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Factors Influencing PrEP Interest among Women at Community Family Planning Clinics in Georgia

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Abstract

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Abstract

Background: According to the Georgia Department of Public Health, Atlanta, a major city in Georgia, ranked 5th in the nation for new HIV diagnosis. Furthermore, Atlanta, a major city in Georgia also ranked 5th in the nation for new HIV diagnosis. HIV can be prevented through the use of a medication called Truvada™, also known as Pre-Exposure Prophylaxis (PrEP). Previous research suggests that we also need to understand the integration of PrEP delivery within reproductive healthcare services, providing opportunities to optimize this prevention strategy for women. Guided by the Diffusion of Innovations theory (DOI), we assessed the association of age, race, ethnicity, clinic location, STI history, condom use, and provider conversation about PrEP on women's interest in and their potential uptake of PrEP, **Methods:** Participants (n=500) were recruited from four public family planning community clinics in Atlanta, Georgia. Eligible participants identified as female, were HIV negative, over the age of 18, and not pregnant at the time of the study. A binary logistic regression was conducted to determine which factors were significantly associated with PrEP interest using 4 measures of interest, and 7 predictor variables (age, race, ethnicity, clinic location, STI history, condom use, provider recommendation). **Results:** Provider recommendation was a significant predictor of PrEP interest. Furthermore, in general, participations who talked to their provider about PrEP had greater odds of becoming interested in taking PrEP, learning more about PrEP, and going to the PrEP clinic to start PrEP. Clinic location was also a significant predictor of PrEP interest. Particularly, those located at clinics closer to a PrEP clinic, had greater odds of becoming interested in taking PrEP, learning more about PrEP, and going to the Fulton County PrEP clinic to start PrEP. **Conclusion:** Public heath professionals and providers should work together to seek interventions to integrate PrEP into local committee clinics, combining provider recommendation and easier access to PrEP.

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Factors Influencing PrEP Interest among Women at 4 Community Family Planning Clinics in Georgia

According to the Centers for Disease Control and Prevention (CDC), in 2016, women made up 19% (7, 529), of the 39,782 new HIV diagnosis on the United States (CDC, 2018). Heterosexual intercourse accounted for the majority (87%) of HIV diagnosis among all women (CDC, 2018). Among all women who received an HIV diagnosis, 61% (4,560) were African American/Black, 19% (1,450) were white, 16% (1,168) were Hispanic/Latina, and 5% (351) were other (CDC, 2018). In regard to AIDS diagnosis, women accounted for 24% (4, 271) of the 18,160 AIDS diagnoses in 2016 (CDC, 2018). HIV diagnosis is not evenly distributed across regions (CDC, 2018). Southern states make up more than half of new HIV diagnoses in 2016, while also accounting for 38% of the national population (CDC, 2018).

In 2016, Georgia was ranked number 5 by the CDC, as a state with the highest number of HIV diagnosis at 2, 716 (CDC, 2018). According to AIDSVu, the rate of people living with diagnosed HIV in 2014 per 100,000 people was 564, with 25% being women (AIDSVU, 2018). The rate of Hispanic/Latina women living with and HIV diagnosis is 3.8 times that of white females (AIDSVu, 2018); the rate of black females living with HIV diagnosis is 12.6 times that of white females (AIDSVu, 2018).

According to the Georgia Department of Public Health (GPDH), Atlanta, a major city in Georgia also ranked 5th in the nation for new HIV diagnosis (GPDH., 2018). According to AIDSVu (2018), in 2015 20% of those living with diagnosed HIV were women. In Atlanta, the rate of Hispanic/Latina females living with HIV diagnosis is 4 times that of white females (AIDSVu, 2018). The rate of black females living with an

HIV diagnoses is 14.1 times that of white females (AIDSVu, 2018). For women, the majority (56%) of HIV infection is from heterosexual contact, while 8.5% is from drug use, and 35.5% comes from other, which includes hemophilia, blood transfusion, perinatal exposure, and risk factors that were not reported or not identified (AIDSVu, 2018). According to Aniz, a non-profit organization dedicated to decreasing AIDS disparities, approximately 3,000 youth (ages 13-24) in Atlanta have been diagnosed with HIV in the last 5 years (ANIZ, 2017). In 2015, the number of deaths of people diagnosed with HIV in Atlanta was 373 (AIDSVu, 2018).

HIV can be prevented through behavioral practices such as condom use, abstinence, and most recently the use of a medication called Truvada™, also known as Pre-Exposure Prophylaxis (PrEP). According to Truvada's official site (2017), PrEP is a combination of two HIV medicines (tenofovir and emtricitabine). It is sold under the name Truvada™ and is approved for daily use, to help prevent an HIV-negative person from getting HIV from a sexual or injection-drug-using partner who is positive (Truvada.com, 2018). PrEP has proven to be a highly effective method for HIV prevention if taken correctly. Among men that have sex with men (MSM), of those who take PrEP pills daily, their estimated level of protection is 99% (men.prepfacts.org., 2018). MSM who take 4 PrEP pills per week, have an estimated level of protection of 96% (men.prepfacts.org., 2018). MSM who take 2 PrEP pills per week, have an estimated level of protection of 76% (men.prepfacts.org., 2018).

Although PrEP has been proven effective, there are a multitude of reasons why people decide not to take PrEP. Cost, is primary concern influencing decisions to take PrEP. In most cases PrEP is only available to those that are insured (men.prepfacts.org.,

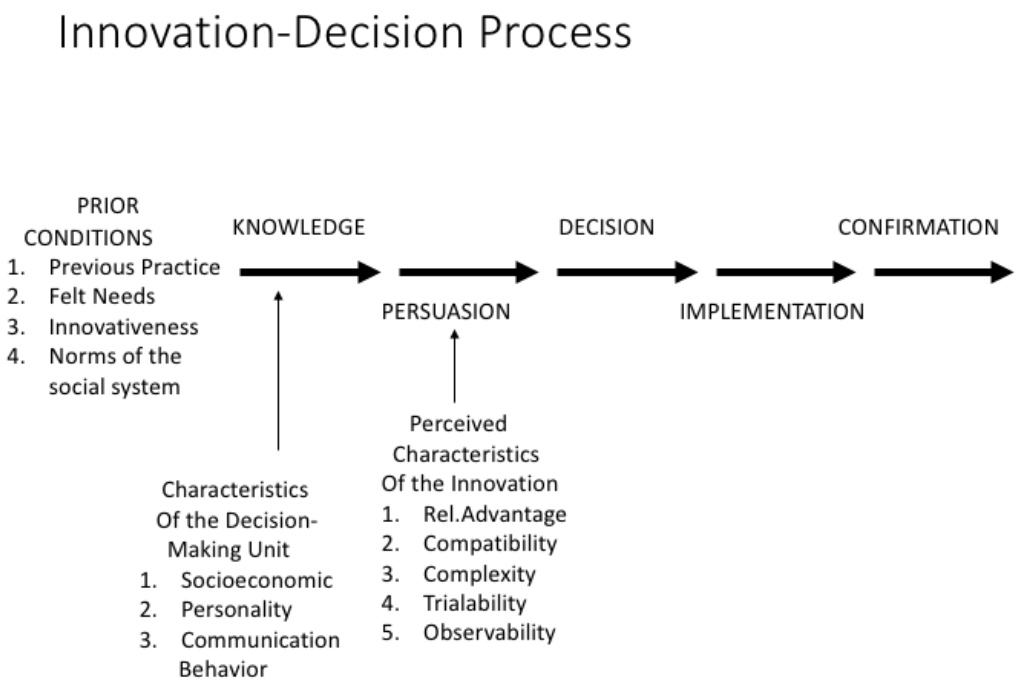
2018). If uninsured, PrEP out of pocket cost can be as high as $13,000 per year (Truvada.com, 2018). For those with government insurance such as Medicaid, coverage varies from state to state (Truvada.com, 2018). Accessibility, is another reason many people are unable to start PrEP. Sites such as greaterthan.org, have made finding PrEP clinics easier, however for those in low-income neighborhoods who may not have access to consistent internet usage, finding a location that offers PrEP may be difficult. As with many medications, PrEP has side effects. In some cases, these side effects can include: kidney problems, bone pain, change in body fat, and changes in your immune system. These side effects can deter individuals from taking PrEP (Truvada.com, 2018; men.prepfacts.org., 2018). Lastly, PrEP is most effective when adhering to the regimen. Adherence to PrEP has made it difficult for individuals to continue consistently (Truvada.com, 2018). All of these factors whether alone or in congruence with each other play a role in an individual's decision to become interested in and eventually uptake PrEP, which could cause a decrease in contraction of HIV.

