sectional survey of contraceptive method selection after counseling</p>		<p>from sample of 25-50 women convenience of use and easy menses were important criteria when selecting method of contraception.</p>	<p>patient's contraceptive choice, he or she must first realize that a woman's view of ease of use is more important than perceived efficacy, tolerability, health benefits, or risks</p>	<p>characteristics of contraception the patient is looking for and what affects the patient's decisions regarding method selection.</p>
<p>French, R., Cowan, F., Wellings, K., & Dowie, J. (2014). The development of a multi-criteria decision analysis aid to help with contraceptive choices: My contraception tool</p>	<p>Level VI</p>	<p>My Contraception Tool (MCT) applies the principles of multi-criteria decision analysis to the choice of contraceptive method.</p>	<p>Decision aids used in contraceptive consultations are acceptable, that clients are more involved in the decision-making process, and there is a greater interaction and information-sharing between the client and provider.</p>	<p>Decision aids identify the risks and benefits of contraceptive choice individually for each patient and provide more information for the patient to make a decision rather than just written literature for the particular contraceptive method</p> <p>Limitations:</p> <ul style="list-style-type: none"> • The impact of decision aids on decision quality, sustained knowledge, contraceptive use, and sexual health outcomes is yet to be determined. Needs additional studies.
<p>Garbers, S., Meserve, A., Kottke, M., Hatcher, R., & Chiasson, M. (2012). Tailored health messaging improves contraceptive</p>	<p>Level II</p>	<p>Three arm randomized controlled trial was conducted at two family planning sites testing the efficacy of a computer-based contraceptive assessment module to</p>	<p>Individualized health materials significantly improved contraceptive method continuation and adherence</p>	<p>The use of provider-patient counseling on the method of contraception chosen by the patient with the use of a decision aid will increase the patient's continuation rates</p> <p>Limitations:</p>

<p>continuation and adherence: Results from a randomized controlled trial</p>		<p>increase the proportion of patients continuing method of contraception for at least 4 months. Patients who receive individualized health materials were significantly more likely to continue use of their chosen method when compared to control group</p>		<ul style="list-style-type: none"> • Small sample size resulted in wide confidence intervals • The study relied on self-report which has been found in other studies to result in overestimates of both continuation and adherence rates.
<p>Hall, K., Castano, P., & Westhoff, M. (2014). The influence of oral contraceptive knowledge on oral contraceptive continuation among young women</p>	<p>Level II</p>	<p>Young women scored on average 22.8 out of 41 points on OC knowledge assessment at baseline and 24.7 points at 6 months. The 6 month OC continuation rate was 59%. Six month OC knowledge scores were negatively associated with OC discontinuation due to side effects or forgetfulness</p>	<p>OC knowledge was associated with OC continuation and common reasons for discontinuation.</p>	<p>Increasing OC knowledge with provider-patient counseling when starting on a new method will increase continuation rates. Interventions aimed at increasing knowledge, addressing side effects, and improving the use of OC's are warranted.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Randomized controlled trial design of the larger study did not offer an ideal design to test relationships between oral contraceptive knowledge and continuation • Not able to determine any associations between contraceptive knowledge and discontinuation
<p>Hanson, J., Nothwehr, F., Yang, J., & Romitti, P. (2015). Indirect and direct perceived behavioral control and the role of intention in the context of birth control behavior.</p>	<p>Level II</p>	<p>The focus of this study was to use perceived behavioral control measures to identify the behavioral determinants of contraception use. Randomly selected sample of 190 non-pregnant women completed a survey and</p>	<p>This study highlights how significant theoretical frameworks such as Theory of Planned Behavior are to predicting contraceptive behaviors.</p>	<p>This study illustrates the importance of the TPB framework and how it can assist healthcare providers in determining which behaviors are important in contraception use to increase continuation rates.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Sample was not very racial or ethnically diverse and findings may not be generalizable

		results suggested a correlation between intention and contraception use.		<ul style="list-style-type: none"> The use of self-report surveys may cause some degree of response bias (overestimating contraception use)
Ijzen, A. (1991). The theory of planned behavior	Level VII	<p>This article is a review of the Theory of Planned Behavior. This theory is supported by empirical data</p> <p>Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control; and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior.</p>	TPB is provides a strong conceptual framework for human social behavior.	This journal article gives a thorough description of TPB and gives examples to go along with the concepts and constructs.
Langston, A., Rosario, L., & Westhoff, C. (2010). Structured contraceptive counseling – A randomized controlled trial	Level II	<p>RCT was conducted with a version of the WHO decision aid. Care was randomized with either usual care or usual care with structured counseling</p> <p>54% of all participants chose a different method. Women in the counseling intervention</p>	In this study, structured counseling had little impact on method choice, initiation, or continuation	<p>Provider-patient counseling alone has not been shown to be effective in improving contraception continuation rates. However, evidence does suggest that counseling in addition to the use of decision aids and shared decision-making increases patient contraception satisfaction and continuation rates.</p> <p>Limitations:</p>

		group were no more likely to choose a more effective method or to initiate their method when compared to the usual care group		<ul style="list-style-type: none"> • Clinic setting had specialized providers as well as a specific ethnic demographic that may limit generalizability of the study • Providers in the setting were aware of the study and may have altered their counseling during the time of the study even though they were asked not to.
Lopez, L., Tolley, E., Grimes, D., & Chen-Mok, M. (2009). Theory-based strategies for improving contraceptive use: A systematic review	Level V	Systematic review of randomized controlled trials that examined theory-based interventions for improving contraceptive use. 14 trials were included of those 10 had positive results for a theory-based group and 4 of 9 addressed contraceptive use. Most interventions focused on adolescents and involved multiple sessions	The effects were not consistent across outcomes and comparisons.	<p>Contraceptive research could benefit from testing theories and models from other disciplines.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Effectiveness is limited when a theory or model is only partially used • Using a combination of multiple theories makes it difficult to determine which is more effective
Mangone, E., Lebrun, V., & Muessig, K. (2016). Mobile phone apps for the prevention of unintended pregnancy: A systematic review and content analysis	Level V	Extensive search conducted on Apple iTunes and Android Google Play for any apps that include or advertise for pregnancy prevention or decision-making support in the context of contraception, pregnancy decision-making, birth control reminders, sexual communication, and	Several useful, evidence-based apps were identified that support prevention of unintended pregnancy, but most apps do not provide current, evidence-based information and can actually increase risk of unintended pregnancy due to the low effectiveness of the contraceptive methods promoted	<p>This article contained a lot of valuable information about <i>Healthy People 2020</i> and the interventions based upon these goals to reduce unintended pregnancy by 10% by the year 2020.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Ineffective search tools on iTunes and Google Play which limited the researcher’s ability to find apps • There is no way to distinguish who is using what app and for what purpose

