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Quality Family Planning: Enhancing the Knowledge of Contraception Counseling in Primary Care

Allison N. Littleford
Pittsburg State University, allisonlittleford.al@gmail.com

QUALITY FAMILY PLANNING: ENHANCING THE KNOWLEDGE OF CONTRACEPTION COUNSELING IN PRIMARY CARE

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Allison N. Littleford

Pittsburg State University

Pittsburg, Kansas

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Allison N. Littleford

APPROVED:

DNP Scholarly Project Advisor _____
Dr. Ashleigh Heter, School of Nursing

Committee Member _____
Dr. Kristi Frisbee, School of Nursing

Committee Member _____
Dr. Anuradha Ghosh, Department of Biology

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An Abstract of the Scholarly Project by
Allison N Littleford

Reducing unintended pregnancies continues to be an important health initiative in the United States. National rates have demonstrated a slow decline, yet the CDC estimates rates remain near fifty percent, with rural women facing higher unintended pregnancy rates than their urban counterparts. Research demonstrates following evidence-based practice recommendations regarding family planning improves contraceptive adherence and helps women achieve desired pregnancy spacing.

This mixed methods research design evaluates provider family planning knowledge levels prior to introduction of an educational video and PDF file, and following the educational tools. Results of the study showed a majority of providers were aware of CDC recommendations screening for a reproductive life plan and contraceptive need. Though, many providers are not screening women for their reproductive life plan or unmet contraceptive needs. Results also indicated providers knowledge improved following delivery of educational material. Providers also reported intent to increase reproductive life plan screening and align practice methods with CDC recommendations.

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Chapter I

Introduction

With the levels of unintended pregnancy remaining at high rates, measures must be taken by primary care providers to improve screening for contraceptive needs and providing quality contraceptive counseling services in women at risk for unintended pregnancy. The most recent unintended pregnancy rates reported in the United States reveal the lowest rates since 1981, but remain near half at 45% (Guttmatcher, 2019). Kansas had a 45% rate of unintended pregnancies in 2010, according to the Guttmacher Institute 2017 report. Although declining percentages are encouraging, it is difficult to attain an accurate percentage of unintended pregnancies, in part due to the underreporting of abortions by women (Jones & Kost, 2007). Disparities in contraceptive services exist for women in rural areas and they are less likely to receive these services when compared to their urban counterparts (Chuang et al., 2012). Dirksen, Shulman, Teal and Huebschmann (2014) report a decreased rate of unintended pregnancies with contraceptive counseling by primary care providers; yet survey data shows only 25% percent of women report contraceptive counseling or prescription birth control from a healthcare provider in a 12-month period. A 2009 survey evaluating internists who assess women's needs for contraceptive services, revealed an inconsistent assessment of these

needs and a lack of training for internists in contraceptive counseling (Lohr, Schwarz, Gladstein & Nelson 2009).

Despite acknowledgements that contraceptive counseling is important and necessary for preventing unintended pregnancies, a qualitative analysis of contraceptive counseling revealed poor patient-provider interactions (Dehlendorf, Kimport, Levey & Steinauer, 2014). Provider contraceptive counseling can be improved in rural clinic practices by following evidence-based guidelines recommended by the Centers for Disease Control and Prevention (CDC) in collaboration with the United States Department of Health and Human Services (HHS) Office of Population Affairs (OPA). These recommendations set clearly-defined screening tools for clinic application to screen all women of childbearing age for contraceptive needs. Providers using these recommendations are given practical approaches for enhancing the patient experience and allowing for shared decision-making between provider and patient.

Clinical Issue

Provider education can be improved to develop higher quality contraceptive services for patients in rural Southeast Kansas. The CDC recommends all persons capable of having a child, should have a reproductive life plan (CDC, 2014). Screening all women of childbearing age for their reproductive life plan allows family practice healthcare providers to appropriately screen for the need of contraceptive services. Multiple studies have shown that providers value the importance of contraceptive counseling, but fail to routinely provide contraceptive services (Dirksen et al., 2014). Many barriers exist preventing consistent and quality contraceptive services and counseling. Providers cite lack of education and comfort providing these services, time

during office visits to address contraceptive needs, and biases of the providers providing these services (Dirsken et al., 2014). Rural clinics face increased barriers to contraceptive services, further demonstrating the need for improved contraceptive education for primary care providers in rural Southeast Kansas.

Significance to Nursing

Unintended pregnancy continues to be a health issue on the national forefront with estimations of half of all pregnancies falling into the unintended category (Finer & Kost, 2011). Rural primary healthcare providers have an opportunity to influence the rate of unintended pregnancy. Patients seeking treatment in primary care can be screened for pregnancy intention, allowing rural healthcare providers to provide unmet contraceptive needs. Unintended pregnancy remains a Healthy People 2020 initiative. Despite being an initiative since Healthy People's conception, the incidence has remained essentially unchanged, at nearly half of all pregnancies. Guidelines for effective, evidence based contraceptive counseling methods are lagging compared to the advancements in preventive care (Levi et al., 2009). Nursing can apply these recommendations in practice, implementing evidence-based screening tools and effective contraceptive counseling methods in primary care offices.

The CDC in collaboration with the Office if Population Affairs (OPA), and the U.S. Department of Health and Human Services (HHS), have created evidence-based recommendations for providing quality family planning services. This collaborative report outlines evidence-based recommendations for quality family planning which includes contraceptive services, pregnancy testing and counseling, helping clients achieve pregnancy, basic infertility services, preconception health services, and sexually

transmitted diseases services. For the purposes of this research project, the author will focus on prevention of unintended pregnancy services.

Significance to Society

Improving contraceptive counseling is a multifaceted problem that requires provider improvement on engaging the patients to make informed contraceptive health decisions. Disparities between rural and urban women exist in contraceptive health. Women in rural settings are less likely to see an obstetrician-gynecologist, which independently predicts decreased contraceptive counseling (McCall-Hosenfeld & Weisman, 2011). Women who experience unintended pregnancies have been shown to have decreased prenatal care, increased risk of postpartum depression and engagement of risky behaviors like smoking and drinking (Stadlander, 2016). These factors demand a change in rural provider's approach to contraceptive counseling for women seeking to delay or avoid pregnancy in rural areas. Despite the CDC acknowledgement that contraceptive counseling is an important principle in effective use of contraceptives, there is little research in the U.S. examining contraceptive counseling practices. "High-quality interaction between patient and provider about contraception is associated with improved contraceptive use, yet little is known about how providers support patients in the decision-making process" (Dehlendorf, Kimport, Levy & Steinhauer, 2014).

Project Questions

1) Are primary care providers in the rural areas of Southeast Kansas and Northeast Oklahoma screening women of childbearing age for their reproductive life plan?

2)Will an evidence-based educational tool regarding contraceptive counseling and screening methods be effective in enhancing provider knowledge?

3) Will an evidence-based educational tool regarding contraceptive counseling and screening methods be effective in increasing provider intent to screen?

4) Are primary care providers in Southeast Kansas and Northeast Oklahoma aware of the CDC and OPA established guidelines for quality family planning?

5) Are primary care providers in Southeast Kansas and Northeast Oklahoma following CDC and OPA recommendations for quality family planning?

6) What are the barriers to provision of reproductive life plan screening and contraceptive counseling experienced by primary care providers in Southeast Kansas and Northeast Oklahoma?

Purpose

The purpose of this scholarly project is to provide an educational tool for primary care providers to implement change in current contraceptive screening, counseling and initiation of contraceptive methods, using evidence-based practice changes following the CDC, OPA and HHS recommendations for quality family planning. This scholarly project aims to improve the providers' screening methods, knowledge base and expand contraceptive counseling approaches.

The low use of contraceptives and potential lack of contraceptive health priorities demonstrate the need for proactive counseling by healthcare providers (Chuang et al., 2012). The CDC, OPA and HHS provide detailed recommendations using the best available evidence regarding need for contraceptive screening and contraceptive counseling. This document is intended to guide providers with evidence-based practice

guidelines; however, providers must use clinical judgement and engage patients in shared decision-making when initiating contraceptive methods.

Theoretical Framework: Health Promotion Model

Nola J. Pender first presented her Health Promotion Model in 1982, published in her fist text, *Health Promotion in Nursing Practice.* (Alligood, 2015). This model will be used to depict the relationship between providers and patients seeking contraceptive services in the clinic setting. Pender presents 14 theoretical assertions that can be directly applied to provider education regarding patient interaction, to promote health, improve the patient's well-being and engage patients in realizing their full contraceptive health potential.

The following model (Figure 1) demonstrates the author's perception of the provider contraceptive education as the intervention, and the resulting changes for patients and provider outcomes. Following the educational training, the provider improves the interaction between themselves and the patient during contraceptive counseling. The provider feels more knowledgeable and comfortable providing these services and takes a shared decision-making approach with the patient. This educational opportunity helps provide the patient with comprehensive knowledge, allowing them to realize their full contraceptive health potential.

***Figure 1*: Relationship of Provider Contraceptive Counseling to the Patients**

Definition of Key Terms

LARC- Long Acting Reversible Contraceptive (ACOG, 2017)

Unintended pregnancy- Unintended pregnancies include pregnancies that are reported by women as being mistimed or unwanted. (US Department of Health and Human Services, 2017)

Preconception counseling- Care before pregnancy (US Department of Health and Human Services, 2017)

Foreclosed approach- Providers give information about methods the patients explicitly mentioned, but does not introduce methods or actively guide the conversation or allow the patient to take a role in decision making (Dehlendorf et al., 2014).

Informed choice approach- Provider shares method information and may introduce methods into the conversation, but leaves all decision making to the patient (Dehlendorf et al., 2014).

Shared decision-making- Provider shares method of information, introduces methods, and interactively and responsively participates with the patient in method selection (Dehlendorf et al., 2014).

Contraceptive- the act of preventing pregnancy. Methods include medications, procedures, devices, and behaviors. (World Health Organization, 2017)

Reproductive health-addresses the reproductive processes, functions and system at all stages of life. Reproductive health implies that people can have a responsible, satisfying and safer sex life (World Health Organization, 2017)

Family planning services-These include contraceptive services for clients who want to prevent pregnancy and space births, pregnancy testing and counseling, assistance to achieve pregnancy, basic infertility services, STD services (including HIV/AIDS), and other preconception health services (Centers for Disease Control and Prevention, 2014)

Reproductive life plan- A woman's intention for pregnancy spacing or intention during her lifetime (Centers for Disease Control and Prevention, 2014)

Logic Model

The following diagram (Figure 2) is a logic model demonstrating the development and projected outcomes of a Contraception Counseling Provider Education Tool. Initiating the program would require collaboration between the stakeholders including the clinic manager, providers, patients seeking contraceptive care, and pharmacists working with the clinic. The stakeholders must be willing to acknowledge the need for improved education regarding contraceptive counseling methods and provider approaches. The stakeholder's willingness to learn and apply these methods to practice will ensure successful implementation of this tool.

National statistics reporting the approximately 50% rate of unintended pregnancies justifies the need for improved provider counseling for contraceptive needs. A 2005 National Survey from Vital and Health Statistics and a random population study by McCall-Hosenfeld and Weisman (2011) found that rural women were less likely than their urban counterparts to receive contraceptive services or pap smears. These findings support the need for better contraceptive screening and counseling education for primary care providers expected to deliver these services, especially in rural settings. Though specific statistics regarding Southeast Kansas' unintended pregnancy rates are not readily available,

the designation of Medically Underserved in Montgomery county and the surrounding counties support the needed improvement of contraceptive counseling for primary care providers.

Short, intermediate and long-term goals are depicted in the model. The short-term goals represent the most immediate changes in contraceptive care in the rural clinic. Through provider education and improvement in screening for need of contraceptive services and counseling, the provider's ability to provide effective contraceptive services will be improved. Using the CDC recommendation of screening every woman capable of having a child for her individualized reproductive plan will create immediate change. This screening tool will meet short-term goals of improving contraceptive counseling by screening women of reproductive age for unmet contraceptive needs. Screening all women capable of having children creates further opportunity for implementing change in contraceptive counseling methods. Using evidence-based recommendations to improve provider counseling, shared decision-making can be implemented, allowing patients to take an informed and active role in their reproductive health. The CDC, OPA and HHS recommendations for contraceptive services are outlined in five steps. Following the outlined steps, using evidence based recommendations, providers will have higher confidence in providing contraceptive counseling for patients.

Intermediate results include higher patient satisfaction with contraceptive counseling and their reproductive health. Following shared decision-making counseling, the patients' ability to discuss and choose the most appropriate method, will result in higher satisfaction. Women who have taken an informed and active role in choosing their contraceptive method will have increased compliance with their chosen contraceptive

method, and reflect higher satisfaction with their providers counseling. Long-term outcomes result in achieving the desired spacing between pregnancies, the absence of unintended pregnancies, and sustained utilization of contraceptive methods.