There has been a substantial amount of research dedicated to understating PrEP among MSM, primarily because this population is affected most by HIV (Kandathil, S. M., 2011). However, previous research suggest that we also need to understand the integration of PrEP delivery within reproductive healthcare services, providing opportunities to optimize this prevention strategy for women (Kandathil, S. M., 2011; Eaton, L. A., Matthews, D. D., Driffin, D. D., Bukowski, L., Wilson, P. A., & Stall, R. D., 2017; Collier, K. L., Colarossi, L. G., & Sanders, K., 2017). The present study hopes to fill this gap. Guided by the Diffusion of Innovations theory (DOI), we assessed the

association of age, race, ethnicity, clinic location, STI history, condom use, and provider conversation about PrEP, on women's interest in and the potential uptake of PrEP.

DOI, developed by E.M. Rogers in 1962, is one of the oldest social science theories. It began in the field of communications to describe how, over time, an idea or product gains energy and spreads through a specific population or social system. The conclusion of this spread is that people, as part of a social system, adopt a new idea, behavior, or product (Leonard-Barton, D., 1995) The uptake of a new idea or behavior does not happen at one time, but in a process where some people are more likely to adopt than others. Within the DOI is an individual's decision-making process, this process describes the steps that many individuals undergo, prior to the uptake of a new behavior or innovation. Parts of the innovation decision making process include: Prior Conditions, Knowledge, Persuasion, Decision, Implementation, and Confirmation. (See graph 1.1).

Graph 1.1: DOI Innovation-Decision Process



The present study was guided by the knowledge component of the innovation decision making process, to assess the question: How is the adoption of PrEP usage among, women ages (18-69), from four community clinics in Georgia, influenced by characteristics of potential female users (i.e. age, race, ethnicity, STI history, condom use, clinic location, and provider conversation/input)? HIV is a significant public health problem, affecting those from varying backgrounds. The present study focused on women in particular, and the factors that influence their interests in the HIV prevention strategy, PrEP.

Chapter 2: Literature Review

Factors that influence women's overall sexual health decisions could play a major role in their interest and eventual uptake of PrEP. Kline and colleagues (1992) used qualitative focus-group methodology to explore the bases of sexual decision making among minority women at high risk for HIV. Findings suggest that women often were assertive and retained substantial power with respect to sexual decision making. Sexual decision can be influenced by a variety of external factors. Jackson (2017) examined issues affecting sexual decisions and found that women perceived lack of education and limited access to healthcare, due to socioeconomic status and rising healthcare cost as contributing factors to the sexual decisions of women (S. Jackson., 2017).

For the purposes of this literature review, we examined age, race, ethnicity, STI history, condom use, and provider input, on uptake in practices. Understanding how these factors influence decisions to start or become interested in a new prevention

practice/product, could help researchers understand women's reasons to become interested in PrEP.

Age and Uptake of New practices

Age can have a considerable impact on the uptake of new practices. From integrating new technology into everyday life, to starting a new health behavior that decreases the risk of obtaining a disease. Age has been studied widely among researchers in regard to the influence it has on the uptake of new procedures, practices, and behaviors across a plethora of topics. Morris and Venkatesh (2000), studied the influence of age differences in the adaptation of new technology in the workforce. Using the Theory of Planned Behavior (TPB), researchers found that at two points of measurement, younger workers' technology usage was more strongly influenced by attitude, on the other hand older workers were more strongly influenced by subjective norm which refers to the social pressure acquainted with performing the new behavior. In addition, older workers were influenced by perceived behavioral control, which refers to their personal perception of the ease or difficulty of performing a new behavior. Both age groups yielded no significant difference in subjective norm when it came to long-term usage decisions. Results were consistent even after controlling for potential confounding variables such as income, occupation, and education. This study illustrates the influence age can have on integrating new workplace practices, and how certain practices may need to be tailored for the correct age group, in order to optimize uptake and long-term use. Age has also been shown to have an influence on the uptake of contraceptive methods such as birth control. Tavrow and colleagues (2012) assessed the uptake of contraceptive

methods after an abortion. Extracted from detailed physician notes of 1, 080 abortion clients in 2006, all clients received confidential family planning, counseling, and were offered a complete range of contraceptives at no additional cost. Prior to the abortion, no client aged 10–18 years reported having used contraception, as compared to 60% of clients aged 27–46 years. After the abortion and family planning counselling session, only 6% of clients aged 10–18 chose a method (Tavrow, P., Withers, M., & McMullen, K., 2012). These findings exemplify that, among many factors, "youth-friendliness" is not sufficient to overcome social barriers related to contraceptive uptake (Tavrow, P., Withers, M., & McMullen, K., 2012). This study illustrated the vast differences among age groups, and the need to possibly adjust counseling sessions to be age appropriate, in order for younger women to note the importance of uptake of contraceptives.

Research on age and influence on uptake in practices varies among results. Steinmets-Wood and colleagues (2017), examined the influence of age on smoking initiation and cessation. Among data drawn from 1,450 young adults participating, it was found that although other factors such as social norms, education level, and employment level contributed to uptake of smoking, age was not significant (Steinmetz-Wood, M., Gagné, T., Sylvestre, M., & Frohlich, K., 2017). Similarly, Walker and colleagues (2011), examined the influence of age on the hypothetical uptake of male hormonal contraceptives (male birth control). A total of 54 men and 134 women were surveyed on their attitudes towards 'male birth control'. The acceptability of a male pill was high, with just under half (49.5%) of the respondents indicating that they would use it. Gender, length of relationship, age and educational achievement did not affect the reported acceptability (Walker, S., 2011).

In regard to PrEP, Marcus and colleagues (2016) examined the disparities in PrEP uptake in the healthcare system. PrEP users were those who initiated PrEP after the US Food and Drug Administration (FDA) approval. They identified 235 HIV seroconverters and 972 PrEP users. Seroconverters were significantly younger than PrEP users (Marcus, J. L., Hurley, L. B., Hare, C. B., Silverberg, M. J., & Volk, J. E., 2016). Results suggest that there may be substantial age differences between individuals initiating PrEP and the underlying population at risk for HIV infection, even in a setting with comprehensive access to health care (Marcus, J. L., Hurley, L. B., Hare, C. B., Silverberg, M. J., & Volk, J. E., 2016). However, Grov and collaborators (2015) examined willingness to take PrEP among 206 high risk active gay and bi-sexual men; age along with other social factors were not significantly associated with willingness to take PrEP (Grov, C., Whitfield, T. F., Rendina, H. J., Ventuneac, A., & Parsons, J. T., 2015). The results of this study exemplified that there was an equal acceptability and willingness to take PrEP among populations that are experiencing disparities in HIV incidence (Grov, C., Whitfield, T. F., Rendina, H. J., Ventuneac, A., & Parsons, J. T., 2015).

