Improving Contraception Counseling among Adolescents

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Abstract

Unintended pregnancy remains an issue here in the United States (U.S.). Unintended pregnancy increases negative health effects for the mother and child. Long-term, this Doctor of Nursing Practice (DNP) Quality Improvement project is to increase the use of effective birth control among adolescents. In order to reach the long-term goal, the short-term purpose aims to increase provider comfortability with adolescent contraception counseling and increase adolescent interest in the methods available to them, specifically Long-Acting Reversible Contraception (LARCs). Educational audio and visual tools were created that focused on shared decision-making among providers and patients. Pre- and post-implementation surveys on provider comfortability were disseminated. Responses indicated increased comfortability among providers and adolescent interest in the new tools available. Future studies should focus on in-person training and the use of an evidence-based shared decision-making tool.

Keywords: unintended pregnancy, adolescents, contraception counseling, shared decision-making

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Section I. Introduction

Background

Increasing contraceptive education in the pediatric setting is imperative to decreasing teen pregnancies as our society has moved away from abstinence. The project partner addressing this healthcare disparity is a family practice that includes several adolescent patients. The project included working with resident physicians in a family practice clinic to improve and increase adolescent contraception education. This healthcare system is a governmental, state-supported medical school organization. Its mission includes three imperative healthcare goals: growing the number of primary care providers in North Carolina, building healthcare, and expanding minority and disadvantaged students. The project partner is a teaching clinic and focuses on training our next generation of providers through preventative healthcare services provided to adult and pediatric patients.

Unintended pregnancy remains higher in the U.S. than in other countries with the same resources and economic structure (CDC, 2021). This preventable problem impacts educational achievement among young mothers (CDC, 2021). It increases their risk significantly for poor birth outcomes, for example, low birth weight infants, prematurity, and increased risk for pregnancy-related morbidities and mortality (CDC, 2021). In addition, the children of unintended pregnancies struggle with school performance, health issues, and behavioral problems (CDC, 2021). Further education initiatives educating adolescents on contraception options are needed to continue and improve the battle against unintended adolescent pregnancies in the U.S. (Szucs et al., 2020). Technological interventions have shown to be a valuable tool in providing sexual health education to adolescents (Plaisime et al., 2020).

Organizational Needs Statement

Tailoring contraceptive education to this population in a fun manner that is accurate and informative is imperative to see change (Plasime et al., 2020). The project champion expressed interest in participating in a project involving engaging educational tools to reach adolescents after recently learning from a conference presenting the emerging research on new tools to adhere to this population. After speaking with resident physicians in training at this clinic, there was an increased need for specific topics in contraception counseling, with time being a primary barrier. This DNP quality improvement project's goal of preventing unintended pregnancy among adolescents aligns with Healthy People 2030's goal (United States Department of Health and Human Services, 2021).

As a nurse practitioner student, it became evident how many adolescents are on oral contraceptives versus more effective contraception methods, along with limited methods being educated on and offered. Clinical barriers expressed from the project site to effective contraception education to adolescents are time, parental presence, provider comfortability, access, and cost. Furthermore, findings from the Youth Risk Behavior study examined the contraceptive methods most commonly used by adolescents, highlighting the increased need in the U.S. for efficient, teen-tailored contraception method education that addresses misinformation and highlights the safety and efficacy of all methods (Szucs et al., 2020).

Between 2015 and 2017, 78% of those aged 15-24 in the United States (U.S.) reported contraception at first sexual intercourse if sex occurred before 20 (CDC, 2021). However, the most effective contraceptive methods, like the intrauterine device and implant, remained extremely low compared to condom use, withdrawal, the pill, and emergency contraception (CDC, 2021). Condoms were the most commonly reported method of contraception; however,

condoms are less effective at preventing pregnancy (Szucs et al., 2020). Additionally, misconceptions about the side effects of the more effective methods indicate a need for contraceptive education among U.S. adolescents (Szucs et al., 2020).

According to the American College of Obstetricians and Gynecology (2019), education on efficacy, failure rates, and a detailed clarification of particular adverse effects is essential when providing a patient with contraception. After all, preventing unintended pregnancy continues to be an objective of Healthy People 2030, to increase the proportion of adolescent females who used effective birth control the last time they had sex from a baseline of 24.1% to 36.8% (United States Department of Health and Human Services, 2021). In conclusion, digital educational videos can increase contraception knowledge among this population, resulting in informed shared decision-making between patient and provider (Vayngortin et al., 2020).

Problem Statement

United States (U.S.) unintended teen pregnancy rates remain higher here than in other Western industrialized nations, despite recent initiatives that have caused a decline in rates since 2011 (CDC, 2021). Equally important, adolescent reports show that American teens begin having sexual intercourse around the same age as in other industrialized nations (Papas et al., 2017). Despite these similarities, the difference in rates is likely the result of adolescents being less likely to use effective medical contraceptive methods here in the U.S. (Papas et al., 2017).

Purpose Statement

This DNP quality improvement project aims to improve adolescent contraceptive education. The dissemination of audio and visual educational tools can help provide accurate sexual health information to adolescents, sparking their interest in using the most effective methods. The short-term objective of this birth control education expansion, tailored towards

adolescents, was to improve contraception method counseling among adolescents. As a result of this educational pilot, the long-term goal is to have adolescents choose more effective contraception methods, with hopes of significant contribution to Healthy People 2030's purpose of preventing unintended pregnancies in the U.S. (United States Department of Health and Human Services, 2021).

