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Human Immunodeficiency Virus Prevention Education on Knowledge and Condom Use among African American Males in Clayton County, GA

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Abstract

Purpose: Georgia remains fourth in the nation for new HIV cases. Young African American adults are responsible for 49% of the new cases in Georgia. The purpose of this project was to explore the effectiveness of a nurse led HIV prevention education program on increasing knowledge of HIV prevention and increasing the frequency of condom use among males between the ages of 18-30 years old in Clayton County, Georgia.

Methods: This educational intervention was implemented in a primary care clinic. Data on knowledge and condom use as well as sexual health, sexual behavior, sexual communication, and perceptions of risk for HIV infection was collected. Content from the CDC designated effective program, NIA, a small group-level intervention was used. A twenty-one item pretest was administered to participants. CDC approved fact sheets and electronic quizzes were also administered.

Results: Thirty African American male participants were recruited. The mean age of each participant was 24 year old. Most participants reported completing at least one year of college. The project had a 50% response rate. Approximately 26% of African American men believed the highest form of HIV transmission came from saliva and 28% believed blood was the second highest form of HIV trans- mission. Participants believed feces, mucus and sweat were among the lowest forms of HIV transmission in this cohort. All participants believed condom use prevented transmission of HIV to partners.

Conclusion: For the advanced practice nurse, incorporating HIV prevention education into routine visits, may facilitate HIV prevention behaviors in patients.

Table of Contents

Introduction

The Centers for Disease Control (CDC) reports 1out of 8 people in the US are living with Human Immunodeficiency Virus (HIV) (CDC, 2016). CDC reports 49% of new HIV cases diagnosed in the United States (US) are among African American men and (CDC, 2016). This incidence is alarming as African American men and women comprise only 12% of the total US population (CDC, 2016). Adding to the clinical problem, seventy-three percent of the new cases were African American men and 26% were African American women (CDC, 2016). Of the new cases, 57% were gay/bisexual men between the ages of 13-24 and 17% were of heterosexual African American men (CDC, 2016). Three decades after HIV was first diagnosed, we are still seeing over 400,000 new cases of infection per year (Centers for Disease Control and Prevention, 2016). The estimated lifetime cost of treating HIV is $379,000 per patient with 30% of those patients being uninsured or underinsured (CDC, 2015). Quin (2009) reported antiretroviral drugs along with early diagnosis, counselling and treatment was very important in controlling the spread of HIV in the US. These national statistics are in line with the epidemiological trends of HIV in the state of Georgia. According to CDC (2014), of the 8 million people living in the state of Georgia, Atlanta has 4,275,065 residents. Among the residents of Atlanta, there are currently 22,437 individuals living with HIV.

Problem Statement and Project Purpose

In the United States, African American men have the greatest burden for HIV infection (Aholou, Sutton, & Brown, 2017. African American men account for 49% of new HIV cases diagnosed in the United States (Centers for Disease Control and Prevention, 2016). Atlanta ranked fourth in the nation for new HIV cases (Camacho-Gonzalez, 2016). Clayton County is 13 miles south of Metro Atlanta. Educational interventions have proven to be the breakthrough in HIV prevention (Medley, Kennedy, O'Reilly, and Sweat, 2009). Few studies have examined HIV

educational interventions for African American men in Clayton County, Georgia. The purpose of this educational intervention was to examine if an educational intervention was effective in increasing the knowledge of HIV and improving frequency of condom use in Clayton County, GA.

Clinical Question

Among African American men 18-30 years old in Clayton County, Georgia is an HIV prevention education intervention more effective than current practice in increasing knowledge of HIV and improved frequency of condom use?

Search Strategy

Databases for peer-reviewed articles included the following: Pub Med, Global health, Medline plus, Education source, Cochran library, and CINAHL (Appendix B). Search criteria consisted of looking for relevant material to synthesize, use of key words and phrases to generate a matrix of evidence, and selecting relevant studies and abstracts that were relevant to this topic. The use of CDC approved fact sheets aided in the search. Search parameters spanned the years 1999 to 2017. Inclusion criteria consisted of educational interventions specific to HIV prevention, pre and posttest data, clear interventions, sampling methods and English publications. The search was limited to articles written 1999-2017. Studies were used from any design that listed HIV educational interventions. Studies were excluded if they were not focused on African American males. International studies, studies isolated only to men sleeping with men, studies involving minors or studies addressing women sexual behaviors were excluded. The search criteria included but were not limited to educational interventions to reduce the risk of HIV in African American men.

Key words: HIV, youth, male, 18-30, rural, MSW, African American, education, English, condoms,

Review of Evidence

Ten key literature reviews were appraised using established Grade criteria (Appendix A for table). The first study reviewed was by Operario, Smith, Arnold and Kegeles (2010). This qualitative study aimed at reducing HIV risk behavior among African American men who have sex with women. This study explored sexual dynamics and risk behaviors with female partners, discuss sexual dynamics and risk behaviors with male partners, reviewed motivations, and situational triggers for unsafe sex. It also examined role-play exercises that aimed at personal risk reduction and examined the benefit of community outreach and counseling. The results concluded that pre and post analysis had significant reductions in unprotected receptive and insertive anal sex with men, fewer number of female and male unsafe sex partners and decreased sex while under the influence of alcohol. Men reported significant increase in social support, self-esteem, and reduced loneliness at follow up. The positive results suggested this was a promising approach for reducing HIV risk in this population.

The second Medley, Kennedy, O'Reilly, and Sweat (2009) was a systematic review and qualitative study. This study examined how effective peer education was on HIV prevention. It used peer education interventions on individual who shared demographic characteristics or risk behavior to increase awareness, impart knowledge and encourage behavior change among members of that same group. It concluded that peer education programs in developing countries were moderately effective at improving behavioral outcomes, but showed no significant impact on biological outcomes.

The third study was conducted by Centers for Disease Control and Prevention (2016). This was a randomized control trial. Its aim was to increase consistent and correct condom use and decrease incident of STI. This randomized control trial consisted of 702 African American youths between the ages of 15-23 years old who were HIV negative. CDC concluded that

intervention participants or those who were taught and demonstrated appropriate condom use at 2 and 6 months had a significantly decrease in STIs compared to those who had inconsistent or no correct demonstration of condom use at 6 months post intervention.

The fourth study was written by Jemmott, Jemmott, and Fong (1996). This was also a randomized control trial. The study's purpose was to evaluate the effects of abstinence and safer-sex HIV risk reduction interventions on young inner city Africa American adolescents' and HIV sexual risk behaviors when implemented by adult facilitators when compared to peer co-facilitators. This study concluded both abstinence and safer-sex interventions reduced HIV sexual risk behaviors, but safer sex interventions were especially effective with sexually experienced adolescents and the adolescents had longer lasting effects.