Previous research on age and the influence of the uptake of practices ranging from technology to PrEP has been inconsistent. The influence of age on uptake and interest in PrEP among women in Georgia has not been studied. Therefore, the present study will examine the influence of age on PrEP, along with other social and behavioral factors.

Ethnicity/Race and Uptake of New Practices

There are varying external factors that play a role in how ethnic/racial groups differ in the uptake in practices. Factors include access, education, trust of the medical

community, among other reasons. Keenan and colleagues (2012), assessed the influence of race on the uptake of the human papillomavirus vaccine (HPV). Participants consisted of 2,098 girls between the ages of 15-18, and their primary caregivers, who were asked about uptake. Results indicated that being African-American decreased the likelihood of uptake of the vaccine; furthermore, controlling for receipt of public assistance, African-American girls were close to 40% less likely to be vaccinated than white girls (Keenan, K., Hipwell, A., & Stepp, S., 2012). Results suggest that racial disparities in prevention interventions such as HPV exists (Keenan, K., Hipwell, A., & Stepp, S., 2012). Consistent with the previous study, Kuhns and colleagues (2017), assessed the association of race and the use of PrEP in young men who have sex with men (YMSM). A total of 394 YMSM, were recruited over the course of two years, correlates of PrEP uptake were assessed in multivariable logistic regression models (Kuhns, L. M., Hotton, A. L., Schneider, J., Garofalo, R., & Fujimoto, K., 2017). African-American YMSM had the lowest rates of PrEP uptake at 4.7%, while white YMSM had the highest rates at 29.5%. Furthermore, in a multivariable regression model, having an HIV positive sex partner, reporting recent group sex, peer network size, and city (Chicago) were significantly and positively associated with use of PrEP, while Black race was negatively associated with it (Kuhns, L. M., Hotton, A. L., Schneider, J., Garofalo, R., & Fujimoto, K., 2017). Continuing the pattern, as the previously mentioned studies, Ojha and colleagues (2015) assessed the impact of vaccine concerns on racial/ethnic disparities in regard to influenza vaccine uptake. Researchers explored whether concerns about safety, effectiveness, and the need of influenza vaccine mediate racial/ethnic disparities in vaccine uptake among health care workers (Ojha, R. P., Stallings-Smith, S., Flynn, P. M.,

Adderson, E. E., Offutt-Powell, T. N., & Gaur, A. H., 2015). Results of the web-based survey yielded that non-Hispanic blacks had lower influenza vaccine uptake than non-Hispanic whites (Ojha et. al, 2015). Hispanics and Asians had moderately lower uptake than non-Hispanic Whites, also mediated by high concern about influenza vaccines (Ojha et. al, 2015). The aforementioned studies exemplify the need for education and risk assessment interventions that address racial/ethnic disparities among groups.

Race/ethnicity has been broadly studied in regard to the uptake of new practices. Although many studies have identified a significant association between race/ethnicity and uptake of new practices, not all research is consistent with these findings. Rosenthal and colleagues (2008), examined the uptake of the HPV vaccine by different demographic and psycho-social factors. Among the sample of 153 mothers, with daughters ages 11-17, who completed the questionnaire, results yielded those mothers who had less than a high school degree, had a history of a sexually transmitted infection, supervised their daughter more when she was with peers, and whose daughter would not mind three shots were more likely to be favorable about their daughter being vaccinated (Rosenthal, S. L., Rupp, R., Zimet, G. D., Meza, H. M., Loza, M. L., Short, M. B., & Succop, P. A., 2008). Race/ethnicity was not significantly associated with their attitudes towards the uptake of the HPV vaccine (Rosenthal, S., et. al 2008). Similarly, Zimet and colleagues (2005), assessed parental attitudes concerning sexually transmitted infection vaccination for adolescent children. Using computer-based questionnaires among a sample of 278 parents, results yielded race/ethnicity was not significantly associated with uptake of the hypothetical STI vaccine (Zimet, G. D., Mays, R. M., Sturm, L. A., Ravert, A. A., Perkins, S. M., & Juliar, B. E., 2005).

Due to varying results regarding race/ethnicity, future research should focus on race/ethnic in regard to the uptake in any type of new practice. The present study will address the influence of race and ethnicity on women's interest in PrEP, in GA.

Health History and Uptake of New Practices

Individual health history can have an effect on level of interest in a new practice (Eaton, L. A., Matthews, D. D., Driffin, D. D., Bukowski, L., Wilson, P. A., & Stall, R. D., 2017). Eaton and colleagues (2017), examined the factors influencing the uptake of PrEP among black MSM. Results indicated that those that had a history of testing for HIV, were more aware of and interested in PrEP (Eaton et. al, 2017). Similarly, Kimber and colleagues (2008) studied predictors of drug treatment and referral uptake. Results indicated that among the 3,175 injecting drug users (IDUs), those that had a history of visiting the Medically Supervised Injecting Centre (MSIC) were 9.4 times more likely to have an uptake of what in referrals than those who had infrequent visits (Kimber, J., Mattick, R. P., Kaldor, J., van Beek, I., Gilmour, S., & Rance, J. A., 2008). The previous studies indicate that health history can play a role in the decision to engage or become interested in a new behavior.

History of a sexually transmitted infection (STI) has shown to be inconsistent in regard to the uptake in behaviors such as HIV testing, condom use, and PrEP among varying populations. DeMaria and colleagues, (2013) examined the association between STI's and contraceptive compliance among 1,015 women (DeMaria, A. L., Lugo, J. M., Rahman, M., Pyles, R. B., & Berenson, A. B., 2013). Results indicated no significant association between STI's and contraceptive compliance. However, Holloway and

colleagues (2017), examining PrEP uptake, adherence, and discontinuation among YMSM, results yielded that those who had a recent STI diagnosis were 2.9 times more likely to uptake PrEP use, compared to those who had not had a recent STI diagnosis (Holloway, I. W., Dougherty, R., Gildner, J., Beougher, S. C., Pulsipher, C., Montoya, J. A., & Leibowitz, A., 2017). This research indicates that history of an STI can play a role in an individual mindset regarding their risk of obtaining other infections such as HIV, which may contribute to uptake of new prevention tools like PrEP.

Previous research suggest that health history may or may not have an influence on individual uptake of a new practice. Previous studies have not addressed the influence of history of STI in women's interest in using PrEP. Research suggest that in many cases after becoming infected more than once, individual level perceived barriers were decreased, and women felt more empowered and begin to care more about their own health outcomes, which could result in the uptake of new prevention methods such as PrEP (Craft-Blacksheare, M., Jackson, F., & Graham, T. K., 2014). In some cases, an individual having a history of an STI could influence his/her future health decisions.

