

Narratives of risk and pleasure among participants engaged in a nurse-led PrEP service

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Preface

This thesis work has been completed to satisfy requirements for the Master of Science in Nursing through the University of Ottawa.

This thesis provides further contribution to the work done by Dr. Patrick O’Byrne and associated research members through analysis of transcripts collected within the primary study, “PrEP-RN: Community Based Nurse Led PrEP”.

I, *Colton Halligan*, being the sole author of this thesis work received approval from Dr. O’Byrne to perform a secondary analysis of interview transcripts collected through his original research and was supported in this endeavor by Dr. Dave Holmes, my thesis supervisor with Dr. Patrick O’Byrne maintaining a co-supervisory role. Further support was shown from the additional thesis committee members, Dr. David Kenneth Wright and Dr. Jean Daniel Jacob.

Due to the nature of this project, no ethics approval was required as it had already been obtained through the primary research.

Abstract

This research analyzed themes relating to the concepts of risk, risk taking, and pleasure by completing a secondary analysis of participant transcripts collected from the PrEP-RN study conducted by Dr. O’Byrne at the University of Ottawa in collaboration with Ottawa Public Health. Analysis was completed to relate risk, risk taking and pleasure in the context of PrEP-RN, but also identify areas for educational improvement in relation to the selected concepts. The research question sought explanation on the relationship that risk has with risk reduction and risk taking, including analysis of condom usage, risk conversation with partners and general sexual health practices while on PrEP. Additionally, the research sought to answer if PrEP-RN participation had any impact on sexual pleasure, analyzing subthemes of stereotyping, security and desire relating to pleasure. Transcript analysis identified that a reduction in condom usage, improved frequency of sexually transmitted infection testing, promotion of conversations with partners surrounding PrEP and sexual health, and a reduction in sexual fear and anxiety with partners were major themes stemming from PrEP-RN participation. A need to increase education surrounding continued condom usage while on PrEP and identify ways to reduce stigmatization of PrEP were identified as ways to improve the PrEP-RN program.

Keywords: condom usage, pleasure, PrEP, risk, risk taking, sexually transmitted infections, stigma

Dedications

This post-graduate work is dedicated to my mom, who has always been an inspiration in life both personally and professionally.

To my dad, who has helped me set goals and provided perspective in times where motivation has failed me.

To Emma, who has endlessly supported my desire to jump into things headfirst and keeps my world turning behind the scenes.

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CHAPTER 1 – Research Problem

Human immunodeficiency virus (HIV) is a viral infection first recognized in 1981 with its main strain, HIV-1, having since infected an estimated 79.3 million people globally, and having been responsible for an estimated 36.3 million acquired immunodeficiency syndrome (AIDS) associated deaths worldwide (Sharp & Hahn, 2011; UNAIDS, 2022). HIV, a retrovirus specifically seeks out and targets intact cells responsible for regulating the human immune system (UNAIDS, 2022). Following initial infection, HIV begins to multiply in the body and target healthy immune system cells, specifically the white blood CD4 cells. Without HIV treatment, CD4 cells (which typically range from 500-1500 cell/mm³) can become severely depleted over time, leading to weakened immunity to protect against secondary infections. Within a period of approximately 8-10 years, individuals who are not using antiretroviral therapy may develop a complication of HIV known as Acquired Immune Deficiency Syndrome (AIDS), which is classified by low CD4 count (<200) and/or the acquisition of AIDS-related opportunistic infections involving various forms of cancers, pneumonias, or multifocal deficits. (UNAIDS, 2022).

An estimated 62,050 people live with HIV in Canada as of 2018, with an estimated annual incidence rate of nearly 6.0 per 100,000 during this time (Government of Canada, 2021). Approximately 87% of those estimated to be living with HIV were diagnosed, leaving 13% of those living with HIV unaware of their status. Statistics also identified that Canada wide, an estimated 2242 new HIV cases were diagnosed in 2018 – comparatively a slight increase from new case identification in 2016 (Government of Canada, 2021). Of these 62,050 people estimated to be living with HIV in Canada, 7,840 are estimated to be diagnosed but not on treatment and 2,560 were estimated to be on treatment but not fully virally suppressed.

Canada wide an estimated 30,316 of those living with HIV in 2018 were identified as gay or bisexual men who have sex with men (MSM), making up 49% of the population alone (Government of Canada, 2021). In Ontario, an estimated 22,461 people were living with HIV as of 2020, the majority of whom identify as MSM.