The fifth study was written by Lyles et al. (2007) and was a systematic review. The objective of this study was for the CDC and HIV/AIDS Prevention Research Synthesis Team to identify interventions demonstrating best evidence of efficacy for reducing HIV risk. The result was that significant intervention effects included increased condom use and reduced unprotected sexual intercourse, number of sexual partners, injection drug use and newly acquired STIs. Most of the best-evidence interventions were directly applicable to populations of greatest need.

The sixth study was written by Aholou, Sutton, and Brown (2017). This study was a randomized testing trial. The study described post-HIV testing trial experiences of HIV negative men in rural Florida. It concluded that participation in a HIV testing study facilitated increased protective behaviors and communication for HIV prevention.

The seventh study was written by Broaddus and Dicker-Gomez (2016). This was a quantitative and qualitative review. The purpose was to assess the use of text messaging to explore relationships of subscales with sexual risk behavior. One hundred and twenty participants completed a 55-item texting sexual relationship scale with interview. Interviews and

scales indicated reasons for use of text in sexual relationships to communicate with partners including talking about condom use, foreplay, picture sharing, sexual intentions and talking about historical STIs.

The eighth study was written by Ritchwood, Peasant, Albritton, and Corbie-Smith (2017). This was a qualitative analysis. It examined the role of condom use knowledge and attitudes about sex and relationship quality among rural African American youth. The conclusion was that greater condom use self-efficacy was predicted by greater knowledge of condom use.

The ninth study was written by Camacho-Gonzalez et al. (2016). This was a mixed method study. It determined that HIV prevention strategies should include improving condom use frequency and HIV disclosure skills, responsible utilization of social media, and education addressing HIV prevention.

The tenth and final study was written by Jeffries (2014). Its determination was to explore sexual health in studies pertaining to MSMW. This study was a peer review and concluded risk reduction interventions alone are likely insufficient to improve MSMW sexual health. Efforts should address the social contexts affecting MSMW in order to decrease HIV/STI vulnerability and mitigate other barriers to MSMW sexual health.

Conceptual and Theoretical Framework

Avedis Donabedian model was used in this HIV/STD teaching intervention project. Donabedian was a theorist who was first recognized for his 1966 work of a paper titled *Evaluating the Quality of Medical Care*. He examined the quality of health provisions in the aspects of structure, process and outcome (Donabedian, 2005). Donabedian's conceptual framework looked at a different interpretation of the global framework structure, process and outcomes opting to focus on sampling and selection, measurement standards, measurement

scales, reliability, bias, and validity (Donabedian, 2005). Donabedian quantified structure by measuring its direct observation or by using a supervisory checklist (McQuestion, 2006). He explained structure could be thought of not only as the physical setting in which the care takes place, but also, the organization of care and the qualifications of the care providers (Donabedian, 2005). Second, Donabedian examined steps or order taken to achieve the desired result, which was named the process. Examples of tools used for this component included participation observation data, data quality assessment tools and/or exit interview questionnaires. Donabedian's third element was outcome, which was the impact of the care on health status (McQuestion, 2006).

For this DNP project, structure was the primary care clinic hosting the forums, the convenient location (Clayton County) and the student investigator (APRN). The process was the steps taken to achieve the desired results of increasing knowledge of HIV transmission and increasing condom use. More so, the process included the quality of the educational material, the assessment tools, the surveys and the validity of the content. To further ensure steps were used to address such sensitive topics, a CDC effective program was used to guide delivery of the content in the educational intervention. Lastly, the outcome included quantifiable data showing an increase in condom use and a decrease in the contact and spread of STDs/HIV. Each participant was asked to quantify weekly condom use and answer questions related to whether or not there had been any STD infection.

Methodology

This educational intervention was a cross-sectional quasi-experimental design. Convenience sampling methods were used. The main objective of the study was to assess knowledge of HIV prevention, increase condom use in African American males between the ages of 18-30 years old, and reduce the spread of HIV.

Setting

The recruitment site was a primary care clinic in Forest Park, Georgia. The clinic was a full service nurse practitioner operated walk-in/primary care clinic with five examination rooms. One nurse practitioner, two medical assistants, a referral specialist, an allergy specialist and a phlebotomist made up the staff at the clinic. The primary patient population were residents of Clayton County Georgia. At this clinic, primary care services were provided to men, women, children and infants with an age range of 6 months to over 65 years. The operating hours of the clinic were Monday thru Friday from 9:00a to 5:00p. The daily patient volume consisted of 20-30 patients and the SI was the nurse practitioner at the clinic.

Recruitment

Participants were recruited face-to-face after they received care for non-project related visits. Inclusion criteria was to self-identify as African-American, speak English, between the ages of 18-30 years old; HIV negative and resided in the US. Participants were deemed ineligible if they did not self-identify as African American, were less than 18 years of age, were older than 30 years of age, HIV positive, or unable to provide voluntary consent.

Data were collected outside of standard clinical operating hours to ensure the patients did not feel coerced. It was communicated to participants that the decision to participate was voluntary. They were informed that the decision whether or not to participate would not affect current or future relations with the facility. Participants were free to withdraw at any time.

Confidentiality

Due to the high level of HIV/AIDS related stigma among ethnic groups from the African American population, a waiver of documentation of consent was requested. Sensitive information was collected anonymously to assure the participants that every effort was taken to minimize paperwork that could link them to the information provided. Email addresses were

only used primarily for delivering handouts and questionnaires or answering participant initiated questions. No names were collected that associated them with the questions. Participants were assigned a participant ID number and the Linking List was kept separate from the surveys. For additional protection, all data were stored in a locked file cabinet behind a locked office door to which only the student investigator had access.

Intervention

NIA Educational Intervention was used to guide this educational intervention. NIA is a program of purpose for African American men. Its goal is to educate African American men about HIV/AIDs, increase motivation to decrease risky sexual behaviors and help African American men learn new skills to protect themselves and others from HIV/STDs. NIA's educational intervention included six-hour sessions spread out over two to four meets. It assembled groups of men at various venues such as STD clinics, faith based organizations or correctional facilities to examine their HIV/AIDs related behavior risk, develop their skills, and exchange HIV related feedback with other participants. The facilitators reinforced the participant knowledge through various videos, group activities/discussions and condom demonstration and practice.

