RUTGERS
School of Nursing

DOCTOR OF NURSING PRACTICE (DNP) PROGRAM

A DNP PROJECT

AN INTERVENTION TO INCREASE UPTAKE OF PRE-EXPOSURE PROPHYLAXIS IN WOMEN AT RISK FOR HIV

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An Intervention to Educate about Women and Pre-exposure Prophylaxis

Education about Pre-exposure Prophylaxis (PrEP) has been focused on men who have sex with men (MSM) because rates of HIV infection are higher among this population. Pre-exposure prophylaxis or PrEP is indicated for people at very high risk for HIV. Those at risk take a once daily pill to lower their chances of getting infected. PrEP can stop HIV from spreading throughout your body (Centers for Disease Control and Prevention [CDC], 2018). Current evidence indicates that women who are educated about PrEP are more likely to inquire about initiating this prevention strategy (Koechlin et al., 2016). For example, The GreaterThan online resource for information about PrEP, has more resources for MSM about PrEP compared to resources about women and PrEP. Women at risk for HIV are not identified for PrEP compared to MSM (Aaron et al., 2017). The Prepwatch webpage address's a woman's need for PrEP; it advises that PrEP is safe for both men and women, however, there is no additional information or resources for women (PrEPwatch, 2018). Women are of considerable interest when discussing PrEP. In 2015 and 2016, women made up 19% of the new HIV diagnoses in the United States (Centers for Disease Control and Prevention [CDC], 2017). Knowledge about PrEP would benefit women at risk for HIV. Because there are limited PreP resources available for women, this education could be provided by counselors and take place at an STD counseling and testing center. This project explores the intervention of counseling clinicians at a clinic located in Newark, NJ to identify and refer women at risk for HIV to the PrEP counselor.

Background and Significance

The first high risk group that PrEP was identified as being useful for were MSM. HIV transmission rates in this group were shown to have reduced by 92% when PrEP was taken consistently (CDC, 2017). This is a significant decrease and can lead to a prevention of HIV within that specific community. There are several other populations at risk for HIV that could benefit from PrEP. According to Risher, Mayer, and Beyrer (2016), other high risk groups include people who inject drugs (PWID), people in prisons, sex workers and transgender populations. Women at risk for HIV would greatly benefit from PrEP. Women are also similarly susceptible to HIV during unprotected vaginal sex with men compared to anal sex transmission among MSM (CDC, 2017). This fits with the general criteria for PrEP, which includes high risk behavior such as heterosexual men or women who do not use condoms consistently during sex with partners of unknown HIV status (CDC, 2018). Although new HIV diagnoses in women have declined in recent years, it is still important to address the barriers to prevention in this group because 92% of HIV negative women reported not using a condom in the previous year (CDC, 2017). Knowledge about PrEP is another prevention strategy that can benefit women.

The knowledge and attitudes of women in the U.S. about PrEp has been evaluated in a variety of published studies. It has been found that when women are informed about PrEP, they are more likely to show interest and are receptive to further education. In one study, 154 women were surveyed about PrEP in New York, Dallas, Atlanta, Newark, Chicago, and New Orleans (Auerbach, Kinsky, Brown & Charles, 2015). The women entered a focus group discussion about PrEP. Researchers discovered that those in the

focus group were “furious” that they never heard about PrEP prior to the focus group (Auerbach et al., 2015). They believed that the organizations they trusted did not educate them on PrEP because they first learned about it as a result of partaking in the focus group. Many also admitted to having great relationships with their gynecologists and primary care providers, where they would seek services and information from. Those women who participated in this study also agreed that they would be most interested in PrEP if they had an HIV positive partner (Auerbach et al., 2015). The information was provided to them as a result of the study and led to them being informed. Women located in the eastern region that were involved in these focus groups, expressed that community agencies were the best sources of information about PrEP (Auerbach et al., 2015). The study conducted supports this project because if healthcare providers who work closely with women at risk for HIV are knowledgeable about PrEP, they can better educate and influence women to consider PrEP. The perception that these women possessed is significant for this project because as more education was given about PrEP, the interest increased among these women.

Problem Statement

Education about HIV prevention strategies among women must be optimized. The leading cause of death for women in reproductive ages 15-24 remains HIV (Adimora et al., 2014). Women living with HIV represent 23% of all Americans living with the virus (CDC, 2018). In addition, of the women living with HIV, approximately 12%, or one in eight do not know they are infected (CDC, 2018). This indicates that PrEP is a highly effective means of preventing HIV for both men and women. HIV transmission can be prevented in this population because PrEP can reduce transmission rates by 94% (CDC,

2017). The presenting issue is the lack of awareness about PrEP for women. In Newark, NJ, the place of the presented project, there were 5,726 people living with HIV in 2015 and of those, 2,175 were women (AIDSVu.org).

PICOT Clinical Question

The clinical question addresses the need for education about PrEP for women at risk for HIV. At [redacted] does educating clinicians about identifying women at risk for HIV about PrEP lead to an increase in referrals for PrEP for those women compared to not educating the clinicians?

Needs Assessment

The CDC estimates that 468,000 heterosexual women in the US currently have indications for PrEP (2017). Many women with a diagnosis of STDs at the clinic are treated by the registered nurses and then sent home. Several of these treated women return within a few months with similar complaints and are subsequently diagnosed with the same STI/STD. According to the CDC, sexually transmitted diseases such as gonorrhea and syphilis can greatly increase the risk of transmitting or becoming infected with HIV (2017). With each STI infection, these women are becoming more susceptible to HIV. Repeat STD infections were an indication that education on PrEP was needed at this facility and would prevent the risk of this occurrence.

At [redacted], a variety of patient care services are delivered. Primary care and STI screening are among the most used services at the clinic ([redacted]). Located in Newark, NJ, this center is one of less than ten centers in New Jersey that provides PrEP as an option to prevent HIV (GreaterThanAIDS, 2018). To understand the

current need, it was important to identify women returning with repeat STD infections and women referred for PrEP who follow up with the PrEP counselor. This was determined by scheduling an interview with the PrEP counselor and receiving data consisting of the number of women who pursued, inquired and were started on PrEP during the year 2017. As per the PrEP counselor, there are a total of 24 women who have pursued and are maintained on PrEP from 2017-2018.

The PrEP counselor at [redacted] is available to all those who are interested in PrEP. He performs a thorough and vital general assessment of those at risk for contracting HIV using a guided questionnaire that is the same for each patient. Once performed, the scheduled Advanced Practice Nurse (APN) also assesses the patient and evaluates him or her for Emtricitabine/Tenofovir, which is the current available drug for PrEP. Many of the patients who inquire about PrEP are MSM and are referred by others who have begun therapy. Others are referred by the HIV counselors from the STD testing and counseling department. The STD centers' current policy does not require a PrEP counselor to be in attendance during the initial counseling meetings. The protocol currently in place is the distribution of the PrEP counselor's contact information to the patients for them to contact the PrEP counselor at their own convenience. Currently, the supervisor at the testing center explained that many women do not wish to meet with the counselor at that time because they may not be completely aware or knowledgeable about PrEP. During my five-month rotation at this clinic, I observed that women visiting the clinic did not have an interest in PrEP and were not assessed by the Advanced Practice Nurse. However, many MSM were interviewed and started on PrEP.

