The Perceptions, Accessibility, and Use of PrEP and PEP as an HIV transmission
inhibitor tool among MSM College Students

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Abstract

Objective: The study assesses the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool among MSM College Students. The objective of this study is to understand the knowledge, perception, opinion, accessibility, and use of pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) among college-enrolled MSMs, and how they may experience barriers to these treatments. The research aims to alleviate the gap of LGBT+ health disparities among students that may be present by uncovering the quality of the campus climate around HIV prevention.

Methods: The research consisted of convenience and snowball-style sampling to carry out 22 semi-structured interviews and 1 focus group, consisting of 9 community members. The target population group for this study is men who have sex with men who
are over 18 years of age and are enrolled at a university/college located in the Middle Tennessee region. The age of participants ranged from 18 – 28 years of age.

Results: There is a disparity between the actual accessibility of PrEP and PEP and the knowledge/awareness of PrEP and PEP availability at on-campus clinics. Within the clinics, the experience of LGBT+ individuals are overall positive, yet subjects also express concerns of inadequate services and lack of health education from healthcare professionals. There does exist adequate knowledge of PrEP, but low knowledge of PEP among MSMs. There are low concerns of HIV prevention and usage of preventative tools, including PrEP and PEP, in the sample population. There are many reasons that subjects report not using the prophylaxes, such as lack of interest, exclusive partnership, frequent HIV testing, lack of LGBT doctors, lack of worry for HIV contraction, and expensive costs.

Conclusion: In age cohorts often reporting frequent sexual activity, sexual health is very important for individuals, organizations, and health establishments. Due to modern technological and pharmaceutical advances, prescription medicine can assist in lowering HIV infection rates, especially for the MSM populations. Yet, LGBT+ health disparities still exist, especially for MSM college students, that should be addressed and alleviated. More effective education, wider accessibility, more health service outreach, infrastructure improvements, lower costs, and support of governmental policies are all vital to decreasing morbidity and mortality rates in this important subgroup within the LGBT+ community.
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CHAPTER I: INTRODUCTION

Thesis Statement

This study assesses the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool among MSM college students. This study seeks to understand the knowledge, perceptions, opinions, accessibility, and use of pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) among college-enrolled MSMs and how these factors may act as barriers to treatment. The study explores the psychosocial barriers associated with PrEP and PEP among MSM students, and evaluates the quality of HIV-prophylaxis healthcare on campus, existing medical interventions, and accessibility of resources. By exploring these elements of PrEP and PEP, as well as their use and accessibility, this study brings into better focus the health needs of LGBT communities in hopes of informing local health initiatives. The research seeks to address this element of LGBT health disparities, and aims to help empower MSM subpopulations and educate local communities regarding the health needs of their citizens.

Literature Review

The human immunodefiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) represent significant health threats for many populations. According to the World Health Organization (WHO), about 27% of the 36.7 million people infected with HIV around the world perished due to HIV-related illnesses (GHO data). In the United States, an estimated 1.1 million people were living with HIV at the end of 2014, the most recent year for which data are available. The population group with the most such infections in the U.S. is males who have sex with males (MSM), according to the Center for Disease Control and Prevention (CDC). The percentage of new HIV diagnoses
among MSMs was 84.3%, according to a 2015 study (“HIV/AIDS: basic statistics,” 2015). In the state of Tennessee, 16,163 men and women were infected with HIV/AIDS in 2014 (Aidsvu, 2014) with no statistics available to document infections among MSMs. Still, HIV remains a significant health problem, especially for MSMs. Members of this group are 24 times more likely to live with HIV than the general population, and are at greater risk of exposure to the virus (“MSM, HIV and AIDS,” 2017). According to the CDC (2012), there are several reasons why rates among MSMs are so high, including high rates of STDs, high-risk sexual activity, substance use, insufficient HIV testing, limited access to healthcare, and experiences of stigma and discrimination. Ways to combat the rate of transmission includes methods like prevention education programs, HIV testing initiatives, condoms, pre-exposure prophylaxis (PrEP), and post-exposure prophylaxis (PEP).

Pre-exposure prophylaxis (PrEP) is a single pill taken every day by people at risk of HIV exposure, including MSMs. A combination of two HIV medicines (tenofovir and emtricitabine), sold under the name Truvada®, is approved for daily use as PrEP to help prevent a HIV-negative person from getting HIV from a sexual or injection-drug-using partner who is positive. In addition to daily drug intake, a follow up every three months with their physician is needed. PrEP is recommended for populations at risk of HIV/AIDS to reduce HIV transmission. Studies suggest that it is highly effective for preventing HIV if it is used as prescribed (“MSM, HIV and AIDS,” 2017). According to a study by the CDC (2017), PrEP can be used to reduce HIV transmission rates among men who have sex with men by 92% (“HIV/AIDS: PREP,” 2017). It is an effective HIV
prevention tool that can be combined with condoms and other preventative methods to provide even greater protection than when used alone.

Post-Exposure Prophylaxis (PEP), on the other hand, is an HIV transmission prevention tool for those recently exposed to HIV. It involves taking antiretroviral medicines as soon as possible, but no more than 72 hours after possible exposure to HIV. This helps to reduce the virus’s ability to replicate itself, thereby infecting an HIV-positive host, and potentially infecting others. In short, these medicines prevent the Human Immunodeficiency Virus from making copies of itself and spreading throughout the body. Two to three drugs are usually prescribed, and taken for 28 days. However, PEP is not always effective; it does not guarantee that someone exposed to HIV will not then become infected with HIV (“HIV/AIDS: PEP”).

Among high-risk MSM populations, young MSMs are significantly more likely to engage in high-risk sexual practices compared with older MSM cohorts (Hightow, 2005). For populations engaging in high-risk sexual practices, PrEP and PEP both show significant potential for HIV-prevention efforts, as briefly described above. This study will explore the use of PrEP and PEP as a HIV inhibitor prevention tool among young MSM students in a university setting, as well as their knowledge/perception and the accessibility of such treatments. In doing so, this investigation considers factors like proximity, affordability, and convenience vis-à-vis these potentially valuable pharmacological therapies. The research seeks to understand potential barriers to using treatments like PrEP and PEP, and to investigate ways in which local communities, clinics/hospitals, and health organizations might focus its efforts in promoting and supporting HIV-prevention among college students. Many universities and communities include substantial population of
LGBT+, so understanding the existing narrative surrounding the use and availability of PrEP and PEP is crucial to better accommodating LGBT students on college campuses, and in their communities.