Project: Enhancing Provider Contraceptive Counseling Logic Model
Goal: Determining effectiveness and educational tool in improving provider knowledge regarding contraceptive counseling, using evidence-based practice recommendations from the CDC

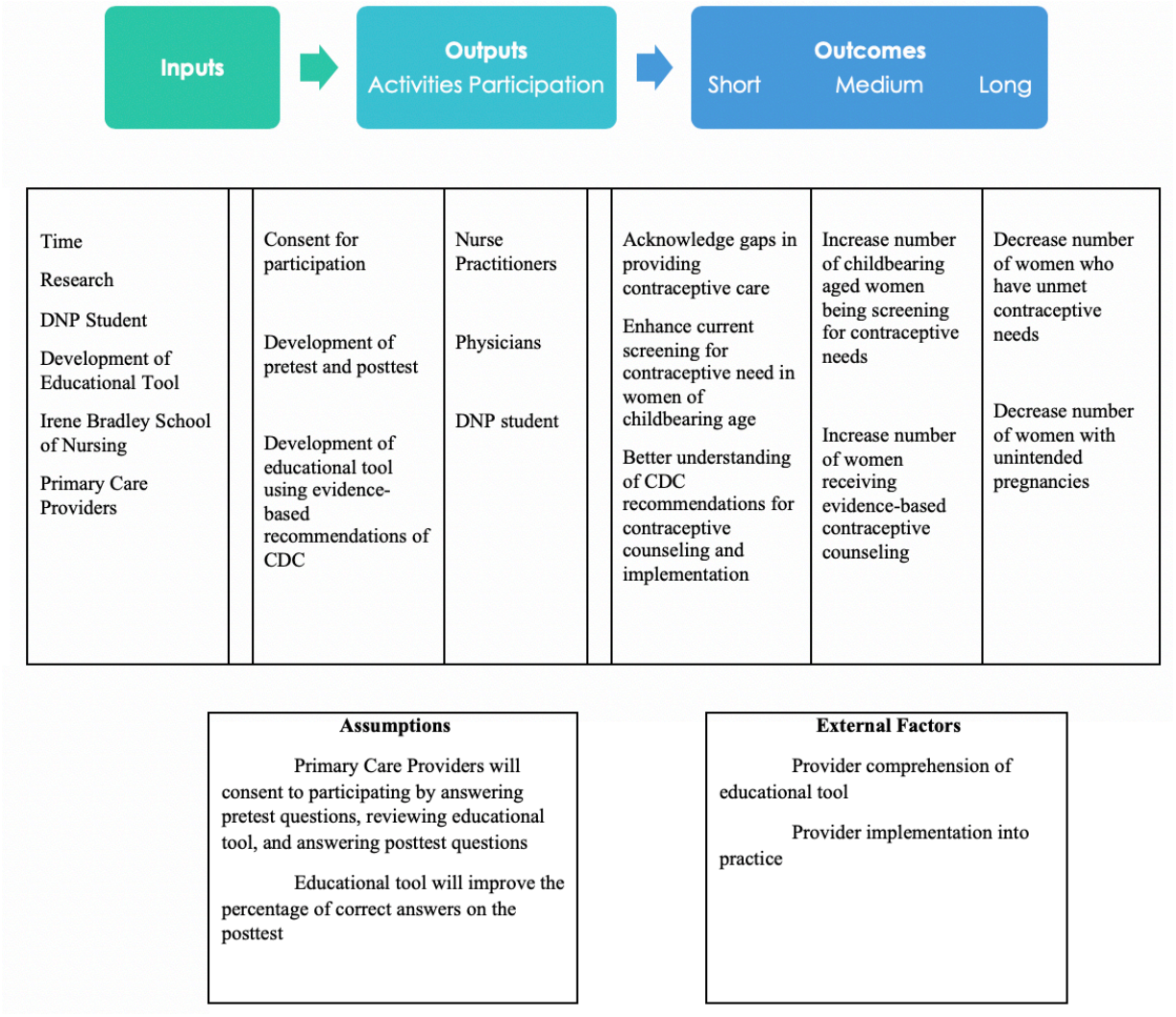


Figure 2. **Logic Model: Development of Enhancing Provider Knowledge in Quality Family Planning**

Summary

"Education is an integral component of the contraceptive counseling process that helps clients to make informed decisions and obtain the information they need to use contraceptive methods correctly" (CDC, 2014). With the levels of unintended pregnancy remaining at nearly 50%, primary care providers must improve screening for contraceptive needs and services in women of childbearing age. Providers need to improve contraceptive counseling techniques and acknowledge the CDC's and Institute of Medicine's recommendations that improving the quality of family planning services positively impacts reproductive health outcomes (CDC, 2014). Clear guidelines are provided by the CDC to effectively treat women wishing to delay or prevent pregnancy. Providers must take note of these practice recommendations and implement these evidence-based recommendations into their everyday practice. Enhancing provider's screening for women's' reproductive life plan, and contraceptive counseling will improve patient knowledge and experiences when choosing the most appropriate method for their individual needs. This is an opportunity for primary care providers to take the initiative to improve contraceptive healthcare and decrease the barriers for women seeking to avoid unintended pregnancies.

Chapter II

Review of Literature

This literature review evaluates unintended pregnancies and why they continue to be a significant healthcare issue in the United States. The review summarizes unintended pregnancies and related financial burdens, health outcomes for both mothers and infants, and the increased risk for unintended pregnancies. Real and perceived barriers, including access to providers offering quality family planning in rural settings, availability of methods, affordability of contraceptives, and quality of contraceptive counseling are discussed. Lastly, a review of evidence based practice guidelines, utilizing latest recommendations of the CDC, HHS OPA and ACOG was completed to best understand practice change recommendations supported by research and effective evidence-based implementation in practice to decrease incidence of unintended pregnancies.

A literature search was completed using PSU Library services including; CINAHL, PubMed and Summon. Initial keyword searches included contraceptive counseling, family planning, and unintended pregnancy. Phrases used to search include, "long acting reversible contraceptives", "access to contraceptives", "quality family planning", "rural access to family planning", and "perceptions of contraceptive barriers." The American College of Obstetrics and Gynecologists, the CDC, and The U.S. Office of

Population Affairs, and Healthy People 2020 were used as primary sources for practice recommendations, and to obtain secondary sources. The United States Census Bureau and Guttmacher were used for reliable statistical data. A CDC 618 initiative was used and subsequent data, statistics and sources from their evidence based practice recommendations were utilized, including data from the national vital statistics system, data on teen births in urban and rural areas, PRAM and evidence based practice change guidelines. Criteria was developed to narrow search results, as follows

- Published within the last 8 years
- Peer reviewed articles
- Research was done in the United States

Trends in Unintended Pregnancies

Unintended pregnancy rates in the United States have remained near 50 percent, despite being a Healthy People Objective since its inception in 2000. Although, a recent study indicates the percentage of unintended pregnancies are on the decline for the first time since 2001, percentages remain near the same halfway mark at 45 percent (Finer & Zolna, 2016). United States unintended pregnancy national trends had not been reported since 2008, Finer and Zolna (2016), found unintended pregnancy rates declined in all age groups of women from the years 2008-2011, using similar methods to previously published studies. Despite the decrease in unintended pregnancies noted in Finer and Zolna's study, women between the ages of 20-24, those not married and living with their partner, poor, Black and Hispanic women had the highest risk of unintended pregnancy.

Kost and Lindberg (2015), completed a multivariate regression study evaluating infant health outcomes, initiation of pre-natal care and risky maternal behaviors in

relationship to wanted or unwanted pregnancies. A propensity score was developed, further defining a mother's intention of pregnancy rather than the standard wanted or unwanted responses. The findings of this study were consistent with previous studies evaluating pregnancy intentions, showing a predictable pattern of outcomes for unintended pregnancies; including, lower birth weight, later prenatal care, less breastfed infants, mothers less likely to be married, delivery paid for by public funding, more likely to be black, and less likely to have graduated from high school (Kost & Lindberg, 2015). Development of the desired scale group, expanding wanted versus unwanted pregnancy intention to a 5-category scale, allowed the researchers to evaluate more factors when determining the mother's pregnancy intentions. However, the authors found previously used methods provided clearer predicted health outcomes for wanted and unwanted pregnancies (Kost & Lindberg, 2015).

Socioeconomic and demographic subgroups greatly impact the rate of unintended pregnancies. Demographic data includes women's age groups, ethnicity, race, marital status, and parity, while socioeconomic includes education level, income, and poverty level (Kost & Lindberg, 2015). Kost and Lindberg's (2015) research supports previous research findings that unmarried, less educated and young mothers with unwanted pregnancies, or mistimed by 2 years or more, have significantly less beneficial behaviors during pregnancy, and the highest level of poor infant health at birth. Further support is provided by the following research, unmarried women co-habiting with their partner were at greatest risk for experiencing unintended pregnancy (Finer & Zolna, 2014). This group of unmarried cohabiting women experience unintended pregnancies more than 4 times the rate of married, or non-cohabitating women (Finer & Zolna, 2014). Poor women

were 5 times more likely to experienced unintended pregnancies than women in the highest income categories, and women without a high school diploma have the highest rated of unintended pregnancy (Finer & Zolna, 2014). Race and ethnicity play a large role in unintended pregnancy rates. Minority women are twice as likely to have an unintended pregnancy as white women (Finer & Zolna, 2014). This research highlights the disparities in rates of unintended pregnancy for women who are poor, of a minority, and less educated and those choosing to cohabitate.

Urban versus Rural

The US Census Bureau defines rural as all housing and territory not included within an urban area. Urban areas are defined as areas with 50,000 people or more. A United States Department of Health and Human Services National Center for Health Statistics (NCHS) 2016 data brief showed a startling trend in unintended pregnancy occurrences for urban and rural teens. Since 2007 teen pregnancy rates have declined in all states. Despite national declines in unintended pregnancy rates disparities persist. Women of major racial and ethnic groups and those in lower incomes and geographically rural areas are more likely to experience an unintended pregnancy (Hamilton, Rossen & Branum, 2016). Large urban counties have had a 50% decrease in unintended pregnancies, medium and small urban counties rates have decreased 44%, and rural counties experienced the smallest drop at 37% (Hamilton et al., 2016). Large urban non-Hispanic white, non-Hispanic black, and Hispanic women had the lowest rates of unintended pregnancy, with rural Hispanic teens have a 50% higher rate than their urban counterparts (Hamilton et al., 2016). With national teen unintended pregnancy rates declining overall, disparities exist between rural and urban teens.

Rural women face greater barriers to preventative healthcare when compared to urban counterparts. This emphasizes the need for primary healthcare providers to fill gaps found in preventative reproductive care for rural women. Acknowledging poorer health outcomes for rural women, and improving reproductive life plan screening in addition to quality contraceptive counseling and interventions is the role primary healthcare providers. Existing research demonstrates rural residents are less likely than urban residents to receive preventative health interventions, and has generally been attributed to lack of access to these services; however, older age, higher poverty, lower levels of education, and poorer insurance status could also attribute to rural health disparities (Mcall-Hosenfeld & Weisman, 2011). Rural women were less likely to receive preventative counseling in all areas when compared to urban women, and rural women in this study were older, less educated and less likely to see obstetrician-gynecologists. Women who saw obstetrician-gynecologists showed an increased contraceptive counseling independent of rural or urban settings (McCall-Hosenfeld & Weisman, 2011).

To further understand rural women's disparities in preventative services a telephone survey of over 4,000 living in rural Southeastern United States was completed. Four preventative measures were evaluated including mammograms, sigmoidoscopies or colonoscopies, pap tests and cholesterol checks. While none of these preventative measures are directly related to unintended pregnancies, the data further supports rural women's underutilization of preventative services and rural women's propensity to be underinsured or uninsured, lower socioeconomic status, and must travel longer distances for services when compared to urban women (Weaver & Giesfield, 2014). Researchers

concluded rural women's preventative services use is complex and is effected by demographic and economic factors, health beliefs, and perceived access to care. They recommend preventative specific "screening footprint" to assess for local context-specific strategies to increase use of preventative services (Weaver & Giesfield, 2014).