Section II. Evidence

Literature Review

A systematic literature review using OVID, PubMed, CDC database, ProQuest, and the National Center for Health Statistics resulted in evidence to support this DNP quality improvement project. The standard terms used were contraception, adolescents, sexual activity, contraceptive use, social media, teens, health promotion, educational intervention, youth risk, and randomized control trial. The review utilized inclusion criteria that limited findings to only articles relevant to the population and sexual health education in this quality improvement project.

Articles excluded did not relate to the subject, the time limit, or the correct population. In addition, this literature review included only articles providing Level IV evidence and above. These search details produced nine relevant, evidence-based pieces of literature that support the Social-Cognitive Theory framework that guides the execution of this project (Appendix A).

Current State of Knowledge

The American College of Obstetrics and Gynecology (ACOG) (2017) recommends using unique techniques when counseling adolescents about sexual health education that encompasses evidence-based, accurate, and age-appropriate interventions. ACOG (2017) states that providers should begin discussing the most effective contraceptive options first and include emergency contraception in their discussion at the initiation of counseling (ACOG, 2021).

Due to a provider's long list of topics to cover during an adolescent visit, contraception counseling goals to increase access and use of age-appropriate educational tools to help dispel myths and encourage the most effective methods are often missed (Gonzalez et al., 2018). Shared decision-making consists of providing patients with knowledge, evaluating their needs

and goals, and letting that guide their decision (Gonzalez et al., 2018). Evidence shows that shared decision-making contributes to patient knowledge and gratification in medical decisions, such as choosing a contraception method (Gonzelez et al., 2018).

Current Approaches to Solving the Problem

There is significant room for improvement when exploring current approaches to contraception counseling in the adolescent population (Gonzalez et al., 2018). With the initiation of a shared-decision making model, patients receive patient-centered counseling, allowing them to choose birth control that best fits their lifestyle, leading to better contraceptive outcomes (Gonzalez et al., 2018). One randomized control trial with 758 patients evaluated a specific shared decision-making tool created by the University of California, San Francisco, *My Birth Control* (Dehlendorf et al., 2019). Participants reported an improved contraception counseling provider-patient occurrence, with knowledge gained on contraception, and informed decision-making (Dehlendorf et al., 2019). However, even though this is beneficial evidence for this specific tool, there are still limited randomized-control trials and research evaluating other shared decision-making aids and their effectiveness in contraception counseling among adolescents (Gonzalez et al., 2018).

Long-Acting Reversible Contraception education for adolescents should begin at the initial contraception counseling visit (ACOG, 2017). Proficient knowledge of the different contraceptive methods and individualized medical eligibility are essential to efficient contraception counseling (ACOG 2021). Additionally, providers should discuss misconceptions from unreliable sources in a non-judgmental, age-appropriate, and individualized way with appropriate health literacy (ACOG, 2021).

Lastly, a systematic review evaluated digital-based interventions, school programs, and a

combined learning program that gave beneficial results (Lameiras-Fernandez et al., 2021). However, unfortunately, digital intervention studies included in the study were inconsistent due to their limitation of selection bias (Lameiras-Fernandez et al., 2021). Nonetheless, results indicate that digital intervention methods that use the Targeted Client Communication are more likely to increase adolescent education on contraception when compared to traditional methods (Lameiras-Fernandez et al., 2021).

Evidence to Support the Intervention

One systematic review evaluated the effectiveness of current educational interventions targeting risky sexual health behaviors in adolescents compared to school-based interventions, digital interventions, and a combined technique intervention using 20 research articles (Vayngortin et al., 2020). A randomized-control trial included in this systematic review showed a significant impact on adolescents using technology-based interventions on condom use ($d=0.23$, 95% confidence interval [CI] [0.12, 0.34], $p<0.0001$ (Lameiras-Fernandez et al., 2021).

In one cross-sectional study, descriptive statistical analysis evaluated providers' perception of effective contraception counseling with adolescent patients, specifically addressing the discussion of LARC methods (Papas et al., 2017). This study revealed the absence of counseling on LARC methods initiated with adolescents during contraception education, with the most common method discussed and prescribed being oral contraceptives (Papas et al., 2017). Of the participating providers, 37% of respondents discussed the intrauterine device (IUD) method of contraception, and only 25% discussed the birth control implant (Papas et al., 2017). The recommendations from this article concluded that contraception training programs would help aid in more uniform, comprehensive contraception counseling techniques (Papas et al., 2017). In addition, time constraints during office visits often result in ineffective contraception counseling

(Papas et al., 2017). In conclusion, adolescents with detailed information on their options increased their knowledge and understanding of the most effective methods available, which produced a more informed decision-making ability among this population (Papas et al., 2017).

One mixed-methods cross-sectional study surveyed adolescents on contraception's sexual health practices and exposed common behavioral findings (Varyngortin et al., 2020). The other phase used a convenient sample to conduct a randomized control trial that evaluated an educational intervention that involved video recordings of contraception education, supported by ACOG's recommendation (Varyngortin et al., 2020). Findings from this research study concluded that adolescents that watched the videos were substantially more interested in using an IUD or implant than the control group, with a p-value less than <.001 increasing the reliability of their research.

It is also equally important to consider digital interventions for counseling in situations that prevent face-to-face communication. This office focuses on reaching rural populations who face healthcare disparities that prevent consistent or frequent face-to-face interactions with their providers. The intervention in the DNP quality improvement project addressed this barrier by adding audio and visual educational tools provided by this educational pilot to providers and patients.