		pregnancy tests. 218 unique apps met inclusion criteria. Apps were rated on a scale with only 50% of the apps containing communication features and less than 42% contained information on modern contraceptive methods		<ul style="list-style-type: none"> No established framework or best practice for unintended pregnancy prevention for mobile phone apps
Molloy, G., Graham, H., & McGuinness, H. (2012) Adherence to the oral contraceptive pill: A cross-sectional survey of modifiable behavioral determinants	Level VI	Cross-sectional survey of 130 female college aged students currently using oral contraceptive pills (OCP). Study aims to estimate the association between a range of well-established modifiable behavioral factors and adherence to OCP. 52% of females surveyed reported missing their OCP once or more per month and 14% twice per month. A significant interaction was observed between intention and anticipated regret.	This study recognizes a number of key modifiable psychological determinants of OCP use	<p>This is the first study to examine psychological predictors of OCP adherence. The study identifies that a large number of women may not be adherence to OCP and this increases risk of unintended pregnancy.</p> <p>Limitations:</p> <ul style="list-style-type: none"> The measurement of adherence could have been improved by using multiple methods (objective methods) This is the first study of this type and additional research will be needed Sample was restricted by socioeconomic status and educational level. Results may not be generalizable.
Morse, J., Ramesh, S., & Jackson, A. (2017). Reassessing unintended pregnancy toward a	Level VI	A patient-centered approach to family planning optimizes women’s reproductive preferences and is aware	Clinicians, researchers, and policy makers can all adopt a patient-centered approach to help underserved women	This journal article is quite informative but does not contain an actual study. It contains professional knowledge and contains a lot of data from previous publications and studies.

<p>patient-centered approach to family planning</p>		<p>of historical harms and current disparities Unintended pregnancy rates are general markers of women's health status but may not accurately capture women's experiences of these pregnancies</p>	<p>regain their reproductive autonomy</p>	
<p>Myklestad, I., & Rise, J. (2007). Predicting willingness to engage in unsafe sex and intention to perform sexual protective behaviors among adolescents</p>	<p>Level VI</p>	<p>Subjective norm was the most important predictor of behavioral intention in females and moral norm was the most important predictor for males</p>	<p>Safe sexual programs for adolescents need to emphasize normative influence and be gender specific.</p>	<p>This study shows the importance of education regarding contraception and that females and males see sexual behaviors differently and therefore require different types of education</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Behavior was measured indirectly through intention and willingness • Intention to use contraception was measured using only one single item
<p>Roderique-Davies, G., McKnight, C., John, B., Faulkner, S., & Lancaster, D. (2016). Models of health behavior predict intention to use long-acting reversible contraception</p>	<p>Level VI</p>	<p>Perceived behavioral control, perceived barriers and health motivation predict the use of long-acting reversible contraception. Of 128 women surveyed, 75% of variance in intention to use long acting contraceptives was accounted for by Theory of Planned Behavior and Health Belief Model.</p>	<p>Information regarding long acting contraception should be based on perceived barriers and the methods should be promoted as effective and safe.</p>	<p>TPB as well as HBM were helpful in predicting what motivates women to choose or not to choose long acting methods of contraception. With this knowledge, providers can counsel women with the information they need to know before making a decision on contraception.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • The use of a convenience sample

<p>Steiner, M., Trussell, J., Mehta, N., Condon, S., Subramaniam, S., & Bourne, D. (2005). Communicating contraceptive effectiveness: A randomized controlled trial to inform a World Health Organization family planning handbook</p>	<p>Level II</p>	<p>The most important reason for choosing a particular contraceptive method was how well it prevents pregnancy (54%) followed by side effects (17%). At baseline contraceptive knowledge was poor. All 3 charts used improved knowledge significant</p>	<p>An accurate understanding of pregnancy risk is crucial in patients choosing appropriate contraceptive method</p>	<p>Decision aids along with verbal and written teaching are needed to increase contraceptive knowledge and to assist the client in choosing the most appropriate method of contraception.</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Randomized allocation of the intervention <p>Limitations:</p> <ul style="list-style-type: none"> • Use of convenience sample • Study design did not enable researchers to evaluate whether improved knowledge translates into actual health outcomes
<p>Stover, J., & Sonneveldt, E. (2017). Progress toward the goals of FP2020</p>	<p>Level VI</p>	<p>The FP2020 initiative seeks to revitalize the field of family planning by expanding knowledge, access, use and quality of family planning services</p>	<p>There have been many successes and some failures so far with FP2020. The initiative clearly has contributed to a reinvigoration of family planning efforts and brought about many positive changes</p>	<p>This article is an update on FP2020 and provided a good update to include in the literature review of the paper. This article indicates that while there is much work to be done to meet the goal of 120 million users by 2020 progress has been made.</p>
<p>Sundstrom, B., DeMaria, A., Meier, S., Jones, A., & Moxley, G. (2015). It makes you rethink your choice of the pill: Theory-based formative research to design a contraceptive choice campaign</p>	<p>Level VI</p>	<p>Qualitative data analysis revealed messages and designs women felt were important characteristics in contraception. Women preferred long acting reversible contraceptive methods due to their effectiveness</p>	<p>This study offers practical recommendations for developing contraceptive choice campaigns targeting long-acting reversible contraception use with the goal to reduce unintended pregnancy.</p>	<p>This study used patient centered care to determine the needs and preferences of each individual in the study. They then took the contraceptive method with the most interest and created a campaign to promote its use.</p> <p>Limitations:</p> <ul style="list-style-type: none"> • Setting was in a southeastern city in the US, results may not be generalizable to other settings • Future research should investigate the impact of coverage and access to long acting reversible contraceptive methods