Men who have sex with men are disproportionally at risk of acquisition of HIV, where in 2020 in Canada 60.8% of new cases among adult were of direct relation to male-to-male sexual contact (Public Health Agency of Canada, 2021). In the United States of America alone, the risk for men who have sex with men to acquire HIV in their lifetime is one in six, compared to heterosexual men who do not have sex with men at one in 524 and heterosexual women at one in 253 (Centers for Disease Control and Prevention, 2021).

HIV rates and the disproportionate impact that HIV acquisition risk has on the MSM population stems from a multitude of factors. Not unlike the risk for other sexually transmitted infections (STIs), the risk for HIV acquisition in MSM can increased based on number of sexual partners, the number of anonymous sexual partners, sex without a condom, and substance usage before or during sexual activity. Other STIs also increase the risk for HIV acquisition, particularly chlamydia and gonorrhea in the rectum or infectious syphilis (Workowski et. al, 2021). MSM who engage in receptive anal sex are at increased risk for HIV acquisition due to the epithelial composure of the rectum (Klatt, 2017). Within the MSM community (who already experiences heightened disparities in terms of HIV acquisition risk), there is further evidence that racial and ethnic disparities subject some groups to even higher rates of transmission. In population survey of MSM across the United States, Black men accounted for approximately 44% of new HIV diagnoses among MSM despite only representing 12% of the population,

followed by Hispanic and Latino who accounted for 25% of new HIV diagnoses among MSM and 17% of the US population (Sullivan et. al., 2018).

The increase in incidence within the population of adult MSM highlights the importance of these individuals as a research subpopulation to attempt to create impactful reduction to HIV rates. One strategy to reduce HIV transmission is pre-exposure prophylaxis (PrEP), and where that may fail, early detection of HIV infections via HIV testing. Both methods ultimately contribute to reduce HIV associated morbidity and mortality and reduce the transmission of HIV to others (Centers for Disease Control and Prevention, 2022). There are significant economic impacts associated with HIV and AIDS, where on average the estimated lifetime cost for those living with HIV or AIDS in the United States ranges from \$250,000- \$400,000 USD based on a study completed in 2013 (Choi et al., 2016). For HIV-positive Canadians engaged in HIV treatment, the healthcare system experiences an estimated mean lifetime cost of \$286,000 dollars per person. Healthcare systems such as Canada's therefore experience significant return on investment (ROI) when looking to reduce numbers of HIV cases by implementing strategies to reduce acquisition (Choi et. al., 2016). Through HIV prevention strategies in Ontario from 1987 to 2011 an estimated 70,279 new cases of HIV have been avoided, creating an estimated savings for the healthcare system of \$25.3 billion CAD, evidencing that term ROI study in Canada for HIV and AIDS has created a correlation that for every \$1 dollar invested into preventative strategies, \$4.8 dollars is saved overall (Choi et. al., 2016).

Due to the population prevalence and potentially heightened risk of HIV among MSM, messaging surrounding preventative strategies to avoid HIV exposure exist in far greater proportion compared to the heterosexual population. Examples of this include internet advertisements and social media outlets such as Facebook that identify MSM as a focal group for

sexual health information messaging and engagement (Simas, Larson, Schulz, & Boulos, 2017). The usage of STI and HIV prevention messaging through online dating apps and casual sex websites (“hookup” sites) have lately been considered an acceptable medium for health information delivery by MSM who are exposed to said preventative messaging through the app or site, despite the potential to adversely impact the users experience (Kesten et al., 2019). While risk perception is a long-theorized driver in protective health behaviours (Slovic, 1964, as cited in Schmälzle, Renner, & Schupp, 2017), the consideration of promoting keen awareness of personal risk perceptions that come with preventative messaging may not take into consideration any potential changes to pleasure that may be experienced if people alter their sexual health behaviour. Risk perception needs to be evaluated not only for potential future PrEP users, but further with those who already take PrEP. Many users have demonstrated an increase in the participation of having sex without a condom, with those on PrEP have often citing participating in more sex without a condom occurs due to increased feelings of pleasure and improved intimacy (da Silvia-Brandao & Ianni, 2020). However, routine condom usage has been demonstrated to at times be a barrier to pleasure for MSM, with contributions to decreased desire, increased anxiety, and other factors leading to at times a negative sexual experience (da Silvia-Brandao & Ianni, 2020). This becomes an uneasy area for health promotion, as the need to establish risk perception from a healthcare standpoint exists, as well as taking into consideration the balance between positive messaging for HIV/STI prevention and the potential impacts that doing so may create for pleasure and desire. This creates an additional research opportunity for current and future PrEP users.