HIV counselors at the clinic are the first contact persons for the female patients presenting to the clinic. If the counselors are well educated about PrEP, they can also identify at risk women. Women who are knowledgeable about PrEP, are led to inquire and consider the use of it (Aaron et al., 2018). After providing education to the staff at the testing and counseling center, they were better equipped to inform high risk women about PrEP and refer them to the PrEP counselor.

Objectives and Aims

This intervention to educate the staff at the testing and counseling center yielded results that promotes health and life in women at risk for HIV. The aim of the project is health promotion and prevention for HIV that continues to be the focus of the disease process. This was achieved by educating the HIV counselors at [redacted] on how to identify women at risk for HIV for PrEP. Objectives that achieved this aim include:

- Developing a tool for the staff at the STI testing center and the PrEP counselor to assess women at risk for HIV
- Identifying barriers that staff had on education and informing women about PrEP
- Strengthening the referral process for women at risk for HIV to meet with the PrEP counselor

Review of Literature

A review of literature was conducted to identify and investigate: 1) barriers to women at risk for HIV receiving PrEP; 2) female attitudes about PrEP and its usage and;

3) counseling women about PrEP. The evaluation and analysis of these considerations led to a better understanding of theories and research pertaining to at risk women and PrEP.

CINAHL, Medline and Ebscohost databases were used with the following search keywords: Pre-exposure prophylaxis AND women AND HIV AND counseling AND education AND providers. The inclusion criteria included Full text English language and dates ranging from 2014-2018. The articles were then evaluated using the exclusion criteria. Studies were excluded if women were not the population of interest and electronic access via the Rutgers library page was not permitted. Inclusion criteria included studies that pertained to women at risk for HIV and PrEP. This was done by evaluating the abstracts. This also includes studies with the topic of counseling and educating women about PrEP. A total of 51 potential articles were used in assessing inclusion and exclusion criteria. Of those 51 articles, 10 matched the criteria and addressed the three statements above.

Barriers to PrEP for Women at risk for HIV

There are social and structural barriers to PrEP use that has caused a lack of awareness among women at risk for HIV (Goparaju et al., 2017). In a study by Goparaju et al., 2017 four focus groups consisting of 20 HIV negative women each from the Washington, D.C. area were educated about PrEP then offered the opportunity to discuss barriers to the uptake of PrEP. Social barriers include the absence of support from family and friends because of the stigma associated with taking a pill to prevent HIV (Goparaju et al., 2017). Although the women who participated in this study were HIV negative, they all personally knew someone who was HIV positive. They have witnessed the negative perception associated with such a medical status. They believe that their families and

friends who were not educated about PrEP have a negative perception about them taking medications to prevent HIV. Stigma also includes their partner's perception on why they are beginning treatment leading to feelings of mistrust and infidelity from their partner. Understanding and anticipating the social barriers facing women who undertake PrEP is essential for counselors to effectively educate women.

The patient provider relationship is identified as a social barrier. The women in the focus groups expressed difficulty in discussing risk behaviors which is an important step in obtaining PrEP (Goparaju et al., 2017). Because of this, healthcare providers also may not correctly identify women at risk for HIV for PrEP. This influences their recommendations for women (Sheth, Rolle & Gandhi, 2016). For example, a provider may not ask specific questions pertaining to sexual history in order to identify and give proper education to at risk women. This becomes a barrier for women who may have indications for PrEP. If healthcare providers are not educated about PrEP, they can't understand the general criteria for use. Those who are likely to confide in their healthcare providers liked and trusted their doctors because they had been seeing them over a long period of time. Infectious disease providers were surveyed across the United States to understand their perception on PrEP (Karris, Beekmann, Mehta, Anderson & Polgreen, 2014). Researchers identified provider barriers to prescribing PrEP. Barriers and perceptions about PrEP from the surveyed providers include future drug resistance, reluctance to start a toxic drug in healthy persons, efficacy of real-world PrEP, the view that provision is time consuming and the belief that patients are not at risk (Karris et al., 2014).These barriers can lead to providers not being comfortable initiating PrEP treatment. The belief that patients are not at risk is found to be a barrier that can be

challenged by addressing the mindset of providers. At risk patients include heterosexual men or women who do not use condoms consistently during sex with partners of unknown HIV status (CDC, 2018). This population is a portion of what providers must understand in order to address these barriers. Authors Aaron et al. describes how PrEP is underutilized by at risk women and is entirely at the women's control (2018). The authors learned that women at risk for HIV are not being identified because providers may not understand the process of doing so (Aaron et al., 2018).

Structural barriers include PrEP guidelines and costs related to PrEP associated with insurance coverage. Women were concerned that they would not be considered high risk according to CDC guidelines. It was found that US women have minimal knowledge about PrEP which prevents self-referrals from occurring (Aaron et al., 2018). An additional barrier is the lack of knowledge about the specific PrEP guidelines and can prevent at risk women from seeking prophylaxis treatment for HIV. Costs related to PrEP is a common concern for women with lack of insurance. Copays and other fees associated with initiation of PrEP can create fear and an anticipation of financial burden (Aaron et al., 2018).

The barriers to PrEP usage can be associated with female attitudes and beliefs related to counseling and perception. Thoughtful attention can lead to a better understanding of why there is limited usage among women.

Female Attitudes About PrEP and Its Usage

The female attitude and knowledge about PrEP is considered to understand why this population has limited use of PrEP. In one study that reviewed the knowledge and attitudes women have about PrEP, researchers learned that women view PrEP as an

important prevention option while assuming that there are minimal side effects, limited cost, the efficacy of the drug is reasonable, and delivered by trusted providers in trusted venues (Auerbach, Kinsky, Brown & Charles, 2015). This is a positive attitude towards PrEP and its use. Perceptions on PrEP for HIV prevention were also explored among urban women. An interview was conducted among HIV negative young transgender women who are also disproportionately affected, and it was discovered that 64% had prior knowledge about PrEP (Wood, Lee, Barg, Castillo & Dowshen, 2017). They expressed concern about barriers to the uptake of PrEP. It was learned that PrEP awareness, barriers and facilitators to PrEP uptake including cost and lack of provider counseling were to account for (Wood et al., 2017). In addition, those who expressed unwillingness to take PrEP believed that the addition of pills to existing prevention strategies such as condom use was a burden (Auerbach et al., 2015). Other women who partook in a survey design reported a decrease in condom use if started on PrEP (Koechlin et al., 2017). The common attitudes among females in the mentioned studies relate to providers initiating the education about PrEP. Those who had good relationships with their providers expressed willingness to turn to them for PrEP information and services (Auerbach et al., 2015). They have a high level of trust and would confide in them while receiving the appropriate information about PrEP. Therefore, providers must be knowledgeable and understand all implications about PrEP and its usage to provide information and counseling.

Counseling Women About PrEP

PrEP based teaching and counseling is necessary for women to be informed about PrEP. The literature review found no article that explored this topic in the U.S, however

there is one study that identified if choice-based counseling was effective for women. This included eight focus group discussions that were held in Kenya and South Africa (Corneli, Yacobson, Agot & Ahmed, 2016). The focus groups included women at risk for HIV. Women who participated in the discussion all agreed to PrEP-specific counseling and believed that they should be able to choose a risk-reduction strategy that is best suited for them. Counselors were also viewed as being able to provide the required information about PrEP for women to make the best decision about their health (Corneli et al., 2016). The result of women being informed and able to decide about the use of PrEP also depends on the counselors. They must use an approach that they are educated about.