<p>Turchik, J., & Gidycz, C. (2012). Prediction of sexual risk behaviors in college students using the theory of planned behavior: A prospective analysis</p>	<p>Level VII</p>	<p>Seven structural equation models were constructed and tested in relation to each of the safe sex behaviors. TPB model alone did not successfully predict safe sex/risky sexual behaviors</p>	<p>Study results support the addition of variables to the TPB model that are both supported literature as correlates of risky sexual behaviors and are specific to the predicted behavior</p>	<p>Intervention and prevention efforts more focused on increasing behavioral control and self-efficacy such as safe sex communication strategies and condom application education may make it easier to perform a given behavior.</p> <p>Limitations</p> <ul style="list-style-type: none"> • Future research needed
<p>Wyatt, K., Anderson, R., Creedon, D., Montori, V., Bachman, J., Erwin, P., & LeBlanc, A. (2014). Women’s values in contraceptive choice: A systematic review of relevant attributes included in decision aids</p>	<p>Level I</p>	<p>32 unique attributes were identified as important to women when choosing a method of contraception. The key attributes mentioned in both surveys/interview and decision aids were efficacy and side effects/health risks</p>	<p>Many attributes were identified as potentially important to women choosing a method of contraception depending upon the survey/interview or decision aid used.</p>	<p>Formal evaluation of decision support tools for contraceptive choice and involvement of users in the development process may lead to more user-design and implementation.</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Systematic search and duplicate study selection process <p>Limitations:</p> <ul style="list-style-type: none"> • The degree of importance of each attribute for women was not included in all studies • A major source of bias was identified related to investigators selecting the items included on surveys and decision aids • The bias limited the researcher’s abilities to prioritize attributes due to importance

Appendix B. DNP Project Timeline

Date	Task
May – June 2017	Explore project topic
May – June 2017	Establish relationship with project site and determine that project is needed
May 2017 – Present	Review literature for contraception continuation rates / Matrix for Final Paper
May – June 2017	Define project topic
June 2017	Write DNP Project Proposal
June 2017	Revise DNP Project Proposal
June 2017	Obtain letter of support to implement project at the site and upload letter to blackboard
June 2017	Establish site champion to assist with project
June 2017	Submit proposal to DNP chair for approval
June 12-14 2017	On campus for DNP Intensive
June - July 2017	Obtain permission from authors to use My Contraception Tool in the project
June 2017	Submit first draft of final paper to blackboard
June 2017	Upload site champion CV and signed agreement to blackboard
July 2017	Verify site contract is valid
July 2017	Submit Final draft of DNP I Final Paper to blackboard
July 2017	Submit Summer Practicum DNP Project time log to blackboard
September 2017	Submit Project for IRB Approval
September 2017	On campus for Fall Semester DNP Intensive
September – December 2017	Work on required chapters of DNP II Final Paper
September – November 2017	Complete design of project including written permission to use My Contraception Tool, evaluation measures, and complete project description
November 2017	Submit DNP II Final Paper to blackboard
December 2017 - January 2018	Staff and Provider training at project site on new contraception selection and patient counseling process
February 2018	On campus for Spring Semester DNP Intensive
January – May 2018	Implement QI project at site and collect data including evaluation of newly implemented process and method evaluation for contraception continuation rates
January – April 2018	Work on required chapters of DNP III Paper
April – May 2018	Upload DNP III Final paper to blackboard
May – July 2018	Continue to work on DNP Final Paper
May 2018	Analyze project data
June 2018	On campus for Summer Semester DNP Intensive

June 2018	Create poster presentation of DNP project
July 2018	Present project outcomes in facility where project was completed
July 2018	Present Completed DNP project
July 2018	Upload Final DNP paper to blackboard
July 2018	Upload final DNP paper to ScholarShip repository
July 2018	Close appropriate IRB Approvals