CHAPTER II: METHODS

Methods

Ethical Approval. IRB approval for the thesis research was sent on September 29, 2017. Approval was granted by the MTSU Institutional Review Board on November 27, 2017.

Study Setting. The data collection for the study was in a college-based city. Interviews were conducted in different locations based on the appointment set-up. All interviews were conducted on the university campuses. A focus group was constituted from the membership of MT Lambda, an LGBTQ Organization on campus.

Data Analysis Method. This research employed open-ended methods to draw out patterns, concepts, and insights from interviews and the focus group discussions. More specifically, the framework method was used. Framework analysis is used by identifying thematic frameworks, coding transcripts, charting data into a framework matrix, mapping resources, and interpreting data (Srivastava, 2009). This approach sought to identify commonalities and differences from data, and draw out descriptive and/or explanatory conclusions based around set themes. Using a both inductive and deductive approach in this research, themes and codes were pre-selected based on previous literature and a previous study conducted by the Memphis Gay and Lesbian Community Center.
(MGLCC) on PrEP and PEP issues among MSMs in Memphis. Their study focused primarily on PrEP and PEP resource accessibility within the city of Memphis. It also included information on behavioral barriers, community knowledge, and perceptions of PrEP and PEP among MSMs within Memphis. The themes of knowledge/perception and accessibility were pre-selected for the study based on the report. The assessment of knowledge/perception is based on what the participants know about PrEP and PEP in terms of definition, mechanism, and its effect on HIV transmission. Participant’s opinions and beliefs about the medicine, concern levels, and further barriers were gathered. To assess accessibility, the researcher utilized questions regarding campus climate on the HIV prevention methods, as well as comparing actual and perceived availability of PrEP and PEP. In contrast with MGLCC’s report, this research will analyze the use of PREP and PEP among MSM students to gauge how many, if any, MSM college students are using it. The retrieval of data also differs by utilizing not only focus group discussions, but individual interviews as well. Furthermore, the proposed research thesis will not gauge physician’s attitude and beliefs about prescribing PrEP and PEP like the MGLCC research. This research’s sample population is only MSM college students. Additional information on PrEP and PEP resources like procedures and costs will not come from practitioner interviews, but rather from field observations and notes taken from health center’s websites, publications, lists of services, and by an on-campus clinic visit. An appointment was set-up with the on-campus health clinic and inquiries were presented to a physician. The physician provided information regarding PrEP and PEP, including cost and resources. That data is categorized within the accessibility section.
Research Tools. The study was conducted using semi-structured individual interviews and focus group discussion. Semi-structured interviews were used to assess knowledge, perceptions, and use of the medications. The interview guide categorized three themes for data analysis: accessibility, perceptions/knowledge, and usage. Questions on accessibility included where participants go for health services, the experience of on-campus health clinic, accessibility of PrEP and PEP from on-campus health clinic, general availability of the medications, source of HIV prevention, PrEP, and PEP education, and the best way to spread health information to the MSMs. The accessibility section is to assess the campus climate on PrEP and PEP accessibility. To explore the knowledge/perception of MSMs on PrEP and PEP, questions in the second section included health concerns, knowledge on PrEP and PEP, opinions on using the medications, level of concern about HIV prevention and PrEP and PEP, and beliefs on the rate of HIV transmission. The section is important to understand what is known about PrEP and PEP among MSMs, and what is believed about the medications. The last section on usage of PrEP and PEP was used to uncover how many MSMs do or do not use both medication and the reasons behind either answer. These questions in the section were used to uncover quantitatively estimate the usage of PrEP and PEP, but also to uncover barriers and motivators that may exist to using both prophylaxes. Questions in further exploring barriers/motivators of usage included gauging participants on sexual activity, frequency of high-risk sexual activity (if present), discussion of PrEP and PEP usage, and STD testing. There was one focus group discussion held at MTSU (March 2, 2018) to gauge community member’s knowledge and beliefs of PrEP and PEP, including methods of accessing either medication. Focus group questions reflected similar items in the interview guide, however excluded the section on
usage due to the respect of privacy for individuals in the group setting. Sections on accessibility and perceptions/knowledge from the interview guide were used in the focus group discussion guide for the same reasons. Field notes and observations from an on-campus clinic appointment were used to gauge the actual accessibility of PrEP and PEP, cost, and eligibility requirements.

*Sampling Method.* The research utilized convenience and snowball-style sampling to carry out 22 semi-structured interviews and one focus group, consisting of nine community members. Due to the difficulty of recruiting gay men, participants were first recruited from personal relationships, then were asked if they could provide references for sampling (snowball-style). Venues for interview appointments included various campus locations. This researcher also utilized convenience sampling on campus. Current and past members of the organization were recruited for a focus group discussion that was conducted in the Student Government Association Office. The target population group for this study is men who have sex with men who are over 18 years of age and are enrolled at a university/college located in Middle Tennessee. The age of participants ranged from 18 – 28 years.

*Procedure.* After agreeing to participate in the interview, participants are debriefed on the research from the model recruitment script and the consent form guide. After obtaining approval by signature, participants are asked to answer a series of questions to the best of their knowledge and ability on the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool. The interviews lasts approximately 30 minutes.
Permission to use voice recordings is designated by signature. Recordings are strictly confidential. The interviewee is asked questions from the interview guide, at which the participant may stop at anytime. After the interviewing process, all information/data were analyzed from pre-selected themes. Voice recordings are transcribed as soon as possible then be deleted after transcription. The transcription and all data received from the participant were terminated on March 26, 2018.
CHAPTER III: Results

Accessibility of PrEP & PEP, as well as LGBT Health Services.