Knowledge of HIV transmission, condom use, and sexual behaviors were collected using a survey delivered electronically and in paper and pencil format. Method of administration was determined by participant preference.

NIA Pre-Intervention Assessment Survey. The NIA Pre-Intervention Assessment Survey (Appendix F) was a 4-item survey designed to capture demographic information about participants. Items included age, date of birth, ethnicity and race.

Pre-test Assessment. The pre/posttest was completed at the time of consent. The pre/posttest consisted of 26 items. The pre/posttest consisted of 5 items with true/false

responses, 6 items were yes/no responses, 1 fill in the blank and the remaining 14 items utilized Likert scales

KHI-KQ-18. (KHI-KQ-18) (Appendix D) and **100 Questions about HIV/AIDs** (Appendix G) were used to formulate questions for HIV transmission quizzes.

HIV Transmission-Quiz 1. This measure was administered as an online quiz. The quiz consisted of 6 items of varying responses (i.e. true/false, multiple selection and multiple choice).

HIV Transmission-Quiz 2. This measure was also administered as an online quiz. The quiz consisted of 5 items, also of varying response scales (i.e. true/false questions, multi select and multiple choice).

HIV Transmission-Quiz 3. The third online quiz comprised of 5 items with only true/false responses.

HIV Transmission-Quiz 4. This final measure was also an online quiz. It consisted of 6 items of varying response scales (i.e. true/false and multi select)

Analysis

Dr. Kimberly Hires and Dr. Sarvotham Kini were consulted for the statistical analysis. Data were analyzed in IBM SPSS version 23, Microsoft Excel and Survey Monkey®. Some components of survey monkey were also used to analyze specific data

A total of 47 participants met the inclusion criteria. Of the men who met the inclusion criteria, 30 volunteered to participate in the project. The dropout rate was high. None remained enrolled after 10 weeks.

Participants ranged in age from 18-30 years old. The mean age was 24 years old (SD=5). All of the participants self-identified as African American and were recruited following an office visit. Most of the participants were educated and reported completing at least one year of college; 100% of participants completed high school. Fourteen percent of the participants were

unemployed. Eighty-six percent did not have children. Approximately 57% of participants reported being sexually active. Forty-three percent reported that they "did not know anybody with HIV". Less than one third reported a positive history of incarceration.

Eighty-six percent of the participants scored high on the perception of risk. A higher response rate for quizzes was observed when quizzes were administered electronically. For HIV Transmission Quiz 1, HIV Transmission Quiz 2, HIV Transmission Quiz 3 and HIV Transmission Quiz 4, the mean score was 88/100, 77/100, 87/100 and 60/100. A sample of individual questions and percentages of the respondents that agreed are listed below:

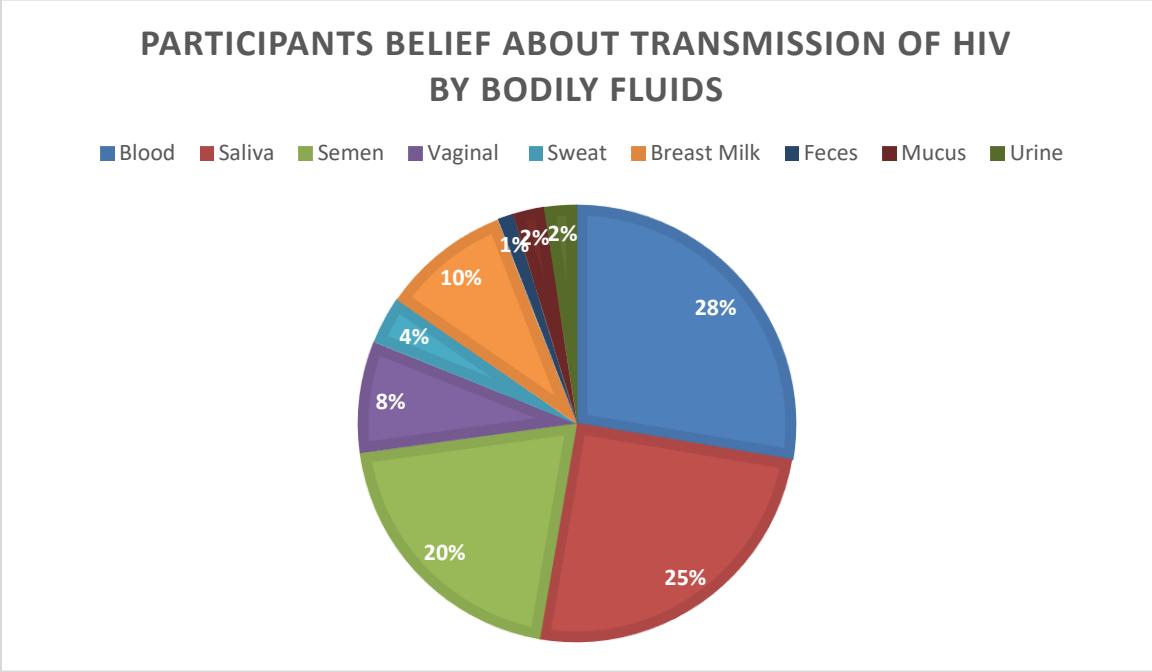
Results

Table (1) Questions	Percent Agree
1. Is it is very risky to get HIV without using a condom	50%
2. Is it risky to get HIV without using a condom	37%
3. Is it less risky to get HIV without using a condom	37%
4. Is it no risk to get HIV without using a condom	12%
5. Is Medline the best source for getting information on HIV	25%
6. Is CDC the best source for getting information on HIV	75%
7. What percentage of men who sleep with men advise their health provider	21%
8. Is there a cure for HIV	14%
9. Can I get a vaccine for HIV	0%
10. HIV is spread through air, skin to skin contact, insects and saliva	2%
11. You can tell whether someone has HIV by looking at them	2%
12. Do you believe HIV is spread from an infected person by sharing needles	100%

13. Do you believe HIV is spread from anal/vaginal secretions	80%
14. Do you believe HIV is spread from using sharing kitchen and baths	2%
15. Does getting tested for HIV help protect a person from getting HIV	100%
16. Does a negative test mean a person cannot get HIV	80%
17. Can a person with HIV who looks healthy pass the virus to others	60%
18. Can a person get HIV through contact with saliva	100%
19. Does having sex with more than one partner increase your risk of HIV	100%
20. Do people get HIV the same way they get gonorrhea and chlamydia	100%
21. Does using shortening or other oils to lubricate condoms help them work better	60%
22. Does washing drug equipment with warm water kill HIV	100%
23. Does most type of birth control also protect against HIV	0%
24. I can be less safe with someone from a small town than someone from a large town	0%
25. Does alcohol play a role in decision making related to HIV	100%

Below depicts more data related to the belief of how various bodily fluids are capable of transmitting HIV.