An additional study that involved focus group interviews about PrEP also concluded that there is a need to provide guidance during HIV risk-reduction counseling on all options available that support women's overall sexual health when taking PrEP (Corneli et al., 2015). Although this supported the need for counselors to be informed, this study also highlighted the fact that most women believed that they no longer had to use condoms when taking PrEP. This poses a concern because of the lack of knowledge given about PrEP. Counselors are an effective strategy in providing the appropriate knowledge for women to understand the use of PrEP as an additional means of prevention and not a substitute to prevent HIV (Corneli et al., 2015). Both studies presented the understanding that the beginning of counseling women about PrEP cannot be effectively initiated if those educating are not informed.

Theoretical Framework

The model used for this project is the Knowledge to Action framework (KTA). This most efficiently supports the advancement of this project (Appendix 1).

Knowledge to Action Framework

The Knowledge to Action Framework is a conceptual framework intended to help those concerned with knowledge translation deliver sustainable, evidence-based interventions (Field, Booth, Llott & Gerish, 2014). There are two components in the framework: Knowledge Creation and an Action Cycle. Knowledge creation begins the cycle with multiple phases existing in each component. The knowledge creation component involves knowledge inquiry, synthesis and product tools. The knowledge creation impacts the action cycle because the activities mentioned in the action cycle is needed for the knowledge to be applied in practice (Field et al., 2014). As the first step in the framework for this DNP project, the identification of the problem is the need for HIV counselors to be educated about PrEP and women. In the knowledge creation about this topic, information was researched to identify the barriers and implications for counselors to be educated about PrEP for women at risk for HIV.

The first step in the action cycle is identification of the problem (Graham et al., 2006). This is done by identifying, reviewing and selecting specific knowledge that pertains to the problem. The cycle continues with all phases overlapping each other. This includes adapting the knowledge to local contexts, assessing barriers to knowledge use, selecting, tailoring, implementing interventions, monitoring knowledge use, evaluating outcomes and sustaining knowledge use (Graham et al., 2006). The selected intervention is the educational session that was implemented to educate the HIV counselors in a

Sexually transmitted disease (STD) clinic about at-risk women and the use of PrEP. The intended result was an increase in referrals for PrEP Continuing further into the action cycle, use of the knowledge provided to the counselors was monitored by evaluating the number of women who have been referred to the PrEP counselor one month after the intervention. The result led to an evaluation of outcomes, also part of the action cycle. The sustainment of the knowledge continues if the counselors are using what was obtained from the education session as they encounter women at the clinic. The tools and methods learned to assess and identify women at risk for HIV must be reviewed for the cycle to be applied and continued. The process of sound application of knowledge to improve health and deliver more effective health services and products can strengthen the healthcare system at [redacted] (Field et al., 2014). Overall, this project fits into the knowledge to action theoretical framework.

Methodology

This is a quality improvement project that involved educating the HIV counselors at [redacted] in Newark, NJ about women and PrEP. A discussion was held with the HIV counselors on their opinion about the topic of women at risk for HIV and their need for PrEP. A pre-test was given immediately before the educational session to assess prior knowledge and attitudes about women and their relationship to PrEP. After the one-time experience of a lunch and learn educational session, participants were then asked to complete a posttest to assess understanding of the topic presented, after one month. The outcome of an increase in women at risk for HIV being referred to the PrEP counselor was measured via a follow up interview with the PrEP counselor. The follow up

interview consisted of statistics that had no recognizable patient information sent by the PrEP counselor and STD clinic one month after the educational session. The PrEP counselor's documentation about services given was used during the interview to identify the number of women referred to him after one month. This and the results of the posttest survey after the intervention was evaluated to determine the expected outcome.

Setting

This project was conducted at [redacted] in located on [redacted] in Newark, NJ. [redacted] is one of New Jersey's largest and most comprehensive HIV/AIDS community-based organizations [redacted]. Their mission is to "empower our clients by reducing social and health disparities in the greater Newark area. Services provided include behavioral research, chronic illness management education, street outreach, substance abuse treatment, transportation, food pantry, syringe exchange, an adult drop-in center for the homeless, and many LGBTQ services including a drop-in center for LGBTQ youth ([redacted]). There are over 25 different grant funded programs at the center. With over 9,000 people benefiting from their services, [redacted] is a strong community advocate that provides technical assistance to other community-based organizations in the Newark area ([redacted]). The lunch and learn at [redacted] was held between 12-1pm in the main conference room when no other meeting was taking place.

Study Population

The study participants included all clinicians who are responsible for testing and counseling patients in the sexually transmitted disease center. This included the HIV

counselors who educate the patients on safe sex practices including PrEP and the Advanced practice nurse (APN), Medical Assistant (MA), Registered Nurse (RN) and PrEP counselors who treat patients after they test positive for a STD. The inclusion criteria also included those who counsel and treat patients after learning of a positive STD result because they provide the most education. The sample size totaled 17 participants.

Study Intervention

The intervention for the study was a 1-hour educational session teaching and discussing participants how to identify women at risk for HIV and their indications for PrEP. During the first step, participants were given consent and the pretest that assessed their current knowledge and attitude about PrEP. A 5-minute video series about how PrEP has been utilized in remote areas of Kenya was shown followed by a 20-minute PowerPoint presentation educating the participants on current guidelines and regulations on PrEP and how to identify women who would benefit from PrEP. A presentation with graphic representation of the assessment tools to identify women at risk for HIV was presented (Appendix 3). Information was extracted from national HIV and PrEP resources in the public domain. Participants were questioned about their role in identifying women at risk for HIV and discussed beliefs about the topic being presented during and after the presentation. One month later, a posttest was given to participants that assessed their understanding on identifying women at risk and the process of referring them to the PrEP counselor. The knowledge and attitudes about the given topic were also reassessed from the posttest 1 month following the intervention in addition to a

chart review that was performed by the PrEP counselor. He was able to provide data during the follow up interview to determine if an increase in women at risk for HIV were being referred to him.

Outcome Measures

Variables. Independent and dependent variables were used to measure the outcome. Categorical, nominal variables was assigned to each data collected. Demographic information such as number of years as an HIV and PrEP counselor, participant's number of years working with women at risk for HIV, ethnicity, position and gender was also questioned. Independent variables that were measured include the educational session and study intervention. Dependent variables include participant's attitude and knowledge about identifying at risk women for PrEP and the number of women referred to the PrEP counselor before and after the educational session.

Data collection. Demographic data was collected from the pretest. Data collection representing indicators was retrieved from the participant's responses from the pre and posttest using the Likert scale (Appendix 6). The retrospective chart review took place prior to the intervention. This gave the primary investigator knowledge about the number of women who have been referred to the PrEP counselor. A report on how many women were seen at the STD clinic, how many women tested positive for STDs and how many women were referred to the PrEP counselor was made available one month after the intervention. This was also done one month following the educational session to identify the change in the dependent variable.

Benefits/Risks

Benefits include a better understanding of identifying at risk women and referring them to the PrEP counselor. Job satisfaction increased because with a better understanding, participants are more confident in their role. However, these benefits were not guaranteed. Risks include frustration among the participants with all the information they received during that given time. To prevent or minimize these risks, participants were permitted to share any concerns or barriers they experience when counseling at risk women before the conclusion of the session.

Participant Recruitment

Advertising in the form of paper flyers was posted throughout the department as a reminder of the proposed project taking place. The flyer had the title of the DNP project, date, time, location and the project intervention taking place (Appendix 5). The use of

coercive language or false claims was avoided. This was the first opportunity for the counselors to have a basic understanding of the proposed educational session.