On inquiring where participants go for health services, 11 of those interviewed go to MTSU Health Services for healthcare. The number of participants that visit their family or local physician was five, while six participants do not go for health services at any location. For those who have gone to the on-campus health clinic, participants were asked if the clinic and services effectively address their health needs and concerns. Participants, five out of 11, express that they are accommodating due to their convenience. “It’s convenient, because I live on campus and it’s a walk away.” On matters of LGBT sexual health, another participant stated, “They were always accommodating and from my experiences very LGBT+ knowledgeable.” On matters of LGBT sexual health, a participant previously on PrEP stated, “(I) went to ask about PrEP (and) met with health worker for information on it. There’s a little test survey to take like age ranges. Different age brackets get a score. You have to be at-risk to be qualified for it.” He continued, “The doctor knew about (PrEP). The nurse had no idea what I was talking about. 10/10 for the visit.” Another participant stated, “It provides the necessary care that I need for when I have a bacterial/viral condition, and I’m able to choose my doctor and their respective amount of experience based on title.”

Others disagreed regarding the clinic’s care, stating, “They are not helpful, because I had the flu and they told me I didn’t. I got sicker. I ended up going to the real doctor.” Other reasons included not having condoms easily accessible without asking and little discussion or explanation of HIV prevention, in addition to testing. A participant, who had previously attended Texas A&M stated that the health center there better
personal sexual health concerns than MTSU by providing adequate resources and knowledge about HIV prevention. On types of health insurance used by LGBT community, four common health insurance providers were described: Blue Cross, Atena, Cigna, & Cedrin. Five participants used Blue Cross, three Atena, three Cigna, three Cedrin, while eight participants were uninsured. According to a participant, Cedrin provides free PrEP and PEP medication support. Participants were asked if PrEP & PEP was ever explained to them by their healthcare provider or other health professional. A majority of the participants (14) said that they had never received information from their healthcare provider or other professional, while 8 said yes. Of those who said yes, sources included a nurse on Facebook, a university health clinic, and local physicians. For those who have not received information from a healthcare provider or professional, other sources included friends and social media. Only the participants who have been on PrEP & PEP knew that the MTSU Health Clinic offers resources for PrEP & PEP (20 participants). When asked, where they believe PrEP and PEP counseling may be available, answers included Nashville CARES, a hospital/clinic, healthcare providers in Nashville, and other healthcare providers. 12 did not know and were unable to answer.

When asked about the best way to spread health information about PrEP and PEP, a majority of participants claimed that social media is the best way (12 participants). One said, “Some people may not want to be seen picking up a pamphlet. Social media links. Best way is online.” Another participant stated that social/dating applications on phones are effective. “I really do think that dating apps should be targeted. I learned it from Grindr and that helped me. We have a lot of sex shaming in this culture. It could be an ad on Facebook. Online platform is where it should be promoted. “Many have said pop-ups
and advertisements. Others say community outreach and education like holding an event or campus-wide campaign on LGBT sexual health (six participants). “Hold an event. Gays are attracted to other gays.” Another expressed, “Commercials, school-wide emails detailing preventative services with brief benefits, and by especially placing this information in the hands of health professionals who see us on a daily basis.” Others contribute simple conversation to help (two participants). One said, “Talk about it face to face. The positive aspects of it.” Another stated, “I think talking about it whenever it comes up. I think including sexual health in conversation; sexuality is talked about a lot and sexual health is not included in the conversation.” Two participants did not know.

**Perceptions/Knowledge of PrEP and PEP**

Upon easing into the questions regarding health concerns within the LGBT community, all participants stated that STDs, like HIV, are major concerns. “HIV. Gets most awareness. It’s the main cause,” said one participant. However, other participants have stated that other STDs and STIs are not as well-represented. One participant said, “STDs don’t get really talked about. Needs more education on STDs. HIV/AIDS is widely-talked about but less common stuff needs to be more educated on those. Syphilis, Chlamydia, Herpes, HPV, etc.” Another expressed, “STIs, specifically, I’ve learned through own research. While it makes HIV infections go down, it makes other STI infection rates go up due to unprotected sex. While most unlikely, still able to contract other STIs.” One participant described a concern with “cheating, it could lead into viral infection transmission.” Some participants also expressed concerns about the lack of concern for health matters within the community. One participant stated, “For the most
part, I have noticed that very few of my male friends take health concerns very seriously. In fact, I know some who have come into contact with curable diseases multiple times with little concern or shame but this is not the norm.” One have said that many LGBT+ students on campus, in general, do not take the proper health precautions towards STDs. A participant stated, “I’m afraid that we are not positively representing what we should be. We are not properly representing ourselves in health aspects.”

This study also assessed knowledge of pre-exposure and post-exposure prophylaxis. 17 participants could describe PrEP correctly as a preventative medicine for sexual health. “It’s just medication at the simplest level that aids in ability to have sexual things with people and keep protected from stuff (STIs and STDs/ HIV, urine infections). I believe it’s a pill. Once a day. It helps aid your body in preventing HIV. Most participants (10) knew it was preventative medicine, but were not able to describe further. One stated, “It’s like a preventative medicine... Other than that, I’m not really sure.” Two participants, who previously were on the drug, could further explain the drug and its effects. A participant stated, “It’s 95% effective and taken every day, preferably at the same time. Similar to birth control. If you skip a day, then you don’t double dose. It takes three weeks before it builds up immunity. It wasn’t hard to take it every day.” One participant was surprised at its effectiveness for decreasing HIV transmission, but questions whether if that included the usage of condoms. Five interviewed did not know how PrEP and PEP decreased HIV prevention. A majority of the participants (18 out of 22) did not know about post-exposure prophylaxis. One simply stated, “I didn’t know they existed.” One who knew about PEP said, “It’s a thirty-day thing, take it 72 after exposure (to HIV). I have done no research, only know general research.”
Participants were also asked their opinions on using PrEP & PEP. A majority of participants (17) expressed positive opinions toward PrEP. However, participants also expressed concerns regarding PrEP like stigma, lack of condom usage, and low standards of sexual health precautions among the community. One said, “I think it’s useful to protect yourself, but I don’t think that’s the only thing you’re doing. It’s better to use always condoms and the prescription.” Another stated, “I feel like people will think ‘I’m on PrEP so I can fuck whoever’ That’s a concern. It could lower people’s standard on inquiry about sexual health.” One participant believed that one partner using PrEP could defray the use from the other partner. One said, “I can see people wondering what do I need to worry about if someone else is on it (PrEP).” As far as PEP, not much is known about it among the participants to have an opinion. “If it’s available and you have access to it then its better than nothing. I don’t know much.” Another contributed costs to be a barrier for usage saying, “Should be used, but prescription drug costs often prevent many people from being able to afford the drug.”