Evidence-Based Practice Framework

A theoretical approach guided the planning and implementation of this DNP quality improvement project. The theoretical framework, Social Cognitive Theory (SCT), guided this DNP quality improvement project by focusing on the most important concepts to address in health promotion. Albert Bandura (1986) theorized that human behavioral changes result from cognitive, environmental, and behavior working closely together, indefinitely leading to the SCT

development. Therefore, according to the SCT, addressing each concept in this conceptual framework will lead to positive behavioral responses from providers and adolescents. The following paragraphs discuss how this project impacts Albert Bandura's SCT concept.

Cognitive Factors

One barrier found through the literature on this subject revealed the lack of confidence of knowledge providers have on all contraceptive methods, specifically LARCs (Papas et al., 2017). This study also provided evidence that they felt more confident by providing education and training about contraception methods to these providers and discussed LARCs more often (Papas et al., 2017). By implementing an educational pilot-focused program, knowledge of contraception options among adolescents and confidence in contraception counseling should improve.

Environmental Factors

The literature revealed social media's impact on teens and their sexual health practices (Plasime et al., 2020). The CDC (2021) recommends using visual and audio tools for counseling adolescents on contraception. Providing an environment that reflects the CDC's evidence-based practices can improve reproductive services to adolescents (CDC, 2021).

Behavioral Influence

When providers use tools to create resources that increase adolescents' knowledge of contraceptive methods, they are more likely to show interest in the most effective ways of pregnancy prevention (Vangortin, 2020). Providers were more likely to prescribe LARCs to adolescents when giving this population the skills necessary to provide comprehensive contraception education (Palapas et al., 2020). Increasing the use of LARCs among adolescents

leads to effective prevention of unintended pregnancy as recommended by the AAP, ACOG, and CDC (ACOG, 2017).

Ethical considerations and protection of human subject rights

The ethical consideration for this DNP quality improvement project is related to the population and their perceived vulnerability in research studies, often requiring parental consent and IRB approval before implementation involving each participant. However, North Carolina does not legally require parental consent for high-risk behavioral health interventions, such as pregnancy, contraception education, initiation, and sexually transmitted disease treatment.

Guidance on the need for IRB approval was evaluated through the University using a tool through the Wisconsin-Madison Health Sciences resources. Based on the report, this DNP quality improvement project does not need IRB approval because it represents Quality Improvement according to federal regulations 45 CFR 46.102 (see Appendix B).

Section III. Project Design

Project Site and Population

This DNP quality improvement project occurred at a local family practice. The demographics included in this clinic serve various age groups belonging to Eastern North Carolina. In addition, the adolescent population faces healthcare disparities: rural living arrangements, an abundance of under-served populations, and low-income households. These factors made this clinic's environment an excellent partner for implementing this DNP quality improvement project because of the link between these disparities and unwanted adolescent pregnancy.

Additionally, the number of resident physicians who gained contraception counseling skills will practice elsewhere after residency, which endorsed this project's interventions to expand and educate adolescents in other clinics in the future. The project champion and project site work with the local medical school, which helped disperse this educational pilot to medical students rotating through the clinic. The adolescent clinic, a training rotation that medical students and physician residents rotate through, helped promote a fundamental setting for this DNP Quality Improvement Project. A barrier to this implementation at this project site is that, even though they see adolescent patients, this is not their most frequent population.

Description of the Setting

This DNP Quality Improvement project occurred at a local family practice. The demographics in this clinic serve various age groups. Healthcare disparities create a significant barrier to educational interventions at this clinic due to serving many rural areas of Eastern North Carolina.

Description of the Population

The age range that made up this project's population were those 25-45 resident physicians. The specific population goal in this DNP quality improvement project were providers who provide care to adolescent patients. The providers in this clinic deliver care to underserved, adolescent populations who lack efficient knowledge of prevention and have limited access to healthcare centers.

Project Team

The project team consisted of resident physicians training at this family practice and two attending physicians who will help guide this project's data collection and implementation. In addition to resident physicians, team members of this project team include medical assistants who assisted in distribution and privacy for adolescents, including finding those who meet inclusion criteria. Another essential team member is a particular resident physician whose interest in adolescent reproductive health helped guide the implementation of this project with ideas and feedback and helped increase participation from other resident physicians. Project faculty also significantly aided in planning this DNP quality improvement project. This project team's average age and familiarity with this application were assets in creating and distributing these educational videos, making the interventions more attractive to the chosen population.

This healthcare system focuses on improving health and wellness throughout Eastern North Carolina while training future physicians to practice independently. The clinic's location is close to the local hospital and shares the building with multiple specialty clinics that provide healthcare to underserved populations.

Project Goals and Outcome Measures

This age-tailored educational intervention aimed to improve contraception counseling through evidence-based interventions that promote shared-decision making. The first goal included measuring resident physician comfortability with contraception counseling and desired education topics. The first goal included measuring resident physician comfortability with contraception counseling and desired education topics. The second goal included educating participating team members who provide reproductive health education with a training PowerPoint focused on patient-centered contraception counseling. A post-survey evaluated feedback from team members on the training and desired future topics and changes to the movement. The third goal was to create or provide educational audio and visual tools that resident physicians can use during contraception counseling.

Description of the Methods and Measurement

Pre- and post-intervention surveys evaluated resident physician comfortability counseling adolescents on contraception during office visits using a Likert scale and multiple-choice questionnaire tools provided by the anonymous survey generator, SurveyMonkey (see Appendix D). Sixty resident physicians received surveys and a PowerPoint educational training session. However, only those with rotations in the adolescent clinic in the Spring of 2022 had access to the laminated hard copies of educational tools during implementation.