To further evaluate rural women's disparities regarding preventative reproductive health care, 19 Pennsylvania rural primary care physicians were interviewed regarding contraceptive care and preconception care. Less access to obstetrician-gynecology care in rural areas is implicated in rural women receiving less contraceptive services and Pap smears than urban women, but primary care providers play an important role in providing these services in rural areas (Chuang et al., 2012). With well documented need for contraceptive care to prevent unintended pregnancies, and less access to obstetrician-gynecology care in rural areas, rural primary care provider's perceptions of preventative reproductive care are important to addressing rural reproductive health disparities. 12 family practice trained providers, 7 internal medicine, 1 general practice, and 1 obstetrician-gynecologist were interviewed, represented by 10 men and 9 women. The providers were evaluated on their role versus urban primary care providers, preconception health and counseling, contraceptive access, community norms as a barrier to care, and patient preferences (Chuang et al., 2012). The sampled providers reported their biggest perceived barrier to providing preventative reproductive services was community norms that did not support family planning (Chuang et al., 2012). Expressing disproval of these norms, the providers did not feel it was their role to confront these norms, and they did no engage in active counseling methods to promote contraceptive health (Chaung et al., 2012). All 19 physicians interviewed reported they could provide

sufficient contraceptive services even though only the obstetrician-gynecologist provided IUD and sterilization services, some did not feel comfortable initiating oral-contraceptives for new patients, and referrals for IUD or sterilization services often required travel over 45 miles away (Chuang et al., 2012). Findings from this research indicates a need for educating primary care providers on taking a more proactive role in preventative contraceptive counseling to aid in prevention of unintended pregnancies (Chuang et al., 2012)

Cost

Pregnancies are a source of significant cost for both public coverage and private health care plans. A Sonfield and Kost report published in 2015, using state level data across the United States evaluating the cost of publicly funded unintended pregnancies and their consequent births and compared with publically funded planned births, and births overall for the year 2010. Publicly funded births were defined as deliveries paid for by Medicaid, the Children's Health Insurance Program (CHIP), or the Indian Health Service. Unintended pregnancy rates were figured using self-reported pregnancy intention data from the Pregnancy Risk Assessment Monitoring System (PRAMS), a CDC surveillance program, accounting for approximately 83% of all births (CDC, 2018). 1.5 million births were considered unplanned in 2010, of those 68% were paid for by public insurance, while only 51% of total births were covered by public insurance (Sofield & Kost, 2015). Costs of unintended pregnancies vary widely by state, dependent on the cost of medical care, fertility rates, and number of women utilizing public insurance. Total government expenditures on unintended pregnancies for 2010 were $21 billion, with $14.6 billion at the federal expense level and $6.4 billion at the state level

(Sofield & Kost, 2015). Similarly, a 2015 multinomial logistic regression study by Dieguez, Pyenson, Law, Lynen and Trussell evaluated the high costs of unintended pregnancies for employee-sponsored health plans. Dieguez et al, (2015) estimated that 28.8% percent of employee-sponsored health insurance pregnancies are unintended. Unintended pregnancies utilizing employee-sponsored health insurances, accounted for approximately 1% of all healthcare delivery costs for employers (Dieguez et al., 2015). Interestingly, their research correlates with non-employee related findings for women at risk for unintended pregnancies. Women employees 15-19 years of age were 78% more likely to experience an unintended pregnancy, further supporting public health goals to increase unintentional pregnancy health promotion efforts in insured women in the workplace (Dieguez et al., 2015). Stakeholders in both the public and employee insurance sectors would benefit from promoting health efforts to prevent unintended pregnancies. Preventing publically funded unintended pregnancies in 2010 would net an approximate gross savings of $15.5 billion, accounting for women who intended to be pregnant, but had just mistimed their pregnancies (Sofield & Kost, 2015). It is estimated that approximately 51% of the 40.8 billion dollars spent on publically funded pregnancies, are unintended. Although the cost of unintended pregnancies in 2010 remained high, the same researchers calculated the cost of unintended pregnancies without publically funded planning services around 75% higher (Sofield & Kost, 2015) Kansas' cost of unintended pregnancies in 2010 totaled $166.1 million, $115.7 million at the federal level, and $50.4 million at the state level (Guttmacher State Facts, 2017).

Internal Medicine Faculty and Residents

A 20-item online questionnaire was given to 146 internal medicine faculty and residents from the University of Colorado to evaluate the frequency contraceptive counseling was provided to women of reproductive age during a prevention-focused visit (Dirken, Shulman, Teal & Huebschmann, 2014). Defining routine as 80% or more of the time, only 25% of responding providers said they delivered contraceptive counseling routinely during preventative focused visits, even though, more than 95% of respondents agreed contraceptive counseling is important (Dirksen et al., 2014). The findings in this research correlated with previous research completed by Lorh et al. A 2009 study evaluating 152 internal medicine residents in Los Angeles County revealed that 95% of residents acknowledged responsibility for providing preventative care for women of reproductive age, but only 17% routinely provided contraceptive counseling (Lohr et al., 2009). The same study discussed rare prescriptions for contraceptives, and 75% of residents desired more training on contraceptive counseling (Lohr et al., 2009). Both Lorh et al. (2009) and Dirksen et al. (2014) found a strong association with routine sexual history and providing routine contraceptive counseling.

Barriers to contraceptive counseling reported by providers in this research included lack of time and adequate knowledge to provide contraceptive counseling. This supports similar results in Lorh et al. and Akers et al. where providers reported the same barriers (Dirksen et al., 2014). This research further supports previous findings that residents need to improve their consistency of routinely taking a sexual history and using patient responses to determine who is at risk for unintended pregnancy and who needs further contraceptive counseling (Dirksen et al., 2014). Further research is needed to

determine the best way to educate residents on effective contraceptive counseling, and potentially including education of routine sexual history taking in women of childbearing age, to improve contraceptive counseling rates for all primary care providers.

Long Acting Reversible Contraceptive (LARC)

Little is known about implementation of the American College of Obstetricians and Gynecologists (ACOG) guidelines for LARC in practice (Philliber, Hirsch, Brindis, Turner, & Philliber, 2017). New recommendations of LARC use were published in 2012, yet most recent estimations report a less 10% use in eligible women. Previous studies have implicated misconceptions about the safety of LARC and provider beliefs and attitudes. There has not been an evaluation of the influence of guidelines and how providers perceive the recommendations and if they implement them into practice (Philliber et al., 2017). In 2011, ACOG released a practice bulletin with specific guidelines, increasing the number of women recommended for appropriate LARC placement, including immediate postpartum, post miscarriage, and post abortion placement. ACOG also stressed same day insertion, even if sexually transmitted infections (STIs) are suspected. Despite well documented safety of LARC, US rates remain less than 10%, while China has a 41% use rate and Norway a 27%. This study sought to determine the effect of ACOG recommendations on provider's attitudes and perceptions about LARC, by surveying the providers prior to new recommendations and after (Philliber et al., 2017).

Colorado and Iowa were part of statewide initiatives to increase the use of LARC in family planning services. Providers answered questions about their experiences and beliefs about LARC in 2010, prior to the 2012 ACOG practice bulletin regarding LARC

recommendations. Providers had an increased likelihood to respond in accordance with ACOG recommendations in 2012 when compared to 2010. There was an increased belief that IUDs are safe for postpartum women, post-abortion or have history of ectopic pregnancy, nulliparous teenagers or history of STI. A small portion of respondents were registered nurses, data indicated that nurses were less likely to report thinking LARC methods were safe, potentially negatively impacting patient perception of LARC (Philliber et al., 2017).

Rural primary care providers are tasked with delivering comprehensive contraceptive care to women of childbearing age, including the most effective methods intrauterine devices (IUDs) and contraceptive implants, to offset disparities rural women face when compared to their urban counterparts (Lunde, et al., 2014). IUDs and contraceptive implants have the highest satisfaction rates, and lowest rates of failure in reversible contraceptive methods, but only a small number of women use these methods (Lunde et al., 2014). All physicians practicing in rural Illinois and Wisconsin were sent surveys analyzing contraceptive provisions, maternity care services, gynecological procedures provided, reasons for not providing long acting contraceptive devices and physician perceptions of barriers to placing long acting devices, 37% of providers responded (Lunde et al., 2014). Providers inserting IUDs totaled 34.6% and those placing the implant totaled 8.7%. Lack of training was the most common barrier reported, with 87% of the providers stating they had not been trained in either method (Lunde et al., 2014). A small, approximately 10%, cited a moral objection to placing long acting methods and a similar percentage felt there was a lack of demand for the services, with only 3% felt concerned about the safety of implants (Lunde et al., 2014). The findings in

this study demonstrated a higher than national average for family medicine providers placing implanted devices for contraception. Over 40% of respondents placed IUDs in practice, compared to the national average reported at 24% (Lunde et al., 2014). Evaluating the national average availability of long acting reversible methods, rural women seeking long acting contraceptive implants are at a disadvantage. The reported national average of family medicine providers offering LARC was approximately 24%. Rural women have less access to primary care providers and obstetricians who offer the most effective methods of contraceptive.

Removing Cost and Access as a Barrier to LARC

An observational cohort study provided St. Louis area women meeting participation criteria, with access to contraceptive method of their choice (CHOICE) at no cost to them for 2-3 years. Women were provided with tiered education by trained contraceptive counselors about contraceptive methods and their effectiveness. To participate women had to be 14-55, sexually active in the past 6 months or considering sexual activity in the next 6 months, not currently pregnant, and not seeking to be pregnant in the next year. Participants had to desire a reversible contraceptive and not currently using a contraceptive or have a desire to change contraceptives. 75% of the participants chose LARC, with most choosing the levonorgestrol intrauterine system, next the implant and lastly the copper IUD. Results of the CHOICE program revealed a decrease in area unintended pregnancies and a cumulative failure rate for pill, ring and patch 20 times the failure rate of LARC methods. CHOICE project removed barriers of cost and access, in addition to providing high quality contraceptive counseling; demonstrating an increased preference for LARC methods. (Birgisson, Zhao, Secura,

Madden & Peipert, 2015). The authors felt this model could be applied to multiple settings, however a significant amount of funding is required to provide high quality contraceptive counseling training, training of LARC insertion for providers, and cost of providing methods at no cost to recipients.

Patient Receipt of a Sexual Risk Assessment from Medical Provider

A CDC National Health Statistics Report (NHSR) using data from the National Survey of Family Growth (NSFR) evaluated over 4,500 women ages 14-44 about their receipt of a sexual risk assessment by a provider in the past year. They were questioned if a physician or any other medical provider had questioned them in the past 12 months about specific aspects of their sexual activity. 47% of women had been screened in the past year, and 23% of men (Copen, 2018). The screening questions included if a medical person had asked about sexual orientation, number of sexual partners, use of condoms, the types of sex they have had, vaginal, anal or oral (Copen, 2018). These reported screening results show less than half the women of child bearing age had a sexual health assessment. The CDC recommends at least annual sexual health screening of all patients, screening for unmet contraceptive or preconception health needs. These findings support the need to increase sexual health screening and documentation of screening to address unmet needs. Over half of the patients did not receive the recommended sexual health screening and were not screened for unmet contraceptive services, risky sexual behaviors, and unmet preconception needs. Statistically significant findings included higher rates of sexual risk assessments in women aged 15-24, higher assessments in Hispanic and non-Hispanic black women, those with an income level 300% below poverty level, and participants on public insurance (Copen, 2018).

Access to Prescription Birth Control

Sexually active women aged 18-44, not currently pregnant not wishing to be pregnant, and not sterilized were surveyed to assess their perceived barriers to accessing contraception in the form of pill, patch or ring (Grindlay & Grossman, 2016). Previous research indicated time and cost of medical visits contribute to difficulty starting or maintaining contraceptive methods. This research was done to further explain difficulties in obtaining and maintaining hormonal contraceptive methods (Grinlay & Grossman, 2016). 29% of the 2,120 women surveyed reported difficulty obtaining or refilling the contraceptive prescription. Barriers listed by the women who had difficulty included 14% reported difficulty paying, citing cost of visits, method, or lack of coverage from insurance for prescribed method, 13% cited difficulty getting an appointment or transportation to the clinic, difficulty getting time off work, and 13% of women stated the provider required a visit or pap exam before they would prescribe the method (Grindlay & Grossman, 2016). Women under the age of 35, less than high school diploma level education, Hispanic women, Spanish speaking, unmarried cohabitating women, uninsured women, and women with incomes equal to or less than 200% of the poverty level had higher rates of difficulty obtaining or refilling contraceptive prescriptions when compared to women outside of these parameters (Grindlay & Grossman, 2016). This research further supports the disparities faced by cohabitating women, poor, lower educated and minority women and their access to comprehensive contraceptive care, and decreased ability to prevent unintended pregnancies.

Analyzing Contraceptive Counseling

A random sample of 50 recorded visits were analyzed evaluating family planning visits and contraceptive counseling. Providers utilized 3 techniques including foreclosed, defined as little discussion of available methods and choice of the contraceptive made by the patient with no input from the provider, informed choice defined as detailed education about methods but no interaction between provider and patient about choice of method, and shared decision making where the provider interacted with the patient responding to the patient and a shared decision was made (Dehlendorf, Kimport, Levy & Steinauer, 2014). Research related to most effective contraceptive counseling is lacking and highly personal. Providers should be encouraged to educate patients on most effective methods and engage the patients to actively participate in choosing the best method of contraception for their personal needs.

Evidence Based Practice

Multiple evidence practice guidelines have been released, addressing change recommendations to family planning to prevent unintended pregnancies. The CDC and HHS OPA practice change recommendations on quality family planning, were released in 2014. As previously discussed national rates remain near 50%, with higher rates in adolescents, young women, minority women, and women with lower levels of education and income (CDC, 2015).

The CDC 618 initiative aims to provide cost evidence to payers demonstrating the cost benefits of preventing unintended pregnancies. Encouraging payers to pay providers for cost of devices and services to initiate LARC methods, even if initial costs are high. A cost-effective model is provided illustrating the cost evidence of supporting

contraceptive care with high upfront costs to incur benefits of avoiding expensive unintended pregnancy costs. Three state models proving this cost evidence is provided for payees, both private and public. Unbundling of immediate post-partum LARC insertion is recommended. This allows providers to be reimbursed for insertion of LARC and patients are provided with contraceptive care in the immediate postpartum setting. Bundling of these services allows the providers only one charge for postpartum care not allowing them reimbursement of LARC insertion. Patients were having to return for a separate visit for LARC insertion. Evidence based recommendations from ACOG, previously discussed; supports immediate post-partum insertion. Unbundling these costs allows providers to be reimbursed for the cost of the device and services for insertion.