Concerns on HIV Prevention, PrEP, & PEP

When asked participants about their concerns regarding HIV prevention, 13 participants have said that they are not personally concerned. Reasons included a single sexual partner, condom usage, no sexual activity, inquiry about HIV status before sexual contact, and frequent testing. “No concerns. Condoms typically (I) use.” One said, “I’m not very concerned about being exposed to HIV. I’m wary of engaging in a sexual relationship with anyone who I feel is careless.” Nine participants said that they are concerned for the community on HIV prevention. One stated that HIV positive individuals are often ostracized. He said, “People seem to run away from people who
have HIV. When using dating app, my HIV-positive friend was on there and he has his [HIV] status on the profile. Someone messaged him and saying ‘You’re disgusting. How could you do that to yourself?’” Others stated that many are scared that they can contract it, if they are sexually active. One said, “People are scared that they can contract it and become what everyone is afraid of.” Another participant reinforced the importance in taking HIV tests, “Anyone who is sexually active, LGBT or not, should take the HIV test every six months.”

On concern of PrEP and PEP, 12 participants expressed they were concerned about PrEP. This included wanting to learn more about the medicine and its effect. Some were concerned that it could lead to over reliance on the prescription drug. “I think it might teach people the wrong way of taking care of themselves. That they can only rely on that or that protected. Pharmaceutical companies are stupid anyways.” On PEP, 18 participants were not concerned. One of the four who expressed concerns that more attention is needed to PEP as well. He stated, “We have a strong hook-up culture. Within the community, it needs to be more attention towards detailed ideas.”

**PrEP and PEP Usage**

Only two participants out of 22 had reported to using PrEP, since they were sexually active. A participant said, “I’ve been sexually active for a year. A way to best protect myself and others.” For those who never used PrEP the following barriers were: cost, little to no sexual activity, fear of doctors and/or lack of LGBT doctors, no interest, lack of perceived HIV risk, and frequent HIV testing. A participant reported, “I don’t think I would put myself in an unsafe position. I get tested regularly and the other person does
Another participant, noting cost as an important barrier, said, “Because it’s pricey and I’m not insured. And I don’t have a crazy sex life.” One participant mentioned the lack of LGBT doctors as a barrier saying, “Doctors intimidate me. I feel more comfortable speaking to a gay man. Representation matters.” No participants had reported using PEP. Reasons included lack of knowledge/information and infrequent sexual activity. One participant stated, “I don’t see a reason for it [PrEP and PEP]; I have no information on it.” One aware of its effects expressed, “If I need to. I know about it [PrEP and PEP] and can get it if I need to.”

On questions of sexual activity, only five reported to not being sexual active. Those who engage in sexual activity, the frequency varied: few times a week (four), once a week (three), once a month (four), every few months (three), and once every 6 months (three). Of those sexually active, this included both with or without an exclusive partner. Of those sexually active, four have reported to using condoms every time. 10 participants reported never wearing a condom or using other HIV preventative methods during sex. Reasons included exclusive sexual partner, frequent testing, and discomfort. One participant stated, “I don’t worry about condoms at all. My partner and I both got tested together. I got tested at my own doctor.” Another participant would ask sexual partners of their status before sexual contact. A participant expressed, “Before I even met him, when I went to his house, I asked of his health status. I try to avoid questioning and using the word “clean.” I don’t like ‘Are you clean?’ It implies people with HIV are unclean. I ask, ‘What is your health status?’” One participant said condoms were discomforting, “I don’t personally enjoy condoms as an HIV preventative because it is uncomfortable to me. I’d rather have no sexual intercourse if this were made a permanent rule.” Two out of 22
participants reported using condoms or other HIV preventative methods occasionally. A participant stated in response to using condoms/HIV preventative methods, “Casually. Every couple of months, I use condoms. Rarely do I engage in high-sexual activity.”

When asked if participants talk to partners about HIV prevention, the majority of participants do not talk about HIV prevention with their partners (14). Reasons included that it was difficulty to bring up, lack of conversation of HIV on-campus within the MSM community, low comfort level on the subject, exclusive partnership, and trust of one’s significant other. A participant who stated it is difficult to bring up stated, “It’s a hard topic to talk about. If you don’t ask, then you don’t know. Ignorance. Within the community, to some degree, there is more support than there isn’t for HIV prevention and those that have it.” Another who does not talk about HIV with his partner expressed, “It’s one of those things that no one talks about. I don’t have AIDS and it’s a trust thing. I know he’s not with other people. It’s a matter of trust. If it’s meant to be, its meant to be. I’m gonna kill myself if I do catch it. Your boyfriend could give you AIDS. It’s something that you can’t control.” A participant stated trust as a reason for lack of discussion, “We are not necessarily in a relationship but our agreement is exclusive and we have dated in the past.” One participant who claimed that they discuss HIV prevention with their partners expressed, “We got to use protection. Even if he says he’s clean then still use. I meet them from Grindr and Tindr.”
CHAPTER IV: DISCUSSION

Introduction

The themes that were pre-selected for this study are accessibility, perception/knowledge, and usage of PrEP and PEP. They were derived from the MGLCC report, as well as previous research and studies. Questions were analyzed and categorized thematically within these three sections. In addition, two themes including the accommodation of the health clinic and sexual health concerns among the MSM community were uncovered from the research. These themes were derived from questions within the sections of accessibility and perception/knowledge, but were separated for organizational purposes.