Appendix C. Birth Control Facts

Method	What Is It?	Chances of Not Getting Pregnant*	Health Concerns	Strong Points	Weak Points
 <p>IUD</p>	<ul style="list-style-type: none"> Small device put inside womb by a health-care provider. Two types: hormonal and copper. Prevents sperm from fertilizing egg. Removal IUDs thicken mucus in cervix (opening to womb), so it's hard for sperm to enter womb. 	<p>More than 99%.</p>	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Always in place. Doesn't interfere with sex. Lasts 3-10 years. Removal IUDs may cause light periods or eventually no period at all. 	<ul style="list-style-type: none"> Copper IUDs may cause more bleeding and cramping during period or spotting between periods. No protection from HIV/AIDS.
 <p>Implant</p>	<ul style="list-style-type: none"> Tiny rod put under skin of arm by health-care provider. Rod slowly releases artificial hormones. Stops ovaries from releasing an egg each month. Thickens mucus in cervix (opening to womb), so it's hard for sperm to enter womb. 	<p>More than 99%.</p>	<ul style="list-style-type: none"> Few serious problems for most women. Should not be used by women with liver disease, breast cancer or blood clots. 	<ul style="list-style-type: none"> Can stay in for 3 years. Always in place. Doesn't interfere with sex. 	<ul style="list-style-type: none"> May have some spotting between periods, light periods, longer periods, or no period at all. Beginning costs are high (\$400-\$600). Minor surgery required to insert or remove rod. No protection from HIV/AIDS.
 <p>Depo-Provera</p>	<ul style="list-style-type: none"> A shot of artificial hormones given by a health-care provider. Stops ovaries from releasing egg. Thickens mucus in cervix (opening to womb), so it's hard for sperm to enter womb. 	<p>If you are very careful—more than 99%. If you are not very careful—96%.</p>	<ul style="list-style-type: none"> Few serious problems for most women. Long-term use may temporarily reduce bone density in some women. 	<ul style="list-style-type: none"> Doesn't interfere with sex. Lasts 3 months. Often decreases bleeding and cramping associated with periods. Safe to use while breastfeeding. Less chance of endometrial cancer. 	<ul style="list-style-type: none"> Must get shot from a health-care provider. May cause heavy, irregular or light periods, or eventually no period. May not be able to get pregnant for several months after shots are stopped. May cause weight changes, moodiness, headaches or dizziness. No protection from HIV/AIDS.
 <p>Pill Patch Vaginal Ring</p>	<ul style="list-style-type: none"> Pill, a skin patch or a vaginal ring that release artificial hormones. Stops ovaries from releasing egg. Thickens mucus in cervix (opening to womb), so it's hard for sperm to enter womb. Must be prescribed by a health-care provider. 	<p>If you are very careful each time—more than 99%. If you are not very careful each time—91%.</p>	<ul style="list-style-type: none"> Few serious problems for young women. Very small chance of blood clots, heart attacks and strokes. May cause high blood pressure. 	<ul style="list-style-type: none"> Simple and easy to use. Doesn't interfere with sex. Less bleeding and cramping during period. Less chance of PD with pill. Less chance of ectopic or endometrial cancer with pill. Some pills can reduce number of periods in a year, or eliminate all periods. 	<ul style="list-style-type: none"> May cause weight changes, moodiness, spotting. Must avoid while breastfeeding. May not be a good method for women over 35 who smoke. No protection from HIV/AIDS.
 <p>Condoms</p>	<ul style="list-style-type: none"> Fits over erect penis and catches sperm when the man "comes." Also known as "rubbers." 	<p>If you are very careful each time—98%. If you are not very careful each time—82%.</p>	<ul style="list-style-type: none"> Some people are allergic to latex. They can use plastic (polyurethane) and condoms. 	<ul style="list-style-type: none"> Can buy in drugstores. Easy to use, easy to carry. Used only when needed. Latex condoms help protect you from HIV/AIDS. 	<ul style="list-style-type: none"> Must be put on during sex. Condoms may irritate vagina or penis.
 <p>Diaphragm</p>	<ul style="list-style-type: none"> Small rubber cup fits inside vagina, over the cervix (opening to the womb). Used with contraceptive cream or jelly that kills sperm. Must be fitted by a health-care provider. 	<p>If you are very careful each time—94%. If you are not very careful each time—88%.</p>	<ul style="list-style-type: none"> Few health problems. May cause bladder infections for some women. Very small chance of toxic shock syndrome. 	<ul style="list-style-type: none"> Can be put in 6 hours before sex. Used only when needed. 	<ul style="list-style-type: none"> Some women say it's hard to put in and take out. Can be messy. Cream or jelly may irritate vagina or penis. Must be left in place 6 hours after sex. No protection from HIV/AIDS.
 <p>Natural Family Planning/Fertility Awareness Method</p>	<ul style="list-style-type: none"> Woman learns to recognize fertile days of menstrual cycle. Can use barrier method during her fertile time (Fertility Awareness Method) OR No intercourse during her fertile time (Natural Family Planning). 	<p>If you are very careful each time—95-97%. If you are not very careful each time—75%.</p>	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> If used without birth control, is approved by all religious groups. Very low cost. Can improve a couple's communication and cooperation. Helpful when made to become pregnant. 	<ul style="list-style-type: none"> Must chart temperature and/or vaginal mucus every day. If periods aren't regular, may not be as effective. Woman must have cooperation of her partner. Special classes needed to learn. No protection from HIV/AIDS.
 <p>Foam, Suppositories and Film</p>	<ul style="list-style-type: none"> Made of chemicals that kill sperm. Put into vagina before sex. 	<p>If you are very careful each time—82%. If you are not very careful each time—75%.</p>	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Can buy in drugstores. Easy to use, easy to carry. Used only when needed. 	<ul style="list-style-type: none"> Must be put in shortly before sex. Can be messy. May irritate vagina or penis. No protection from HIV/AIDS.
 <p>Sterilization</p>	<ul style="list-style-type: none"> Operation that makes a person unable to have a baby. Permanent. Both men and women can be sterilized. 	<p>More than 99%.</p>	<ul style="list-style-type: none"> Safer for men than women. Small chance of complications during surgery or infection or bleeding after surgery. Tubal pregnancy could occur if operation doesn't work. 	<ul style="list-style-type: none"> No other method will ever be needed. No physical effect on sexual desire or ability. 	<ul style="list-style-type: none"> Permanent. Cannot change your mind later. No protection from HIV/AIDS.

(Education, Training, and Research, 2017)

Appendix D. MCT Permission to Use in the Project

From: **FPA Web Team** websupport@fpa.org.uk
Subject: RE: MCT Question
Date: June 26, 2017 at 10:10 AM
To: Cowin, Caddie Peele peelec07@students.ecu.edu



Thanks J

From: Cowin, Caddie Peele [<mailto:peelec07@students.ecu.edu>]
Sent: 26 June 2017 11:40
To: FPA Web Team <websupport@fpa.org.uk>
Subject: Re: MCT Question

I will! Thank you!!!

Sent from my iPhone

On Jun 26, 2017, at 4:59 AM, FPA Web Team <websupport@fpa.org.uk> wrote:

Hi Caddie

Many apologies for the delay getting back to you. Yes, we're happy for you to use the tool in your project. It would be great if you can mention it by name.

Good luck with the project and please let us know how it goes and what the results of the study are.