Discussion of the Data Collection Process

The data was gathered anonymously through Survey Monkey with mostly Likert scales and two fill-in-the-blanks with the first two surveys and one in the last (see Appendixes D and E). The goal of educating adolescents on contraception included age-tailored interventional tools. One intervention was short educational clips that were evidence-based, interactive, and appealing to this population. Additionally, QR codes and appealing visual educational handouts provided

visual aids of knowledge. Surveys sent before and after the educational pilot provided details on provider comfortability. Data was utterly anonymous by using the survey generator Survey Monkey.

Implementation Plan

Initial planning of implementation began with making an educational PowerPoint to be distributed to physician residents interested in making the social media short videos that provided education on different contraception methods. The PowerPoint consisted of a script to go by based on the CDC and ACOG education on the contraception methods available to adolescents. Three resident physicians interested in this part of the project received this through email. In addition, the Plan Do Study Act (PDSA) cycle provided a system during implementation to improve current tool resources and strategies for distributing educational tools.

A pre-survey (Appendix B) gathered initial data on comfortability in the first week of project implementation. Subsequent results from this pre-survey analyzed comfortability and concerns in preparation for creating an educational training session. The PowerPoint educational training used information from the CDC, ACOG, Medicaid Family Planning Services, U.S. DHHS (Title X Family Planning), Beyond the Pill resources, insertion and removal of IUD video from Bixby Center for Global and Reproductive Health and Contraception Action Plan hand out resources.

Educational tools and provider reference materials were accumulated and subsequently approved by the project champion (Appendix E). These tools provided evidence-based resources to aid in shared-decision making among physician residents and adolescent patients. The materials consisted of resources provided by the CDC, ACOG, Medicaid Family Planning

Services, Beyond The Pill, Title X Family Planning, Contraceptive Action Plan, and short educational videos as a backup from AwkTalk. The same week the PowerPoint session (Appendix F) was disseminated by email; the laminated educational materials and tools were made available in the adolescent clinic workroom. Later during the implementation period, Physician residents recommended placing the audio/visual educational tools in the individual adolescent rooms. Each week data was gathered from the project champion and resident physicians on the advice of tools provided, such as the placement of tools and ways to promote awareness of the new devices. Video resources were found during implementation and approved by the project champion. These resources eliminated the need for the project team to create short clips for their Instagram page.

The active implementation team members consisted of several persons that made the interventions possible. Resident physicians trained in this clinic were the participants that were sent the surveys. An educator and attending physician took the role of the project site champion, approving resources and educational PowerPoints. They project faculty aided in guidance of implementation and editing of this paper.

Timeline

Physician residents received pre-surveys on February 7th, 2022. On February 18th, physician residents received the educational training PowerPoint with a post-survey attached (Appendix C). The subsequent week, physician residents received educational tools. During the last week of implementation, physician residents received post-intervention surveys through email. From February 20th through April 30th, 2022, interventions took place for this DNP quality improvement project, along with simultaneous data collection and analysis.

Section IV. Results and Findings

Results

The pre-survey responses resulted in 9 responses from 60 physician residents. One of nine respondents strongly agreed that they were comfortable providing contraception counseling to adolescents, while the rest agreed that they felt comfortable. Three of the nine respondents disagreed that they did not feel comfortable discussing emergency contraception with adolescents during contraception counseling. One respondent disagreed on feeling comfortability concerning LARC side effects and treatment options with adolescents. Six respondents agreed, one strongly agreed, and one was undecided.

One respondent strongly disagreed, and one disagreed on feeling comfortable when answering the question regarding IUD removal and insertion. Seven other respondents agreed with comfortability, but none felt they very strongly agreed on comfortability regarding this topic. Four of the nine respondents disagreed with the statement, "I use educational audio/visual tools when providing contraception counseling adolescents." Two were undecided, two agreed, and one respondent strongly agreed.

Four of 60 physician residents took the survey through email post-implementation. Survey results showed the benefits of a contraception counseling educational pilot. For example, compared to 33% of pre-implementation respondents that disagreed on comfortability with discussing emergency contraception when counseling adolescents on contraception, none disagreed post-implementation. In addition, an increase in strongly agreeing from 11.11% pre-implementation to 50% post-implementation in survey results regarding the question on comfortability with discussing possible side effects of LARCs and treatment options with adolescents.

When asked what topic the resident physicians would like to know more about regarding counseling adolescents on contraception, respondents wrote emergency contraception, cost and access, IUD placement, and troubleshooting. Survey respondents believed barriers such as parental buy-in, cost, and access were of concern when providing adolescent contraception counseling.

Two out of 60 participants responded to the post-educational training session survey. All respondents replied that the contents were easy to understand and gained knowledge on at least one topic. When asked if there were any topics on contraception that they wished were provided in the educational session to increase their comfortability, respondents wrote types of oral contraceptive pills, names of emergency contraception available over the counter, and more information on Nexplanon. Both respondents answered whether the educational session sparked interest in IUD insertion and removal training.

Discussion of Major Findings

The data regarding interest in seeking IUD insertion and removal training after reviewing the educational training session shows benefits from the training session. However, the feedback on the need for information on cost and access is a significant barrier among providers. Another major finding included the input from one of the resident physicians regarding the use of the educational tools in the adolescent clinic.