An additional component of the 618 initiative, is removal of administrative and logistical barriers to LARC. This includes the removal of required prior-authorization for payment, unnecessary initial visits to provider for screening, and instead allows for same day visit and insertion, and requiring patients to fail another method before inserting LARC. Defraying the costs of obtaining methods for stock, and having payers help defray high costs of stocking methods. Providers rarely follow ACOG recommendation of same day insertion and an estimated 87% of gynecologists required 2 or more visits for LARC insertion. Finally, private plans not grandfathered in, must provide one of the 18 recognized contraceptive methods without cost sharing.

Implementing Evidence Based Practice

The Quality Family Planning Recommendations (QFP), is a collaborative effort by CDC and the U.S. Office of Population Affairs, and outlines evidence based practice recommendations regarding contraceptive services and family planning. The Center for

Disease Control and Prevention report, *Providing Quality Family Planning Services,* estimates nearly half of all United States pregnancies are unintended. Quality family planning services are needed to provide planned pregnancies with planned spacing between intended pregnancies. Family planning services need higher quality measures, and this report expands on 16 core measures to improve family planning services and prevent unintended pregnancies.

These 16 core recommendations aim to improve reproductive health outcomes, by improving the quality of family planning services. The report lists the following as included in the family planning services; "providing contraception to help women and men plan and space births, prevent unintended pregnancies, and reduce the number of abortions offering pregnancy testing and counseling, helping clients who want to conceive providing basic infertility services, providing preconception health services to improve infant and maternal outcomes and improve women's and men's health providing sexually transmitted disease screening and treatment services to prevent tubal infertility and improve the health of women, men, and infants" (CDC, 2014). These practice change recommendations will focus on contraceptive services, quality counseling and youth friendly implementations.

Practice Change Recommendations

Contraceptive services, with a focus on contraceptive counseling steps, contraceptive services education, and confirmation of the contraceptive services, will be expanded upon. Adolescent services and providing a youth friendly environment while confirming understanding of information provided is another piece to improving contraceptive counseling in alignment with evidence based practice recommendations.

Five specific change recommendations will be discussed, with many having multiple secondary specific recommendations. Some of these recommendations will already be in place within the many primary care clinic settings, however these specific recommendations ensure an easy to follow guide for providing higher quality family planning.

Table 1. Summary of Quality Family Planning Recommendations

Recommendation	*Core Measures*
1) Contraceptive Services- Contraceptive Counseling Steps: To help a client who is initiating or switching to a new method of contraception. Providers should follow these steps.	a) Establish and maintain rapport with the client b) Obtain clinical and social information from the client c) Work with the client interactively to select the most effective and appropriate contraceptive method for him or her d) Provide a physical assessment related to the contraceptive; when warranted e) Provide the contraceptive method along with instructions about correct and consistent use, help the client develop a plan for using method and for follow-up
2) Contraceptive Services- Education: The content, format, method, and medium for delivering	
3) Adolescent Services: Comprehensive Information	a) Providers should provide comprehensive information to adolescent clients about how to prevent pregnancy and STDs. b) This should include information about contraception and that avoiding sex (abstinence) is an effective way to prevent pregnancy and STDs.

4) ***Youth-Friendly Service: Family planning programs should take steps to make services "youth-friendly"***	a. *Confidentiality* b. *Accessibility* c. *Peer involvement* d. *Parental or familial involvement* e. *Quality of provider interaction*
5) Quality Improvement	*Family planning programs should select, measure, and assess at least one outcome measure on an ongoing basis*

The CDC recommendations further expanded on the contraceptive services and assessments aiding in choosing the best contraceptive for patient's individual needs. The CDC report defines contraceptive counseling as, "a process that enable clients to make and follow through on decisions about their contraceptive use. Education is an integral component of the contraceptive counseling process that helps clients to make informed decisions and obtain the information they need to use contraceptive methods correctly" (p. 7). Table 2 further details steps to provide quality contraceptive counseling and assessments.

Table 2. Core Recommendations for Establishing Quality Contraceptive Services

1. First establish and maintain rapport with the client
a. Use open ended questions
b. Demonstrating expertise, trustworthiness and accessibility
c. Explaining why the information is needed and how it will be used
d. Encouraging the client to ask questions and share information
e. Listening and observing the client
f. Being encouraging and demonstrating empathy and acceptance
2. Obtain clinical and social information from the client
a. Menstrual history, gynecologic and obstetrical history, contraceptive use, allergies, recent intercourse, miscarriage or termination and any relevant infectious or chronic health conditions (age, breastfeeding, postpartum)

b. Use of condoms, known allergies to condoms, partner use of contraceptives, recent intercourse, partner pregnancies
c. Pregnancy intention or reproductive life plan
d. Contraceptive experiences and preferences
e. Sexual health assessment
3. Select the most effective and appropriate contraceptive method using an interactive approach
a. Method Effectiveness
b. Correct use of the method
c. Non-contraceptive benefits
d. Side Effects
e. Protection from STD's, including HIV
f. Social-behavioral factors
g. Intimate partner violence and sexual violence
h. Mental health and substance use behaviors
4. Conduct a physical assessment related to contraceptive use, when warranted
a. Blood pressure should be taken before initiating combined hormonal contraception
b. Current pregnancy status
c. Measurement of BMI for baseline monitoring, most methods can be safely used in obese women
d. Unnecessary medical procedures and tests can create logistical, emotional or economic barriers to contraceptives
e. The following tests are not needed to routinely provide contraceptive safely to a healthy client
i. Pelvic examinations (unless inserting an IUD or fitting for a diaphragm)
ii. Cervical cytology, or other cancer screening, including clinical breast exam
iii. HIV Screening
iv. Laboratory tests for lipid, glucose, liver enzyme, and hemoglobin levels or thrombogenic mutations
5. Provide the contraceptive method along with instructions about correct and consistent use, help the client develop a plan for using the selected method and for follow-up, and confirm understanding
a. Provide onsite dispensing
b. Begin contraception at time of visit
c. Provide or prescribe multiple cycles (ideally a full year's supply)
d. Make condoms easily and inexpensively available
e. If chosen method is not available onsite, provide another method until he or she can start chosen method
f. Help the client develop an action plan for selected method

g. Develop a follow-up plan
h. Confirm client's understanding

The Family Planning National Center (FPNC) is supported by the Office of Population Affairs/Department of Health and Human Services (DHHS), and provides algorithms, video training and assessment tools to evaluate current family planning services and to provide free training to improve family planning services supported by evidence based practice.

Summary

Many opportunities exist to improve rural primary care contraceptive services. Rural, less educated, poor, minority women are at increased risk of unintended pregnancy. The literature supports the reality of these disparities. The same women at increased risk for unintended pregnancy are at higher risk for poorer maternal and infant outcomes. Providers have room for improvement in up to date practice recommendations, and in delivering higher quality contraceptive care. Women at higher risk for unintended pregnancy need to be screened appropriately at all primary care visits, to decrease the incidence of unintended pregnancy. There is a documented lack of LARC insertion trained providers in rural settings, and a inconsistency from providers in relationship to LARC recommendations and practice of LARC insertion. Data for rural areas shows a continued need for improving family practice healthcare delivery.

Chapter III

Methods

This mixed methods study, was designed to assess effectiveness of an evidence-based educational tool for enhancing provider knowledge regarding evidence-based contraceptive counseling and screening methods. The intent of the author was to assess provider intent implementing change in practice methods and assess for common barriers experienced by providers in adhering to evidence-based recommendations. A pretest/posttest survey was statistically analyzed following the introduction of a stepwise approach of evidence-based contraceptive screening and counseling tool. This chapter covers the methodology, selection and protection of subjects, instrumentation, data collection and analysis of data for this study.

Project Design

The purpose of this project was to assess primary care provider's current knowledge and comfort level regarding contraceptive counseling and treatment recommendations in the ambulatory clinic setting in relationship to evidence-based clinical practice guidelines. A mixed methods research design was utilized to measure provider knowledge, interventions, and self-reported perceived barriers to family planning care. A descriptive research design was used to measure provider knowledge

following a contraceptive screening and counseling tool using evidence-based practice guidelines. An educational tool designed by the researcher included current evidence-based practice guidelines for quality family planning screening, contraceptive counseling and recommended contraceptive prescribing interventions. This educational tool was created by the researcher to educate providers on current screening and interventions for patients wishing to avoid pregnancy and how to approach contraceptive care utilizing evidence-based practice guidelines, for educational purpose and for incorporation into practice.

This study used a one-group pretest/posttest design of family practice nurse practitioners that provide services to women of childbearing age. A pre-test survey using demographic data, multiple choice questions and current practice methods was used to assess for provider knowledge and practices before and after, the educational intervention. The independent variable was the educational tool created, using evidence-based recommendations for quality family planning by the CDC. Data collection and analysis was used to identify quantitative changes between the pretest and posttest survey answers following the educational tool, to assess for effectiveness of the evidence-based educational tool. It was hypothesized that if provider's knowledge regarding contraceptive screening and treatment recommendations increases following the evidenced-based practice educational tool, providers would be motivated to implement practice change.

A qualitative self-report question was included to further explain the quantitative data results. Study participants were asked to reply with self-reported barriers they face providing contraceptive care. Participants were also asked to self-report their perceived

barriers providing quality family planning, including screening for reproductive life plan and providing contraceptive care for those wishing to delay or avoid pregnancy. The author felt it was important to help identify perceived and real barriers, and how they correlate with evidence-based practice guidelines. Utilizing a qualitative response survey to supplement quantitative data, allowed the researcher to consider possible barriers to evidence-based practice.

Sample Population

The sample population used for this study design consisted of primary care providers currently working in the Southeast Kansas and Northeast Oklahoma area. Participants completed a pretest survey, given access to an educational video and PDF tool, and then completed a posttest survey. The primary care providers were asked to provide brief responses about barriers in their current practice methods screening women of childbearing age for reproductive life plans, interventions for those patients and current counseling methods.

Convenience sampling was used to solicit participants. Primary care practice mangers were emailed asking for voluntary participation. Social media solicitation was also utilized for solicitation of providers. Eligibility requirements for participants were currently practicing primary care providers, and currently providing care for women of childbearing age. Providers who did not provide care for women of childbearing age did not meet the qualification for this study. Only completed pretest and posttest surveys were included in the study.

Protection of Human Subjects

Prior to beginning data collection, an application to the Pittsburg State University Institutional Review Board was approved. The participants gave informed consent with their voluntary participation. The surveys were anonymous; therefore, the study did not include any identifying information. No vulnerable populations will be used for the study, and the researcher upheld the basic principles of human subject protection. Responses from the surveys did not have any identifying information, and were coded with a unique identifier to ensure anonymity.

Instruments

Instruments to be used in this study design included informed voluntary consent, a self-report survey, a pretest, a posttest and an educational tool. Electronic participation was solicited using email with online links to a survey. Social media was used to elicit more participants. The participants were asked to complete a pretest survey assessing their current knowledge and views regarding contraceptive screening and interventions, and a self-report survey providing qualitative data about current perceived barriers to quality family planning. All components and links of the research were included in the initial email. Following completion of the pre-test including the self-report data, participants were asked to access the evidence-based educational tool. Participants were encouraged to review the educational tool, and then complete the posttest survey.

The pre-test and posttest surveys were similar. The pretest survey included demographic data and an open-ended question about perceived barriers. Posttest differences integrated intent to screen and intent to follow recommendations following the educational tool. Review of the pretest and posttest survey was completed and

potential concerns addressed prior to administration. There were two qualification questions, multiple choice questions, an open-ended question and a unique identifier question to allow for a paired-comparison t-test.

Qualitative data was gathered using self-report answers about the participant's current perceived barriers. Multiple choice questions with one correct answer was used for the pretest and posttest. The questions were developed using the published evidence-based recommendations of the CDC for quality family planning. A paired sample t-Test analyzed each question with the independent variable of the educational video and PDF tool. One open ended question asked participants to briefly list barriers to screening or providing contraceptive services in their current practice.

The educational video and PDF tool was developed using *Providing Quality Family Planning Services: Recommendations of CDC and the U.S. Office of Population Affairs* (QFP) to summarize the most effective methods to avoid unplanned pregnancies. The focus of this education was to improve practice methods for screening and most appropriate contraceptive intervention for those patients.

Procedure

The first step of this research was gaining approval by Pittsburg State University's IRB board. Approval was granted and the author began sending out emails eliciting primary care providers' voluntary participation in the study. Initial contact included a description of the research being done and expectations of participants, links to complete the pretest survey, the educational video, printable PDF tool and posttest survey were included in the initial contact email. Informed consent was obtained by participant's voluntary participation in the anonymous pretest survey.

Following completion of the pre-test and self-report survey, participants were asked to follow the additional link to the educational tool. Participants were given three weeks to complete the pretest survey view the educational video, PDF tool and complete the posttest survey. The qualitative data evaluated current practices and self-reported perceived barriers to providing recommended contraceptive interventions. The open-ended question assessed self-reported barriers listed by providers.

After completion of the pre-test and posttest surveys a data analysis was done by this author. Paired-comparison t-test results for correct and incorrect multiple choice responses of the pre-test and posttest were analyzed. The data was investigated to assess for changes in provider attitudes using evidence-based clinical guidelines, following introduction of the educational video and tool. The survey responses were coded using a unique identifying question, to ensure anonymity and statistical validity.