Condom Use and Sexual Health Decisions

Condom use can play a major role in preventing the contraction of HIV/AIDS and other STI's. However, in some cases negotiating condom use may be difficult for women and play a role in their inability to use condoms. Previous research outlines that women who feel that their partner is engaging with other sexual partners were more likely to negotiate condom use with their sexual partner (Crosby, R. A., DiClemente, R. J., Salazar, L. F., Wingood, G. M., McDermott-Sales, J., Young, A. M., & Rose, E., 2013).

Additionally, women who had more than one sexual partner themselves, felt condom negotiation presented a high benefit, in order to protect themselves and their partner (St. Lawrence, J. S., Wilson, T. E., Eldridge, G. D., Brasfield, T. L., & O'Bannon, R. I., 2001). Overall themes in the benefits of condom negotiation were the justification of multiple sexual partners, and the protection from diseases such as HIV/AIDS and STI's (St. Lawrence, J. S., Wilson, T. E., Eldridge, G. D., Brasfield, T. L., & O'Bannon, R. I., 2001; Crosby et. al 2013). Barriers to condom negotiation use can be physical, psychological, social or financial. In regard to negotiation of condom usage, barriers range from partner abuse, access to condoms, fear, and trust issues within the relationship (Wingood, G. M., Hunter-Gamble, D., & DiClemente, R. J., 1993). Sales and colleagues (2012) assessed the reasons why African American women do not change their condom negotiation behaviors after participation in an STI/HIV intervention due to a variety of barriers (Sales, J. M., DiClemente, R. J., Davis, T. P., & Sullivan, S., 2012). Some women reported engagement in substance use, which impacted their ability to discuss condom usage during the moment. The study also discussed women experiencing individual level barriers such as no condom present, stubbornness, and even having a low self-esteem. Furthermore, the study results show that many partners got defensive when the women introduced the thought of using a condom. The study also pointed out that women who may have been in relationships with older, controlling male partners were less likely not to negotiate condom usage. Individuals who desired to have a child, were also less likely to attempt to negotiate condom usage with their sexual partner. Additionally, in a separate study, researchers examined African American heterosexual women's explanations for recurrent chlamydia, using HBM (Craft-Blacksheare, M.,

Jackson, F., & Graham, T. K., 2014). As similar to the previous study, women felt barriers to negotiations of condom use, was their partner attitudes towards condoms, and fear they would lose their significant other (Craft-Blacksheare, M., Jackson, F., & Graham, T. K., 2014). Consistent with previous findings trust within the relationship and conflict avoidance were two of the top perceived barriers with negotiation condom usage (Hall, D., 2013).

Partner abuse and lack of overall control in the relationship, have also shown to have a significant impact on the ability for the woman to negotiate condom use. Researchers examined intimate partner violence (IPV) and engagement in risky sexual behaviors (Seth, P., Wingood, G. M., Robinson, L. S., Raiford, J. L., & DiClemente, R. J., 2015). Results indicated, that women who had higher levels of IPV were more likely to have inconsistent condom usage (Seth, P., Wingood, G. M., Robinson, L. S., Raiford, J. L., & DiClemente, R. J., 2015). Women in abusive relationships may be unable to utilize their communication skills, due to fear of their abusive partner (Seth, P., Wingood, G. M., Robinson, L. S., Raiford, J. L., & DiClemente, R. J., 2015). In congruence with the previous study, researchers examined the impact of a history of abuse on current HIV/STD behaviors (Brown, J. L., Young, A. M., Sales, J. M., DiClemente, R. J., Rose, E. S., & Wingood, G. M., 2014). The results yielded women with a history of abuse were less likely to negotiate condom use, therefore increasing their chances of experiencing HIV/AIDS or an STI (Brown, J. L., Young, A. M., Sales, J. M., DiClemente, R. J., Rose, E. S., & Wingood, G. M., 2014).

Overall, research suggests perceived barriers play a major role in some women's ability to negotiate condom use with their sexual partner. Barriers can be individual or

physical. Women, that view negotiating condom usage as problematic, were less likely to use condoms, resulting in an increased susceptibility of getting HIV/AIDS (Craft-Blacksheare, M., Jackson, F., & Graham, T. K., 2014; Raiford, J. L., Wingood, G. M., & DiClemente, R. J., 2007; St. Lawrence, J. S., Wilson, T. E., Eldridge, G. D., Brasfield, T. L., & O'Bannon, R. I., 2001).

Due to the perceived barriers some women face in negotiating condom use, this could result in a heightened interest in PrEP, because of the privacy and ability to use without partner approval. Although there has been previous research on the barriers to condom negotiation and how that can influence health decisions, the present study will examine the influence of condom use on women's interest in PrEP.

Provider Input and Sexual Health

Provider recommendation can influence uptake of new practices. Various studies have outlined the influence of provider recommendation and the uptake of the HPV vaccine. Galbraith and colleagues (2016), examined acceptance and uptake of HPV among African American and Latinos in the United States. Results yielded that among Latinos vaccine acceptability was associated with the vaccine's cancer prevention benefits and a provider's recommendation. Among African Americans, acceptability was associated with awareness, perceived risk of acquiring HPV, religion, and a provider's recommendation (Galbraith et. al. 2016). Similarly, Rosenberg (2013), examined provider recommendation linkage to HPV vaccination among young U.S females, results yielded that all racial and ethnic groups who have received a recommendation from a health care provider to get vaccinated against HPV are more likely than others to initiate

the vaccine (Rosenberg, 2013). Provider input can be considered as an addition to knowledge when it comes to sexual health decision making of women. Previous literature is consistent in regard to the impact of provider recommendation and the uptake of HPV vaccines. Wilson and colleagues (2013), studied knowledge and acceptability of the HPV vaccine among ethnically diverse black women, the qualitative study found that provider recommendation of the vaccination was important for uptake (Rula et. al. 2013).

Understanding the impact of provider recommendation in women's sexual health decisions could help researchers understand ways to incorporate provider interventions, relaying the importance of certain health decisions, that could have a long-term impact on women's sexual health. Furthermore, in regard to PrEP, results suggest that family planning clinics may be a natural setting for PrEP discussion and roll-out. They should be considered in the context of integrating HIV prevention with reproductive health services (Garfinkel, D. B., Alexander, K. A., McDonald-Mosley, R., Willie, T. C., & Decker, M. R. 2017).

Location and Uptake

Location can play a role in uptake in new practices due to access individuals may have to the new practice. For instance, Polmanteer (2018), explored the geographic disparities in post-partum depression (PPD) using secondary data from the Pregnancy Risk Assessment Monitoring system (PRAMS), it was found that based on their practice experiences, social workers report that rural women can experience PPD differently due to lack of resources, access challenges, and isolation (Polmanteer, R. R., 2018). Similarly, Olorunsaiye (2016), looked into the relationship between individual and community

socioeconomic status (SES) and the quality of prenatal care and the location of childbirth (Olorunsaiye, C. Z., 2016). Among the sample of 24,718 women residing in six countries, results yielded that after adjusting for individual and contextual characteristics, residence in a poor community was associated with reduced odds of a woman receiving high quality prenatal care in six countries (Olorunsaiye, C. Z., 2016).

Location may have an effect on the access an individual has to a new practice. Previous research suggests that generally those in lower SES communities have a lower probability of receiving the best care and or prevention methods. The locations of certain clinics and attributes such as proximity to a PrEP clinic, distance from the nearest public transportation line, and cost of care can help researchers understand the qualities that may make a clinic a better location to provide PrEP or inform patients about PrEP. The present study will address clinic location, and the influence it may have on PrEP uptake among women at four community clinics in Georgia.

Women and PrEP.