Actual & Perceived Accessibility of PrEP & PEP

This research aims to assess the actual and perceived accessibility of PrEP and PEP among MSM college-attending MSMs. The research, in part, seeks to explore how accessible PrEP and PEP therapies are to MSM students and their perceived accessibility of the prophylaxes. According to field notes, observations, and a clinic visit, these prophylaxes are available in the campus health clinic. However, knowledge of accessibility among MSM students is very low. The medication for PrEP & PEP, Truvada, according to a recent on-campus health clinic visit, is not offered at the pharmacy located on campus. However, healthcare professionals have the resources able to link students with the anti-HIV medication through Nashville CARES, a local AIDS service organization. After gauging risk for HIV contraction through a survey (included in the research), a physician signs an approval referral to the organization. Students who are referred speak to an organization representative who further explains more about the
process to receiving the prescription. Resources from the on-campus clinic are present for students who set up an appointment. Two participants were able to get connected with the administration of PrEP by health services on campus. Like the two, majority of participants do utilize MTSU Health Services for their healthcare. This primarily consisted of students who lived on campus. However, only the two MSM students knew that the MTSU Health Clinic offers the resource for PrEP & PEP. There is low perceived accessibility among the MSM students. Answers on location of availability included various healthcare facilities, as well as Nashville CARES. None were aware that the resources for PrEP and PEP exist on campus. More than half of all participants did not know where to obtain PrEP & PEP resources. About a third of participants do not utilize any health services so it raises concerns on individual health. Focus group participants brought up the need for more transparency on the resources.

Adequate Knowledge of PrEP & Low Knowledge PEP

All but five participants were able to display some level of knowledge of the prescription drug. Although many do not go past the knowledge that it is a HIV preventative medication, the knowledge level was adequate in that PrEP was able to further prevent HIV transmission. Only one participant reported believing that it helps fight off against any sexually-transmitted disease transmission or urine infections. Two participants were able to provide a wider knowledge on the medicine due to their past prescription of PrEP. On the other hand, however, knowledge on PEP is low. Many participants did not have any knowledge of PEP. Some were aware of the medicine, but unable to provide knowledge of its use. Since it is a prescription medicine that is taken
after a possible HIV infection, it is important for knowledge on PEP in case one is potentially infected.

**Low PrEP Usage & Existing Barriers**

According to all 31 community members, focus group included, PrEP is not used, besides two participants. When asked about barriers, the respondents notes that many barriers to being prescribed PrEP. It includes lack of knowledge, exclusive partner, cost, fear of doctors/lack of LGBT doctors, lack of interest, lack of worry, and frequent HIV testing. Not many participants know enough about PrEP to catalyze interest. This is also paired with lack of worry for HIV contraction. Other participants say that being in a monogamous relationship discourage them from using HIV prevention methods like condoms or PrEP. Some who were in relationships also stated that frequent HIV testing is most often done together. According to another participant, there is a fear of doctor’s visit, mainly due to the lack of LGBT doctors that can serve as a relatable healthcare provider. Representation of LGBT+ staff in healthcare has been expressed to be a motivator in frequent clinic visit. Another major barrier that has been seen is the high cost of PrEP & PEP. Most insurance companies expressed in this research do cover the cost of PrEP like Cedrin, who also waives STD/STI testing & medication fees. Although coverage is possible, not many knew if their health insurance could cover it. For those uninsured, cost can be high. According to a physician and pharmacists, PrEP can be as expensive as $2500 a month. In addition, one must go through multiple health screening tests to be able to qualify for the medication. The list of tests included screening for HIV, Gonorrhea, Chlamydia, Syphilis, Hepatitis Surface Antigen, Oral/Anal, and Core
Antibody. Updated Hepatitis B vaccinations are also needed. The cost of screening and vaccinations in total is about $160. Cost is a major barrier in any budget, let alone a college student.

**Accommodation of Health Clinic**

From participants who state they go to MTSU’s health clinic, over half report that the clinic effectively addressed their health needs and concerns. The only two participants who have been on PrEP were able to prescriptions through the clinic. However, for those who did not feel as well-accommodated, it was concerns of adequate services rather than around sexual orientation. One such concern involves the lack of HIV prevention education given with HIV testing at the clinic. One participant compared their experiences at Texas A&M, a school previously attended, to MTSU and said the on-campus clinic in Texas was more accommodating by providing “more adequate resources and knowledge about HIV prevention.” When receiving HIV testing at MTSU Health Clinic, not much is explained about steps and process to further educate students on prevention based on the participant. A swab and you’re out the door awaiting online results. There is a missed opportunity for furthering HIV prevention education. Over half of participants have expressed they have never been explained about PrEP & PEP by their healthcare professionals. For those who answered yes in receiving education from healthcare professionals, the PrEP & PEP education was given to them from other sources like social media and other local physicians.
Concerns of Sexual Health among MSM Community

Participants have expressed that there are high concerns for sexual health among MSM. Most of the concerns are related to STDs and transmission. Interviewees and the focus group expressed a lack of conversation of other STDs, besides HIV, and lack of education on other STD/STIs. There is a concern that as HIV infections decrease, it can allow STI rates to increase as many are participating in unprotected sex. Although the participants have expressed prevalent health concerns, some say that they live in a community (MSM) that do not take health concerns seriously and there is a lack of precautionary measures. From this research, more than half have reported to not being personally concerned with HIV prevention. Many participants engage in high-risk sexual activity without a condom. Many do not wear condoms because they are in an exclusive relationship and/or have discussed status. However, as one participant said, cheating is a concern among the community, so there is still risk of infection within any partnership. In addition to a needed push for condom usage, advocating for more frequent HIV testing is also important in this case. Other participants have also expressed that the MSM community is very hostile against individuals that are HIV positive. Many are scared to contract it and, unfortunately, ostracize those who have been infected.
CHAPTER V: CONCLUSION

This research aims to assess the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool among MSM College Students. From interviews of 31 total participants, there exist problems with perceptions of HIV prevention, lack of knowledge of accessibility of PrEP, lack of usage for the medicine, infrastructural issues, and barriers of utilizing the prophylaxes. In an age cohort that engages in frequent sexual activity, sexual health should be an absolute high priority for individuals, organizations, and health establishments. Due to modern technological and medicinal advances, prescription medicine exists to assist in lowering HIV infection rates, especially for the MSM community. Yet, LGBT+ health disparities still exist, especially for MSM college students, that should be addressed and alleviated. Implications on needs of further education, wider accessibility, more health service outreaches, infrastructural improvements, lowering of economic costs, and support of governmental policies are all vital to decreasing the mortality rates of a subgroup within the LGBT+ community.