Ottawa’s rates of new HIV diagnosis’ maintaining approximately 60 per year from 2012 to 2017, and an overall incidence of HIV higher than the Ontario average minus Ottawa in 2018,

(Ottawa Public Health, 2021) signaled a need to re-evaluate prevention strategies for HIV transmission. The result of these revised preventative actions has become the initiation of a nurse led PrEP program, hereby referred to as PrEP-RN, implemented by Dr. Patrick O’Byrne with the University of Ottawa and the Ottawa Public Health sexual health clinic. Universally, the use of antiretroviral medications (like those use for PrEP) have shown to substantially reduce the risk of partner-to-partner sexual transmission of HIV, providing a safer sexual participation experience (World Health Organization, 2017). Since the initiation of PrEP-RN, HIV rates in Ottawa have seen a decline in new diagnoses among MSM starting in 2019, which has been sustained (data current to 2021) (OHESI, 2022). Despite numerical demonstration of PrEP programs delivering effectiveness in HIV transmission mitigation, few studies within established PrEP initiatives and clinics have discussed the concepts of risk, risk taking and pleasure. It remains unclear if perceptions of risk, risk taking actions and pleasure appear as significant concepts relating to patient participation in PrEP programs, or more specifically in the PrEP-RN program. This research will provide secondary analysis of original data collected by Dr. O’Byrne in relation to the PrEP-RN program. Among striving for ways to achieve decisive improvement of the PrEP-RN program, our research question sets out to examine what the perceptions of risk, risk taking behavior and pleasure among PrEP-RN participants are.

Research Objectives

1. Evaluate risk, risk taking behavior and pleasure as concepts relating to those receiving PrEP through PrEP-RN.
2. Identify the potential areas of PrEP-RN patient education-in relation to the evaluated concepts of risk, risk taking and pleasure.

Research Questions

1. Do risk taking and risk management practices change after participation in the PrEP-RN program?
2. Do participants see benefit to PrEP-RN in terms of risk reduction?
3. Does participation in PrEP-RN influence sexual pleasure or desire to engage in sexual acts?

Epistemological Stance

The paradigm provides context to a researcher's philosophical orientation, and therefore has significant implications related to the direction of the research process, including methodology (Kivunja & Kuyini, 2017). The paradigm choice allows insight into how meaning is constructed from the data, therefore providing context to frame where we, as researchers, are coming from (Kivunja & Kuyini, 2017). Using an interpretivism approach, we are aware that knowledge and truth are subjective concepts, often based not only on the experience of each person, but rooted in history and individuals understanding (Ryan, 2018). We can identify and admit that as researchers, we are never truly separated from our own belief and value system, which has its own impact on analyzing and interpreting data (Ryan, 2018). Interpretivism research can further be dissected into the following main subcategories: (1) *hermeneutics*, which is associated with historical document and text interpretation to seek out a deeper meaning within; (2) *phenomenology*, which is focused on interpretation of the lived experience, seeking meaning through the experienced phenomena; and (3) *symbolic interactionism*, which associates symbols as social objects derived from culture, which in time adapt and share meaning that can be interpreted (Ryan, 2018).

CHAPTER 2 – Review of the Literature

To provide adequate contextual knowledge before exploring risk, risk taking and pleasure for MSM taking PrEP, a review of the literature was completed. Initial review started with the epidemiological picture of HIV and AIDS, and further discussed incidence and mortality rates in Canada and the United States comparing various time periods. Historical approaches to HIV treatment and transmission reduction strategies, all leading up to the introduction to PrEP as a preventative strategy were then reviewed to bring context to treatment approaches leading us to the current PrEP approaches. Literature on PrEP uptake by sex and gender, race/ethnicity, and geographical area were studied with major findings for both populations with good PrEP uptake and barriers to uptake discussed. PrEP uptake specific to MSM was then discussed, focusing on the typical uptake profile of those who use PrEP and discussing positive and negative associative factors influencing use in this group. Risk and risk taking in healthcare was studied, including identifying what risk is and factors that influenced perceived risk, all within a healthcare perspective. Risk in the context of PrEP and risk literature was then reviewed and discussed. Sexual pleasure, specifically a definition of sexual pleasure and barriers to achievement of sexual pleasure were then researched with influences on pleasure identified, and further pleasure in the concept of sexual health discussed. Pleasure specific to MSM was then researched, as well as PrEP use and its relation to pleasure.