PrEP has not been as widely studied in women as opposed to the MSM population. However, there are studies that examine attitudes, knowledge, and likelihood of PrEP use among women. Auerbach and colleagues (2014), found that many women (72%) had not heard or PrEP and expressed anger because they had not heard of the pill. The focus groups found that PrEP was viewed as additional, but not a substitute protection for condoms. Barriers identified to PrEP uptake included distrust, stigma, and cost. Additional barriers include perceived low risk due to having a stable partner, stages

of life such as attempting to conceive, and life events (Namey, E., Agot, K., Ahmed, K., Odhiambo, J., Skhosana, J., Guest, G., & Corneli, A. 2016).

Previous research has placed an emphasis on women's knowledge and attitudes towards PrEP, but there is a lack of research on what may cause women to become interested in PrEP. The present study will fill that gap assessing all the aforementioned factors at once, and if they are significantly associated with PrEP interest in women. With this knowledge, researchers could identify interventions geared towards the factors that have the greatest association with interest in PrEP, in order to increase interest and decrease disparities in this relatively new prevention technology.

Chapter 3: Methods

Study design was a cross sectional study. Institutional Review Board (IRB) was obtained prior to study onset.

Participants

Participants (n=500) were recruited from four public family planning community clinics in Atlanta, Georgia. Eligible criteria for participants were: being female, HIV negative, over the age of 18, and not pregnant at the time of the study. Study candidates were screened, in person, to assess eligibility, and if eligible, were asked to provide written consent and participate in a pre- and post-survey. Quantitative assessments of participants were conducted in a secluded area, away from other patients at the clinic, via a paper and pen survey. Exit (post-visit) questions were verbally asked by the research assistant to the participants. All participants enrolled were provided with $20 in cash, as compensation for their time.

Setting

Site 1: is a community-located, FQHC providing various services, including sexual health services, to predominantly African American patients residing in one of the poorest communities in Atlanta, GA. This family planning clinic provides comprehensive family planning services, women's reproductive services, STD screening (including Hepatitis B & C) and treatment, HIV testing and health education/counseling. In 2013, this clinic served over 5,000 clients; nearly all were African American and nearly 1/3 were 18-24 years of age. This clinic is served by OB/GYN physicians and residents, nurse practitioners, counselors, and health educators.

Site 2: is a hospital-based clinic providing comprehensive family planning services to the Atlanta metro area. Services include contraceptive counseling and supplies (e.g. intrauterine devices), pregnancy testing, HIV testing, STD testing, (including Hepatitis B & C), STD treatment, and health maintenance including cervical cancer screening, vaccinations, and routine exams. The clinic serves women 18-51 years of age. In 2010, 45% of clients (N=3,970) were 10-24 years of age; the vast majority (78%) were African American. Clients are predominantly of low socio-economic status (98% at or below 100% of the federal poverty level), uninsured (75%) or receive public assistance (22%).

Site 3: is a stand-alone family planning clinic, part of the largest comprehensive family planning service group, this clinic offers comprehensive family planning services such as abortion service, birth control, HIV testing, emergency contraception, STD testing and

treatment, and pregnancy testing. The median age of those in this zip code is 36, while the average income is 69,788, with 8.5% of people living below poverty level (census.gov).

Site 4: is the second-largest provider of sexual health services to young women in metro Atlanta. This clinic provides comprehensive family planning services, women's health/reproductive services, STD screening (including Hepatitis B & C), and treatment, and health education/counseling. The majority of clients (79%) were 14-29 years old; nearly half (46%) were African American.

Procedures

At each of the clinics where data collection occurred, as patients checked in, 1 of 2 research assistants approached them and stated the purpose of the study and asked if they would like to participate by stating: "Hi, my name is_____. I am a graduate student at Emory University working on a study about women's health and was wondering if you might be interested in participating? You would just need to complete a 5-10-minute survey before your appointment and a short 10-15-minute interview after your appointment. You would receive $20 for your time." If the patient replied "yes" the research assistant would screen them via the 4-question screener (*Appendix A*), and if eligible begin the process of study enrollment. Participants completed a total of 4 forms, after signing the consent form. The forms consisted of a release of medical records, a locater form, and a women's risk assessment. After their appointment was complete, participants completed an exit interview (*Appendix B*)

Measures

Independent Variables

Prior to going in for their visit, participants were asked to self-report their age, race, ethnicity, STI history and condom use. Age was assessed with the question: "How old are you?". Race was measured by asking: "What is your race?". Reponses options included: American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, White, and mixed race. Ethnicity was measured by asking the question: "Do you identify as Hispanic or Latina?". Response options were "yes or no". STI history was assessed with the question: "In the past year, have you tested positive for an STD (like chlamydia, gonorrhea, syphilis, trich, mycoplasma, herpes or genital warts)?" Answer responses were: Yes, No, and Not Sure/Not Tested. Condom use was measured by asking: "In the past 6 months, have you had either vaginal or anal sex with a male partner?" and if the participants selected "yes" they were asked the question: "If yes, how often did you use a condom when you had sex?" and the response options were: Never, Sometimes, or Always. Provider conversation was measured during the exit interview with the question: "During your visit today, did the doctor or nurse talk to you about a daily pill to prevent HIV – called PrEP or Truvada?" Answer response to this question were: Yes or No. Lastly clinic location was recorded by placing the clinic initial at the top of the participant form prior to beginning.

Dependent Variables

PrEP interest was measured using 4 questions on the exit interview. First, interest in PrEP was assessed by asking the question: "During your visit today, did talking to your doctor or nurse make you interested in taking PrEP?". Second, interest in learning more about PrEP was measured with the question: "During your visit today, did talking to your doctor or nurse make you interested in learning more about PrEP?". Next, interest in going to a PrEP clinic to start PrEP, was measured by the question: "During your visit today, did talking to your doctor or nurse make you interested in going to the Fulton County PrEP Clinic (or another PrEP clinic) to start PrEP?". Lastly, willingness to take PrEP was measured by the question: "If you could get PrEP at this (state name of clinic: Clinic 1, Clinic 2, Clinic 3, or Clinic 4), would you be more willing to take it?". All answer responses to the aforementioned questions were: 'Yes' or 'No'.

Data Analysis Plan

SPSS version 25 was used to analyze data. Data was cleaned by research assistants working on the study and checked by the principle investigator (PI) Descriptive statistics were used to calculate age, clinic location, race, ethnicity, condom use, STI history, and provider conversation. A binary logistic regression was conducted to determine which factors were significantly associated with PrEP interest using 4 measures of interest (During your visit today, did talking to your doctor or nurse make you interested in taking PrEP?"; "During your visit today, did talking to your doctor or nurse make you interested in learning more about PrEP?"; "During your visit today, did talking to your doctor or nurse make you interested in going to the Fulton County PrEP

Clinic (or another PrEP clinic) to start PrEP?; "If you could get PrEP at this (state name of clinic: Clinic 1, Clinic 2, Clinic 3, or Clinic 4), would you be more willing to take it?".. Level of significance used was p=.005.