Programmatic Implications

Implications that are needed for the MSM community on campus include the widening of knowledge on accessibility of PrEP, PEP, and other HIV preventative methods. Most of the participants reported to having some sort of knowledge on PrEP and PEP, yet do not know if their on-campus health is providing the prophylaxes. Since participants have reported that social media is the best way to reach LGBT+ students, a social media campaign to market PrEP, PEP, and other various healthcare screenings/tests are needed.
Sponsors for this campaign should be MTSU Health Services and/or LGBT+ organizations on campus. Events created by LGBT organizations raising sexual health awareness are also educating the public, however may not be as effective for everyone. On campus, there was a LGBT+ Health Awareness week starting this year on March 26-31. There was a panel (forum) on LGBT+ Health where issues, such as services provided by the on-campus health clinic for LGBT+ individuals, were discussed. However, one may not be too comfortable attending a LGBT+ forum in person if they are not open in their sexual orientation. Social media is the best way to capture a more encompassing net of LGBT+ students. Another way to reach students is through school-wide e-mails addressing sexual health services that are being offered at MTSU Health Services. Website links for MTSU Health Services do not necessarily list out all the services or counseling help offered, especially for those who are looking to be on PrEP. While healthcare professionals are administering HIV Testing, discussions on HIV preventative methods before, during, and/or after testing is needed. A debriefing on ways to prevent STD transmission would be beneficial to students, as education is absent when one goes for HIV testing. It is important to address the concerns of the few LGBT+ members that do not feel they are being properly accommodated.

Education on PrEP can also lead to an increase in interest. Cost of PrEP, that may defray further interest, is a matter of the market economy and lack of competition for companies on producing the medication. Lawmakers in Congress can make a difference by making policy changes that allow the regulation of prescription drug prices. The aim should be to continue investigating drug prices. Currently, lower prescription costs are needed even though costs (set by corporations) are continually rising. In addition,
transparency is also needed from drug companies on the cost of research and development, costs to make and distribute, and other processes for medications like PrEP. Transparency will provide awareness to the public and the justification of the high drug prices. Transparency can also lead to the increase of corporations on providing the drug. This will create competition, which businesses do not want, but lower the cost for consumers. The expense of raised mortality rates is just far too great to ignore.

**Study limitations**

Due to time, PrEP and PEP from other clinics and hospitals around Murfreesboro were not able to be gauged. A further study could map out PrEP and PEP resources at a wider scale than a university. Gathering information on health practitioners’ knowledge and beliefs on PrEP and PEP would also be an interesting application to this research. Another limitation is difficulty of recruiting MSM participants. Pools for participants is quite limited to begin with, but when recruiting participants after snowball–style sampling, willingness of participant’s approval to be interviewed on a sensitive subject also pose as a challenge. Most of my participants were open in sexuality with their parents and family, however I was not able to gather more participants who are not “out.” Had I not have many personal friends and acquaintances who are gay men, this study would be more difficult to conduct.
REFERENCES


APPENDICES

APPENDIX A: MODEL RECRUITMENT SCRIPT

The Perceptions, Accessibility, and Use of PrEP & PEP as an HIV transmission inhibitor tool by MSM college students.

My name is Hermon Phuntling. I am a student at Middle Tennessee State University. I am conducting a study to understand how pre-exposure prophylaxis and post-exposure prophylaxis, affect your community. We are here because we value your ideas. There are no right or wrong answers. I am simply trying to learn about your understandings of PrEP and PEP, as well as its usage and accessibility. You will not benefit directly from our study being here today. Your responses will help us better understand your health needs in hopes of improving local health initiatives. Your answers will be kept confidential and will not affect the healthcare you receive in any way. This meeting will take approximately 30 minutes. Risk might include discomfort during the interview process. Participation is completely voluntary and you may stop at any point during the meeting. You can also tell me that you do not wish to answer any specific question. If refusal to participate, all data received will be terminated. This interaction may be recorded in order to assist in recalling information later on. Recordings will be kept strictly confidential.

Agreement to participate in this study indicates that you understand the above considerations. Your participation is voluntary and you have the right to withdraw from the study at any time. I would like to thank you in advance for your participation in this very important study that will positively impact health care service use and illnesses experienced among persons with HIV/AIDS among college students.

If you have any additional questions, please contact Hermon Phuntling at HPHUNTLING @GMAIL.COM or (865) 283-1093.
APPENDIX B: CONSENT FORM GUIDE

CONSENT FORM: The Perceptions, Accessibility, and Use of PrEP & PEP as an HIV transmission inhibitor tool by MSM college students.

Principal Investigator: Hermon Phuntling
Study Title: The Perceptions, Accessibility, and Use of PrEP and PEP as an HIV transmission inhibitor tool among MSM college students.
Institution: Middle Tennessee State University

Assigned ID Number: _______  Age: __________

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time. In the event new information becomes available that may affect the risks or benefits associated with this research study or your willingness to participate in it, you will be notified so that you can make an informed decision whether or not to continue your participation in this study.

For additional information about giving consent or your rights as a participant in this study, please feel free to contact the MTSU Office of Compliance at (615) 494-8918.

1. Purpose of the study:
   You are being asked to participate in a research study because the objective goal of this study is to understand the knowledge, perception, opinion, accessibility, and use of pre-exposure prophylaxis and post-exposure prophylaxis among college-enrolled MSM individuals and how it may act as barriers for the treatment. The study will be assessing the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool among MSM College Students. The study will explore the psychosocial barriers associated with PrEP and PEP among MSM students, and evaluate the quality of HIV-prophylaxis healthcare, existing medical interventions, and accessibility of resources. By exploring these elements of PrEP and PEP, as well as its usage and accessibility, the study will expose any health needs of the LGBT community in hopes of improving local health initiatives. The research is needed to alleviate the gap of LGBT health disparities among students that may be present. It is intended to serve the MSM community in empowering and educating the local community on health initiatives.
2. **Description of procedures to be followed and approximate duration of the study:**
   If agreed, you will be asked to answer a series of questions to the best of your knowledge and ability on the perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool. There are no right or wrong answers. We are here because we value your ideas. You will only participate once. The interview will last approximately 30 minutes. Your approval to be voice recorded will be designated by your signature. If you do not wish to be audio-recorded, simply circle NO on the later portion of the consent and state that you do not wish to be recorded. Recordings will not be utilized without your permission. This is to ensure correct data when analyzing. After the interviewing process, all information/data will be kept within the faculty's storage. Voice recordings will be transcribed as soon as possible then be deleted after transcription. The transcription and all data received from the participant will be terminated on March 26, 2018.