Section V. Interpretation and Implications

Cost and Resource Management

There was no cost for this DNP project since the supplies needed were available to the student along with free printing through the University's library. Collectively, if having to re-purchase all of the supplies, the cost would be $50. However, tools are available for a long time once purchased and made. The printing through the school costs $0.10 per page. The rings used to band together related tools cost $6.99 on Amazon. A laminator costs $19 on Amazon but is available in most clinics along with the printing availability. Laminating sheets cost $13.99 for a 100-pack on Amazon. However, since tools were accessible to the student, there was no cost associated with implementing this DNP project.

Laminated educational tools adhere to infection protocols, ensuring supplies can stay in place even after inspections. They can be cleaned and reused. Overall, compared to the financial impact of unwanted pregnancies on our healthcare system, the benefits gained from the tools vastly outweigh the one-time price paid to create them (See Appendix H).

Implications of the Findings

The feedback gathered from the implementation of this project included experiences from resident physicians, seeing patients looking at the educational tools, and taking pictures of the QR codes helped validate the success of grabbing adolescents' attention to this topic. This data supports the current evidence about technology use among this age group and the benefits of using educational audio/visual tools. Forty-four percent of the resident physicians indicated that they did not use educational audio/visual tools during contraception education. Providing these educational tools in the designated adolescent visit rooms and the clinic helped increase the use of audio/visual contraception educational tools during counseling.

Implications for Patients

QR codes help provide reliable information on contraception methods to adolescent patients and are interactive, helping to deliver shared decision-making. In addition, patients could take pictures and resources and have them accessible for future reference. Providing patients with extensive knowledge of the available methods can help them feel more confident in choosing contraception

Implications for nursing practice.

Previously this clinic did not have a universal protocol or designated resources for the resident physicians to use during contraception counseling. Creating this protocol in counseling adolescents on contraception helps ensure the universal use among providers at this clinic of evidence-based interventions. Furthermore, future resident physicians may have increased interest in seeking training in the most effective methods for adolescents, such as the IUD, as evidenced by the post-training survey results.

Impact for Healthcare System(s)

If an adolescent is confident and satisfied with the methods of contraception, they are more likely to keep using that method, increasing compliance. Likewise, this DNP quality improvement project provided comprehensive educational tools highlighting the effectiveness of LARCs, which may increase the use of these methods among the adolescent population from knowledge gained on this overlooked option. Finally, educating resident physicians and medical students on how to obtain training on IUD insertion and removal increased their interest in seeking training, as evidenced by the post-survey results.

Increasing IUD training among providers increases access to one of the most effective methods available to adolescents. This project's interventions may impact this healthcare system

in the future by decreasing unwanted pregnancies among adolescents. With increasing compliance with chosen contraception methods and increased use of LARCs, the effectiveness of contraception among this population in preventing unwanted pregnancy will potentially increase.

Sustainability

Physician residents and medical students will be provided with the contraception educational PowerPoint and educational resource tools in the future, providing an evidence-based universal protocol in this clinic. Moreover, the PowerPoint and resource tools will remain a reference for current and future providers of this clinic. Resources were uploaded by the project site champion to the digital archive available to medical students and physician residents of this healthcare system.

After their training, physician residents and medical students will practice at other clinics in the future, increasing the dissemination of the knowledge they gained from the educational PowerPoint, counseling tools, and resources. Additionally, it is possible to see an increase in IUD-trained providers in other clinics in our healthcare system from their new knowledge and interest.

Dissemination Plan

This DNP Quality Improvement project was presented on July 12th, 2022, at East Carolina University's College of Nursing. The project was also presented to the participating physician residents on June 13th, 2022. Additionally, the project was submitted to ECU's digital archive, The ScholarShip, allowing review and use for future research of the ECU community.

Section VI. Conclusion

Limitations and Facilitators

One of the major limitations of this project was the low response rate from survey respondents. The clinic is also hectic; rotating resident physicians weekly and gathering consistent data during implementation was difficult. A significant barrier to this project was the inability to create contraception educational clips as planned.

Facilitators of the success of this project included the fact that these resident physicians were in training; they were still learning new ways to practice and not "set in their ways." Another asset was that the project champion was the faculty of the local medical school and shared the project with the pediatric division of resident physicians and local medical students. As a result, they rotate through the adolescent clinic during their schooling, increasing the dissemination and sustainability of the interventions.

Recommendations for Others

Because of the low post-training survey responses, recommendations include in-person training in the future to help increase feedback on the survey results. Additionally, since the evidence-based shared decision-making contraception tool's electronic resource is unavailable, implementation did not include this intervention. An additional way to eliminate this barrier would be through an email/text messaging system. This email/text messaging system would have allowed the tool to reach more adolescents and save time during appointments**.**

Recommendations for Further Study

In future studies, taking advantage of modern technology provided in some clinics, like the use of tablets, for the My Birth Control application would be an additional project launch to increase shared-based decision making, as discussed in the literature. Secondly, if a clinic has a

provider trained in IUD insertion and removal, a group training session could be offered at a reduced price to other providers during implementation. Including an IUD-trained provider on-site would likely increase hands-on training after the session and enhance skill comfortability among newly trained providers. Additionally, creating the short video clips using the script provided in this project would help integrate social media to further reach adolescents in the community (Appendix D). Lastly, full implementation of this project at a pediatric clinic would increase the number of adolescent patients receiving the intervention.

Final Thoughts

This DNP quality improvement project included extensive research on interventions proven to impact patient decision-making, condensing interventions into one educational pilot. The project also focused on improving contraception counseling by providing increased comfort to physician residents. Physician residents were educated on patient-centered counseling and provided with educational tools to enhance contraception counseling and increase their comfortability. These resources could be easily accessed for reference and used during counseling sessions.