The Epidemiology of HIV and AIDS

HIV and its subtypes are retroviruses, belonging more specifically to the family of ribonucleic acid (RNA) lentiviruses, are characterized by long term incubation periods and association with immunosuppression and central nervous system involvement (Klatt, 2017). HIV exists in two genetically different retrovirus forms, known as HIV-1 and HIV-2 occurring due to

a multitude of cross species transmissions from non-human primates to humans (Bbosa, Kaleebu, & Ssemwanga, 2019). HIV-1 exists in multiple subgroups, known as HIV-1 M, HIV-1 O, and HIV-1 N, and most recently HIV-1 P. HIV-1 M is responsible for the majority of HIV infections, described as the dominating force behind the HIV epidemic and seeing the most global spread in comparison to the alternative subgroups in which they have remained relatively local throughout the Democratic Republic of Congo (Bbosa, Kaleebu, & Ssemwanga, 2019). HIV-1 M is further divided into nine different subtypes, lettered A-D, F-H, J & K. HIV-2 remains mainly local to western Africa, with some viral introduction throughout Europe, India, and the United States of America (Bbosa, Kaleebu, & Ssemwanga, 2019). HIV-2, like HIV-1, has nine subgroups. Notably, HIV-2 has demonstrated to be less infection in comparison to the HIV-1 form (Bbosa, Kaleebu, & Ssemwanga, 2019).

Retroviruses are unable to replicate outside of a living host cell since they do not contain their own DNA coding. Therefore, to replicate they must gain entry into a susceptible host cell. This is done after the retrovirus enters the host body, it connects to a cell with the appropriate CD4 receptor molecules, where proper attachment grants it cellular entry (Klatt, 2017). Entry into the cell can happen in oropharyngeal, cervical, gastrointestinal, and vaginal mucosal surfaces. Transmission potential is therefore a result of both how many HIV virus particles, or virions, that an entered fluid has plus the availability of cellular CD4 receptors (Klatt, 2017). Once the virus enters a host environment, virions are taken up by CD4 cells and disseminated throughout the body at a rapid rate, leading most individuals to experience seroconversion illness. The acute phase of infection is characterized fever, diarrhea, night sweats, weight loss, rash, or lesions (Klatt, 2017). Following initial infection, HIV enters a chronic phase, lasting upwards of 10 years, where persons living with HIV are generally asymptomatic and often

unaware of the presence of infection. Of concern, HIV transmission continues to occur during the latent phase (Klatt, 2017). After 8-10 years, HIV enters its third phase, known as AIDS, which is characterized by a CD4 count $<200 \text{ umol/L}$ and/or the presence of opportunistic infections. As with the chronic phase, HIV transmission is elevated during AIDS stage if individuals are not using HIV treatment due to high amounts of HIV virus present in the body (Klatt, 2017). HIV is primarily transmitted through bodily fluids and secretions, most commonly through blood and anal and genital fluids (such as semen or rectal secretions), with receptive anal sex and sharing of injection drug equipment posing the highest risk transmission (Tan et al., 2017; Workowski et al., 2021). For HIV transmission via sexual contact, there needs to be a distinct number of viral particles found within secretions, known often as viral load. Methods of viral load detection are often quite accurate, with undetectable levels typically ranging when copies are below 50 copies/ml (Rodger et al, 2019). Viral load is considered suppressed when copies are less than 200/ml, and a viral load $<2000 \text{ copies/ml}$ results in a lowered risk of transmission, though still possible (Klatt, 2017; Rodger et al., 2019). Viral load contributes to increased transmission when levels reach or exceed 10,000 copies per ml (Klatt, 2017). To clarify transmission potential, and with a shared goal of ending the stigma associated with HIV, a 2016 Prevention Access Campaign launched the Undetectable = Untransmissible (U = U) campaign. This campaign highlighted that with successful antiretroviral therapy leading to maintained undetectable viral load levels in HIV positive individuals, there is no possible risk of HIV transmission (Eisinger, Dieffenbach, & Fauci, 2019). Mucosal surface epithelium impacts transmission potential, with the thinnest of epithelial layers providing the greatest risk for transmission. Transmission is further increased by the presence of specific chemokine receptors, cervical ectopia, oral contraceptive use, pregnancy or menstruation, intact foreskin, and genital

ulcerative diseases (Klatt, 2017). Presence of other STIs can also promote increase infectivity of HIV due to associated inflammation and ulceration (Klatt, 2017). For HIV infection via blood, the most common method of transmission is through parenteral exposure. Due to this, the most at-risk population for this form of transmission is people who use drugs if there is repeat usage of injection methods, such as sharing needles or injection equipment (e.g., cookers, water, filters, etc.) (Klatt, 2017). MSM who engage in sexual activity while under the influence of drugs (often referred to as chemsex) may also be at increased risk for HIV acquisition through sharing of needles or other drug equipment and condomless sexual activities.