Consent Procedures

After eIRB approval was obtained through Rutgers University, the participant consent was made available to each participant. This was be done by meeting with each participant and discussing a written consent form that outlined the intervention, risks/benefits and outcome. Participants were given one week to decide if they wish to participate. During this time, questions pertaining to the project was answered. After one week, participants were asked about their understanding of the proposed project. They were then offered the decision to consent or not. Those who consented, were required to sign a documentation that was sealed and provided at their request. Participants were also informed that they could remove themselves from the project at any point in time.

Participant Costs and Compensation

There was no cost or compensation to the participants and the lunch was provided for the educational session. Participants were able to keep all handouts distributed during the session. The total time commitment was an estimate of one hour during the session.

Project timeline

Using a Gantt Chart, the timeline began with approval from eIRB and was anticipated before the fall of 2018. In March of 2019, IRB approval was earned. The primary investigator completed the needs assessment by reviewing the data from the PrEP counselors retrospective chart review. On March 2, 2019, recruitment flyers were posted, and participants were provided with information to consent. On March 7, 2019

the educational session took place and results from the pretest was reviewed immediately. The following month, April 2019, the follow up interview with the PrEP counselor and posttest request took place to measure the expected outcome. Results were compared to the data provided before the education session during the month of March 2019.

Resources Needed/Economic Considerations

Supplies needed for the proposed project included paper to print out the recruitment flyers, consents, pre and posttests, and a poster board with images designed and created professionally by an office supply store such as staples. One to three hours a week preparing for the education session, implementing and reviewing data was spent by the primary investigator. With about 16 weeks in an academic semester, this resulted in over 400 hours in total to fulfill this project need. Lunch serving the participants was also budgeted. An estimate of $200 was spent on this project that was self-purchased.

Data Maintenance/Security

The data analysis plan includes how the results from the pre, and posttest were stored, as well as who will have access to it. The pre and posttest was anonymously written by the participants. Immediately following, all survey answers were typed and stored in a personal password protected flash drive at the Rutgers Newark IRB School of Nursing office. Data was only shared among the project committee.

Data Analysis

Descriptive statistics was used to describe the participants gender, position and years of experience with working with women at risk for HIV. The open-ended questions that the participants answered during the post test was written and reviewed as feedback

about the session and opinions about how the material was presented. Univariate analysis to describe number and percentages related to the sample size and setting was utilized. Attitude and knowledge about women at risk for HIV being referred for PrEP was assessed from the pre and posttest. The variables considered are also bivariate categorical. For example, the nominal data includes gender, ethnicity and position. Therefore, the data is presented using a pareto and pie chart with numbers and percentages representing the responses from the pre and posttest (Appendix 7). The pareto chart is also used to display the percentage increase of referrals the PrEP counselor had received for at risk women from the time of the educational session till one month later. A description and interpretation of the results is provided after each visualization of the data. The open-ended questions that the participants answered during the posttest are qualitative and will be written and reviewed as feedback about the session and opinions about how the material was presented. The counselors reported the data that provided the aggregate number of patients seen, including the sexual orientation and those who tested positive for STDs.

Results

The pre and posttest was made up of 11 questions for the participants to answer. A total of 17 participants participated in the intervention with 9 participants also returning the post test. Demographic data did not influence the results; therefore, it will not be discussed in this section. The first question asked the participants how many years

they have worked as a clinician at [redacted]. Majority of all respondents, from both pre and post surveys, have been working as a clinician at [redacted] for less than 1 year.

Knowledge and Education

Of those clinicians, when asked, how often do you perform STD testing and counseling on women between the pre and post surveys, the change in percentage shows a trend towards more likely performing STD testing and counseling, with an average change of 12.11%. Question 3 identified how informed about PrEP clinicians were during the pre and posttest. From the pre to posttest survey, a trend towards being more informed about PrEP was shown, with an average change of 13.16%. Looking at the post survey directly, 75% of respondents said they were "Always" informed about PrEP, versus the Pre survey result of 42.11%. Respondents answered with the top three scale values (Always, Often, Sometimes) with an average change of 23.9% when questioned about the frequency of PrEP guidelines being reviewed for women at risk for HIV. Participants were more likely to identify women at risk for HIV after the posttest with a great percentage change in the number of clinicians choosing "Always". The Pre survey showed only 15.79% for "Always" versus the Post survey result of 50.0%, with a difference in 34.21%. Overall, the average difference was 15.13%, with a trend towards the more frequent items.

Attitudes

The question regarding women inquiring about PrEP was affected very little by the educational intervention, and rightly so, as the educational intervention was not given to patients, just to health professionals. The average change was 8.77, with no trend

noticed towards either side. The overall percentages show that most women visiting NJCRI rarely ask about PrEP. Clinicians were identified as often discussing PrEP to women at risk for HIV. The greatest change coming from the Always responses, which was 32.24%. Overall, there is a noticeable trend towards the top three scale items, as indicated by the bar graph (Appendix 7). Question nine shows that most professionals were already comfortable discussing PrEP with women at risk for HIV, with over 50% of respondents answering with one of the top three responses, for both pre and post surveys. Respondents showed an increase of "Always" responses, with a change of 21.71% between the two surveys to the question of how often women are referred to the PrEP counselor. Question eleven shows a trend towards less likely missing an opportunity. Both sets of graphs show a clear change in perception. Based purely on looking at the distribution of the bar graphs, the pre portion of the bar graph shows a normal distribution. The post portion shows a distribution with a skew to the right, which is usually caused by some outside influence.

Open ended questions and Interview with PrEP counselor

Clinicians were asked to define PrEP. Accepted answers include those that mention the words, "to prevent HIV", "once daily pill" and "pre-exposure prophylaxis." This question was skewed because of non-clinical staff among the participants. Of the respondents that answered the question, all respondents were correct. However, this is misleading. The pre survey had 47.37% of respondents not answer the question at all. The post survey was missing 12.5% of responses. With almost half of responses missing,

it is unable to be determined if the educational intervention had any effect on the outcome.

The post test results included an area for open ended remarks from participants. One of the clinicians stated, “I let the nurse or nurse practitioner know that this woman may be a good candidate for PrEP after speaking to her.” As well as, “women are asking a bit more because my nurse and medical assistant are discussing it more.” Although only 8 participants responded to the post test survey, the intervention was shown to be of some benefit to staff.

After meeting with one of the PrEP counselors, it was discovered that there were not any women who were referred to him after the one month follow up. He expressed that the length of time may have attributed to that result.

Post Presentation Evaluation

Respondents were given a post presentation evaluation to complete in order to identify any factors from the presentation that may have influenced the answers on the post test. In reference to the material and eye contact, responses showed that the speakers understanding of the material appeared mostly broad and deep with only one response stating it was superficial. Regarding the presentation qualities and visual aids, respondents reported that the volume and speed of delivery of the presentation was OK while most responses showed that the visual aids were very suitable and legible.

Discussion

PrEP is a highly effective HIV prevention strategy that benefits not only MSM but heterosexual women. The intervention to increase uptake among women at risk for HIV can cause more awareness about PrEP for women. The project intervention directed towards the clinicians are the first encounter for most of the women at [redacted]. The development of the educational session had many strengths but met many challenges and barriers.