This DNP quality improvement project sought out resources already available on the internet to actively include adolescent patients in the decision-making process of choosing a birth control method through different educational tools. QR codes and pdf printouts provided adolescents access to audio/visual educational tools, aligning with current evidence on the impacts of digital intervention and shared decision-making. Increasing provider knowledge on contraception through the training session and reference tools increased provider comfortability, revealed through survey responses.

This project was successful; in particular, the educational tools gained positive feedback from resident physicians at the clinic. This DNP provided educational tools in the designated adolescent visit rooms and the clinic. This helped increase the use of audio/visual contraception educational tools during counseling. In conclusion, making contraception counseling educational audio/visual tools available to providers and patients in primary care clinics increases the use of evidence-based recommendations and shared decision-making tools necessary to maintain decrease in the rate of unwanted pregnancies in the U.S.

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Appendix A

Literature Matrix

Author	Year	Article Title	Theory	Journ	Purpose and take	Design/Anal	IV DV or Themes	Instr. Used	Smple	Smple	Subject	Comments/critique of the article/methods GAPS
Bandura, A.	1987	Social Foundations of Through and Action: A Social Cognitive Theory. Annals of child development	Social and cognitive theory	Annals of child development. Vol 6. Six theories of	Explanation of how social and cognitive aspects can affect behavior. A theory created by Albert Bandura based off the Social learning Theory	n.a	n/a	n/a	n/a	n/a	n/a	n/a
Dehlendorf, C., Fitzpatrick, J., Fox, E., Holt, K., Vittinghoff, E., Reed,	2019	Cluster randomized control trial of a patient-centered contraceptive decision support tool, my birth control.	Social and Cognitive theory	American Journal of Obstetricians and Gynecology	Research suggests the need	Level II- Clusterized Randomized Control Trial	Independent Variable- control group without use of mybirthcontrol app Dependent Variable- Effectiveness of the MyBirthControl App with shared-decision making education intervention	Mixed-effects logistic regress	758 patient and 28 providers	a racially and socioeconomically diverse sample at four safety net clinics in San Francisco. Analyzed audio recordings	those of reproductive age and with ability to conceive. Less than 25% were	
Gonzalez, S.C., Preiss, R.M., & Allende-Richter, S.	2018	Contraceptive shared decision-making: An innovative approach in adolescent and young adolescent and young adults	Social and Cognitive Theory	Clinical Pediatrics	key component to address	n/a	n/a	n/a	n/a	n/a	n/a	
Wayngortin, T., Bachrach, L., Patel, S. & Tebb, K.	2020	Adolescents' Acceptance of Long-Acting Reversible Contraception After an Education Intervention in the Emergency	Social and cognitive theory	Western Journal of Emergency Medicine	Because teens who enter the emergency department are most at risk for unintended pregnancy the intervention was implemented in an ED. Adolescents who watched the videos were more interested in	Level II- Two Arm Randomized Control Trial	IV- traditional contraceptive education and contraception education videos; specifically LARCs IUD and implant DV-interests in using IUD or	Surveys used for demographics. Surveys used for data analysis- LIKERT scale	79	Females aged 14-21 reporting prior sexual activity; presenting to urban pediatric	age 14-21; female; 20% African American, 14% Hispanic 5%	Similar to study did not differentiate between control and intervention groups when assessing actual uptake of LARCS. Only done during specific time periods, follow-up calls and chart reviews PI and RAs were or blinded to group allocation, survey and video only available in English; half of participants lost to follow up. Usefulness: videos are similar to tiktok video education that will be used for this QI project,. those most at risk for unintended pregnancy were involved in the study. High level of evidence.
Szucs, L.E., Lowry, R., Fasula, A.M., Pampati, S., Copen, C.E., Hussain, K.S., Kachur, R.E., Koumans, E.H., & Steiner, R.J.	2020	Condom and Contraceptive Use Among Sexually Active High School Students- Youth Risk Behavior Survey, United States, 2019	Social and cognitive theory	Morbidity and Mortality Weekly Report CDC	The purpose of this article was to evaluate condom and contraceptive use among sexually active High School Students based on a youth risk behavior Survey	Level IV-I Cross-Sectional. Analysis was restricted to only sexually active students (which includes those who reported having sexual intercourse with one or more persons during the 3 months before the survey). SUDAANN	Category: contraception among adolescents.	surveys	3,226	public and private school students in the 50 U.S. states and the District of Columbia	school students in grades 9-12. 52.2% female 52.3% white, 36.9% were in grade 12	This article uses statistics from the Youth Risk Behavior Survey that evaluates many other different subjects regarding health promotion for adolescents. Making the selection of participants un-biased and a good representation of adolescents' sexual activity habits and contraceptive use in the United States. The sample size is very large making this strong evidence with results that indicated further need for education on the more effective contraceptive options based on limited use of these contraceptive methods.