The open-ended question allowed providers to share their current practices and self-reported perceived barriers providing evidence-based clinical guidelines in practice. This permitted the author to further assess deviations from evidence-based guidelines and provider's self-reported barriers. The open-ended question attempted to find common barriers listed by providers in Southeast Kansas and Northeast Oklahoma.

Timeline

Data collection via pretest survey began February 20, 2020. Respondents were given three weeks to review the education material, and complete the posttest survey. The data was analyzed and results completed March 30, 2020. Completion of the scholarly project and final edits was completed April 2020.

Resources Needed

The technology needed for this study included an online survey tool Qualtrics, emails for study participants, social media and an online educational video and PDF tool. The educational video was a voiceover PowerPoint converted to a YouTube video link. The human resources were current practicing primary care providers willing to participate in the study.

Outcome Data

The outcome data being collected was the change in provider attitudes related to contraceptive care following the educational intervention. This data was used to determine if provider's attitudes or views changed regarding evidence-based clinical practice guidelines in contraceptive care. The qualitative survey assessed for commonly reported barriers to providing quality family planning, specifically screening and contraceptive care.

Tools/Instruments

Data collection was evaluated using the paired comparison t-test. The percentage of correct answers of each individual question were compared between the pretest and posttest surveys. A unique identifying question was utilized for paired-comparison analysis. The data was separated into two groups. A pretest group of provider's answers without the educational tool and the second group the posttest provider's answers following the educational tool intervention.

Methods of Analysis

Data was analyzed using a paired-comparison t-test. Pretest and posttest responses were compared to assess for a statistical difference in percentage of correct answers using

evidence-based guidelines for family planning screening and contraceptive interventions. Tests were paired using the unique identifying question. The qualitative question was analyzed by assessing common words and themes providers listed as barriers. This was done to better understand provider's self-perceived and reported barriers to providing quality family planning.

Summary

A descriptive mixed methods research design was used for this project. Convenience sampling was utilized to elicit participation from primary care providers in Southeast Kansas and Northeast Oklahoma via email solicitation and social media. Data analysis was completed following collection of pretest and posttest scores. A review of paired t-test scores was used to determine if the educational tool was effective at enhancing provider knowledge and intent to implement practice change utilizing evidence-based contraceptive counseling and screening. Statistical data analyzed percentage increases in a one group pretest and posttest method following the intervention of the education tool.

Chapter IV

Evaluation of results

The data in this study was collected to evaluate primary care provider knowledge of previously existing CDC clinical practice guidelines regarding contraceptive care and family planning. The goal of this study was to improve provider knowledge using an educational voiceover PowerPoint video with current CDC clinical practice guidelines regarding quality family planning. Providers current practice concerning family planning screening and interventions were assessed, along with current knowledge of existing CDC clinic practice guidelines. The educational voice over PowerPoint video link was delivered and providers knowledge levels were assessed using the same questions from the pretest. A PDF file including the educational information from the video was also provided for reference and future clinic use.

The focus of this study was to deliver current evidence-based practice guidelines from the CDC to family practice providers. The goal was to enhance their family planning practices with a focus on screening all women of childbearing age for contraceptive needs using the CDC recommendations. Recommended reproductive life plan screening, most effective contraceptive methods, and effective contraceptive counseling techniques were included in the educational video and PDF tool.

Demographic Data

The sample population was comprised of 27 family nurse practitioners, physicians and physician assistants. Participation within the study included an email with links to the pretest survey, the educational video, educational PDF file and the link to the posttest. Using online survey software made available through the researcher's graduate school, the pretest and posttest data was collected. Participants provider roles were as follows, nurse practitioners made up 81% (n=22) physician assistants 15% (n=4) and physicians 4% (n=1). Participants were all currently licensed providers currently working in a family practice setting during the time of data collection.

A majority of participants 52% (n= 14) fell in the 31-40 age range, followed by 26% (n=7) 41-50 age range, 18% (n=5) aged 20-30 and 4% (n=1). Females made up 85% (n=23) of the participants with males 15% (n=4). Length of time in primary practice role was primarily made up of the 0-5 year range with 70% (n=19) of participants falling in this category. The 6-10 years range had 11% (n=3) respondents as did the 11-15 years range 11% (n=3). Participants with 16 years or more in primary care role were 8% (n=2). Participants were asked to describe their patient population as urban, rural, suburban, or unsure, a definition of these choices was not provided. 74% (n=20) of participants chose rural, 15% (n=4) chose urban and 11% (n=3) chose suburban. No participants chose unsure to describe their patient population.

70% (n=19) practice in family practice birth to geriatric. Participants practicing in internal medicine were 11% (n=3). The remaining 19% (n=5) indicated other. 3 participants further defined their role as a mixture of emergency medicine, family practice clinic and urgent care. Another respondent in the other group listed her role as

pediatrics and obstetric and gynecological services only. The final participant listed her primary role as dermatology with limited family practice services.

A graph representing the demographic data of participants is presented below (Figure 3).

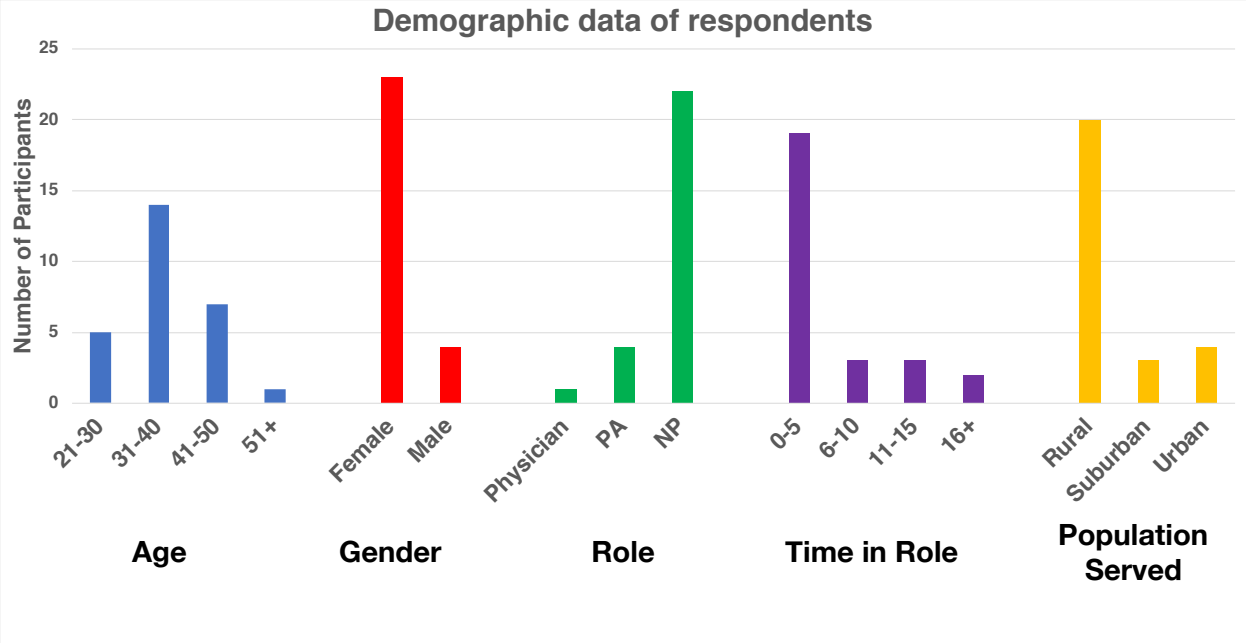


Figure 3 **Demographic data of respondents**

Project Questions and Study Results

The pretest consisted of nineteen questions, eight multiple choice scored questions, six demographics, three regarding current knowledge and practice methods, one qualitative and one unique identifier question. The eight scored questions had a range of correct answers from three to eight. The mean score of participants (n = 27) was 5.3 (66.25%) with a standard deviation of 1.24 (15%). Results of the pretest scores were evaluated to answer the following research question, *"Are primary care providers in Southeast Kansas and Northeast Oklahoma aware of the CDC and OPA established guidelines for quality family planning?"* Results for the pretest revealed only 15% (n = 4)

of participants scored at least 85% (n = 7) on questions derived from current CDC and U.S. OPA recommendations for family planning recommendations.

Three questions on the pretest were used to address the following two research questions, *"Are primary care providers in the rural areas of Southeast Kansas and Northeast Oklahoma screening women of childbearing age for their reproductive life plan; are primary care providers in Southeast Kansas and Northeast Oklahoma following CDC and OPA recommendations for quality family planning?"* Participants were asked how frequently they screen women of childbearing age and given multiple choice answers with ranges 0-25%, 26-50%, 51-75% and 76-100% of the time. Pretest results denoted nearly half, or 48% (n = 13) only screened women of childbearing age for their reproductive life plan 0-25% of the time. 30% (n = 8) of participants indicated screening 26-50% of the time. The remaining two categories had 11% (n = 3) for both the 51-75% and 76-100% rates of screening women of childbearing age for a reproductive life plan. Participants were asked if they were aware of the CDC's recommendation for screening for a reproductive life plan. Responses were split with 48% (n = 13) responding no, and 52% (n = 14) responding yes. Next respondents were asked if they felt they follow CDC recommendations for screening women of childbearing age for a reproductive life plan. Less than half, 44% (n = 12) of participants responded yes and 56% (n = 15) answered no.

The posttest was used to assess the next research question, "*Will an evidence-based educational tool regarding contraceptive counseling and screening methods be effective in enhancing provider knowledge?"* Posttest scores had a mean score of 7.185 (89.75%) with a standard deviation of 0.735. When comparing the posttest results to

pretest results there was an improvement of 1.8 (22.5%) and a decrease in the standard deviation from 1.24 to 0.735. To further evaluate provider knowledge enhancement following the independent variable, the educational video, results were analyzed using a paired t-test. The pretest and posttest correct answer results were paired using the unique identifier. There was a significant increase in correct responses in the posttest following the educational video (M=7.185, SD=0.735) than the pretest (M=5.333, SD=1.24); t(26) = 9.372, p = 0.0001. The significant p-value less than 0.0001provides strong evidence against the null hypothesis.

Answering another research question, *"Will an evidence-based educational tool regarding contraceptive counseling and screening methods be effective in increasing provider intent to screen"* was examined in the posttest. Participants were asked how frequently they intended to screen women of childbearing age using the same range and choices as the pretest. There was a substantial increase in intent to screen women of childbearing age. Posttest results indicated 70% (n = 19) of participants intended to screen women of childbearing age for a reproductive life plan 76-100% of the time. Compared to pretest results and their current screening percentages, this revealed a 59% (n =16) increase screening 75-100% of the time. 15% (n = 4) indicated they intended to screen 51-75% of the time. The remaining intent to screen percentages fell dramatical with 0-25% garnering 7.5% (n = 2) and 26-50% also receiving 7.5% (n = 2), indicating the participants overall intention to screen increased following the educational video. This research question was further explored in the posttest asking the participants if they plan to start screening women in their practice for a reproductive life plan. Nearly all the participants, 96% (n = 26) responded yes. When compared to the pretest if they were

aware of screening for reproductive life plan recommendations 52% (n = 14) were not aware of this recommendation. This shows an increase of knowledge and likelihood to screen following the educational video.

Further evaluation was established with the posttest question asking if participants will implement CDC recommendations for contraceptive screening and services in your practice. 92.5% (n = 25) stated they intended to follow these recommendations, with only 7.5% (n = 2) replying no. This also showed an increase of provider knowledge and intention to screen when compared to the pretest question, *in your practice do you follow CDC recommendations for screening for a reproductive life plan?* Before the educational video most respondents, 56% (n = 15) replied no. Figure 4 below further depicts the providers current practice screening compared to intent to screen following the educational intervention.