Best wishes
Bekki

FPA
23-28 Penn Street, London N1 5DL
www.fpa.org.uk

From: Cowin, Caddie Peele [<mailto:peelec07@students.ecu.edu>]
Sent: 21 June 2017 13:25
To: FPA Web Team <websupport@fpa.org.uk>
Subject: Re: MCT Question

Hello,

I was just checking in to see if you have had a chance to speak with your team regarding me using the MCT in my DNP project. Thank you so much for your help!

Caddie

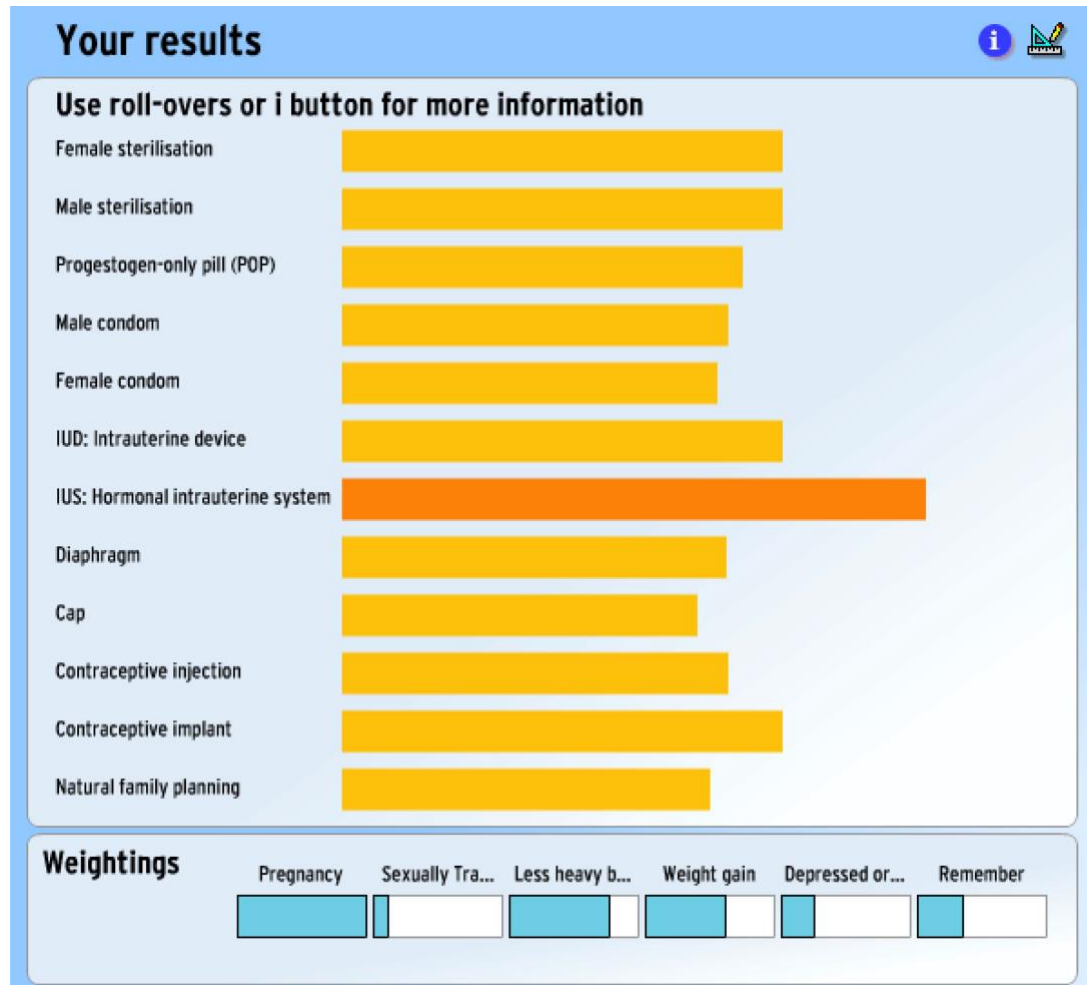
Caddie Cowin. MSN. FNP-C

Appendix E. Sample MCT Questions

- 1 Are you male or female?
- 2 What is your age?
- 3 Do you have a male sexual partner at the moment? (yes, no)
- 4 If yes, how old is your partner?
- 5 Have you ever had children? (yes, no)
- 6 Would you like to have children in the future? (yes, no, don't know)
- 7 Does your partner want to have children in the future? (yes, no, don't know)
- 8 Have you had a new sexual partner in the last year? (yes, no)
- 9 How many people have you had sex with in the last year? (0-1, 2-4, 5 or more)
- 10 Do you have any of the following conditions at the moment?
 - a. Heavy bleeding during your period
 - b. Painful periods
 - c. Pre-menstrual symptoms
 - d. Acne
 - e. None of the above
- 11 What is important to you when choosing a contraceptive method?
 - a. I would like to have no periods
 - b. I would like less acne
 - c. I do not want painful periods
 - d. I do not want my periods to stop
 - e. I do not want heavier bleeding during my period
 - f. I do not want irregular bleeding or spotting
 - g. I do not want nausea (feeling sick)
 - h. I do not want weight gain or more than 5 lb
 - i. I do not want to feel irritable or depressed
 - j. I do not want breast tenderness
 - k. I do not want headaches
 - l. I do not want skin irritation
 - m. I do not want any loss of sex drive
 - n. I do not want the return of my fertility to be delayed after stopping a contraceptive method
 - o. I want to avoid going to see a doctor or nurse to get contraception
 - p. I want to avoid having an injection
 - q. I want to avoid having an implant under the skin in my arm
 - r. I want to avoid having a vaginal examination at a clinic
 - s. I want to avoid having to remember when to take or use contraception
 - t. I want to avoid having to rely on my partner to remember when to take or use contraception
 - u. I want to avoid having genital contact (touching the vaginal or penis) to use contraception
 - v. I want to avoid having any interruption during sex in order to use a contraceptive method
 - w. I want to avoid any loss of sensation/feeling during sex
 - x. I want to avoid my sexual partner knowing that I'm using contraception

y. I want to avoid my friends or family knowing that I'm using contraception
(Family Planning Association, 2017)