Strengths

Participants were able to learn new information about PrEP. Questions were asked about treatment criteria and indications for PrEP. After the powerpoint presentation, staff were able to participate in a discussion about barriers they face with insurance and payment for the pre-PrEP work up which includes blood work with STD testing and counseling. The discussion was defined as being insightful because the many disciplines at [redacted] were able to interact and understand their roles better. In general, participants were able to understand the implications for PrEP for women at risk for HIV. They were very motivated to learn and attend future sessions as well which was a positive intended consequence. This created a no hassle opportunity to work and speak with the clinicians regarding the planning of this project. All were very open and encouraging to participate.

Limitations

The electronic Institutional Review Board (eIRB) process was the first barrier to initiating the intervention. The educational session was proposed to take place in September 2019 to ensure that the results and findings would be complete before the

Spring semester. The holiday season starting in November 2018 caused a delay in the meeting for the stakeholders and IRB chair at [redacted] to grant IRB approval because most were not available during the same time. Due to a delay in receiving eIRB approval, implementation and results were delayed. In addition, scheduling conflicts arose because of the holiday season. Therefore, those who would participate in the educational session were not available at the initial date. To prevent this unintended consequence for future projects, time management must be achieved by the investigator. Results from the pre and post test were skewed because among the participants, there included non-clinical staff such as 2 receptionists, a social work student and 2 DNP students who perform other duties at the clinic. 8 participants were lost to follow up and did not submit their post test anonymously.

Implications for Clinical Practice

PrEP is a highly effective HIV prevention strategy that benefits not only MSM but heterosexual women. The intervention to increase uptake among women at risk for HIV can cause more awareness about PrEP for women. At [redacted], women can receive STD counseling along with a referral to the PrEP counselor if clinicians are educated on identifying women at risk for HIV. A quarterly educational session can be implemented to refresh the knowledge clinicians have about women and PreP. It is also important to reassess the barriers and attitudes of the clinicians occasionally. Having a quarterly educational session with discussion about limitations to identifying women at risk for HIV and the indications, challenges and frequency would benefit and help to increase referrals to the PrEP counselor.

Implications for Healthcare Policy

In Botswana, where the world's second highest prevalence of HIV infection occurs, daily PrEP among heterosexual women was proven to be effective in preventing HIV (Thigpen, et al., 2012). Policy in this country was created to allow women to receive the knowledge and participate in PrEP. Women who are correctly identified as being at risk for HIV, can receive the information about PrEP by the trained clinicians. Within the facility, the identification and treatment algorithm can be created as a new policy specific for women at risk for HIV. Clinicians can be mandated to refer women to the PrEP counselor upon meeting with them and assessing their need. A monthly follow up can also be created to assess if the women were able to meet with the PrEP counselor and start PrEP.

Implications for Quality/Safety

Patient safety was an aspect within the DNP project. Within the methodology, it was outlined that to protect the privacy of the patients, the retrospective chart review performed by the PrEP counselor did not include any patient identifiers. The participants demographics were also protected when storing the data and discussing the results. The safety of all those involved was considered and helped to achieve better quality for the project.

Implications for Education

Education on women and PrEP can be discussed and learned in an academic setting. This topic can be integrated into HIV specialty education to inform the upcoming clinicians or providers on how to identify women at risk for HIV.

Economic Implications

The economic costs for NJCRI's HIV treatment can be decreased because of the increase in use of PrEP to prevent HIV. Less money and time could be spent on frequent testing and evaluating signs of opportunistic infections among women with HIV. The economic benefits are towards the prevention of HIV.

Plans for Future Scholarship

To sustain this project, it is important to appoint a clinician that can be responsible for supporting the PrEP counselor and assessing the frequency of the counselors, medical assistants and APNs in identifying women at risk for HIV and referring them to the PrEP counselor. They can also be responsible for hosting the quarterly educational sessions with staff to discuss barriers and current knowledge and attitude about women and PrEP. The clinical director's involvement would also be beneficial to sustain and plan for future development including knowledge-based activities for the clinicians to always stay up to date about women at risk for HIV and the need for PrEP.

Conclusion

Discussion about the need for PrEP for women at risk for HIV includes community and local plans to increase the uptake among this population. Starting with a local HIV clinic in a setting where women are at an increased risk was the first step in exploring this topic. Introducing similar implementations on a broader scale can later be introduced using [redacted] as a guide. Overall, the intervention to increase uptake of PrEP in women at risk for HIV is the beginning of a series of interventions revolving around risk reduction and prevention strategies for women at risk for HIV.

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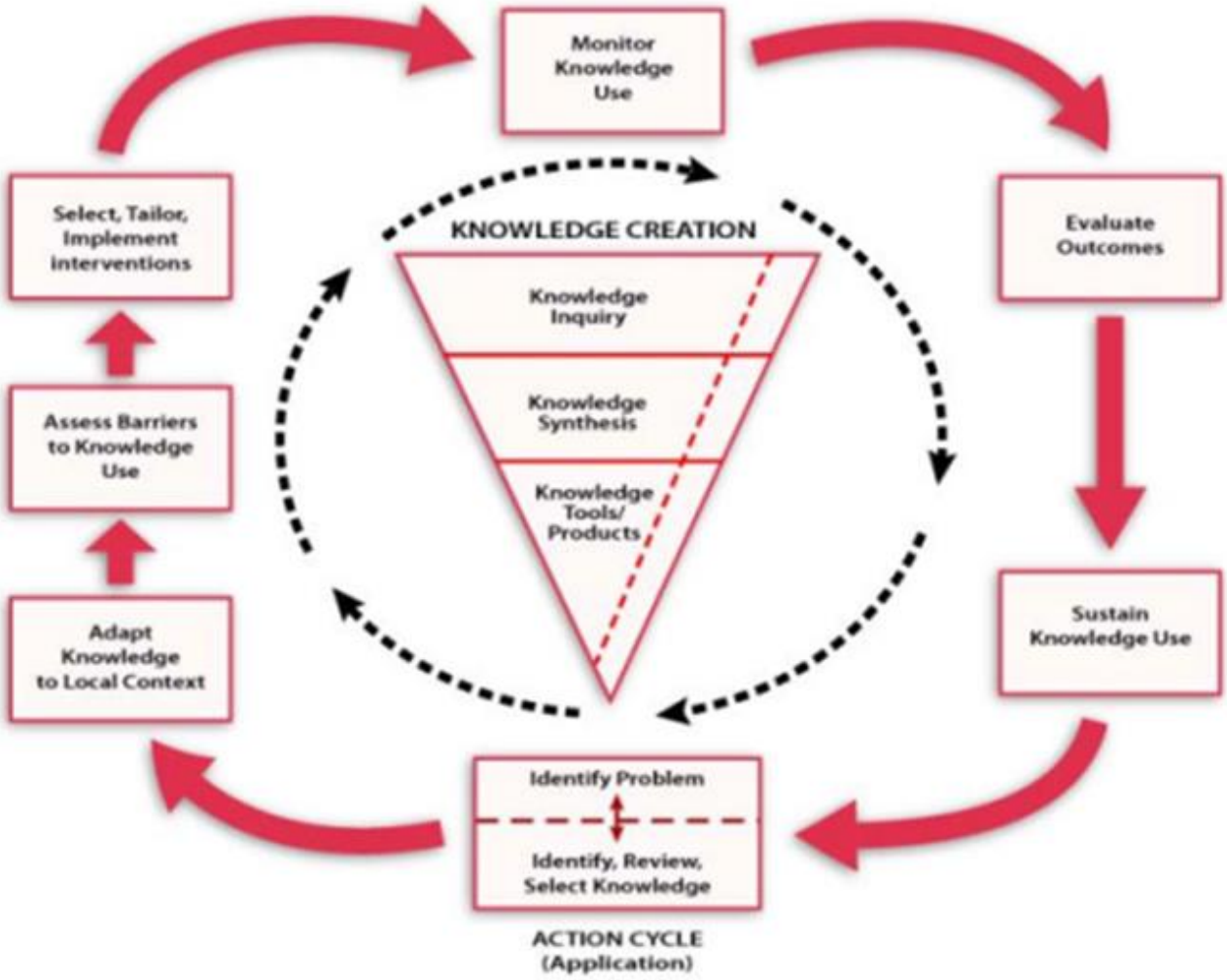
Appendices