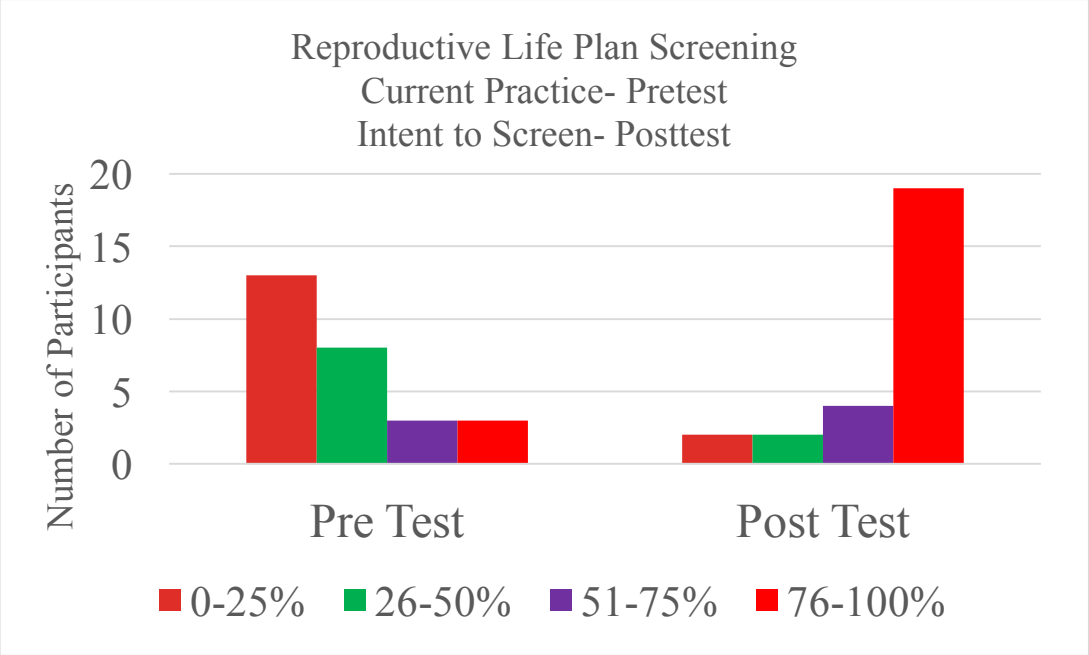


Figure 4: **Reproductive Life Plan Screening Current Practice- Pretest, Intent to Screen- Posttest**

Additional Statistical Analysis

A paired sample t-test was used to determine significance of mean comparison between pretest and posttest scores. Data was collected and tabulated in excel by the researcher. A paired t-test was chosen to assess for statistical significant difference between the means following the independent variable, introduction of the educational video and PDF tool using a 95% confidence. A paired comparison t-test was used to test the hypothesis, the posttest scores would be higher than the pretest scores. The null hypothesis was no variation in scores would be found between the scored pretest and posttest.

A confidence interval of 95% was chosen to determine significance, therefore a p-value of ≤ 0.005 is representative of a statistically significant difference. The statistical analysis revealed posttest scores (M =7.19, SD = 0.72, n=27) were higher than pretest scores (M = 5.33, SD 1.22 = n=27). These results indicated a statistically significant difference between posttest and pretest results, p-value <0.0001. The results are further revealed in Figure 5 below.

Table Analyzed	Data 1	
Column B	PostTest	
vs.	vs.	
Column A	PreTest	
Paired t test		
P value	<0.0001	
P value summary	****	
Significantly different (P < 0.05)?	Yes	
One- or two-tailed P value?	Two-tailed	
t, df	t=9.372, df=26	
Number of pairs		27
How big is the difference?		
Mean of differences		1.852
SD of differences		1.027
SEM of differences		0.1976
95% confidence interval	1.446 to 2.258	
R squared (partial eta squared)		0.7716
How effective was the pairing?		
Correlation coefficient (r)		0.562
P value (one tailed)		0.0011
P value summary	**	
Was the pairing significantly effective?	Yes	

***Figure 5*. Paired t-test results**

A further analysis of score questions indicated improvement in all the scored questions except questions number four and six. Question four on both the pretest and posttest all n=27 respondents answered the multiple-choice question, *"If a client chooses a contraceptive method not available the same day or onsite, the provider should?"* correctly. Question number six, *"If a client chooses a contraceptive method not available the same day or onsite, the provider should?"* was answered correctly by n=26 on both the pretest and posttest.

Providers showed a 15% increase on question one, Primary care providers should screen women ages 14-44 for their reproductive life plan with all 27 answering correctly on the posttest. The same 15% increased improvement was found regarding the question

asking providers to choose the least effective long acting reversible method. Both questions two and four demonstrated smaller increased percentages in correct answers with 4% increases. These questions focused on CDC recommendations for providers to be reasonably certain a woman in not pregnant what patient populations are appropriate to consider for long acting contraceptive methods. The largest percentage increase was the question, *"The CDC recommends that clinicians obtain a sexual history at a patient's first appointment and at all routine preventive appointments. According to published research, it is estimated less than ____ healthcare providers obtain a sexual history from their patients"* with a 44% increase of correct answers from the pretest to posttest. Figure 6 provides a comparison of pretest and posttest scores depicted by individual question results

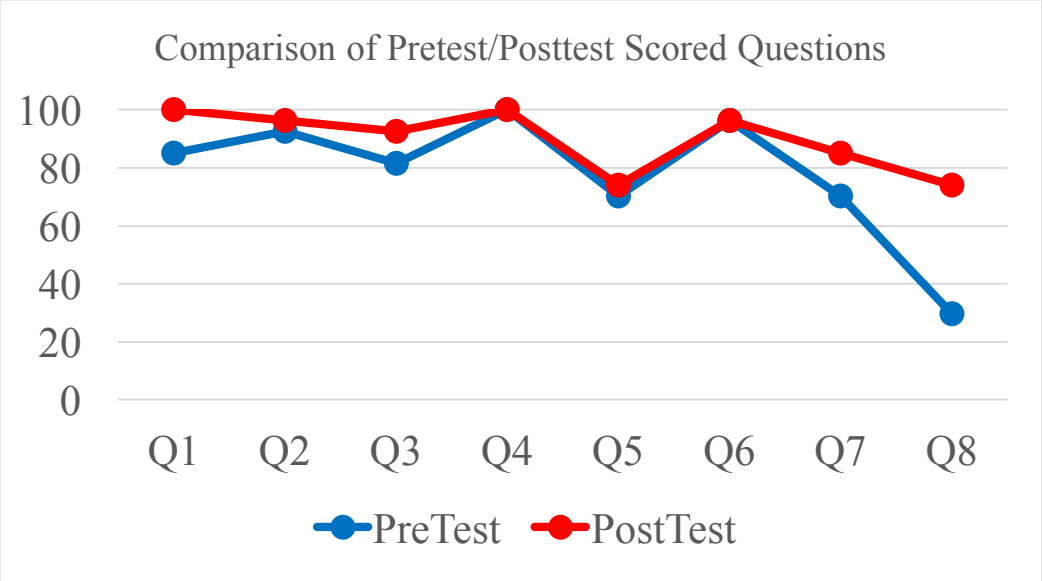


Figure 6. **Comparison of Pretest/Posttest Scored Questions**

Qualitative Results

A qualitative question was used to answer the research question, "What are the barriers to provision of reproductive life plan screening and contraceptive counseling experienced by primary care providers in Southeast Kansas and Northeast Oklahoma?" Participants were asked to briefly list barriers they face while providing contraceptive counseling, need for contraceptive services and pregnancy intention or life plan. A text entry was not required for respondents to , complete the survey, 70% (n = 19) gave a response and 30% (n = 8) didn't enter a response. Of those nineteen responses 47% (n = 9) cited time as a barrier to providing services. Lack of understanding and knowledge deficits were listed by 21% (n = 4) of participants. Lack of access in clinic or for patients was stated by 16% (n = 3) of respondents and patient's age, willingness to discuss and lack or insurance or financial restraints were listed by 10% (n = 2) of participants. One respondent stated they did not see many women of childbearing age and preferred to refer them to a visiting gynecologist when needed.

Summary

The purpose of this study was to assess current provider knowledge and evaluate if current provider practices align with CDC and U.S. OPA quality family planning recommendations, and to enhance provider knowledge by providing an educational video using evidence-based recommendations. Participants were also provided with a PDF educational file, providing a printable tool with the information covered in the educational video. This PDF file was a useful reference for the posttest and future clinic use.

Reviewing the posttest scores of correct answers in comparison to pretest scores resulted in a statistically significant finding ($p < 0.0001$) that there was an increase in provider knowledge regarding family planning screening and intervention following the educational video.

This research allowed for demographic data collection, allowing the researcher to look at differences in provider role, age, gender and patient population to further describe results. Qualitative data collection was also collected allowing the researcher to further evaluate self-reported barriers to providing recommended family planning services. The most common response indicated time was the biggest barrier to participants in the study.

Chapter V

Discussion

Current clinic practices, provider knowledge, perceived barriers and current screening practices were examined in this study. Multiple choice questions were developed using CDC and U.S. OPA quality family planning guidelines and used to assess provider knowledge before introducing an educational video utilizing the same resources used to develop the questions. Following completion of the pretest participants were instructed to watch the educational video, and were informed of the PDF file for reference and future clinic use. Both the educational video and PDF file were developed using the CDC and U.S. OPA stepwise approach to quality family planning. Participants were instructed to take the posttest and encouraged to use the PDF file as a reference if needed. The posttest intention was to assess for increased provider knowledge and intent to implement CDC and U.S. OPA recommendations in clinical practice after providing the educational video and PDF file.

Outcomes: Relationship to the research

The pretest evaluated primary care provider's current knowledge and practices in reference to reproductive life plan screening, contraceptive counseling, and contraceptive services provided, also allowing self-reported barriers to providing these services. An

educational video and PDF file were developed using CDC and U.S. OPA recommendations for screening, contraceptive counseling and providing shared decision making while choosing contraceptive methods with patients. The posttest assessed for improved provider knowledge following the educational intervention. The following research questions were the framework for this study.

Current Knowledge Levels

Results of this research support previous studies emphasizing the importance of screening for contraceptive need and enhancing provider-patient interaction and counseling (Dehlendorf et al., 2014). This research indicated more than half the providers knew about CDC recommendations and answered evidence-based questions correctly, yet failed to follow these recommendations in practice. Results of this research further supported previous findings with providers citing similar barriers to providing quality family planning services citing time constraints, patient knowledge and comfort levels, and accessibility to contraceptive options. Providers acknowledge screening for contraceptive need and comprehensive services are essential, but inconsistently provide these services. A Dirksen et al., survey indicated a mere 25% of women reported contraceptive counseling within a 12-month period. According to Chuang et al., rural women compared to urban equivalents are less likely to receive contraceptive counseling. These findings were supported in this research with more than 90% of the providers indicating they appropriately screen women for contraceptive needs 75% or less of the time. A need for increased provider education regarding screening all women for reproductive life plans, contraceptive counseling and comprehensive contraceptive interventions is indicated by the results of this study.

Knowledge Increase Through QFP Recommendations Education

Results from this research indicate providing a short educational opportunity for providers reviewing evidence-based recommendations can enhance knowledge levels. Increase of knowledge was demonstrated by an increase in the posttest mean of scored multiple choice answers. Providers also indicated an intention to increase their current practice rates screening women of childbearing age for a reproductive life plan.

The educational video utilized a stepwise approach as recommended by the CDC and U.S. OPA to providing comprehensive family planning. Reproductive life planning was defined and further discussed for significant to all women of childbearing age. Quality provider-patient contraceptive counseling was outlined and a clear depiction of best practice contraceptive prescribing and education was provided. Sexual health assessments and CDC estimates of providers preforming sexual health screenings were also reviewed.

Evaluation of Theoretical Framework

Nora Pender's Health Promotion Model explores 14 theoretical assertions that can be directly applied to provider education regarding patient interaction, to promote health, improve the patient's well-being and engage patients in realizing their full contraceptive health potential (Alligood, 2015). Provider knowledge was assessed to determine a need for education to follow CDC and U.S. OPA recommendations for quality family planning. Provider's current contraceptive screening, counseling and interventions were assessed in the pretest.

Pender's Health Promotion Model served as the framework for developing the educational video and PDF file. The Health Promotion Model places an emphasis on

individual characteristics, previous life experiences, and patient and providers likelihood of engaging in the health-promoting behavior (Alligood, 2015). For successful change in provider practice, it was essential to use Pender's Health Promotion Model to demonstrate positive patient outcomes to providers when implementing CDC and U.S. OPA recommendations in family practice clinics. It is important to acknowledge Pender's belief that the provider and patient's previous life experiences influences their decision making and following the stepwise approach recommended by the CDC provides a more comprehensive family planning clinic visit.

Evaluation of Logic Model

Providers' knowledge level using existing recommendations for quality family planning by the CDC and U.S. OPA was the focus of this study. It also evaluated providers' current reproductive life plan screening in practice and self-reported barriers to providing these services. Using the CDC and U.S. OPA recommendations an educational video and PDF file were developed and provided to participants. Improved provider knowledge, intent to screen for reproductive life plan, and intent to implement CDC and U.S. OPA recommendations into practice were demonstrated in the study. Pretest and posttest score review revealed an improved provider knowledge level. Educating providers over CDC recommendation of screening every woman capable of having a child for her individualized reproductive plan with the educational video and PDF demonstrated providers' willingness to create immediate change. The posttest survey demonstrated provider intent to screen more frequently with 96% of respondents indicating yes, they intend to screen women in their practice for a reproductive life plan. Pretest results revealed only 48% of providers were aware of the CDC recommendation

screening for a reproductive life plan. The educational video and PDF file provided a step-wise approach encouraging shared decision making between patient and provider. Providers were encouraged to print and keep the PDF file to use in practice and implement change in counseling methods. Time constraints of this study prevent measurement of the long-term goal of desired pregnancy spacing and absence of unintended pregnancy. Hypothetically adherence to CDC and U.S. OPA family practice recommendations and utilization of educational video and PDF file will result in desired pregnancy spacing and absence of unintended pregnancy.

Limitations

Limitations noted within the study were a small sample size, little variety in provider role, predominantly female participants and one scored answer with 100% correct answer on the pretest. The sample size was limited to providers that completed the pretest and posttest. The survey was emailed to over fifty providers with twenty-seven responding.