Appendix F. MCT Results Screen



(French et al., 2014)

Appendix K. Provider/Staff Training PowerPoint Presentation

IMPACT OF SHARED DECISION-MAKING ON CONTRACEPTION CONTINUATION RATES

CASPER COUNTY
 SHIP PROJECT
 BAY CAROLINA UNIVERSITY

BACK GROUND INFORMATION

- Nearly 50% of all pregnancies in the United States are unintended (Deblendorf et al., 2014)
- The most common factor contributing to the high rate of unintended pregnancy is the underuse and inconsistent use of contraceptives (Deblendorf et al., 2014)
- Reducing unintended pregnancy is a complex public health challenge and has been included as a public health goal in the US Department of Health and Human Services' Healthy People 2020 campaign (Morgone et al., 2014)

PROJECT QUESTION

- Will shared decision making in the selection of contraception and intensive patient counseling on chosen methods improve contraception continuation rates?

BENEFITS OF THE PROJECT

- Increase patient autonomy
- Increased rate of contraceptive satisfaction promoting contraceptive continuation
- Increased patient knowledge regarding contraception
- Benefits to the healthcare providers is a standardized process to aid patients with selection of contraception

IMPLEMENTATION DETAILS

- The start date of implementing this project will be in the second week of January 2018
- The standardized process to aid patients with contraception selection will be implemented at the health departments in all three counties
- Each step of the process will be reviewed in the following slides and a copy of this presentation will be provided to everyone to have as a reference
- I will be on site twice a week to check on progress and to collect data
- My contact information will be available if anyone has a question or concern at any time during project implementation

WHAT PATIENTS ARE ELIGIBLE?

- Every family planning patient either starting on contraception for the first time or switching from one method to another is eligible for the process
- NO identifying information will be collected including patient name, date of birth, medical record number etc.
- Data collected will strictly be related to the methods of contraception chosen and whether the method is continued at the follow up visit

STEP ONE – MY CONTRACEPTION TOOL (MCT)

- MCT is a web-based decision aid we will be using to determine which method of contraception is the best choice for patients
- A number of factors go into the results of MCT depending upon how the patient answers the questions
- The survey is online and takes approximately 5 minutes to administer
- The nurse will administer the survey when she collects the patient history before the patient sees the healthcare provider
- <http://www.fpa.org.uk/contraception-help/my-contraception-tool>

Weightings	Partner	Health	Contraception	Weighting	Partner	Health	Contraception	Weighting

STEP ONE CONT.

- Print the results screen and give to the healthcare provider to review and sign off on before they go see the patient
- Scan the results page into the patient's chart

STEP TWO – SHARED DECISION-MAKING

- Provider reviews MCT results page and compares the results with US Medical Eligibility Criteria for Contraceptive Use
- Engage patient in shared decision-making to choose appropriate contraceptive method
- Provider will educate patient about method chosen including instructions for use, side effects, when to return for follow up visit

STEP THREE – NURSE EDUCATION

- The nurse will review any specific instructions related to the method and any information the provider stated in the patient's plan of care
- Provide EACH patient with the "Birth Control Facts" brochure
- Schedule patient for follow up method evaluation per healthcare providers' discretion
- Provide patient with card containing follow up appointment date and time

STEP FOUR - DOCUMENTATION

- Each of the following needs to be documented in the EHR:
 - MCT results page scanned into the chart after being reviewed and signed off on by healthcare provider
 - New Contraception Start or Switching from another method
 - Provider/Patient SDM
 - The Contraceptive method chosen
 - Provider/Nurse counseling on method
 - "Birth Control Facts" brochure given
 - Date/Time of Follow up appointment

STEP FIVE – FOLLOW UP APPOINTMENT

- Did the patient return for the follow up visit?
- Are they continuing the method of contraception?

FOR PATIENTS CHOOSING CONDOMS ONLY AS THEIR METHOD

- We will go through the process just like the other family planning patients
- They will be included in the initial data collection process but will more than likely not be followed up on if they do not return within the three month time frame.

CONTACT INFORMATION

- Call: 253-217-3642
- Email: prolect7@rochester.acu.edu or csd@rochester.acu.edu
- Please contact me by phone, email, or text if you run into any issues or if you have any questions