Appendix 1

Theoretical framework



Appendix 2

Evidence Table

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Limitations	Evidence Level & Quality
1.	Auerbach J. (2015)	qualitative focus group	144 at-risk women in six US cities-New York, Dallas, Atlanta, Newark, Chicago, and New Orleans	US women view PrEP as an important prevention option	Only African American women were exclusively recruited, data not included from New Orleans focus group	Good quality with reasonably consistent results and sample size, fairly definite conclusions about women finding PrEp attractive
2.	Thomson, K.A. (2016)	double-blind, placebo-controlled randomized clinical trials	Between 400-4000 females in Kenya, Uganda, Botswana, Zimbabwe, Thailand and Uganda	Tenofovir-based oral PrEP reduced HIV acquisition in subgroups of women by 49–79% in intent-to-treat analyses, and by >85% when accounting for PrEP	Two trials did not demonstrate an HIV prevention benefit from PrEP in women and low adherence was also an issue	Some were of good quality with consistent sample size and others did not have sufficient evidence to support EBP

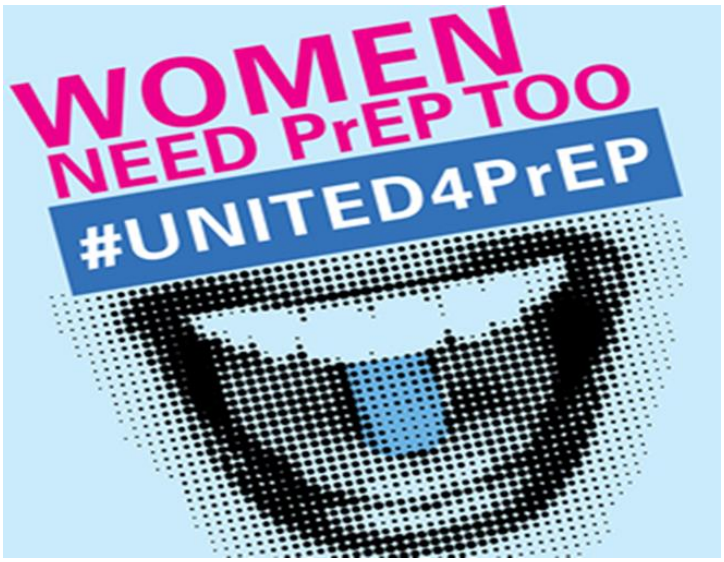
				adherenc e		
3.	Tellalia n, D. (2013)	Online survey	189 members and credentialee s of the American Academy of HIV Medicine between April 2011 and September 2011	Despite awarenes s from providers about PrEp, its use was limited and the lowest among women	low response rate, changes in the evidence base, and the novelty of PrEP	Good quality with evidence supporting providers knowledge about PrEp and lack of use with women
4.	Celum, C.L. (2015)	Clinical trials with placebo	Four trials conducted among men who have sex with men (MSM) in a multicountr y trial, injection drug users in Asia, and African HIV serodiscord ant couples and young men and women	Majority of participa nts self-sorted within the first three months into users versus non-users, EBP was not answered effectivel y	Lack of information about age groups used for clinical trials	Low quality with limited information about results therefore conclusions can't be drawn to support EBP

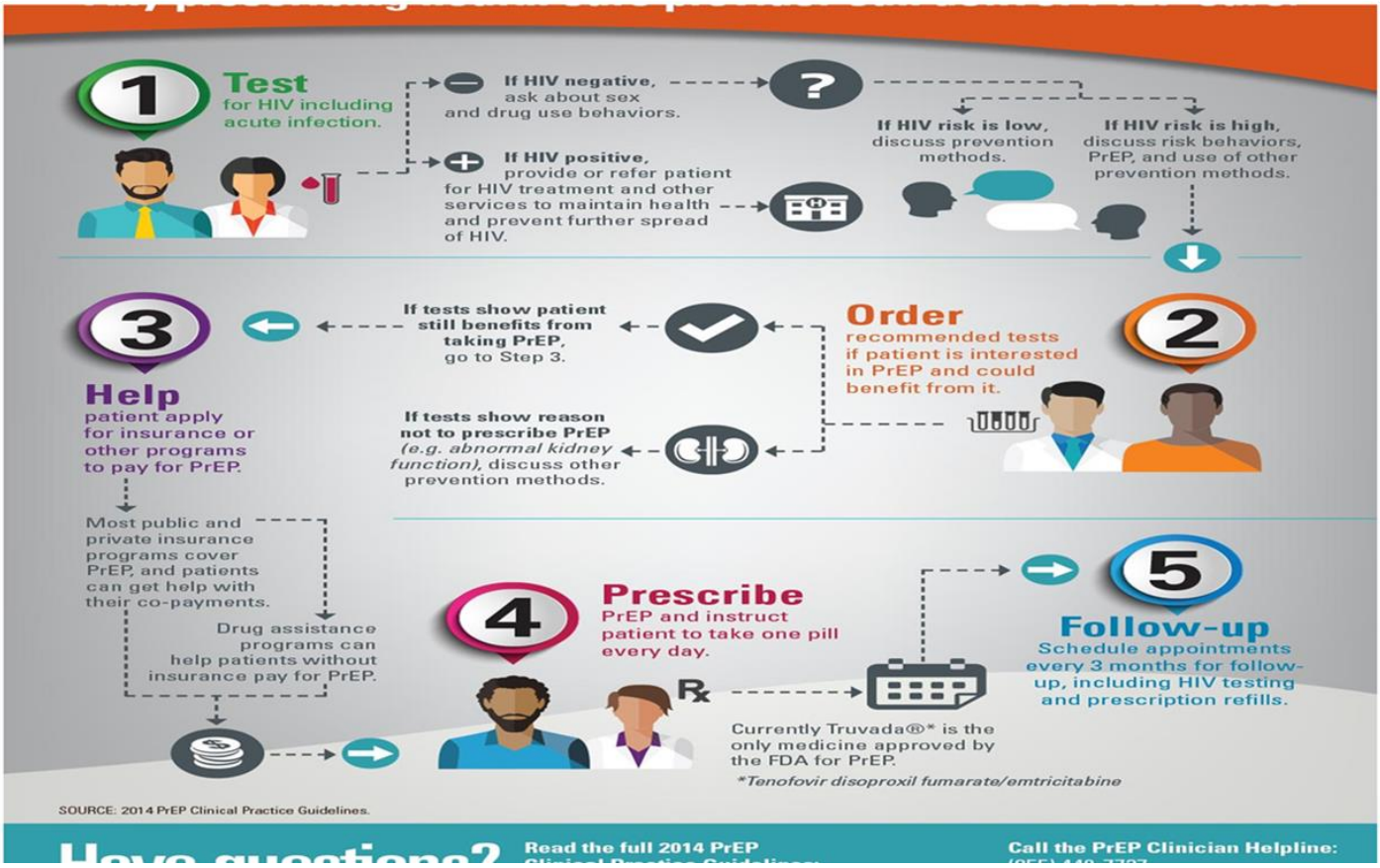
5.	Karris, M.Y. (2014)	Online Survey	1175 Infectious disease physicians who are members of Emerging Infectious Network (EIN) from June 5- July 7 2013	A majority of clinicians supported PrEP but only 9% had actually provided it. Despite CDC guidance, PrEP practices were variable and clinicians reported many barriers to its real-world provision	Lack of information about groups in which the 9% use PrEp, of the 1175 e-surveys sent out, 573 responded	Good quality with evidence supporting providers knowledge about PrEp, limited information about specific US cities that providers practice at
6.	Sheth, A.N. (2016)	Randomized clinical control trials	2000-5000 heterosexual women in South Africa, Uganda and Zimbabwe, Kenya, Tanzania	Adherence to PreP 90-95% by self report,	No statistically significant association between HIV seroconversion and plasma tenofovir levels and HIV incidence in oral TDF or TDF/FTC groups	Low quality because efficacy among women was not provided, conclusion to support EBP can not be drawn