3. **Expected costs:**
   There is no cost or compensation for participating in this study. The risk involve sensitive information regarding use of drugs for HIV prevention and transmission prevention, however all data will be confidential and data will be kept in faculty's storage so information is not dissiminated.

4. **Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:**
   Responding to sensitive questions on LGBT issues and HIV might cause discomfort. The risk involve sensitive information regarding use of drugs for HIV prevention and transmission prevention, however all data will be confidential (only identifiable information used is ID number) and data will be kept in faculty's storage so information is not dissiminated. If at all any point of the interview you feel discomfort, please stop the interview and let Hermon Phuntling know. There are no consequences for refusal of participation. Simply tell the Principal Investigator (Hermon Phuntling) you no longer wish to continue and the interview will cease. You are able to change your mind before, during, or anytime after the interview.

5. **Compensation in case of study-related injury:**
   MTSU will not provide compensation in the case of study related injury.

6. **Anticipated benefits from this study:**
   a) The potential benefits to science and humankind that may result from this study are improving local health initiatives on HIV/AIDS prevention and care. The research is needed to alleviate the gap of LGBT health disparities among students that may be present. It is intended to serve the MSM community in empowering and educating the local community on health initiatives.
   b) The potential benefits to you from this study are feeling good you contributed to the betterment of humankind. There are no other benefits.
7. Alternative treatments available:
The only alternative treatment is to refuse being interviewed, which you are open to do at any point of the interview.

8. Compensation for participation:
There is no compensation.

9. Circumstances under which the Principal Investigator may withdraw you from study participation:
If you express being uncomfortable/discomfort and wish to stop the interview or deny permission to use data, then the Principal Investigator will withdraw you from the study participation.

10. What happens if you choose to withdraw from study participation:
All data will be deleted and terminated. You will not be used for the purpose of the study if you choose to withdraw.

Contact Information. If you should have any questions about this research study or possible injury, please feel free to contact Hermon Phuntling at 865-283-1093 (Email: HPHUNTLING@GMAIL.COM) or my Faculty Advisor, Brian P. Hinote at (615) 898-2488 (Email: BRIAN.HINOTE@MTSU.EDU).

11. Confidentiality. All efforts, within reason, will be made to keep the personal information in your research record private but total privacy cannot be promised. Your information may be shared with MTSU or the government, such as the Middle Tennessee State University Institutional Review Board, Federal Government Office for Human Research Protections, if you or someone else is in danger or if we are required to do so by law.

12. STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY
I have read this informed consent document and the material contained in it has been explained to me verbally. I understand each part of the document, all my questions have been answered, and I freely and voluntarily choose to participate in this study.

Do you agree to be audio-recorded (circle):   YES    NO
Date

Signature of patient/volunteer

Consent obtained by:

Date

Signature

Printed Name and Title
APPENDIX C: INTERVIEW GUIDE

PrEP and PEP Research Interview
Population of Interest: MSM
Introduction / Informed Consent.

Demographic.
Age ____________________________________
Gender Identity ______________________
Sexual Orientation ___________________

Section 1. Accessibility
1. Where do you normally go for health services? How often do you go there for
   health services?

2. How often do you go to your on-campus health clinic?
   a. Do you feel your on-campus health clinic is accommodating to your health
      needs/concerns?
      i. If YES, how?
      ii. If NO, why?

1. What are some improvements needed?

3. Has your physician or healthcare provider provided you with HIV prevention
   education?
   a. If YES, what was said about it?

4. Have you received education on PrEP and PEP?
   a. If YES, where did you learn about PrEP and PEP? Who provided the
      education? What was taught about it?

5. Does your on-campus health clinic provide PrEP and PEP?

6. Where are PrEP and PEP available? How close in proximity is it to you?
7. What is the best way to spread health information about PrEP and PEP to the MSM community?

Section 2. Perception

8. What are some of your health concerns, if any?

9. What are some health concerns within the MSM community?

10. What do you know about PrEP? How does it affect HIV transmission, if at all?

11. What do you know about PEP? How does it affect HIV transmission, if at all?

12. What are your opinions on using PrEP as an HIV prevention tool?

13. What are your opinions on using PEP?

14. How concerned are you about HIV prevention?

15. How concerned are you about PrEP? PEP?

16. Do you think usage of PrEP and PEP is helping lower HIV transmission rates in your community?
   a. If YES, how?
   b. If NO, why?

Section 3. Usage

17. Do you take or have you ever taken PrEP?
   a. If YES, where did you receive it?
   b. If YES, is it covered by your healthcare provider?
      i. If NO, how much was the cost?
         1. How affordable was it to you?
   c. If YES, what are your reasons for taking PEP?
   d. If YES, how has it affected you?
e. If NO, why have you not gotten it before?
   i. What hinders you from taking PrEP?

18. Do you take or have you ever taken PEP?
   a. If YES, where did you receive it?
   b. If YES, is it covered by your healthcare provider?
      i. If NO, how much was the cost?
         1. How affordable was it to you?
   c. If YES, what are your reasons for taking PEP?
   d. If YES, how has it affected you?
   e. If NO, are you interested in receiving PEP?
      i. How much would you pay?

19. Are you sexually active?
   a. If YES, how frequently do you engage in sex? How often do you engage in high-risk sexual activity (no HIV inhibitor method including but not limited to condoms, PreP, and PEP, etc.)?
   b. If YES, what HIV prevention tools do you use, if any? What initiatives do you take for HIV transmission prevention, if any?
   c. If NO, when was the last time you had sex? Did you or your partner use any HIV prevention methods? Why/Why not?