Martinez, G. & Abma, J.	2020	Sexual Activity and Contraceptive Use Among Teenagers Aged 15-19 in the United States	Social and cognitive theory	U.S. Department of Health and Human Services	the purpose of this article was to address statistics on sexual activity and Contraceptive Use Among Teenagers Aged 15-19 in the United States, 2015-2017. Patterns and trends in sexual activity and contraceptive use in the United States. Most young adults were younger than 20 when experiencing intercourse for the first time. The method most commonly use by females were condom, withdrawal and OCPs. Those in industrialized nations, though having sexual intercourse for the first time around the same time as Americans, use more effective contraceptive methods at	Level III- Cross Sectional Descriptive Inferential	Concepts addressed in the data brief were what percentage of never-married teenagers aged 15-19 have ever had sexual intercourse, probability of having had sexual intercourse by each age 15 though 20, percentages of young females using contraception at first sexual intercourse by age, and contraceptive methods used by female teenagers who have ever had sexual intercourse in the United States in	SURVEY procedures in SAS software version 9.4. Kaplan-Meier procedure in SUDAAN. Two-tailed t tests	924 females. And 886 males	Probability Sampling SURVEY procedures in SAS software 9.5 from the National Survey Family Growth	those aged 15-19 in the United States. Never-married who have ever had sexual intercourse. 67.8% female and 65.6% % male	Though some of the data included in the data brief includes those aged 15-24, the areas that I focused on for my quality improvement project which was the comparison of the amount of adolescents 15-19 who had had sex and were not married to other industrialized nations and females 15-19 and their reported contraceptive use providing trends of the most common type of contraception used.
Papas, B. Shaikh, N. & Watson, K.	2017	Contraceptive counseling among pediatric primary care providers in Western Pennsylvania: A survey-based study	Social and cognitive theory	Sage Open	The purpose of this study was to examine self-reported contraceptive counseling and prescribing practices in response to clinical vignettes were assessed. Providing the take home message that the variation in contraceptive counseling potentially results in missed opportunities to counsel about and provide the most effective contraceptive	Level of evidence III. Cross Section survey sent through email.	Evaluation of factors affecting pediatricians discussion of effective education on contraception with adolescent patients.	Likert scales, clinical scenarios, multiple choice questionnaires 24 question survey.	88	Convenience sampling	Western Pennsylvanian Providers	Strengths: Provides insight on pediatricians current adolescent education on contraception and the effectiveness of multiple methods used among different practices. Limitation was the sample size which might affect the ability to explore how training might affect contraceptive counseling.
Plaisime, M., Robertson-James, C., Mejia, L., Nunez, A., Wolf, J. & Reis, S.	2020	Social Media and Teens: A Needs Assessment Exploring the Potential Role of Social Media in Promoting Health	Social and cognitive theory	Sage Open	The purpose of this study was to assess social media and it's use in providing healthcare information to adolescents. The findings of the study conclude that social media can be an effective way to communicate to teens about healthcare information. It is important that the information teens access on social media be reliable and tailored towards their interest.	cross-sectional mixed methods. 1. Cross Sectional Social Media Usability Survey 21 close-ended questions. 2. 2nd phase consisted of four sex-specific teen focus groups 2 groups of girls and 2 of boys. focus groups answers were audio recorded and convenience sampling group used **Level of evidence- III- quantitative & Level IV-II**	There was no control group but instead focus was needs assessment they had intercourse for the first time. With categories of: demographics (race/ethnicity, sex, age, zip code), utilization of social media, frequency of mode of device along with connections with family/friends, information seeking behavior, interests, and activities, exploration of health information, and identification of reliable sources of health information. Evaluated in the qualitative part of the research were the following categories: social	phase 1 close-ended survey for demographics and social media usability survey. phase 2- open-ended questions audio recorded	152 participants in phase 14 girls and 12 boys for phase 2	Convenience sampling and focus groups	Aged 13-8 years old; even percentage of boys and girls with 7.2% not reported for the survey and age range of girls for the audio recording were ages 14-17 and boys were ages 14-18.	The limitations of this article include the convenience sampling that was done which may have led to selection bias limiting the generalizability of study, however, when comparing demographics to other studies, the results are consistent. This study is considered useful and strong because it also provided feedback for social media and it's role in health promotion to teens. They even gave specific recommendations on how to use social media to promote health information. Limitation related to project also includes tiktok not being a choice of which social media account was used most
Lameiras-Fernandez, M., Martinez-Roman, R., Carrera-Fernandez, V. & Rodriguez-Castro, Y.	2021	Sex Education in the Spotlight: What is Working? Systematic Review	Social and cognitive theory	International Journal of Environmental Research and Public Health	The purpose of this systematic review was to evaluate what currently is known about sex education and the effectiveness of interventions being used today. Providing a conclusion that blended learning programs offer a promising future with combination of face to face and digital interventions.	Level of Evidence: II. Systematic Review using PRISMA checklists and systematic review of previously published on the PROSPERO International Prospective Registry of Technical Reviews	**Independent Variable- Effectiveness of sex education for adolescence Dependent Variable- sex education intervention**	Database search using Cochrane database, ERIC, Web of Science, PubMed, Medline, Scopus, and PsycINFO.	20	Database search with Inclusion criteria- **population** being aged 10-19 yrs old. **Intervention**- digital platforms, school-based or blended learning programs. **Comparison**- included RCTs and studies using quasi-experimental **Outcomes**: sexual behavior, health and social outcomes, knowledge and	Reviews and peer-reviewed articles containing evaluation of sex education interventions towards adolescence and their data on effectiveness.	Strengths include multiple random control trials. Strengths also include all articles in systematic review being a peer-reviewed article. Limitation include possible limitation of all keyword that could provide relevant data. Limitation of reliability due to self-reported studies that only mention occasional biological outcomes, which may limit effectiveness of results. Focusing on adolescents from high income countries is reported to be a limitation highlighting the United States being overly represented but this is actually a strength of this study for my literature review of this DNP quality improvement project.