A current global picture of HIV identifies that an estimated 38 million people are living with HIV in 2022 (UNAIDS, 2022). Of this, an estimated 20 million people living with HIV reside in eastern and southern Africa, followed by 6 million persons with HIV in Asia and the Pacific, 5 million in western and central Africa, 2.3 in western central Europe & North America (63,000 in Canada), 2.2 million in Latin America, and 1.8 in Eastern Europe & Central Asia (UNAIDS, 2022). Global mortality for HIV and AIDS appears to have peaked in 2006 with 1.95 million deaths annually, with a decrease to 0.95 million deaths in 2017. The peak of new HIV cases occurred in 1999, both statistics leading to an increased prevalence (Frank et. al, 2019).

Within Canada, a 2017 study estimated that new HIV infections occurred in 942 females and 2590 males (Frank et. al, 2019). HIV deaths occurred in an average of 72 females, and 202 males in the same year. Annualized rate of change in new HIV infections in Canada from 1990-2007 was reported as an average estimate of -1.8%, while 2007-2017 data was reported as an average estimate of +3.8%. Annualized rates of change in HIV deaths in Canada from 1990-2007 was reported as an estimated average of -4.8%, with estimates of -5.6% from 2007-2017 (Frank et. al, 2019). This is in comparison to the United States, where there was an estimated 14,700

females and 36,600 males newly infected in 2017. Where annualized rates of new infection from 2007-2017 was +1.5% (Frank et. al, 2019).

Overall, mortality rates from AIDS have seen a dramatic decline since peak incidence during 1981-1987. During this time, in the United States alone, 46,251 men and 4,029 women were diagnosed with AIDS, with 47,993 (95.5%) of those dying before 1988 (CDC, 2001). This contrasts with 2010-2018 numbers demonstrating that HIV and AIDS associated deaths occurred in 4.7 per 1000 positive HIV cases (Bosh et. al, 2020).

Recent estimates of HIV infection in Canada from 2019 (most recent data available) indicate that gay, bisexual, and other men who have sex with men (gbMSM) represent the highest number of new HIV diagnoses (representing ~40% of all newly reported HIV cases), followed by heterosexual men who do not have sex with men contact (representing ~28% of all newly reported HIV cases), and injection drug use (representing ~21% of all newly reported HIV cases). Examining this HIV surveillance data by gender, gbMSM were noted to account for over half (56.2%) of all new HIV diagnoses among males, compared to heterosexual males who do not have sex with men, and men who use injection drugs who accounted for 20% and 14% of diagnoses, respectively. Notably, the highest burden of HIV infections among gbMSM were noted in males aged 20-29 years. This data highlights gbMSM as the largest exposure category at risk for new HIV diagnosis, with disparity among young males (Haddad et al., 2021).

The Journey to Pre-Exposure Prophylaxis

Long prior to the introduction to PrEP, a June 1981 edition of the CDC's Morbidity and Mortality Weekly Report reported an increase in a rare case of lung infection, seen in five young and previously healthy gay men. These cases, and a continued reporting of other increased rates of cancers and infections disproportionally impacting the gay population, lead to a growing

number of reported severe immune deficiency that by December of 1981 had reached 331 cases. These reporting's would be the first initial cases in what would come to be known as the AIDS epidemic (HIV.gov, 2021). With HIV rapidly infecting the public in the late 1980's, scientists turned to a medication called azidothymidine (AZT) and signaled the start of the first widespread attempt at managing HIV infection and transmission (HIV.gov, 2021). The promotion of AZT as a treatment for HIV and the designation of male condom usage as a barrier for HIV and AIDS transmission both signaled the start of preventative and treatment focused care for those living with or at risk of HIV (HIV.gov, 2021). AZT as a treatment method was far from a cure however, coming with its own added health complications and further fronting the single largest prescription cost of any single medication therapy on the market in history, at the time (HIV.gov, 2021). AZT, while an attempt at treatment, was largely as an ineffective and the AIDS epidemic continued to grow to over 100,000 reported cases of HIV or AIDS infection in the United States alone by 1989 (HIV.gov, 2021).