7.	Adimora, A.A. (2013).	Prevention research for women and PrEp	Women ages 15-24 in the United States and throughout the world	Progress in preventing HIV infection among women is continuing	Limited information on development of interventions was listed	Low quality with little evidence with inconsistent results, not detailed information about what interventions are being done after the research
8.	Flash, C.A. (2014).	Focus groups	26 English-speaking black women between the ages of 18 and 50 recruited from the Dimock Community Health Center, an inner-city primary care facility in Boston, Massachusetts, and its affiliated HIV testing sites	Women who were not interested in using condoms due to potential decreased sexual pleasure or condom failure were open to using oral PrEP	Vaginal gel use was compared with PrEP which prevented the main focus of PrEp to answer the EBP	Good quality with consistent evidence and recommendations based on the intervention that was performed

Appendix 3

Project Tools






Having Sex? Let's Talk About PrEP!
#LetsTalkAboutPrEP
letstalkaboutprep.com

Appendix 4

Project Consent

TITLE OF STUDY: An Intervention to Increase Uptake of Pre-exposure Prophylaxis in women at risk for HIV

Principle Investigator: Ashley Attah-Mensah RN, BSN

Hello! I am a doctoral graduate student at Rutgers School of Nursing. As part of my final project for the Doctor of Nursing Practice program, I am directing a quality improvement project.

Purpose of the Study:

This intervention to educate the staff at the testing and counseling center about the importance of women utilizing PrEP. Staff will be asked about their knowledge and attitude concerning PrEP. The purpose of this is to increase the number of referrals from the PrEP counselor and yield results that will promote health and life in women at risk for HIV. The aim of the project is health promotion and prevention for HIV that continues to be the main focus of the disease process. This can be achieved by educating the HIV counselors at [redacted] how to identify at risk women for PrEP.

What is PrEP? Pre-exposure prophylaxis (PrEP) is indicated for people at very high risk for HIV. They take a once daily pill to lower their chances of getting infected. PrEP can stop HIV from spreading throughout your body.

What will be done?

After completing the informed consent, you will partake in an educational session at the proposed scheduled date from 11:30-12:30pm. Prior to the session, you will be asked to complete a pre-test assessing your current knowledge, attitude and experience about identifying women at risk for HIV

One month following the lunch and learn, I will ask you to complete a posttest evaluating your knowledge, attitude and evaluation of how useful the session was to your encounters with women a risk for HIV.

Participation in this study is completely voluntary.

Risks or Discomforts:

As a healthcare provider and staff member, there is no risk to your participation in this study.

Benefits of this Study:

Benefits include a better understanding of identifying at risk women and referring them to the PrEP counselor. Job satisfaction can increase because with a better understanding, participants will be more confident in their role. However, these benefits cannot be guaranteed.

Confidentiality:

Your responses will be kept confidential. Personal identifiers are not included in this study.

Compensation:

There will be no cost or compensation to the participants and the lunch will be provided for the educational session. Participants will be able to keep all handouts

distributed during the session. The total time commitment will be an estimate of one hour during the session.

Withdrawal:

Your participation is voluntary. You are free to withdraw your participation from this study at any time without penalty.

How the findings will be used:

The results of the study will be used for the purpose of quality improvement. This includes a better understanding of how to refer women at risk for HIV to the PrEP counselor and better methods to educate women about PrEP. The results may be published in a peer reviewed journal or presented in other ways for the purpose of improving best practices.

Contact Information:

If you have concerns or questions about this study, please contact the principle investigator, Ashley Attah-Mensah at [redacted] or via email at [redacted], or the chair member of this project Dr. Suzanne Willard via email at sw488@sn.rutgers.edu .

If you have questions about your rights as a research subject, please contact the IRB Director at 973-972-3608.

Prior to participating in the lunch and learn session, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

Staff Signature: _____Date: _____

Appendix 5

Recruitment flyer

WOMEN AND PREP: LUNCH & LEARN

WHEN

THURSDAY MARCH 7, 2019 12-1PM

WHERE

[redacted]

CONFERENCE ROOM

NEWARK, NJ

CONTACT · [ASHLEY ATTAH-MENSAH] · [redacted]

ALL CLINICIANS: HIV COUNSELORS, RNS, APNS, MA'S

PURPOSE:

promote health and life in women at risk for HIV, identify women at risk for HIV, refer women at risk for HIV to the PrEP counselor

CONSENT REQUIRED

Lunch Provided
Pre-test following education on women & PrEP and posttest one month after session

WE PrEP TOGETHER

Rutgers, The State University of New Jersey

Appendix 6

PreTest, Post Test, Evaluation

Women and PrEP: Lunch & Learn

Pre-Test

How do you identify? (circle all that apply)

1. Are you from a Spanish speaking country? Yes/No
2. What is your race?

- ❖ American Indian
- ❖ Alaska Native
- ❖ Asian
- ❖ Black or African American
- ❖ Hispanic or Latino
- ❖ Native Hawaiian or Pacific Islander
- ❖ White
- ❖ Other:_____

Gender

To which gender do you identify?

- ❖ Male
- ❖ Female
- ❖ Transgender male
- ❖ Transgender female
- ❖ Intersex
- ❖ Choose not to answer

What is your job title at NJCRI?

_____

- ❖ How many years have you worked as a clinician at NJCRI?
  <1 2-4 5-10 >10

- ❖ How often do you perform STD testing and counseling on women?
  Always Often Sometimes Rarely Never

Evaluation (After educational session)

1. Material

Clarity: Points made clearly and without unnecessary detail?

Excel Very Good Good Fair Poor

Sequence: Points presented in logical easy-to-follow sequence?

Excel Very Good Good Fair Poor

Coverage of subject: Excel Very Good Good Fair Poor

The material presented indicated the speaker's knowledge and understanding of the subject was:

Deep Broad Adequate Superficial

Remarks

……
……

……
……

……
……

2. Presentation

Did the speaker look at audience and maintain contact with them?