REFERENCES

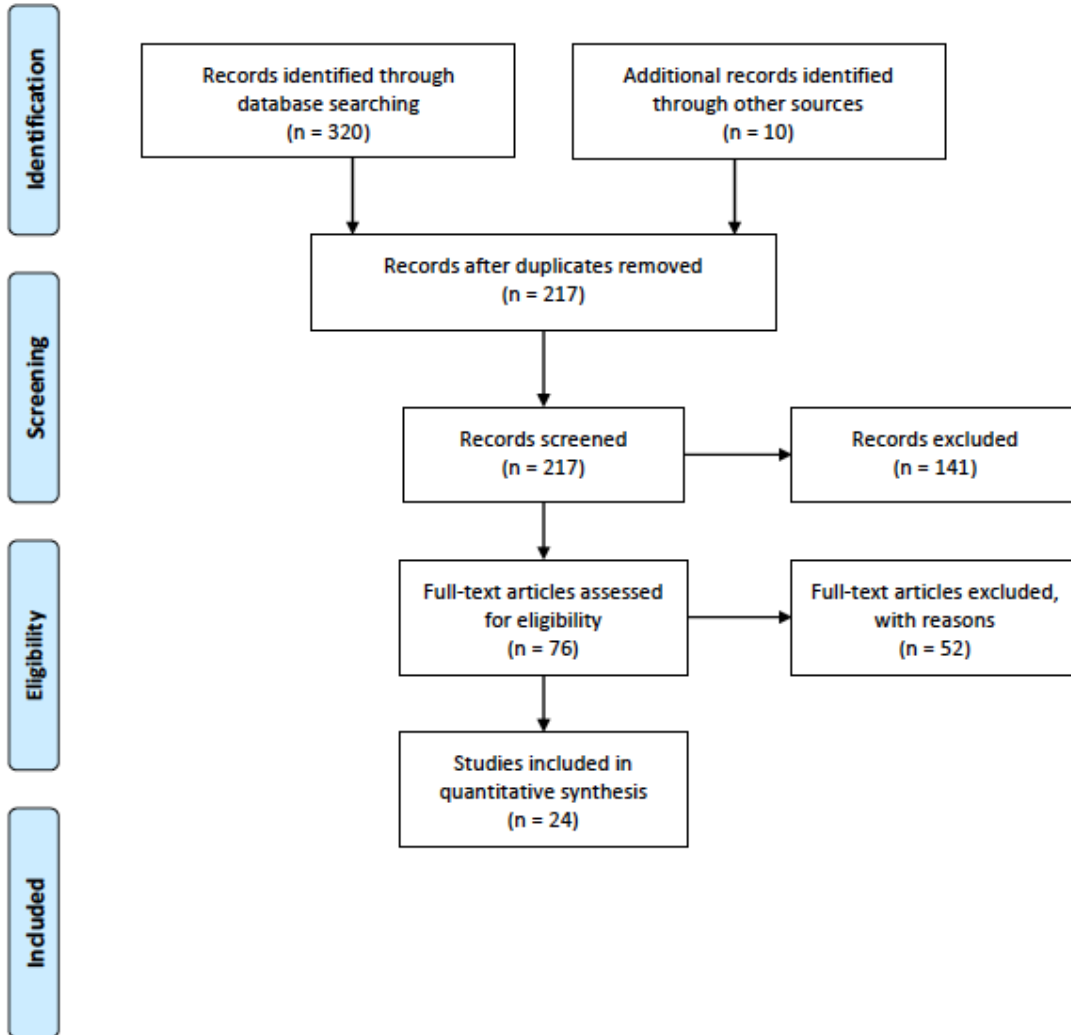
Dehlendorf C., Fitzpatrick, J., Steirauser, J., & Swisher, L. (2016). Development and field testing of a decision support tool to facilitate shared decision making in contraceptive counseling. *Patient Education and Counseling*, 100(7), 1274-1281.

Dehlendorf C., Kinport, K., Luy, K., & Steirauser, J. (2014). A qualitative analysis of approaches to contraceptive counseling. *Perspectives on Sexual and Reproductive Health*, 46(4), 233-240. <http://dx.doi.org/10.1336/46e2114>

Mangone, E., Lebrun, V., Mueasing, K. (2016). Mobile phone apps for the prevention of unintended pregnancy: A systematic review and content analysis. *JMIR MHealth and UHealth*, 4(1), 1-13. <http://dx.doi.org/10.2196/mhealth.4846>



Appendix M PRISMA Chart



(Moher, Liberati, Tetzlaff, & Altman, 2009)

Appendix N. Raw Project Data

Data Collection Form

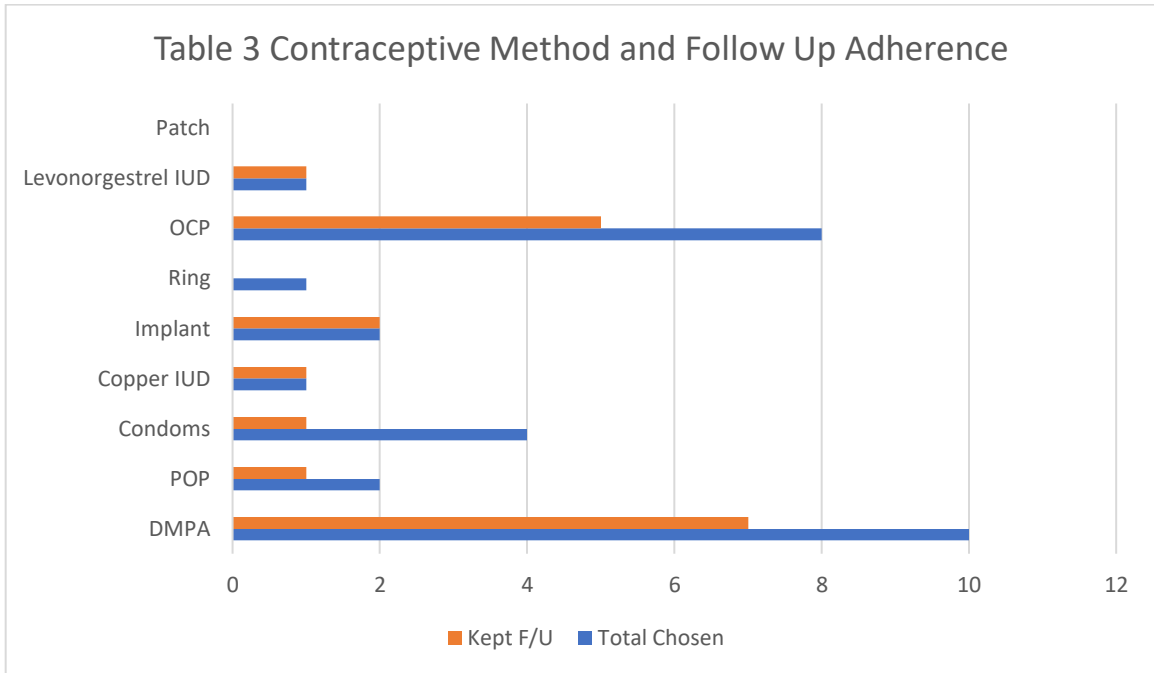
Initial/Method Change	MCT Completed with Patient (Y/N)	Provider Reviewed MCT Results (Y/N or N/A)	MCT documented in EHR (Y/N or N/A)	Patient/Provider SDM (Y/N)	Contraceptive Method Chosen	Counseling Provided? (Y/N)	“Birth Control Facts” Brochure Given (Y/N)	F/U apt date/time given (Y/N)	Kept f/u apt (Y/N)	Continued method (Y/N or N/A)
MC	N	N/A	N/A	Y	DMPA	Y	Y	Y	Y	N
I	N	N/A	N/A	Y	DMPA	Y	Y	Y	N	N/A
I	Y	Y	Y	Y	CONDOMS	Y	Y	Y	N	N/A
I	Y	Y	Y	Y	CONDOMS	Y	Y	Y	N	N/A
MC	Y	Y	Y	Y	POP	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	DMPA	Y	Y	Y	N	N/A
MC	Y	Y	Y	Y	CONDOMS	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	COPPER IUD	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	IMPLANT	Y	Y	Y	Y	Y
MC	N	N	N	Y	RING	Y	Y	Y	Y	Y
I	Y	Y	Y	Y	DMPA	Y	Y	Y	N	N/A
MC	N	N	N	Y	CONDOMS	Y	Y	Y	N	N/A
I	Y	Y	Y	Y	OCP	Y	Y	Y	N	N/A
MC	N	N	N	Y	DMPA	Y	Y	Y	Y	Y