In the following years as AZT's continued use occurred, other similar types of medications under the umbrella term as antiretrovirals (ARV's), such as nucleoside reverse transcriptase inhibitors (NRTIs), were developed and utilized in the treatment of those infected with HIV (HIV.gov, 2021). NRTI's worked to block the ability of the HIV virus from reproducing, by eliminating a key enzyme needed for the HIV virus to copy itself. Despite NRTI's promoting a longer life expectancy in the HIV infected patient, their use as ARV's came with an increase in associated chronic complications, such as toxicity and long-term drug resistance (Holec, Mandal, Prathipati, & Destache, 2017). By 1990's HIV became the leading cause of death for Americans ages 25-40, and with 500,000 reported HIV or AIDS related cases by 1995, and it was clear there was a need for a new and sustainable treatment approach for

those living with HIV (HIV.gov, 2021). The second revolutionary approach of highly active antiretroviral therapy (HAART) in HIV patients promoted the usage of newly approved antiretroviral medications to expand the life expectancy of those infected with HIV, as the prior use of NRTI's had shown clinical promise despite some of the adverse effects (HIV.gov, 2021). The use of HAART was widely successful in its ability to significantly expand the life expectancy of those infected with HIV, but due to the constraint of multiple medications needing to be taken and once again associated side effects of these medications impacting users significantly, many patients with HIV chose to abandon HAART long term (HIV.gov, 2021). In 1997, the development of lamivudine/zidovudine (named Combivir) and other combination antiretroviral medications made taking antiretroviral medications more manageable for those living with HIV and succeeded in prolonging the life expectancy, becoming the go to treatment for the HIV infected person for many years, despite growing concern about drug resistance and long-term side effects (HIV.gov, 2021).

In 2011, the Centres for Disease Control and Prevention (CDC) released a report indicating that a daily dose of antiretroviral medication used to treat HIV infection could greatly reduce HIV acquisition in heterosexual persons, this following up a fall 2010 report indicating that the PrEP strategy was successful in transmission reduction of HIV for MSM (CDC, 2011). The iPrEx Study, a multinational study of PrEP dosing in HIV negative MSM indicated that those reported relative risk reduction (RRR) rates for seroconversion of 44% with PrEP use, and for those taking PrEP greater than 90% of the RRR rates increased to 73% (Spinner et. al., 2016). A follow up to this was studied in the IPERGAY study, analyzing intermittent PrEP usage, and in the PROUD study, studying continuous PrEP usage, both displaying an even higher risk reduction rate of 86% each (Spinner et. al., 2016). This marked the beginning of PrEP usage to

be widely seen as a breakthrough in the potential prevention of HIV transmission and its initial roll out within targeted demographics who are considered at higher risk. Currently in Canada, oral PrEP is available in two forms: emtricitabine 200mg in combination with tenofovir disoproxil fumarate 300mg or emtricitabine 200mg in combination with tenofovir alafenamide 25mg (Fields & Tung, 2021). Recent randomized controlled trials of PrEP demonstrate reduction of HIV acquisition by nearly 96%, with a risk reduction potential of nearly 100% when strict adherence to PrEP therapy occurs (Tan et al., 2017; Arkell, 2021).

General PrEP Uptake

PrEP has undergone mixed uptake among the general population in the last few years. In the United States in 2020 a preliminary study identified that around 25% of those who were recommended PrEP were prescribed it, compared to only 3% in 2015 (CDC, 2021). In Canada, the number of PrEP users increased by 4-fold from 2016-2020 from approximately 300 males and females per 100,000 in 2016 compared to 1200+ per 100,000 in 2020 (Government of Canada, 2021). There is, however, a major disparity in PrEP uptake across ethnicities. PrEP uptake has occurred in only about 9% of Black/African American persons and 16% in Hispanic/Latino populations in contrast to nearly 66% of White persons (CDC, 2021). PrEP usage occurs in about 3x as many males compared to females, with usage of 28% of males with indicators for use in comparison to about 10% in females with indicators for use in the U.S alone (CDC, 2021). In Canadian studies the discrepancy is even larger. Canadian numbers identify that where 1200+ men per 100,000 use PrEP, less than 100 females per 100,000 use PrEP (Government of Canada, 2021). Cisgender females are identified to make up about 19% of the new HIV diagnosis population in the United States in 2019 – identifying a critical imbalance of PrEP uptake that could be targeted to improve HIV rates (CDC, 2021). Provincially, Ontario has

the largest amount of PrEP prescriptions and usage (without representation from British Columbia in the study) with an estimated PrEP use prevalence of 760.5, followed closely by Saskatchewan and Quebec with estimated use prevalence of 682.7 and 675.2 respectively (Government of Canada, 2021).