Chapter 4: Results

Descriptive Statistics

A total of 500 women were surveyed across the four clinics. In regard to clinic location 18% (n=90) were surveyed at Clinic 1, 28.6% (n=143), were surveyed at Clinic 2, 28.2% (n=141) were surveyed at Clinic 3, and 25.2% (n=126) were surveyed at Clinic 4. The average age among the participants was 33.68 (SD= 12.93), with ages ranging from 18 years to 69 years old. Of the participants, in regard to the top two ethnicities, 65.4% (n=327) identified as African American, and 23.8% (n=119) identified as white, *(see table 1.1 for full breakdown demographics.*

Graph 1.1 Demographics

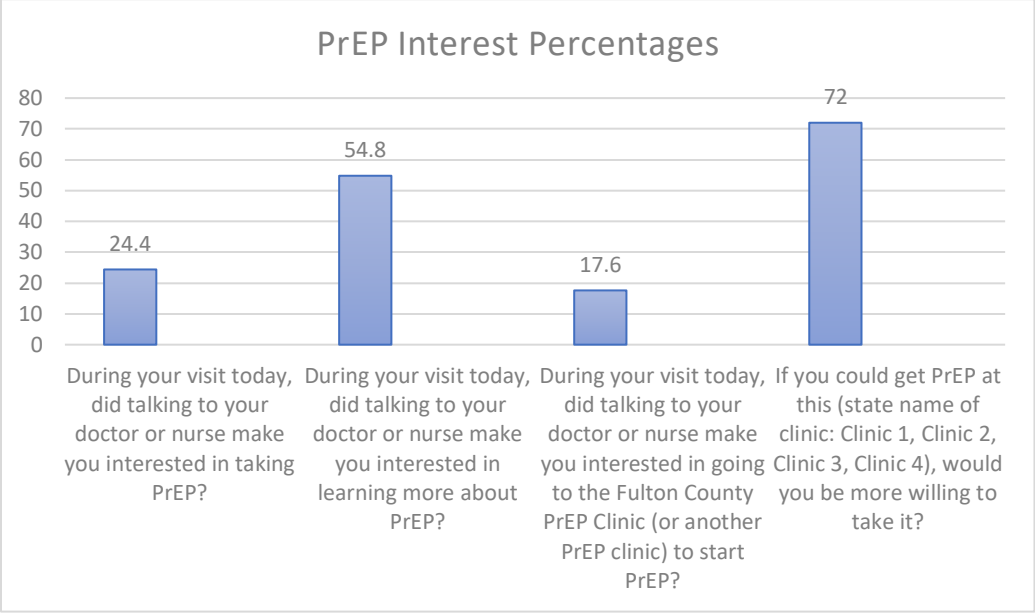
Characteristic	**Range, mean (SD)**
Age	18-69, 33.68
	N (%)
Race/Ethnicity	
Black or African American	327 (65.4)
White	119 (23.8)
Hispanic/Latina	49 (9.8)
Asian	14 (2.8)
American Indian or Alaskan Native	8 (1.6)
Native Hawaiian	1 (.2)
Multiracial	6 (1.2)
Missing	25 (5)
Clinic Location	

Clinic 1	90 (18)
Clinic 2	143 (28.6)
Clinic 3	141 (28.2)
Clinic 4	126 (25.2)

This graph represents the overall race/ethnicities of the participants from four community clinics in Metro-Atlanta, GA that were enrolled in the study.

In regard to condom use, 58.2% (n=291) indicated that they sometimes or never used a condom. Furthermore, 18.6% (n=93) indicated that they had a history of an STD. Of the participants, 42.4% (n=212) indicated that their provider or nurse talked to them about PrEP during their visit. Among participants, 24.4% (n=122) indicated they became interested in taking PrEP after talking to their provider/nurse, 54.8% (n=274) indicated they would like to learn more about PrEP, 17.6% (n=88) indicated they would be willing to visit the Fulton county PrEP clinic to start PrEP, and 72% (n=360), indicated that if the clinic they were currently receiving services from offered PrEP, they would be more willing to take it *(see graph 1.2).*

Graph 1.2: PrEP Interest Percentages



The graph above shows the percentages of participants that answered 'yes' to the four measures of PrEP interest.

Interest Measure 1: *During your visit today, did talking to your doctor or nurse make you interested in taking PrEP?*

A logistic regression analysis was conducted to predict patient in interest in taking PrEP. Age, ethnicity, race, STI history, condom use, clinic location, and provider conversation about PrEP were included in the model as predictors. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between those interested and not interested in taking PrEP (chi-square=53.275, df=13, p<.001).

The Wald criterion demonstrate that age was a significant predictor in regard to patent interest in taking PrEP (p=.015). Specifically, for each unit increase in age, there is

a .03 decrease in odds of being interested in taking PrEP (AOR = .971; CI= .948, .994; p=.015). Clinic location was a significant predictor of patient interest in taking PrEP (p=.003). Women that received care from community clinic number 2, were 3.286 times more likely to become interested in taking PrEP, compared to women at community clinic 4 (AOR= 3.286; CI= 1.467, 7.361; p=.004). Lastly, provider conversation about PrEP was deemed significant. Specifically, the odds of a patient becoming interested in PrEP were reduced compared to those who did not talk to their provider about PrEP (AOR=. 228; CI=.133, .389; p<.001). STI history (p=.370), condom use (p=.143), race (p=.995), and ethnicity (p=.309), were not significant predictors to determine interest in taking PrEP.

Interest Measure 2: *During your visit today, did talking to your doctor or nurse make you interested in learning more about PrEP?*

A logistic regression analysis was conducted to predict patient interest in learning more about PrEP, for patents that visit these clinics in Georgia. Age, clinic location, race, ethnicity, and provider recommendation, condom use, and STI history were included in the model as predictors. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between those interested and not interested in learning more about PrEP (chi-square= 65.819, df=13 p<.001).

The Wald criterion demonstrated that clinic location was a significant predictor of patient interest in PrEP (p=.016). Specifically, patients at clinic 2 were 2.913 times more likely to be interested in talking to PrEP (AOR= 2.913, CI=1.405, 6.042; p=.004), than

patients at community clinic 4. Provider conversation about PrEP was also deemed significant. Specifically, those who did not have a conversation with their provider about PrEP had reduced odds to become interested in PrEP (AOR=.196; CI=.120, .321; p<.001), compared to those that did. Age (p=.220), STI history (p=.292), condom use (p=.175), race (p=.546), and ethnicity (p=.557), were not significant predictors of patient interest in PrEP.

Interest Measure 3: *During your visit today, did talking to your doctor or nurse make you interested in going to the Fulton County PrEP Clinic (or another PrEP clinic) to start PrEP?*

In order to assess if age, race, ethnicity, provider conversation, condom use, STI history and location were significant predictors of women attending 4 Georgia clinics to become interested in going to the Fulton County PrEP clinic to start PrEP, a logistic regression was conducted. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between those interested and not interested in going to the Fulton County PrEP clinic or another PrEP clinic to start PrEP (chi-square 42.286, df-13, p<.001).

The Wald criterion demonstrate that condom use was a significant predictor for patient interest to start PrEP at a local PrEP clinic. Specifically, patients that never or sometimes used a condom were 2.019 times more likely to become interested in starting PrEP at a local PrEP clinic (AOR= 2.019; CI=1.122, 3.633; p=.019). Clinic location was also significant among patients (p=.001). Patients that received care from community clinic 1, were 2.727 times more likely to be interested in starting PrEP at a local PrEP

clinic than patients at clinic 4 (AOR= 2.727; CI=1.024, 7.266; p=.045). Additionally, patients that received care form clinic 2, were 3.505 times more likely to be interested in going to a local PrEP clinic to start PrEP, than patients at clinic 4 (AOR= 3.505; CI=1.427, 8.609; p=.006). Lastly, provider conversation about PrEP also yielded significance. Particularly, patients who did not have a conversation about PrEP with had reduced odds to be interested in going to a local PrEP clinic to start PrEP, compared to those that did have a conversation with their provider (AOR= .516; CI=.287, .927; p=.027). Age (p=.133), STD history (p=.702), race (p=.993), and ethnicity (p=.056) were not significant predictors of patient interest to start PrEP at a local PrEP clinic.