Appendix B

Pre and Post Survey for providers

1. I feel comfortable providing contraception counseling to adolescents on all available methods of contraception

   Strongly Agree Agree Undecided Disagree Strongly Disagree

2. I feel comfortable discussing emergency contraception when counseling adolescents on contraception

   Strongly agree Agree Undecided Disagree Strongly Disagree

3. I feel comfortable discussing possible side effects of LARCs and treatment options with adolescents.

   Strongly agree Agree Undecided Disagree Strongly Disagree

4. I feel comfortable answering questions from adolescents about the IUD insertion and removal process

   Strongly agree Agree Undecided Disagree Strongly Disagree

5. I use educational audio/visual tools when providing contraception counseling to adolescents

   Strongly agree Agree Undecided Disagree Strongly Disagree

Pre-Survey fill-in-the-blanks

I would like to know more about this topic for counseling adolescents on contraception _____

I am concerned about this barrier/barriers with providing contraception counseling to adolescents _____

Post-Survey fill-in-the-blanks

How many adolescents did you see looking at or taking pictures of the educational audio/visual tools provided in the patient rooms? _____

Appendix C

Post Educational Power Point Training Session Survey

1. Were the contents in the training session easy to understand?

   Yes No

2. Did you gain knowledge through the training session on any topic?

   Yes No

3. Is there any topic on contraception counseling you wish was provided in the educational session to enhance your comfortability with providing contraception education to adolescents? Please provide topic in comment box.

Appendix D

Contraception Counseling Video PowerPoint Script

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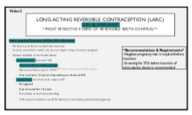
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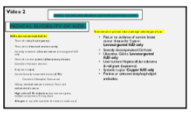
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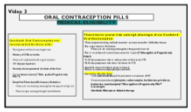
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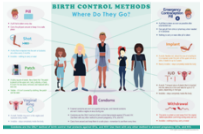
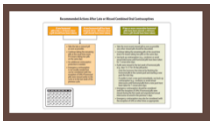
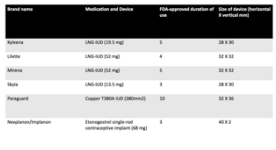
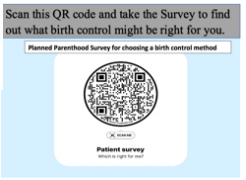
Appendix E

Contraception Counseling Educational Audio/Visual Tools



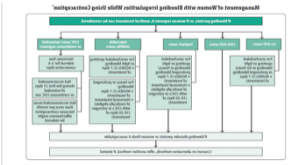






English- https://beyondthepill.ucsf.edu/sites/beyondthepill.ucsf.edu/files/EC-English-043019.pdf
Spanish- https://beyondthepill.ucsf.edu/sites/beyondthepill.ucsf.edu/files/EC-Spanish-043019.pdf

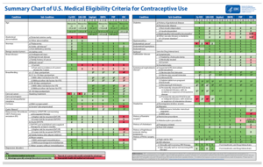
English- https://medicaid.ncdhhs.gov/media/1284/download
Spanish- https://medicaid.ncdhhs.gov/media/1285/download

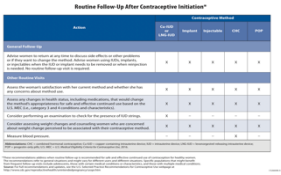


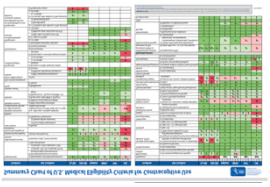
UCSF- Interactive Birth Control Website/Tablet

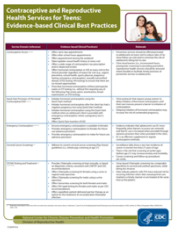
https://clinic.mybirthcontrol.org/en/main_nav

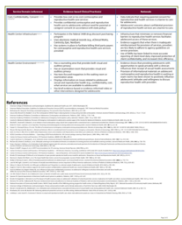
SCAN ME

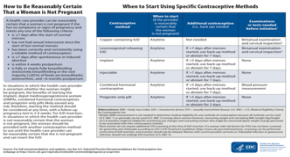


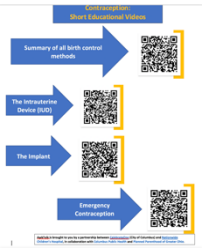












https://www.cdc.gov/teenpregnancy/pdf/about/Fact-Sheet-Contraceptive-Reproductive-Health-Services-Teens_TAGGED-508.pdf

Appendix F

Contraception Counseling Educational Training Session PowerPoint

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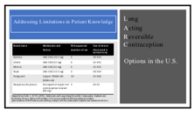
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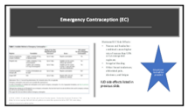
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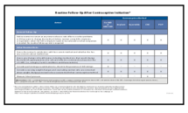
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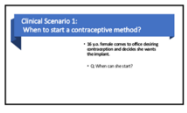
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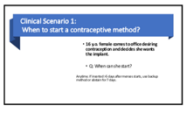
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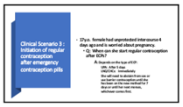
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Appendix G

Improving Contraception Counseling Among Adolescents' Projected Budget

Expense Items	Quantity	Unit Cost	Total Cost
Amazon Binder Rings	1 pack	$6.99	$6.99
ECU Printing	100	$0.10	$10.00
Scotch Laminator on Amazon	1	$19.00	$19.00
Scotch Laminating Sheets on Amazon	1 pack- 100 sheets	$13.99	$13.99
			$49.98