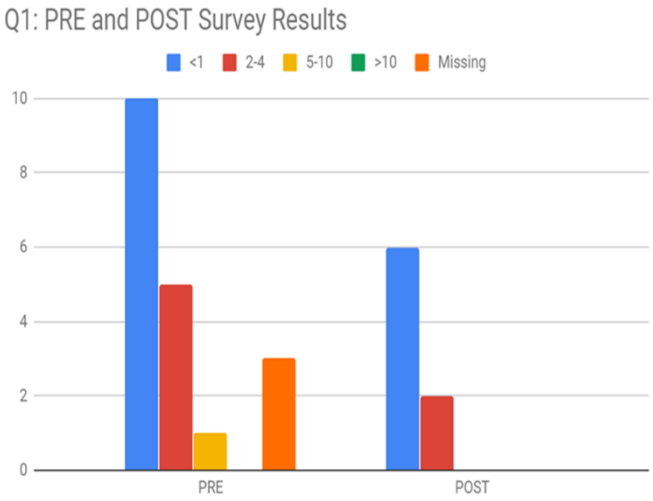
During talk: Yes No

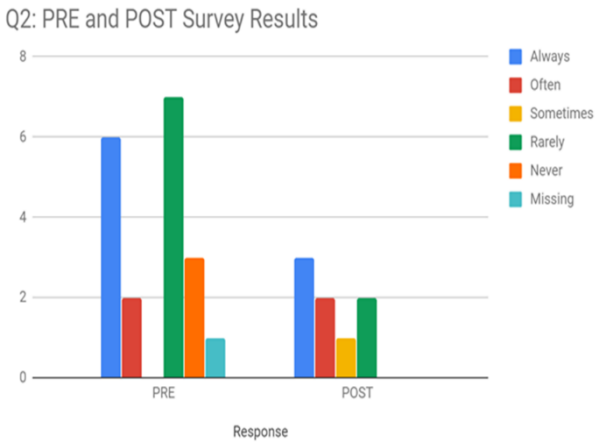
When using visual aids: Yes No

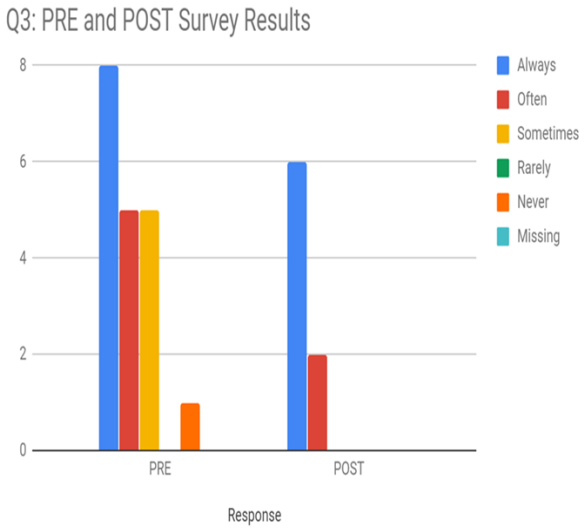
Voice:

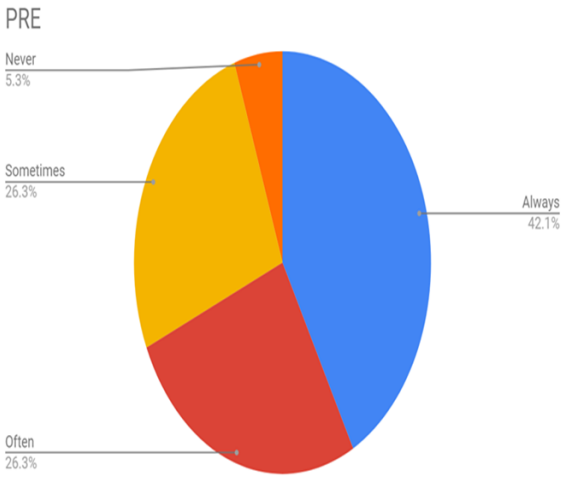
Appendix 7

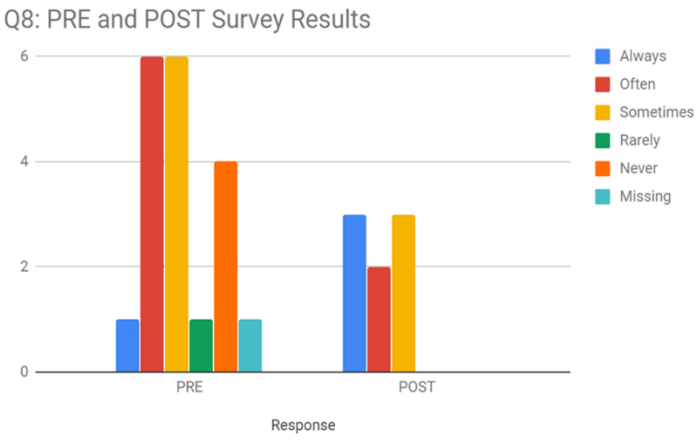
Charts and graphs

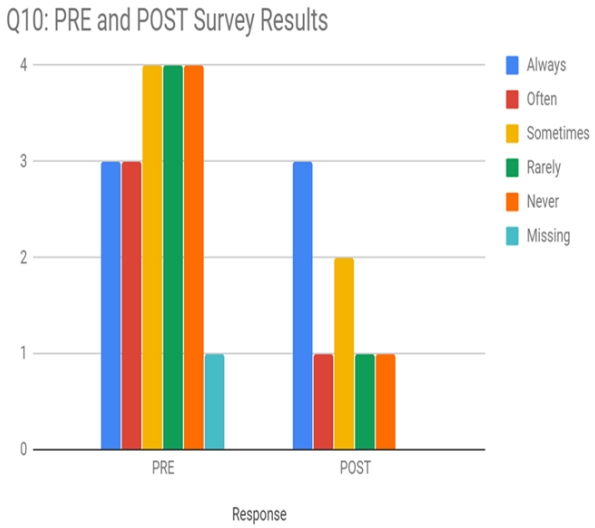


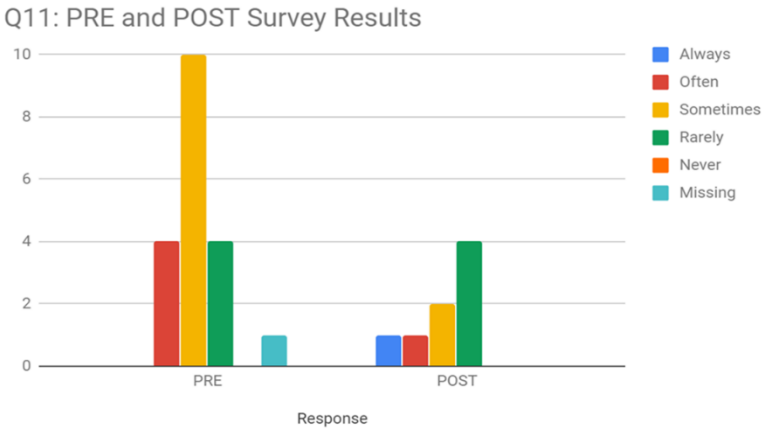







Q8: PRE and POST Survey Results
6
4
2
0
PRE
POST
Response
Always
Often
Sometimes
Rarely
Never
Missing


Q10: PRE and POST Survey Results
4
3
2
1
0
PRE
POST
Response
Always
Often
Sometimes
Rarely
Never
Missing


Q11: PRE and POST Survey Results
10
8
6
4
2
0
PRE
POST
Response
Always
Often
Sometimes
Rarely
Never
Missing