20. Do you talk to your partner(s) about HIV/HIV prevention?
   a. Is YES, what is discussed?
   b. If YES, how often do you talk to your partner(s) about HIV prevention?
   c. If NO, what are the reasons?
21. Do you talk to your partner(s) about PrEP and/or PEP?
   a. If YES, what is discussed?
   b. If YES, how often?
   c. If NO, what are the reasons?

22. How often do you test for HIV? When was the last time you tested for HIV? How was your experience?

23. What questions/concerns do you have about PrEP and PEP, if any?
APPENDIX D: FOCUS GROUP GUIDE

PrEP and PEP Research Focus Group
Population of Interest: MSM
Introduction / Informed Consent.

Demographic.
Location ____________________
Number of Participants _____

Section 1.

1. Where do you normally go for health services? How often do you go there for health services? For what types of health services?

2. Do you feel your on-campus health clinic is accommodating to your health needs/concerns?
   i. YES, how?
   ii. NO, why?

   1. What are some improvements needed?


4. How LGBT-friendly is your primary health clinic, if not on campus? Explain.

5. Has your physician or healthcare provider provided you with HIV prevention education?
   a. If YES, what was said about it?

6. Has anyone explained PrEP and PEP to you?
   a. If YES, where did you learn about PrEP and PEP? What was taught about it?

7. Does your on-campus health clinic provide PrEP and PEP?
8. Where are PrEP and PEP available? What clinics? How close in proximity is it to you?

9. What is the best way to spread health information about PrEP and PEP to the LGBT community?

Section 2.

10. What are some of your health concerns, if any?

11. What are some health concerns within the LGBT community, if any? Health challenges within the LGBT community?

12. How concerned are you about HIV? How concerned are you about HIV prevention?

13. What is PrEP? How does it affect HIV transmission, if at all?

14. What is PEP? How does it affect HIV transmission, if at all?

15. What are your opinions on PrEP as an HIV prevention tool?

16. What are your opinions on PEP?

17. How concerned are you about PrEP? PEP?

18. What are your community’s views on PrEP and PEP?

19. Do you think usage of PrEP and PEP is helping lower HIV transmission rates in your community?
   a. If YES, how?
   b. If NO, why?
APPENDIX E: IRB APPROVAL

IRB
INSTITUTIONAL REVIEW BOARD
Office of Research Compliance,
010A Sam Ingram Building,
2269 Middle Tennessee Blvd
Murfreesboro, TN 37129

IRBN001 - EXPEDITED PROTOCOL APPROVAL NOTICE

Monday, November 27, 2017

Principal Investigator: Hermon Phunting (Student)
Faculty Advisor: Brian Hinote
Co-Investigators: NONE
Investigator Email(s): hp2u@mtmail.mtsu.edu; brian.hinote@mtsu.edu
Department: Sociology & Anthropology (Office of Student Success)
Protocol Title: The perceptions, accessibility, and use of PrEP and PEP as an HIV transmission inhibitor tool among MSM college students
Protocol ID: 18-2071
Funding: NONE

Dear Investigator(s),

The above identified research proposal has been reviewed by the MTSU Institutional Review Board (IRB) through the EXPEDITED mechanism under 45 CFR 46.110 and 21 CFR 56.110 within the category (7) Research on individual or group characteristics or behavior. A summary of the IRB action and other particulars in regard to this protocol application are tabulated below:

<table>
<thead>
<tr>
<th>IRB Action</th>
<th>APPROVED for one year from the date of this notification</th>
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<tbody>
<tr>
<td>Date of expiration</td>
<td>11/30/2018</td>
</tr>
<tr>
<td>Participant Size</td>
<td>50 (FIFTY)</td>
</tr>
<tr>
<td>Participant Pool</td>
<td>General Adults (18+ of age) - LGBT+ individuals using the MTSU SONA system and other sources</td>
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</table>
| Exceptions        | 1. Permitted to record identifiable information to administer the study.  
                     2. Approved to collect audio data with restrictions. |
| Restrictions      | 1. Mandatory signed informed consent; the participants must be provided with a copy of informed consent signed by the PI/FA.  
                     2. Video/audio data must be destroyed after data processing.  
                     3. Identifiable information must be deleted after data collection has ceased. |
| Comments           | NONE                                                      |

This protocol can be continued for up to THREE years (11/30/2020) by obtaining a continuation approval prior to 11/30/2018. Refer to the following schedule to plan your annual project reports and be aware that you may not receive a separate reminder to complete your continuing reviews. Failure in obtaining an approval for continuation will automatically result in cancellation of this protocol. Moreover, the completion of this study MUST be notified to the Office of Compliance by filing a final report in order to close-out the protocol.

IRBN001
Version 1.3
Revision Date 03.06.2016
Continuing Review Schedule:

<table>
<thead>
<tr>
<th>Reporting Period</th>
<th>Requisition Deadline</th>
<th>IRB Comments</th>
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<tr>
<td>First year report</td>
<td>10/31/2018</td>
<td>TO BE COMPLETED</td>
</tr>
<tr>
<td>Second year report</td>
<td>10/31/2019</td>
<td>TO BE COMPLETED</td>
</tr>
<tr>
<td>Final report</td>
<td>10/31/2020</td>
<td>TO BE COMPLETED</td>
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Post-approval Protocol Amendments:

<table>
<thead>
<tr>
<th>Date</th>
<th>Amendment(s)</th>
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<tr>
<td>NONE</td>
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</table>

The investigator(s) indicated in this notification should read and abide by all of the post-approval conditions imposed with this approval. Refer to the post-approval guidelines posted in the MTSU IRB's website. Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Amendments to this protocol must be approved by the IRB. Inclusion of new researchers must also be approved by the Office of Compliance before they begin to work on the project.

All of the research-related records, which include signed consent forms, investigator information and other documents related to the study, must be retained by the PI or the faculty advisor (if the PI is a student) at the secure location mentioned in the protocol application. The data storage must be maintained for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board  
Middle Tennessee State University

Quick Links:
- Click here for a detailed list of the post-approval responsibilities.  
  More information on expedited procedures can be found here.