A majority of the participants were women, 85% (n= 23). Although the survey was emailed to clinic managers and distributed to all providers within the clinics, 81.5% were nurse practitioners. Multiple factors could be attributed to the higher female and nurse practitioner role response rate. This was a convenience sample using both clinic managers and social media to distribute emails soliciting participation. A higher percentage of female providers working in Southeast Kansas and Northeast Oklahoma could also contribute to the response demographics. Primary care clinics could also have a higher percentage of nurse practitioners filling those roles, and it is unknown what the rate of primary care provider male to female ratio is for the area surveyed.

A low completion rate could be attributed to numerous influences. Providers might feel they don't have time to participate, lack of interest, technology difficulties, and the email soliciting participation could have inadvertently been missed. Survey technology utilized for this study was Qualtrics. Graduate students are given access to online survey technology allowing for wide distribution allowing for multiple question formats and anonymous responses. Instructions for participation were made clear and concise with hyperlinks within the email for ease of finding and completing pretest and posttest surveys. In an effort to increase participation mobile use was chosen for survey appearance. The email soliciting participation could have been confusing to some providers, despite the researcher's efforts to ensure easy to follow directions. The educational video was a voiceover PowerPoint converted to a YouTube video link. Some providers may not have access to adequate internet or YouTube via work phones or computers. Including pretest link, video link, PDF file, and posttest link there were four different steps, possibly dissuading participation. Finally, in person educational opportunities might provide higher participation and more variation in demographic data.

One of the scored survey questions had 100% correct answers on the pretest. This limited the ability of the researcher to demonstrate increased knowledge and indicates the question was not challenging to providers. This could be attributed to no validation of the research tools. Current published guidelines and recommendations were used to develop the surveys and educational tool by the researcher. A concerted effort was made to ensure the content was valid and within published guidelines. This researcher developed study resulted in no previous validated tools.

Implications for Further Research

Results of this study indicate a need for future research educating providers about reproductive life plan screening, contraceptive counseling and practice recommendations for offering contraceptives. Broader research is indicated for family practice providers with special attention to rural settings. Both randomized population study by McCall-Hosenfeld and Weisman, and a 2012 National Survey from Vital and Health Statistics found women in rural areas were less likely than urban women to receive contraceptive services or pap smears as recommended by CDC guidelines. Providers pretest responses indicating low screening percentages for reproductive life plans and self-reported low knowledge levels of current CDC recommendations indicate a need for more research and education. Limitations of this study could be addressed with more research including more providers, a variety of provider roles and evaluation of more rural areas.

Trends comparing urban and rural unintended pregnancy rates reveal a much slower decrease in incidence for rural women. Large urban areas have seen a decrease of 50% in unintended pregnancies while rural women have had a 37% decrease (Hamilton et al., 2016). Further research examining the primary care provider role in rural settings providing contraceptive screening, counseling and services is needed to better understand why rural women have higher rates of unintended pregnancy. Research shows rural women have less access to obstetricians for contraceptive services requiring rural women to seek contraceptive services from primary care providers (Chuang et al., 2012). Additional research is needed to evaluate rural primary care providers contraceptive screening, counseling and prescribing educational needs.

Implications for Practice, Policy and Education

The focus of this study was providing a comprehensive approach to reproductive life planning, contraceptive counseling and shared decision making between provider and patient in choosing a contraceptive method. Research indicates following these steps improves patient perception and adherence to chosen methods. Despite the CDC publishing a recommendation that all women of childbearing age have a documented reproductive life plan in 2006, results of this study showed half the participants weren't aware of this recommendation. Primary care practices should strive to follow current evidence-based recommendations and guidelines regarding contraceptive screening, counseling and implementation. Providers should also acknowledge gaps in their knowledge and utilize available resources to bridge these gaps.

Contraceptive care can be influenced greatly by local, state and employer policies. Healthcare providers should utilize resources to determine what policies could impact their contraceptive services. Although institutional polices may prevent offering contraceptives to patients, providers can still screen patients for need, offer evidence-based education over methods, allow shared decision making, and prompt referral as needed. Allowing patients to be informed and active decision makers in their reproductive life plan should be a priority of all healthcare providers, policy makers and women of childbearing age.

Conclusion

The focus of this study was to measure primary care providers' knowledge regarding contraceptive need screening, contraceptive counseling, and contraceptive interventions in a rural setting prior to introducing an educational video, PDF file and

after introduction of these tools. With limited access to obstetricians in rural areas, primary care providers ability to provide evidence-based and comprehensive contraceptive care is imperative. Unintended pregnancy continues to be a problem in the U.S. with rural women facing more disparities in contraceptive care than urban women. Primary care providers must be willing to remain current regarding evidence-based practice recommendations for comprehensive contraceptive care to best serve their female patients of childbearing age.

Reference

Alligood, M. R. (2014). *Nursing theorists and their work*. Elsevier.

Birgisson, N. E., Zhao, Q., Secura, G. M., Madden, T., & Peipert, J. F. (2015). Preventing unintended pregnancy: The contraceptive CHOICE project in review. *Journal Women's Health, 24*(5), 349-353. doi:10.1089/jwh.2015.5191

Burgess, C. K., Henning, P. A., Norman, W. V., Manze, M. G., & Jones, H. E. (2018). A systematic review of the effect of reproductive intention screening in primary care settings on reproductive health outcomes. *Family Practice, 35*(2), 122-131. doi:10.1093/fampra/cmx086

Centers for Disease Control and Prevention. (2016). U.S. selected practice recommendations for contraceptive use, 2016. https://www.cdc.gov/mmwr.volumes/65/rr/pdfs/rr6504.pdf

Chuang, C. H., Hwang, S. W., McCall-Hosenfeld, J. S., Rosenwasser, L., Hillemeier, M. M., & Weisman, C. S. (2012). Primary care physicians' perceptions of barriers to preventive reproductive health care in rural communities. *Perspectives on Sexual and Reproductive Health, 44*(2), 78-83. doi:10.1363/4407812

Copen, C. E. (2018). Receipt of a sexual risk assessment from a doctor or medical care provider in the past year among women and men aged 15-44 with recent sexual activity. *National Health Statistics Reports,* (110), 1-12. https://www.cdc.gov/nchs/data/nhsr/nhsr110.pdf

Curtis, K. M., Jatlaoui, T. C., Tepper, N. K., Zapata, L. B., Horton, L. G., Jamieson, D.J., Whiteman, M.K. (2016, July 29). U.S. selected practice recommendations for contraceptive use, 2016. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report,* 65(4), 1-66. https://www.cdc.gov/mmwr/volumes/65/rr/pdfs/rr6504.pdf

Dehlendorf, C., Kimport, K., Levy, K., & Steinauer, J. (2014). A qualitative analysis of approaches to contraceptive counseling. *Perspectives on Sexual and Reproductive Health, 46*(4), 233-240. doi:10.1363/46e2114

Dieguez, G., Pyenson, B. S., Law, A. W., Lynen, R., & Trussell, J. (2015). The cost of unintended pregnancies for employer-sponsored health insurance plans. *American Health & Drug Benefits, 8*(2)

Dirksen, R. R., Shulman, B., Teal, S. B., & Huebschmann, A. G. (2014). Contraceptive counseling by general internal medicine faculty and residents. *Journal of Women's Health, 23*(8), 77-713. doi:10.1089/jwh.2013.4567

Finer, L. B., & Kost, K. (2011). Unintended pregnancy rates at the state level. *Perspectives on Sexual and Reproductive Health, 43*(2), 78-87. doi:10.1363/4307811

Finer, L. B., & Zolna, M. R. (2016). Declines in unintended pregnancy in the United States, 2008–2011. *The New England Journal of Medicine, 374*(9), 843-852. doi:10.1056/NEJMsa1506575

Finer, L. B., & Zolna, M. R. (2014). Shifts in intended and unintended pregnancies in the united states, 2001-2008. *American Journal of Public Health, 104*(1), S43-8. doi: 10.2105/ajph.2013.301416

Gavin, L., Pazol, K., & Ahrens, K. (2017). Update: Providing quality family planning services – ecommendations from CDC and the U.S. office of population affairs, 2017. *MMWR. Morbidity and Mortality Weekly Report, 66*(50), 1383-1385.

Gipson, J. D., Koenig, M. A., & Hindin, M. J. (2008). The effects of unintended pregnancy on infant, child, and parental health: A review of the literature. *Studies in Family Planning, 39*(1), 18-38. doi:10.1111/j.1728-4465.2008.00148.x

Grindlay, K., & Grossman, D. (2016). Prescription birth control access among U.S. women at risk of unintended pregnancy. *Journal of Women's Health, 25*(3), 249254. doi:10.1089/jwh.2015.5312

Guttmacher Institute. (2016, September). *State Facts About Unintended Pregnancy: Kansas.* https://www.guttmacher.org/fact-sheet/state-facts-about-unintended-pregnancy-kansas

Guttmacher Institute. (2019). *Unintended Pregnancy in the United States.* https://www.guttmacher.org/fact-sheet/unintended-pregnancy-united-states

Hamilton, B. E., Rossen, & L. M., Branum, A. M., (2016). *Teen birth rates for urban and rural areas in the United States, 2007-2015*. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. https://permanent.access.gpo.gov/gpo77171/teenbirth.pdf

Ingram, D. D., & Franco, S. J., (2013). NCHS urban–rural classification scheme for counties. National Center for Health Statistics. *Vital and Health Statistics* 2(154). 2012. https://www.cdc.gov/ nchs/data/series/sr_02/sr02_154.pdf

Jones, R. K., & Kost, K. (2007). Underreporting of induced and spontaneous abortion in the United States: An analysis of the 2002 national survey of family growth. *Studies in Family Planning, 38*(3), 187-197. doi:10.1111/j.1728-4465.2007.00130.x

Kost, K., Finer, L. B., & Singh, S. (2012). Variation in state unintended pregnancy rates in the United States. *Perspectives on Sexual and Reproductive Health, 44*(1), 57-64. doi:10.1363/4405712

Kost, K., & Lindberg, L. (2015). Pregnancy intentions, maternal behaviors, and infant health: Investigating relationships with new measures and propensity score analysis. *Demography, 52*(1), 83-111. doi:10.1007/s13524-014-0359-9

Levi, A. J., Simmonds, K. E., & Taylor, D. (2009). The role of nursing in the management of unintended pregnancy. *Nursing Clinics of North America, 44*(3), 301-314. doi: https://doi.org/10.1016/j.cnur.2009.06.007

Lohr, P. A., Schwarz, E. B., Gladstein, J. E., & Nelson, A. L. (2009). Provision of contraceptive counseling by internal medicine residents. *Journal of Women's Health (2002), 18*(1), 127-131. doi:10.1089/jwh.2008.0809

Lunde, B., Smith, P., Grewal, M., Kumaraswami, T., Cowett, A., & Harwood, B. (2014). Long acting contraception provision by rural primary care physicians. *Journal of Women's Health, 23*(6), 519-524. doi:10.1089/jwh.2013.4286

McCall-Hosenfeld, J. S., & Weisman, C. S. (2011). Receipt of preventive counseling among reproductive-aged women in rural and urban communities. *Rural and Remote Health, 11*(1), 1617. www.rrh.org.au/journal/article/1617

Office of Disease Prevention and Health Promotion. (2017). Family planning. https://www.healthypeople.gov/2020/topics-objectives/topic/family-planning

Philliber, A. E., Hirsch, H., Brindis, C. D., Turner, R., & Philliber, S. (2017). The use of ACOG guidelines: Perceived contraindications to IUD and implant use among family planning providers. *Maternal and Child Health Journal, 21*(9), 1706-1712. doi:10.1007/s10995-017-2320-1

Sonfield, A., Kost, K., Gold, R. B., & Finer, L. B. (2011). The public costs of births resulting from unintended pregnancies: National and state-level estimates. *Perspectives on Sexual and Reproductive Health, 43*(2), 94-102. doi:10.1363/4309411

Stadtlander, L. M. (2016). Women's health behaviors with unintended pregnancy and births. *International Journal of Childbirth Education, 31*(3), 34.