Initial/ Method Change	MCT Completed with Patient (Y/N)	Provider Reviewed MCT Results (Y/N or N/A)	MCT documented in EHR (Y/N)	Patient/Provider SDM (Y/N)	Contraceptive Method Chosen	Counseling Provided? (Y/N)	“Birth Control Facts” Brochure Given (Y/N)	F/U apt date/time given (Y/N)	Kept f/u apt (Y/N)	Continued method (Y/N or N/A)
MC	N	N	N	Y	OCP	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	DMPA	Y	Y	Y	Y	Y
MC	N	N	N	Y	DMPA	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	POP	Y	Y	N	N	N/A
I	Y	Y	Y	Y	DMPA	Y	Y	Y	Y	Y
MC	Y	Y	Y	Y	OCP	Y	Y	Y	Y	N
MC	N	N	N	Y	DMPA	Y	Y	Y	Y	Y
I	N	N	N	Y	OCP	Y	Y	Y	Y	Y
I	Y	Y	Y	Y	DMPA	Y	Y	Y	Y	Y
I	Y	Y	Y	Y	IMPLANT	Y	Y	Y	Y	Y
I	N	N	N	Y	OCP	Y	Y	Y	N	N/A
I	N	N	N	Y	OCP	Y	Y	Y	Y	Y
MC	N	N	N	Y	IUD	Y	Y	Y	Y	Y
MC	N	N	N	Y	OCP	Y	Y	Y	N	N/A
MC	Y	Y	Y	Y	OCP	Y	Y	Y	Y	Y

Appendix O DNP Project Data Totals

	Y	N	N/A
MCT Completed with Patient	16	13	0
Provider Reviewed MCT Results	16	0	13
MCT Documented in EHR	16	0	13
Patient/Provider SDM	29	0	0
Counseling Provided	29	0	0
"Birth Control Facts" Brochure Given	29	0	0
Follow Up Appointment Date/Time Given	28	1	0
Patient Kept Follow Up Appointment	19	10	0
Patient Continued Method	17	2	10

Appendix P



Appendix Q Pre-Implementation PDSA Cycle

Information to Consider	Pre-Implementation DNP PDSA Cycle
<p>Plan:</p> <ul style="list-style-type: none"> • What change is being made? • Who is going to be involved? • How long will it take? • What resources are needed? • What data will be collected? 	<ul style="list-style-type: none"> • Implementation of a shared decision making process for contraception selection including the use of a decision aid (My Contraception Tool) and provider-patient counseling with verbal and written information • The project will involve nurses and healthcare providers working in the project setting. Nurses will administer the decision aid prior to the patient seeing the provider. The provider will use shared decision making to assist the patient in choosing a method of contraception and then provider verbal counseling on the method chosen. Nurses will then follow up with the patient providing written information on the contraceptive method along with verbal instructions as directed by the provider and detailed information on when to follow up for a method evaluation. • Project implementation will begin in the middle of January and end in May. Follow up times for each patient will depend upon the contraceptive method chosen. • Access to the internet will be required for the use of the web-based decision aid (MCT). The project site already has ample supplies of the “Birth Control Facts” brochure and no other materials are required. • Chart reviews will be completed on each family planning patient after the initial visit and again after the follow up method evaluation.
<p>Do:</p> <ul style="list-style-type: none"> • When and how did we do it? 	<ul style="list-style-type: none"> • Each step of the QI project was reviewed in detail with the nurses and providers in education sessions prior to project implementation with the use of a PowerPoint presentation. Each member was also given a copy of the PowerPoint. • Education was provided on the use of MCT and simulation patients were used to allow the nurses to practice using the decision aid prior to implementation • The nurse was responsible for identifying eligible family planning patients and administering MCT prior to the provider seeing the patient. The nurse printed MCT results and provided them to the provider to review and sign off on prior to the patient encounter.

	<ul style="list-style-type: none"> • The provider implemented the shared decision making process with the patient and provided documentation in the electronic health record of this process and the contraceptive method chosen as well as what counseling and education was provided • The nurse was then responsible for providing the patient with the “Birth Control Facts” brochure, any additional teaching as indicated by the provider and the follow up date and time for the method evaluation.
<p>Study:</p> <ul style="list-style-type: none"> • What were the results? • Were there implementation lessons? 	<ul style="list-style-type: none"> • Results will be reviewed with chart reviews. An initial chart review will be done after the patient’s initial visit and then a second chart review will be done after the follow up visit
<p>Act:</p> <ul style="list-style-type: none"> • What changes will be made based on the findings? • Adapt, Adopt, or Abandon? 	<ul style="list-style-type: none"> • After implementation of the project, each step will be evaluated for effectiveness and any needed changes will be made at that time.