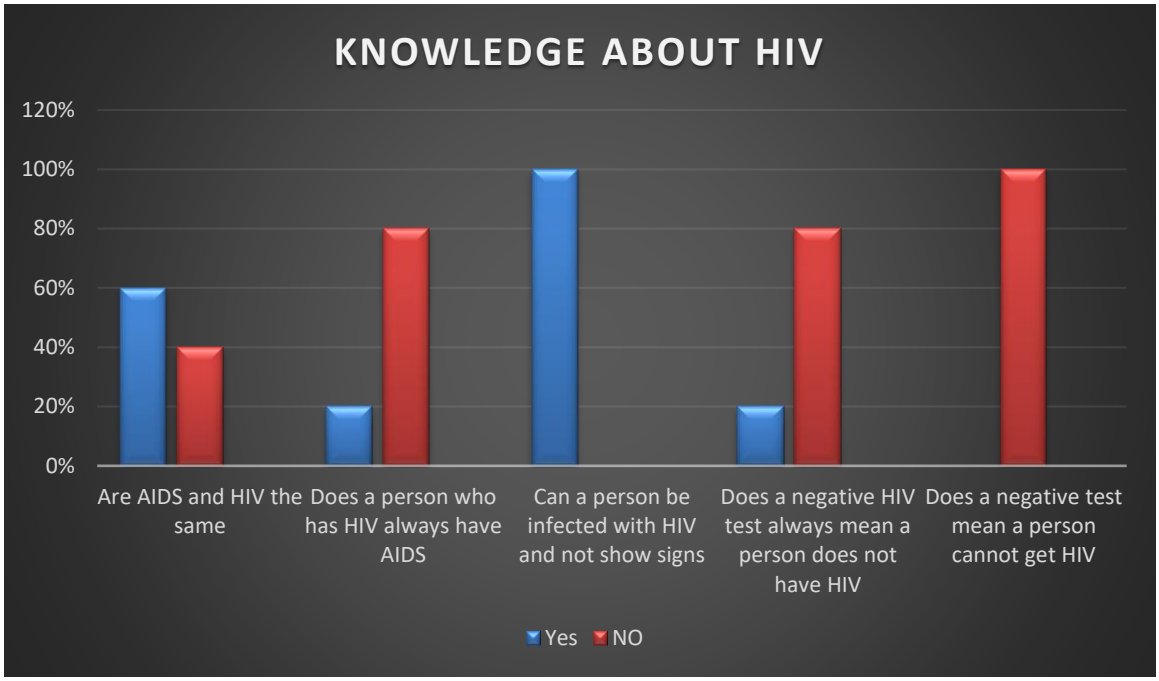
Table 2



Twenty six percent of African American men believe the highest form of HIV transmission comes from saliva and 28% believe blood is the second highest form of HIV transmission. The participants also believed that feces, mucus and sweat are among the lowest forms of HIV transmission in this cohort.

Table 3 depicts knowledge related to defining HIV/AIDS, the implications of HIV/AIDS, the signs associated with an infected person with HIV, the inferences of a negative HIV test, and the relationships between a negative test and future risk.

Table 3



The participants scored higher (100%) when asked about signs associated with HIV and negative test results. The scores declined to (80%) when asked if a person who had HIV would always have AIDS and if a negative test always meant the person did not have HIV. When asked if AIDS and HIV were the same, the participants scored much lower than the mean scores on other questions, overall.

The safety analysis in table 4 sums the statistical data related to basic knowledge of HIV, preventative measures and factors that play a role in deciding condom use. Overall, the participants did well. There were two questions that could have used more investigating (1) is HIV easy to spread and (2) is HIV easily spread through air, skin, insects, and saliva. More teaching was needed to educate participants in this cohort about how HIV was affecting its neighboring counties and cities.

Table 4

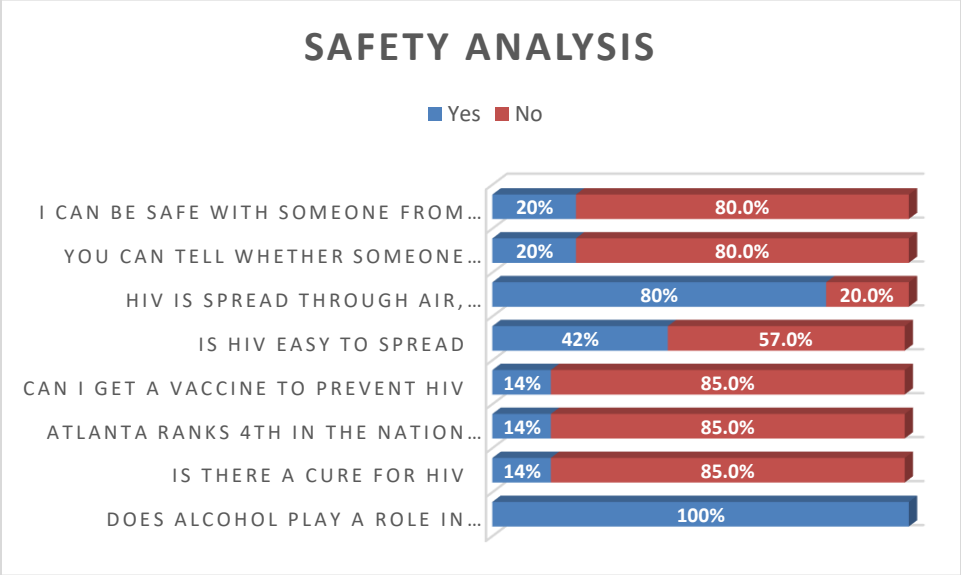
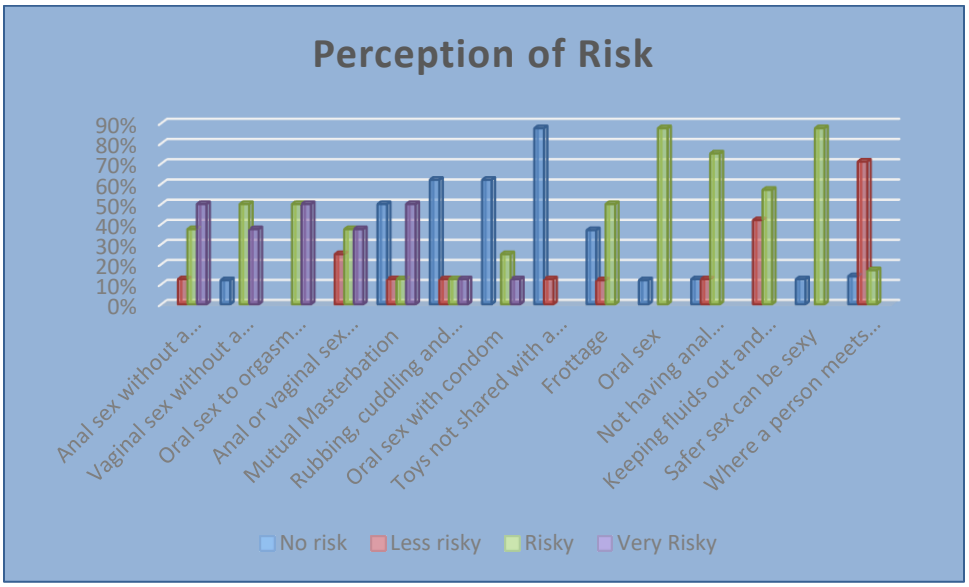