Interest Measure 4: If you could get PrEP at this (state name of clinic), would you be more willing to take it?

Lastly, a logistic regression was conducted to predict if age, ethnicity, clinic location, provider recommendation, and race were significant predicators to determine if women would be more willing to take PrEP If they could get it that the clinic they currently receive care. A test of the full model against a constant only model was not statistically significant, indicating that the predictors as a set did not reliably distinguish between those interested and not interested in receiving PrEP from the clinic they are receiving services from (chi square 12.121, df=13 p=.518)

None of the variables tested which included age (p=.161), STI history (p=.360), condom use (p=.711), clinic location (p=.075), race (p=.986), provider conversation (p=.775), and ethnicity (p=.499) resulted in significant predictors of women's willingness

to take PrEPif it was offered at the clinic where they currently receive care (See table 1.3 for results breakdown)

Table 1.3: Results

Measures of Interest Predictor Variables	*During your visit today, did talking to your doctor or nurse make you interested in taking PrEP?*	*During your visit today, did talking to your doctor or nurse make you interested in learning more about PrEP?*	*During your visit today, did talking to your doctor or nurse make you interested in going to the Fulton County PrEP Clinic (or another PrEP clinic) to start PrEP?*	*If you could get PrEP at (state name of clinic), would you be more willing to take it?*
Age	.971; p=015; (.948, .994)	p=.220	p=.133	p=.161
Race	p=.995	p=.546	p=993	p=.986
Ethnicity	p=.309	p=.557	p=.056	p=.499
Clinic Location	3.286, p=.004; (1.467, 7.361)	2.913, p=.004; (1.405, 6.942)	Clinic 1: 2.727; p=.045; (1.024, 7.266) Clinic 2: 3.505; p=.006; (1.427, 8.609)	p=.075
Provider Recommendation	.228; p<.001; (.133,.389)	.196; <.001; (.120,.321)	.516; p<.001; (.287,.927)	p= .775
STD History	p=.370	p=.292	p=.702	p=.360
Condom Use	p=.143	p=.175	2.019; p=.019; (1.122, 3.633)	p=.711

Significant findings include AOR & CI: *(AOR, p=x; (CI)*

Chapter 5: Discussion

This is the first study to assess if age, ethnicity, race, STI history, condom use, provider conversation and clinic location were associated with PrEP interest, among

women receiving care form four community clinics in Metro Atlanta, GA. For the most part, results in this study are consistent with that of previous studies, in that the findings are inconsistent, in regard to what is effective in predicting the uptake of a new practice among populations.

Age

The present study assessed the association of age on uptake in PrEP interests. When asked if talking to their provider or nurse made them more interested in taking PrEP, for every increase the age the changes of a participant becoming interested in PrEP, were decreased. Consistent with prior researchers, age can have an influence on the ease or difficulty of the uptake of a new practice (Morris & Venkatesh, 2000). As individuals get older, there may be more resistance to change their current behaviors, to align with a new behavior (Morris & Venkatesh, 2000). Furthermore, age was not a significant influence on the other three variables measuring interest. These findings were consistent with previous research, in regard to PrEP, age was not associated with willingness to take PrEP, suggesting equal acceptability among women, in their willingness to become interested in PrEP (Grov, C., Whitfield, T. F., Rendina, H. J., Ventuneac, A., & Parsons, J. T., 2015).

Per the results of this study, public health leaders should cater interventions towards women, as they get older in age assessing the difficulty that may come with the uptake of a new behavior. Researchers should focus on ways to market PrEP, so that older women who are at risk of HIV, would be more willing to be interested in starting the PrEP. Age did not influence interest in learning more about PrEP, going to the PrEP

clinic to start PrEP, or receiving PrEP at the clinic where they receive services. Although age had no influence on the previous mentioned variables of interest, researchers should still focus on age appropriate marketing for PrEP, in order to increase the chances of women from varying ages to become interested in PrEP. Furthermore, age may not have been significant across these variables because PrEP conversation is still fairly new, especially among heterosexual women, and there may be a general interest into what the pill is among all age groups, resulting in a spark of interest. More research needs to be done among women of varying age groups and their interest in PrEP.

Ethnicity and Race

Ethnicity and race were assessed to understand the association it may have with PrEP interest. The present study revealed that neither race nor ethnicity were significant predictors of PrEP among all four variables of interests (i.e. willingness to take PrEP, learning more about PrEP, going to the PrEP clinic to start PrEP, or receiving PrEP) at the clinic where they receive services). Results on race and ethnicity, and uptake in new practices have been consistently inconsistent. The findings of this study align with previous researchers that suggest that individuals with more perceived risk are more highly associated with the uptake of a new practice or behavior, than race/ethnicity (Rosenthal, S. L., Rupp, R., Zimet, G. D., Meza, H. M., Loza, M. L., Short, M. B., & Succop, P. A., 2008; Zimet, G. D., Mays, R. M., Sturm, L. A., Ravert, A. A., Perkins, S. M., & Juliar, B. E., 2005). . The present study was inconsistent with previous studies that suggests that race and ethnicity do have an influence on the uptake of a new behavior. Previous studies suggest that in most cases, African Americans are the least likely to

uptake a new medical behavior or practice, even though it may be suggested by their medical provider (Keenan, K., Hipwell, A., & Stepp, S., 2012; Kuhns, L. M., Hotton, A. L., Schneider, J., Garofalo, R., & Fujimoto, K., 2017). This can be due to historical factors such as distrust in the medical community, lack of education on the importance of the new practice, or lack of accessing regard to new health practice for minorities (Kuhns, L. M., Hotton, A. L., Schneider, J., Garofalo, R., & Fujimoto, K., 2017).

Although previous studies state otherwise, the results of this study suggest that there may be no need to tailor PrEP advertisement or interventions regarding PrEP to certain races or ethnicities. Since African American women have a higher risk of acquiring HIVcompared to other races, PrEP advertisement and interventions should keep this in mind when seeking to increase usage among at risk populations

Health History

The present study examined health history, measured by STI history, in regard to uptake in interest of PrEP. STI history yielded no significance in none of the variables of interest. The influence of STI on the uptake of new practice has also been consistently inconsistent. The results of this study were consistent with that of previous researchers that found no relationship between STI history and uptake of practices. Those with a previous history of an STI may be less motivated to become interested in PrEP, due to a lower level of perceived risk, compared to individuals that may be genuinely interested in PrEP (Hojilla, J. C., Vlahov, D., Crouch, P., Dawson-Rose, C., Freeborn, K., & Carrico, A., 2017). Individuals that already have a history of an STI, may not see themselves as capable of acquiring HIV, and may be less motivated to engage in safer practices.

PrEP interventions should continue to target those with a previous history of an STI, due to a lack of intrinsic motivation to seek safer sex practices. Although this group of people may be at the highest risk, often times they do not seek behavioral adaptations, in order to prevent the onset of other STI's or even HIV. Individuals without a previous history of an STI may overall engage in safer sex practices, in order to prevent acquiring an STI.