There are noted barriers that remain for PrEP uptake, including drug coverage and the associated economic impact PrEP can have on users with only partial or no coverage. Nationally there is not a blanket coverage available for PrEP medications in Canada. And while all provinces except for Manitoba offer a coverage plan for PrEP, in Ontario, Trillium provides coverage to residents between the ages of 25-64 but requires an income-based deductible to be paid, creating an access barrier for lower income individuals (Virgilio, 2020). Without insurance, the oral PrEP medications can cost between 220 dollars and 876 dollars a month (depending on the brand). Secondly, physicians' perceptions of PrEP limits potential patient access to treatment (Virgilio, 2020). Many primary care providers (e.g., physicians, nurse practitioners) do not feel they have adequate knowledge about how to prescribe PrEP, leading eligible patients to either be referred to a secondary provider or not receive PrEP at all (Virgilio, 2020). In a Canadian study of physicians relating to PrEP knowledge, treatment, and prescription willingness only 45.4% of physicians were willing to prescribe PrEP, with 4.7% completely unwilling to prescribe PrEP and 50% unsure of their decision (Sharma et. al, 2014, as cited in Virgilio, 2020). In a more recent study of Canadian physicians, the reiteration of educational gaps on PrEP knowledge remained a large theme in perceived barriers to uptake, as physicians self-identified as having strong knowledge of PrEP only if they have prescribed PrEP (Sinno et. al, 2021). In contrast, those who have not prescribed PrEP identify that they feel neutral on their knowledge of PrEP and have identified further educational needs (Sinno et. al, 2021). One fifth of those who had never

prescribed PrEP had never heard of PrEP. The largest identified barrier was that of the cost burden and lack of coverage their patients would receive for PrEP, deeming it economically unviable for their patients (Sinno et. al, 2021).

PrEP Uptake in MSM

In a 2021 study of sexually active MSM, only 68% of MSM with indicators for PrEP were reported to use it (Weiss, 2021). Indications for PrEP use were identified based on surveyed results of number of sexual partners, last five sexual partners, type of partnership (main, casual, one time), length of partnership, occurring or reoccurring sexual acts with each partner, frequency of sexual acts with partner, and if one or both partners were using PrEP, antiretrovirals, condoms, or any other forms of protection. Criteria further included having a previous negative HIV test, being in a non-monogamous partnership, have participated in anal intercourse within the last 6 months, and engaging in condomless sex with a partner who had been diagnosed with a bacterial STI within 6 months (namely syphilis, gonorrhea, or chlamydia) (Weiss, 2021). In previous cross-sectional surveys of PrEP users and their characteristics, similar qualities were found to constitute most of the group. Most MSM using PrEP were typically white men between the age of 25-44. Socioeconomically, education and wage are found to impacts PrEP uptake among MSM, with those with a college degree (>80%) and who make over \$50,000 a year being more likely to use PrEP (Snowden, Chen, McFarland & Raymond, 2017). Both positive and negative factors influence adoption of PrEP use for the MSM population. For positive adoption factors, or the likelihood for a person to take PrEP, the association of recent or consistent sexual activity with an HIV positive partner was one of the largest factors influencing the uptake of PrEP (Golub et. al., 2019). Further, the association between sexual practices was found to improve PrEP adoption, including reported amounts of condomless sexual activity

improved rates of adoption. The use of illicit substances during sex (specifically stimulants), was also reported to increase the likelihood for PrEP use among MSM (Golub et. al., 2019). A persons perceived risk of HIV acquisition was also identified as a positive factor for PrEP use, as well as the perceived effectiveness of PrEP programs is significant in its relation to associated uptake, along with perceived self-efficacy related to drug adherence (Golub et. al., 2019). A large and prominent negative adoption factor for PrEP adoption was the associated stigma surrounding PrEP, or anticipated HIV associated stigma from both social groups and healthcare providers (Golub et. al., 2019). Stigma associated with PrEP include its close association to those who take the medication who are already HIV positive, where current and prospective PrEP users fear that they will be seen as HIV positive if they are seen taking, or known to use PrEP (Golub, 2018). Further the usage of PrEP remains closely linked with its societal perception of users engaging in higher risk behaviors and promiscuity (Golub, 2018). Some MSM taking PrEP have been labeled as sex workers, avid participants in chemsex, or those more likely to participate in increased rates of condomless sex, and many MSM who openly express their PrEP usage report experiencing rejection, both in person and on dating apps (Dubov, Galbo Jr, Altice, & Fraenkel, 2018). Younger MSM have cited a lack of educational knowledge surrounding PrEP as a barrier, contributing to the inability to make an informed decision about uptake. Specifically, knowledge gaps around what PrEP does, and what would happen if PrEP was started and not continued have are the largest reported concern for MSM less than 50 years of age. Many young MSM also believe that there are easier ways to prevent HIV than taking PrEP (Klein & Washington, 2020). Additional barriers for MSM uptake of PrEP include the lack of knowledge surrounding personal view of HIV risk, distrust in medical providers, lack of access to a medical provider and associated cost (Virgilio, 2020). PrEP uptake among older (greater than 50 years of age) MSM