Table 5 demonstrated the participant's perception of risk. In looking at table 5, overall, the responses were favorable; however, 10% of participants perceived anal sex without a condom as low risk and 20% perceived either anal or vaginal sex without a condom is minimal risk.

Table 5



Discussion

This project aimed to examine whether a nurse led education intervention would be effective in increasing the knowledge of HIV and improving frequency of condom use in Clayton County, GA. Overall, participants demonstrated a high knowledge of HIV transmission; however, there were some dangerous knowledge deficits. One major concern was that some participants believed saliva, skin-to-skin contact, insects and air was the highest form of transmitting HIV, when in fact, it is considered one of the lowest forms. Equally concerning, were participants that scored lower than expected when asked if HIV could be transmitted by sharing kitchens, bath facilities, coughing, sneezing and kissing. Interestingly, the results supported much of the current literature that suggested there was a lack of knowledge related to HIV transmission in this age group.

Historically, African American males with low education levels, history of incarceration and increased risky behaviors had the highest risk of HIV (Camacho-Gonzalez et al., 2016). The majority of participants in this project reported a low number of sexual partners and no history of incarceration; however, knowledge deficits around HIV transmission were still observed. Some of the concerns were the knowledge deficit related to saliva exchange, sanitized equipment, and the lack of understanding about the use of shortenings or other oils as lubricants when having sex. This finding of the use of shortenings and other oils was particularly concerning because HIV is spread through transmission of infected bodily fluids entering damaged mucous membranes. Shortening and oils could alter the membranes making them vulnerable to HIV transmission.

Condom use also played a significant role in reducing the risk of HIV transmission. The participants in this project demonstrated greater condom use than expected. It can be ascertained that condom use was high as evidenced by the low number of reported children. With the high

attrition rate, characteristics of the participants who did remain enrolled for 10 weeks were consistent. They were all young African American adults between the ages of 18-30. They were essentially employed and had few to no children. They all scored higher on the electronic quizzes than paper and pen and their responses were consistent in the area of safety, social and cognitive belief. In conclusion, this study showed evidence that youth and young adults were still at high risk for contracting HIV/STDs. The dropout rates were high and younger adults (18-21 years old) were not active participants. Middle range adults (older than 21 years old) played a more significant role in this educational intervention. Nevertheless, there are educational deficits that needed to be addressed and more community outreach could enhance that education. Future interventions should work on strategies to reach the younger cohorts to ascertain greater knowledge across the continuum.

Limitations

This project was not without limitations. The sample size was small compared to the interventions in the literature review. This may have been due to the limited time available to implement the intervention. The participants were not as engaged as anticipated and follow up was a challenge. Lack of enthusiasm from the participants could have been due to lack of sufficient incentives to encourage them to remain enrolled. Younger participants were especially challenging. This may be due to lack of diversity in the communication style (social media, smart phone, etc.), lack of incentives or merely disinterest in the topic.

Practice Implication

Despite the limitations, the findings do provide some practice implications. The APRN should strive for improving education and communication amongst African American males within vulnerable populations, especially Clayton County. Perhaps including components of the

NIA intervention during routine care can help to encourage communication between the patient and provider. One of the APRN's role as a health professional is to continue to educate the community. Further emphasis on HIV educational interventions may need to be considered in Clayton County, Georgia. Future studies are already in the pipeline with joint effort from the Clayton County Board of Health.

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Appendix A

Matrix Table

Operario, Smith, Arnold, and Kegeles (2010)			Grade Level of Evidence: Strong recommendation	
Hypothesis/Objective	Design	Sample	Measurement	Results
To reduce HIV risk behavior among African American men who have sex with men and women	Qualitative design, educational intervention	36 African American MSMW	Discuss sexual dynamics and risk behaviors with female partners, discuss sexual dynamics and risk behaviors with male partners, review motivations and situational triggers for unsafe sex and engage in role-play exercises that aim to real personal risk reduction roles, and community outreach and counseling	Pre and post analysis found significant reductions in unprotected receptive and insertive anal sex with men, fewer number of female and male unsafe sex partners and decreased sex while under the influence of alcohol. Men reported significant increase in social support, self-esteem, and reduced loneliness at follow up. Positive results suggest this is a promising approach for reducing HIV risk in this population
Medley, Kennedy, O'Reilly, and Sweat (2009)			Grade Level of Evidence: Strong recommendation, high grade 4	
Hypothesis/Objective	Design	Sample	Measurement	Results
How effective is peer education intervention on HIV prevention	Systematic review and meta-analysis of peer education interventions in developing countries published between	30 studies were selected for appraisal out of 271	Peer education interventions on individual who share demographic characteristics or risk behavior to increase awareness, impart knowledge and encourage behavior change among members	Meta-analysis indicates that peer education programs in developing countries are moderately effective at improving behavioral outcomes, but show no significant impact on biological outcomes. Limitations: some of the appraised articles stratified condom use by partner type, validity