Condom Use

Condom use was assessed among women, to identify if it was a significant predictor of interest in PrEP. The results of the study yielded that women that never or sometimes used a condom were twice as likely to want to go to a PrEP clinic to start PrEP. This finding can justified be due to the barriers, previous research has outlined, many women may face in negotiating condom use with their sexual partner. In some cases, women face physical, psychological, social, or financial barriers when trying to negotiate condom usage with their partner. Barriers range from partner abuse, access to condoms, fear, and trust issues within the relationship (Wingood, G. M., Hunter-Gamble, D., & DiClemente, R. J., 1993). PrEP is a pill that can be taken without the other partner knowing. It is a safe way to combat the fear of condom use negotiation, while still being safe from contracting HIV from a partner that may be engaging in sex with more than just one person. PrEP offers the ability for women to make the decision on their own, without having to involve their partner, if they feel that it may cause turbulence in the relationship. It can be taken in private, and no one would ever know that an individual was on PrEP. Previous research suggest that some partners may become defensive, when

asked to wear a condom. If an individual is on PrEP, it places the power of HIV safety in their hands and ensures that they are in control of their behavioral decisions.

Professionals offering PrEP interventions should seek to identify women that may be experiencing fear of condom negotiation or abuse in their relationships and offer them an alternative that could also protect them from contracting HIV. PrEP interventions should also reinforce the concept of privacy and control that an individual would have if they feel that they are currently at risk for HIV and are unable to do anything about it.

Provider Input

Provider conversation about PrEP was assessed to determine if it was a significant predicator of women's interest in PrEP. Consistent with previous studies in regard to the uptake of new medical practices (Rosenberg, 2013; Rula et. al. 2013), provider input was a significant predictor of interest in PrEP. Specifically, those that had a conversation about PrEP with their doctor or nurse were more likely to be interested in taking PrEP, learning more about PrEP, and going to a PrEP clinic to start PrEP. Provider conversation with a patient can clear up many misconceptions an individual may have prior to speaking with their provider. Providers are able to answer questions, assess risk, and recommend new behaviors to ensure the optimal health of their patient (Garfinkel, D. B., Alexander, K. A., McDonald-Mosley, R., Willie, T. C., & Decker, M. R. 2017). Additionally, generally, patients tend to trust what the information their provider is informing them of. Therefore, patients who had a conversation with their provider about PrEP, were more likely to be able to ask questions and pose concerns regarding the new medication. Providers can play a very important role in the onset of PrEP interest among

women. Provides are in a position of trust and many women will go to their provider with concerns of contracting a HIV and seek ways to prevent it. Furthermore, providers have the ability to refer patients to the correct resources such as local PrEP clinics, where patients can learn more about PrEP and possible begin the PrEP regime.

In creating approaches to address interest in PrEP, innovators should seek to focus on interventions dealing directly with providers so that they are able to inform their female patients about PrEP, while assessing their need and advising them of the benefits of uptake. To increase PrEP uptake, interventions should be geared towards informing providers how to identify women at risk for HIV talk to them and refer them to the proper resources in order to avoid the contraction of the virus. Consistent with HPV vaccine research, understanding the impact of provider recommendation and conversation in women's sexual health decisions, could help researchers understand ways to incorporate provider interventions, relaying the importance of certain health decisions, that could have a long-term impact on women's sexual health.

Clinic Location

Lastly, clinic location was assessed in order to determine if it was a significant predictor of patient interest in PrEP. Results of this study indicate that clinic location predicted interest in taking PrEP, learning more about PrEP, and going to the nearest PrEP clinic to start PrEP. Some clinics in particular were consistently more likely to be interested in PrEP than other clinics. This could primarily be due to the proximity of the clinic to PrEP clinics such at the Fulton County PrEP clinic, which is walking distance from one of the clinics. This finding highlights the importance of accessibility to PrEP to

the community of interest. In many cases, populations are prevented from receiving a new medical practice due to lack of access. Some individuals do not have a reliable transportation and can barely get to the doctor's office let alone a specialty clinic for PrEP. Consistent with previous research, location can play a role in having lack of resources, higher challenges, and isolation of innovated practices (Polmanteer, R. R., 2018). Generally, those residing in low SES communities lack in accessibility, but have the highest rates of disease incidence. The present study identified that location was consistently significant among women. The majority of women (72%) indicated that they would be more willing to take PrEP if it was offered at the clinic where they currently receive services.

Future public health professionals should seek to address location barriers, generally prevalent in low SES communities, so that individuals there are able to have easier access to healthcare preventive services such as PrEP. This can be done through incorporating PrEP 'pop-up' clinics, the use of shuttles to get people from low access communities to PrEP clinics or incorporating PrEP into local community family planning clinics.

Limitations

This study had limitations such as missing data for some variables such race, ethnicity, and condom use. Additionally, follow-up of women who indicated interest in PrEP, were not included in the model. The surveys did not capture all items relevant for HIV risk in women. Questions assessing interest in PrEP were phrased as if PrEP was available for free, which is not a reality for all users. The sample does not represent all

women in Metro-Atlanta. In addition, data used in this analysis were cross-sectional. We did not include data on reasons why individuals were unwilling to become interested in PrEP; however, our findings indicate the prevalence is large enough to warrant more consideration, perhaps through qualitative methods like semi-structured interviews and/or focus groups among women at community clinics. Although there were limitations, to our knowledge, this is one of the first reports on the aforementioned factors influencing PrEP interest, among women in Metro Atlanta.

Conclusion

In a sample of women from four community family planning clinics in Metro-Atlanta, we found that interest in PrEP was primarily influenced by provider conversation about PrEP, clinic location, condom use, and age. Ethnicity, race, and STI history were not significant predictors of PrEP interests, however due to inconsistences with prior research, these variables should be investigated further. More research need to be done on this often-overlooked population in regard to PrEP interest and factors that would influence uptake. Future interventions can begin to focus on provider communication around PrEP and access to PrEP. Interventions are desperately needed to increase PrEP awareness, education, advertisement, and delivery to individuals who are at risk.

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Appendix A: Eligibility Checklist

FOR RA USE ONLY:
CLINIC: _____ RA: _____ ID: _____

Eligibility Checklist

All women must be screened for eligibility before being permitted to participate in the study.

Check all that apply:

- ☐ Female
- ☐ 18 years or older
- ☐ HIV negative
- ☐ Not pregnant

Have you participated in this study before?

- ☐ Yes
- ☐ No

Outcome:

- ☐ Ineligible; Not Enrolled
- ☐ Eligible; Not Enrolled

Please Explain: _____

_____

- ☐ Eligible; Enrolled

Appendix B: Participant Exit Interview

FOR RA USE ONLY:
CLINIC: _____ RA: _____ ID: _____ RA Closeout: _____

6. **During your visit today, did talking to your doctor or nurse make you interested in taking PrEP?**

   YES NO

7. **During your visit today, did talking to your doctor or nurse make you interested in learning more about PrEP?**

   YES NO

8. **During your visit today, did talking to your doctor or nurse make you interested in going to the Fulton County PrEP Clinic (or another PrEP clinic) to start PrEP?**

   YES NO

9. **Would you like to make an appointment with the Fulton County PrEP Clinic?**

   YES MAYBE NO

   [IF YES OR MAYBE]
   8A.1 Would you like us to help you make an appointment at the Fulton County PrEP Clinic?

   YES NO

10. **If you could get PrEP at this (state name of clinic: Clinic 1, Clinic 2, Clinic 3, Clinic 4), would you be more willing to take it?**

    YES MAYBE NO