Tydén, T., Verbiest, S., Van Achterberg, T., Larsson, M., & Stern, J. (2016). Using the Reproductive Life Plan in contraceptive counselling. *Upsala journal of medical sciences*, *121*(4), 299–303. doi:10.1080/03009734.2016.1210267

Weaver, A., & Gjesfjeld, C. (2014). Barriers to preventive services use for rural women in the Southeastern United States. *Social Work Research, 38*(4), 225-234. doi:10.1093/swr/svu023

World Health Organization (2017). *Family Planning Contraceptive http://www.who.int/mediacentre/factsheets/fs351/e*

APPENDIX

Appendix A

Pretest

1. What is your current age?
    a. 20-30
    b. 31-40
    c. 41-50
    d. 51 or older
2. Gender
    a. Male
    b. Female
    c. Would rather not respond
3. Current practice role
    a. Physician
    b. Physician Assistant
    c. Nurse Practitioner
    d. Other, _____
4. Length of time in primary care practice
    a. 0-5 years
    b. 6-10 years
    c. 11-15 years
    d. 16 years or more
5. What best describes your current practice role?
    a. Family practice, birth to geriatric
    b. Internal medicine
    c. Other,_____
6. How would you describe your current patient population?
    a. Urban
    b. Rural
    c. Suburban
    d. Unsure
7. How frequently do you screen women of childbearing age for their reproductive life plan?
    a. 0-25% of the time
    b. 26-50% of the time
    c. 51-75% of the time
    d. 76-100% of the time
8. Are you aware of the CDC's recommendations for screening for a reproductive life plan?
    a. Yes
    b. No

9. In your practice do you follow CDC recommendations for contraceptive screening and services?
    a. Yes
    b. No
10. Primary care providers should screen women ages 14-44 for their reproductive life plan?
    a. Only if the patient is requesting contraceptives
    b. If the patient is sexually active and not currently using any contraceptives
    c. As part of any visit where a reproductive life plan or current contraceptive method is not already clearly documented
    d. Never, they patient should see their OBGYN for these services
11. All of the following allow the provider to be reasonably certain that the woman is not pregnant **EXCEPT**
    a. Is ≤ 7 days after the start of their normal menses
    b. Is within 4 weeks postpartum
    c. Has been correctly and consistently using a reliable method of contraception
    d. Less than six months postpartum, not breastfeeding, and amenorrhea

12) The following tests are routinely needed to provide contraception safely to a healthy client
    a. Cervical cytology or other cancer screening, including a clinical breast exam
    b. Human immunodeficiency virus (HIV) screening
    c. Laboratory tests for lipid, glucose, liver enzyme, and hemoglobin levels
    d. Blood pressure and current pregnancy status

13) All of the following are appropriate steps in providing contraceptive services **EXCEPT**
    a. Refusing to discuss long acting reversible methods with clients because that is not a service your clinic provides
    b. Obtain clinical and social information from the client, including a sexual health assessment
    c. Work with the client interactively to select the most effective and appropriate contraceptive method
    d. Conduct a physical assessment related to contraceptive use, only when warranted

14) Long Acting Reversible Contraception (LARC) is considered
    a. First line choices of contraceptive methods only for parous adults
    b. Not considered an appropriate choice for adolescents
    c. Dependent on compliance/adherence for effectiveness
    d. Should be considered a first-line choice for both nulliparous and parous women, including adolescents

15) If a client chooses a contraceptive method not available the same day or onsite, the provider should
    a. Recommend the client choose a different method

b. Let the client find another provider who has their chosen method
c. Refer them to another provider without providing them with another method until their chosen method is available
d. Provide the client with another method to use until her chosen method is available

16) Which of the following is considered the least effective contraceptive method?
a. Intrauterine device
b. Implant
c. Injectable
d. Tubal ligation

17) The Center for Disease Control recommends that clinicians obtain a sexual history at a patient's first appointment and at all routine preventive appointments. According to published research, it is estimated less than ____ healthcare providers obtain a sexual history from their patients.
a. 75%
b. 60%
c. 50%
d. 40%

18) Please briefly list barriers you face while providing contraceptive counseling, need for contraceptive services and pregnancy intention or reproductive life plan.
a. _____

19) To create a unique identifier please key in the following answers. Your middle initial, the first letter of your mother's maiden name, the first letter of the town you were born in, and the first letter of your first name.
a. _____

Appendix B

Posttest

1)How frequently do intend to screen women of childbearing age for their reproductive life plan?

a. 0-25% of the time
b. 26-50% of the time
c. 51-75% of the time
d. 76-100% of the time

2) Do you plan to start screening women in your practice for a reproductive life plan?

e. Yes
f. No

Will you implement CDC recommendations for contraceptive screening and services in your practice?

g. Yes
h. No

3) Primary care providers should screen women ages 14-44 for their reproductive life plan?

a. Only if the patient is requesting contraceptives
b. If the patient is sexually active and not currently using any contraceptives
c. As part of any visit where a reproductive life plan or current contraceptive method is not already clearly documented
d. Never, they patient should see their OBGYN for these services

4) All of the following allow the provider to be reasonably certain that the woman is not pregnant **EXCEPT**

b. Is ≤ 7 days after the start of their normal menses
c. Is within 4 weeks postpartum
d. Has been correctly and consistently using a reliable method of contraception
e. Less than six months postpartum, not breastfeeding, and amenorrhea

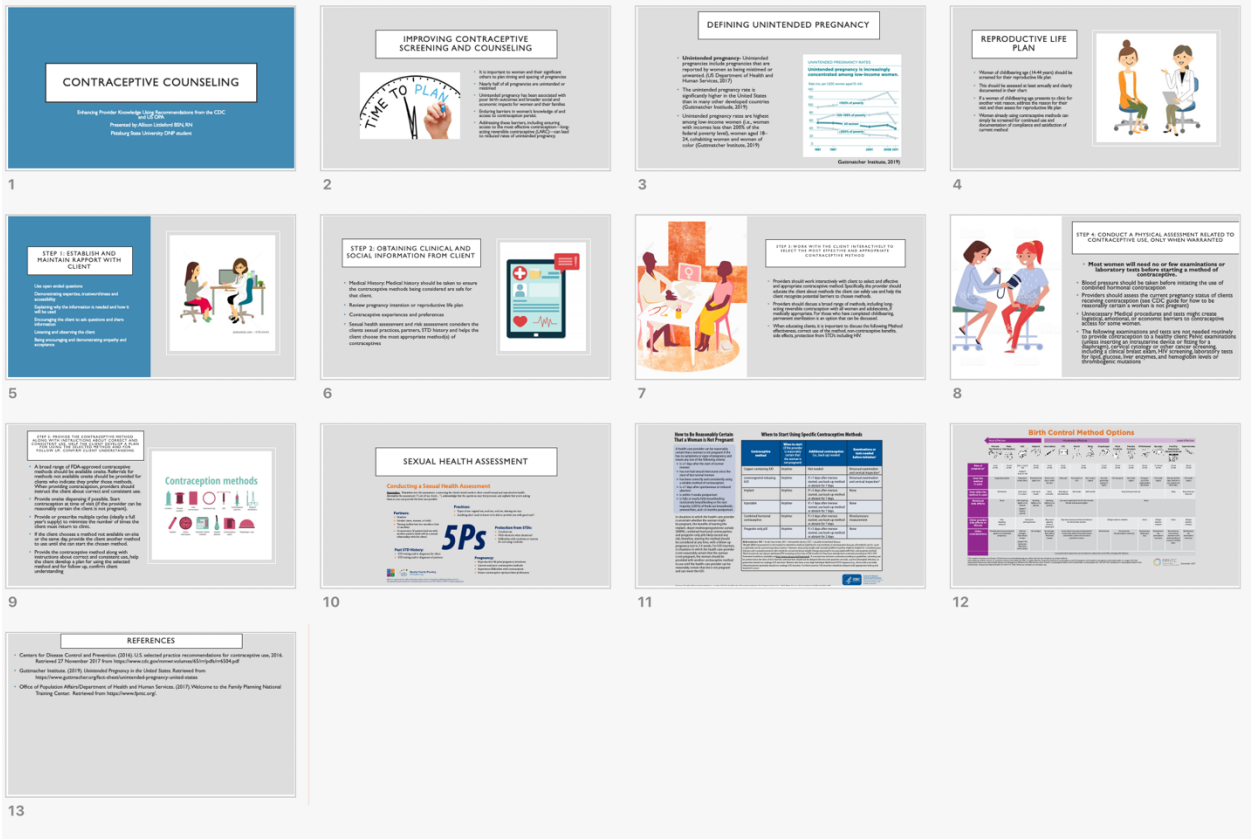
5) The following tests are routinely needed to provide contraception safely to a healthy client

a. Cervical cytology or other cancer screening, including a clinical breast exam
b. Human immunodeficiency virus (HIV) screening
c. Laboratory tests for lipid, glucose, liver enzyme, and hemoglobin levels
d. Blood pressure and current pregnancy status

6) All of the following are appropriate steps in providing contraceptive services **EXCEPT**
    a. Refusing to discuss long acting reversible methods with clients because that is not a service your clinic provides
    b. Obtain clinical and social information from the client, including a sexual health assessment
    c. Work with the client interactively to select the most effective and appropriate contraceptive method
    d. Conduct a physical assessment related to contraceptive use, only when warranted
7) Long Acting Reversible Contraception (LARC) is considered
    a. First line choices of contraceptive methods only for parous adults
    b. Not considered an appropriate choice for adolescents
    c. Dependent on compliance/adherence for effectiveness
    d. Should be considered a first-line choice for both nulliparous and parous women, including adolescents
8) If a client chooses a contraceptive method not available the same day or onsite, the provider should
    a. Recommend the client choose a different method
    b. Let the client find another provider who has their chosen method
    c. Refer them to another provider without providing them with another method until their chosen method is available
    d. Provide the client with another method to use until her chosen method is available
9) Which of the following is considered the least effective contraceptive method?
    a. Intrauterine device
    b. Implant
    c. Injectable
    d. Tubal ligation
10) The Center for Disease Control recommends that clinicians obtain a sexual history at a patient's first appointment and at all routine preventive appointments. According to published research, it is estimated less than ____ healthcare providers obtain a sexual history from their patients.
    a. 75%
    b. 60%
    c. 50%
    d. 40%
11) To create a unique identifier please key in the following answers. Your middle initial, the first letter of your mother's maiden name, the first letter of the town you were born in, and the first letter of your first name.

Appendix C

Educational Video Tool Slides



Appendix D

Educational PDF Printable

Component of Care	Screening Questions/Assessments	Key Recommendations/ Evidence
Determining need of services	What is the clients reason for the visit? Does the client have another source of primary health care?	Essential to understand the client's goal for the visit and address those needs to extent possible Understanding if the provider is the main source of primary care helps identify what services a provider should offer. If the client receives primary care from another provider, the current provider can ensure needs are met without duplicating services
Reproductive life planning/ Family Planning	Would you like to become pregnant in the next year? Are you hoping to have any (or more) children in the future? Have you thought about how many children you would like to have, or how soon you would like to have any (more) children? Have you thought about preferred methods of avoiding a pregnancy?	Providers should discuss a reproductive life plan with all persons capable of having a child, as recommended by the CDC. For those wishing to prevent or delay pregnancy contraceptive counseling should be offered that align with the patient's personal preferences, reproductive life plan, and existing medical conditions
Contraceptive Counseling Step 1	Establish and maintain rapport with the client	Use open ended questions and demonstrate expertise, trustworthiness and accessibility. Ensure privacy and confidentiality, explain how the information will be used. Encourage the client to ask questions and share information.
Contraceptive Counseling Step 2:	Obtain Clinical and Social information from client Medical History: Medical history should be taken to ensure the contraceptive methods being considered are safe for that client. Review pregnancy intention or reproductive life plan Contraceptive experiences and preferences Sexual health assessment and risk assessment considers the clients sexual practices, partners, STD history and helps the client choose the most appropriate method(s) of contraception.	This includes menstrual history (including last menstrual period, frequency, length and amount of bleeding), gynecological and obstetrical history, contraceptive use, allergies, recent intercourse, recent delivery, miscarriage, termination, and any relevant chronic history. Clients considering combined hormonal contraception should be asked about smoking tobacco and cessation. Method specific questions including current methods, previous methods, difficulties experienced previously, preferred methods See complete CDC recommendations for completing a sexual health assessment below
Contraceptive Counseling Step 3:	Work with the client interactively to select the most effective and appropriate contraceptive method	Providers should work interactively with client to select and effective and appropriate contraceptive method. Specifically, the provider should educate the client about methods the client can safely use and help the client recognize potential barriers to chosen methods. Providers should discuss a broad range of methods, including long-acting reversible contraception with all women and adolescents, if medically appropriate. For those who have completed childbearing, permanent sterilization is an option that can be discussed. When educating clients, it is important to discuss the following; Method effectiveness, correct use of the method, noncontraceptive benefits, side effects, protection from STD's including HIV.
Contraceptive Counseling Step 4:	Conduct a physical assessment related to contraceptive use, only when warranted. Most women will need no or few examinations or laboratory tests before starting a method of contraceptive.	Blood pressure should be taken before initiating the use of combined hormonal contraception Providers should assess the current pregnancy status of clients receiving contraception (see CDC guide for how to be reasonably certain a woman is not pregnant) Unnecessary Medical procedures and tests might create logistical, emotional, or economic barriers to contraceptive access for some women. The following examinations and tests are not needed routinely to provide contraception to a healthy client: Pelvic examinations (unless inserting an intrauterine device or fitting for a diaphragm), cervical cytology or other cancer screening, including a clinical breast exam, HIV screening, laboratory tests for lipid, glucose, liver enzymes, and hemoglobin levels or thrombogenic mutations
Contraceptive Counseling Step 5:	Provide the contraceptive method along with instructions about correct and consistent use, help the client develop a plan for using the selected method and for follow up, confirm client understanding	A broad range of FDA-approved contraceptive methods should be available onsite. Referrals for methods not available onsite should be provided for clients who indicate they prefer those methods. When providing contraception, providers should instruct the client about correct and consistent use. Provide onsite dispensing if possible. Start contraception at time of visit (if the provider can be reasonably certain the client is not pregnant). Provide or prescribe multiple cycles (ideally a full year's supply) to minimize the number of times the client must return to clinic. If the client chooses a method not available on-site or the same day, provide the client another method to use until she can start the chosen method.