	January 1990 and Novembe r 2006.		of that same group. 2) Meta-Analysis Observational Studies in Epidemiology	of the self-reported information, and no previous comparative studies to assess efficacy of intervention in developing vs underdeveloped countries
Jemmott, Jemmott, and Fong (1996)			Grade Level of Evidence: Strong recommendation, high grade	
Hypothesis/Objective	Design	Sample	Measurement	Results
To evaluate the effects of abstinence and safer-sex HIV risk reduction interventions on young inner city Africa American adolescents' HIV sexual risk behaviors when implemented by adult facilitators as compared with peer co-facilitators	Randomi zed controlle d trial with 3-, 6- and 12 month follow up	659 African American adolescent s	Self-reported sexual intercourse, condom use and unprotected sexual intercourse	Both abstinence and safer-sex interventions can reduce HIV sexual risk behaviors, but safer sex interventions may be especially effective with sexually experienced adolescents and may have longer lasting effects
Lyles et al. (2007)			Grade Level of Evidence: Strong recommendation, high grade	
Hypothesis/Objective	Design	Sample	Measurement	Results
CDC and HIV/AIDS Prevention Research Synthesis Team looked to identify interventions demonstrating best evidence of efficacy for reducing HIV risk	Systemati c review	18 interventio nal studies	Searching for studies that identified best evidence for reducing HIV	18 studies met criteria. Significant intervention effects included increased condom use and reductions in unprotected sexual intercourse, number of sexual partners, injection drug use and newly acquired STIs. Most of the best-evidence interventions are directly applicable to populations of greatest need.
Centers for Disease Control and Prevention (2016)			Grade Level of Evidence: Strong recommendation, grade 3	

Hypothesis/Objective	Design	Sample	Measurement	Results
Increase consistent and correct condom use and decrease incident of STI	Randomized control trial to 1 of 2 study arms	702 black male youths (between 15 and 23 years of age, HIV-negative, self-identified as black or African American, and had engaged in penetrative sexual intercourse at least once in the past 2 months)	Sex behaviors including correct and 1) consistent condom use, defined as 100% use with no condom errors (e.g., slippage, breakage) during the last 2 months 2. Laboratory-confirmed incidence of chlamydia and gonorrhea were measured at 6 months post-intervention. Use of audio computer-assisted self-interview at 2 and 6 months post-intervention	Across the two assessments (2 and 6 months), 1) intervention participants were significantly more likely to report consistent and correct condom use than control participants 2) Intervention participants had a significantly greater change in consistent and correct condom use rates than control participants from baseline to 6 months post-intervention
Aholou, Sutton, and Brown (2017)			Grade Level of Evidence: Strong recommendation, high grade 4	
Hypothesis/Objective	Design	Sample	Measurement	Results
Study described post-HIV testing trial experiences of HIV negative men in rural Florida	Randomized HIV testing trial	77 men participated	Risk reduction, sexual health communication with sex partners, and health communication with peers and family	Participation in a HIV testing study facilitated increased protective behaviors and communication for HIV prevention. Also, interventions in rural areas warrant incorporating these strategies to encourage routing HIV testing
Ritchwood, Peasant, Albritton, and Corbie-Smith (2017)			Grade Level of Evidence: Strong recommendation, high grade	
Hypothesis/Objective	Design	Sample	Measurement	Results

Examines the role of condom use knowledge and attitudes about sex and relationship quality among rural African American youth	Quantitative analysis	465 youth	Sexual activity, condom use self-efficacy, knowledge of condom use, attitudes towards condom use	Greater condom use self-efficacy was predicted by greater knowledge of condom use
Broaddus & Dickson-Gomez (2016)			Grade Level of Evidence: Strong recommendation, grade 2	
Hypothesis/Objective	Design	Sample	Measurement	Results
To describe the initial development of a multidimensional scale of the Uses of Text Messaging in Relationships in two stages of exploration of qualitative themes, and quantitative exploratory factor analysis, and (2) to explore relationships of these subscales with sexual risk behavior.	Qualitative and Quantitative review	Qualitative N=20 Quantitative N=110 participants (At risk African Americans adults)	55 item texting in sexual relationship scale to include the following categories: • Uses of Texting in Sexual Relationships • Relationship Status • Safer Sex Intentions • Relationship Power • Outcome Measures	Exploratory factor analysis resulted in four subscales: Sexting, Relationship Maintenance, Relationship Development, and Texting for Sexual Safety. Interviews indicated reasons for use of text in sexual relationships to communicate with partners including talking about condom use, foreplay, picture sharing, sexual intentions and talking about historical STIs
Camacho-Gonzalez et al. (2016)			Grade Level of Evidence: Strong recommendation, high grade	
Hypothesis/Objective	Design	Sample	Measurement	Results
Understanding adolescent and young adult perspectives on HIV transmission risk	Mixed methods study. Qualitative analysis	68 participants	Self-administered surveys, computer assisted thematic analyses, transcribed focus group responses and pre-sex HIV status disclosure	HIV prevention strategies should include improving condom use frequency and HIV disclosure skills, responsible utilization of social media, and

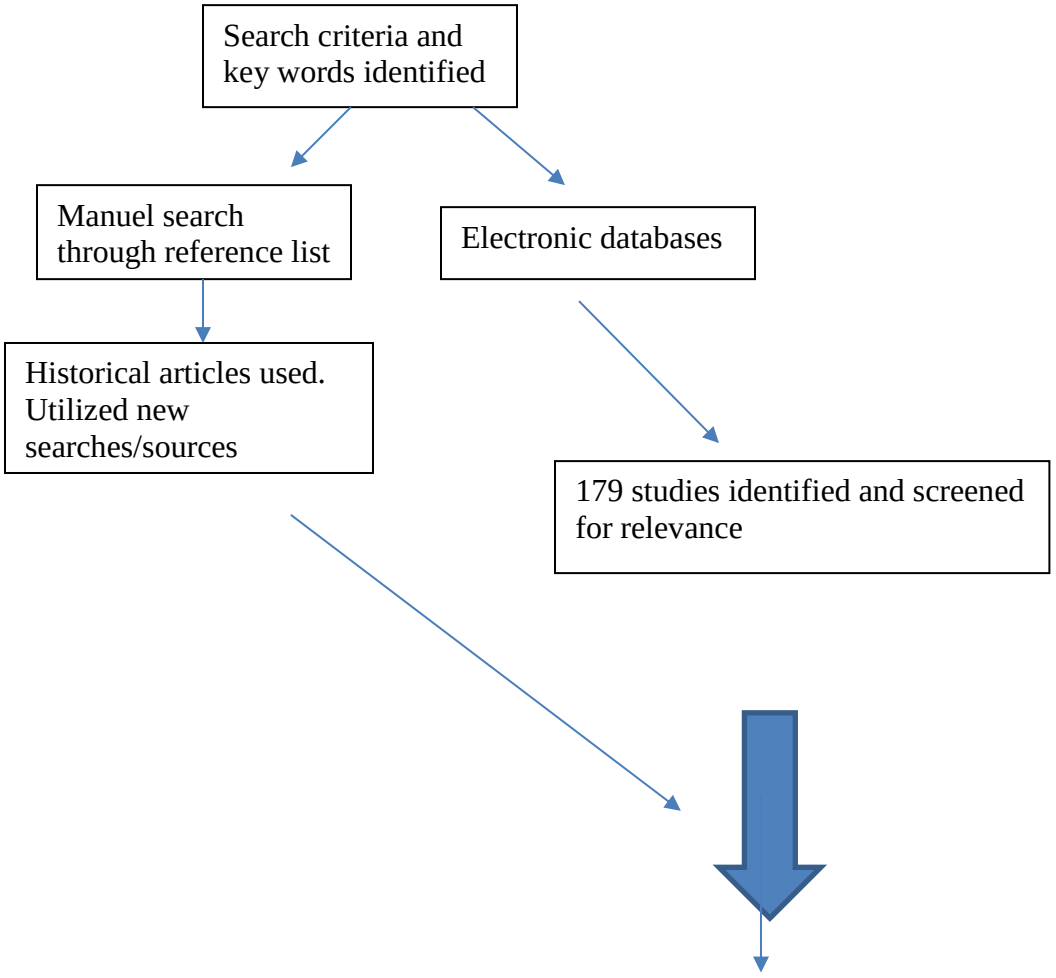
				education addressing HIV prevention
Jeffries (2014)			Grade Level of Evidence: Strong recommendation, high grade	
Hypothesis/Objective	Design	Sample	Measurement	Results
To explore sexual health in studies pertaining to MSMW	Peer review	4 literature review studies and data gathering	Peer review	Risk reduction interventions along are likely insufficient to improve MSMW sexual health. Efforts should address the social contexts affecting MSMW in order to decrease HIV/STI vulnerability and mitigate other barriers to MSMW sexual health

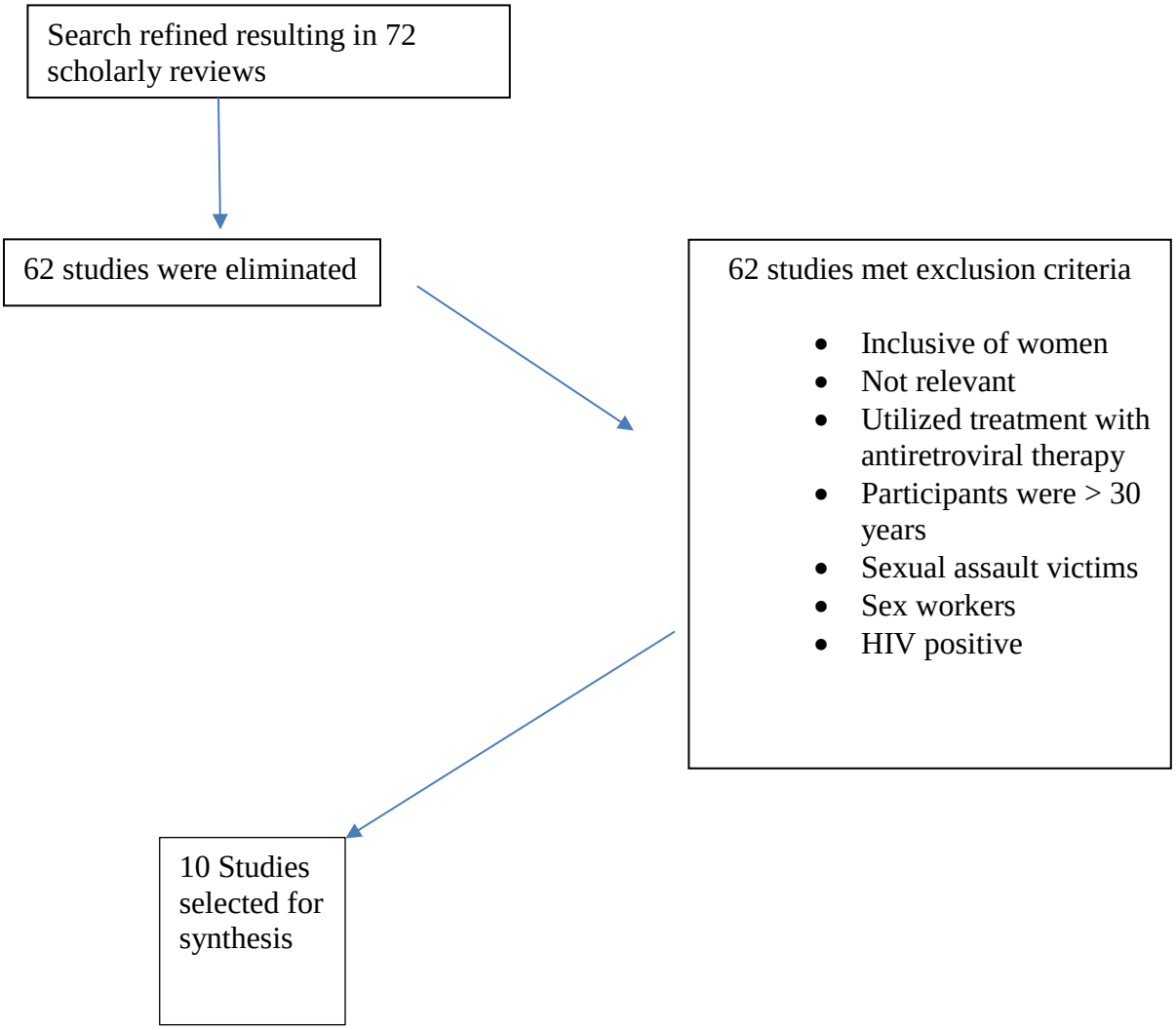
Appendix B

Table 1

Search Criteria	Key Words
Key Search Terms Used	• Medical Subject Heading (MeSH) obtained from databases resulting in the following key words: HIV, risky behavior, youth, prevention, HIV prevention, HIV transmission prevention, men sleeping with men (MSM), behavior interventions, meta-analysis review , youth HIV
Years/Language	• 10 years/English Language
Search Engine	• Google scholar and Google
Data Bases	• PubMed, CINAHL, Cochran Library, Global health, Education Source
Government Agencies	• Centers for Disease Control and Prevention
Professional Organizations	• Ryan White Program
Other	• Reference Bibliographies

Search Results




Search refined resulting in 72 scholarly reviews
62 studies were eliminated
62 studies met exclusion criteria
Inclusive of women
Not relevant
Utilized treatment with antiretroviral therapy
Participants were > 30 years
Sexual assault victims
Sex workers
HIV positive
10 Studies selected for synthesis

Appendix C

HIV-KQ-18

For each statement, please circle "True" (T), "False" (F), or "I don't know" (DK). If you do not know, please do not guess; instead, please circle "DK."

		True	False	I don't know
1.	Coughing and sneezing DO NOT spread HIV.	T	F	DK
2.	A person can get HIV by sharing a glass of water with someone who has HIV.	T	F	DK
3.	Pulling out the penis before a man climaxes/cums keeps a woman from getting HIV during sex.	T	F	DK
4.	A woman can get HIV if she has anal sex with a man.	T	F	DK
5.	Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV.	T	F	DK
6.	All pregnant women infected with HIV will have babies born with AIDS.	T	F	DK
7.	People who have been infected with HIV quickly show serious signs of being infected.	T	F	DK
8.	There is a vaccine that can stop adults from getting HIV.	T	F	DK
9.	People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV.	T	F	DK
10.	A woman cannot get HIV if she has sex during her period.	T	F	DK
11.	There is a female condom that can help decrease a woman's chance of getting HIV.	T	F	DK
12.	A natural skin condom works better against HIV than does a latex condom.	T	F	DK
13.	A person will NOT get HIV if she or he is taking antibiotics.	T	F	DK
14.	Having sex with more than one partner can increase a person's chance of being infected with HIV.	T	F	DK
15.	Taking a test for HIV one week after having sex will tell a person if she or he has HIV.	T	F	DK
16.	A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV.	T	F	DK
17.	A person can get HIV from oral sex.	T	F	DK
18.	Using Vaseline or baby oil with condoms lowers the chance of getting HIV.	T	F	DK

Appendix D

Nia Pre-Intervention Assessment Survey

Please answer the following questions as truthfully as possible; there are no right or wrong answers. Please take your time, and read each section carefully. Some sections require you to provide numbers. Others require you to circle the appropriate response. All answers will remain confidential to the extent allowed by law.

Participant ID Code: _____ **Today's Date: ____/_____/_____**

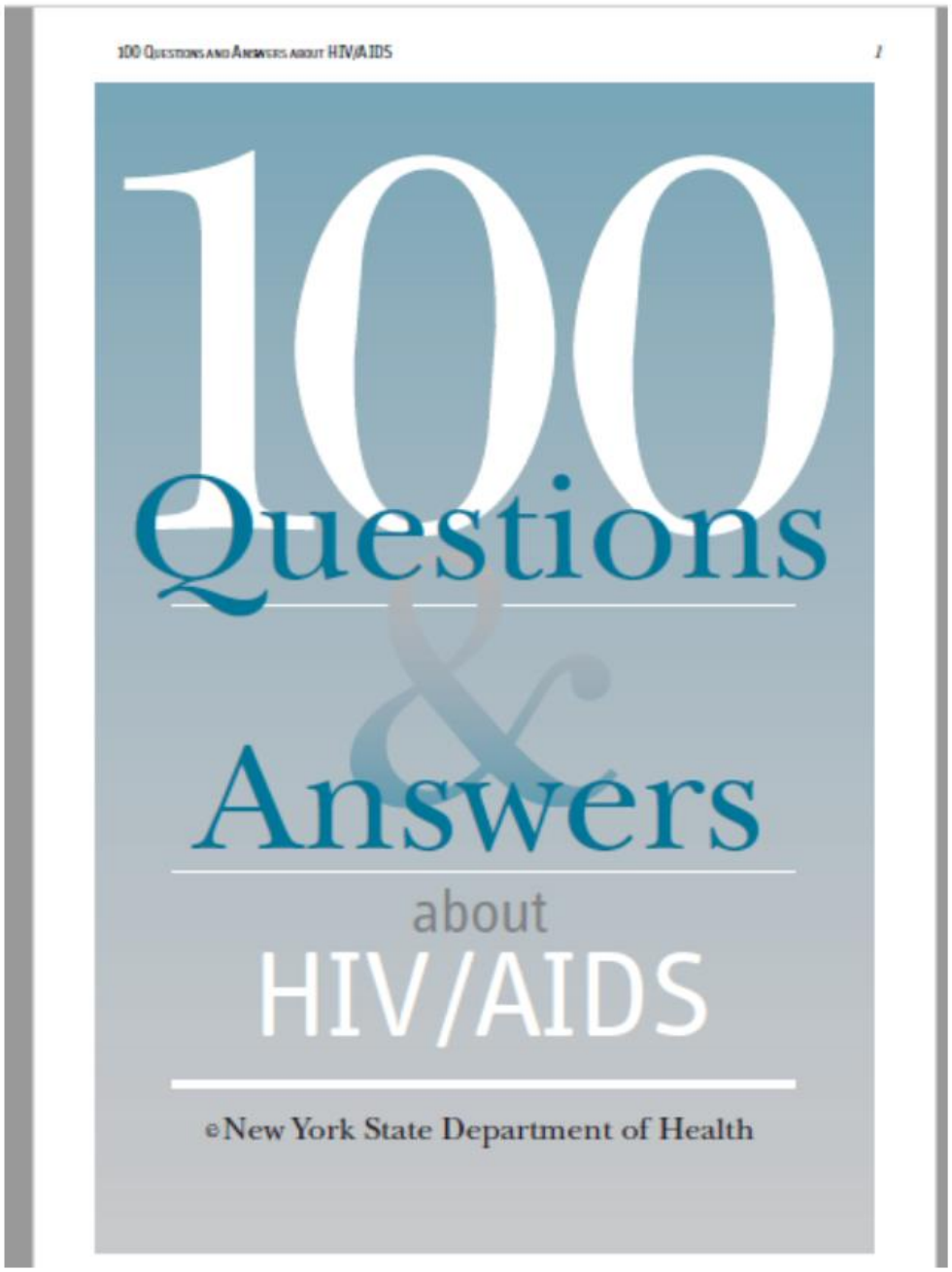
Age: _____ **Birth date: ____/____/____**

Ethnicity:
Hispanic/Latino ☐ **Not Hispanic or Latino** ☐

Race:
Mark your primary race first.
If you identify with more than one, please mark a secondary choice.

	Primary	Secondary
American Indian/Alaskan Native	☐	☐
Asian	☐	☐
African American/Black	☐	☐
White	☐	☐
Native Hawaiian/Pacific Islander	☐	☐

Appendix E


100 Questions and Answers about HIV/AIDS 1
100
Questions
&
Answers
about
HIV/AIDS
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