may be impacted further by perceptions of PrEP and its usage, as older MSM navigated many years prior to PrEP with the keen awareness of HIV and created individual risk reduction and methods of self-protection. Older MSM are both more likely to be aware of PrEP, know someone who is on PrEP, but in contrast to their younger counterparts they display less interest in further education surrounding PrEP (Klein & Washington, 2020). This could, however, be associated with a higher baseline knowledge of PrEP. Among older MSM, the two largest represented obstacles surrounding PrEP uptake included (1) concern regarding the newness of PrEP and an unclear long-term safety, and (2) a belief that there are better (more effective) ways to prevent HIV (Klein & Washington, 2020). PrEP uptake could be quite simply impacted due to some MSM not willing or feeling the need to participate in PrEP due to personal sexual practices, personal established risk reduction techniques, or personal choice.

Theorizing Risk and Risk Perception in Healthcare

Risk itself can be described as “the exposure to the likelihood of a negative event” (O’Byrne, 2008, pg. 33), and risk within the weak constructionist view focuses on one’s individual perception of risk, despite a consensus of the risk objectively seen by others. For example, someone who routinely skydives may have a varied perception of risk in contrast to the rest of the general population, where consensus would largely be that this is an extremely risky activity. In their work on risk perception and communication in health, Schmälzle et al. (2017) break-down aspects of risk into two core elements: one, the probability of a hazardous event, and two, the severity of the negative consequences associated with that risk, which can be both taken as each element independently, or often using the formula of probability x severity to calculate risk. The perception of risk for the public is more complex, with public risk perception

incorporating theories to risk perception such as the dread risk factor, and the unknown risk factor.

In more detail, the dread risk factor applies a role for the emotional component associated with risk, describing those emotions, and the illusion of perceived control over risk, can play as much of a part into one's risk perception as do severity and probability of a hazardous event (Schmälzle, Renner, & Schupp, 2017). The unknown risk factor speaks to the degree in which a risk is predictable, studied, observable, and understood. In other words, the more we are aware of the risk, and the more information we have collected surrounding it, the less associated fear we have surrounding the risk, separating risk from the probability and severity calculation, entirely (Schmälzle, Renner, & Schupp, 2017).

It is important to understand theories driving public health risk perception to develop effective risk reduction communication or lead risk reduction initiatives for the public. Risk perception in health, and risk communication in health are prerequisites for protective action (Schmälzle, Renner, & Schupp, 2017). For the public, people need to be aware of the risk but also need to feel like they are personally at risk for both health teaching to be effective and preventative action to be taken (Schmälzle, Renner, & Schupp, 2017). The identification of being at risk can itself drive a person toward risk reduction activities, as those deemed "at risk" more often seek out medical testing, or more often participate in interventions that protect themselves from the potential risk (Lupton, 1999).

Schmälzle et al. (2017) identify that this personal risk perception can be described as absolute; or comparative. Absolute health perception speaks to the probability that one could see themselves contracting that health risk, asking questions such as "What is the likelihood that I contract HIV?". Comparative health perceptions speak to the perceptions in comparison to others

around them, such as “What is the likelihood I contract HIV in comparison to my same age friends?” (Schmälzle, Renner, & Schupp, 2017). Both absolute and comparative health perception are crucial factors when creating effective health promotion and communication. Health and risk communication tread the fine line of informing and influencing target audiences to both draw awareness to existing health risks and impacting them in a way where their behaviour may become changed because of the provided information (Schmälzle, Renner, & Schupp, 2017).

PrEP and Risk

PrEP and its association with risk can be largely broken down into two subthemes describing the risk associated with taking the medication, such as the adverse effects associated with PrEP, and the risk associated with taking the medication beyond the medical.

From the medical perspective, PrEP is a proven risk reducing medication that shows a risk reduction rate of nearly 100% with strict adherence. While most people who use PrEP do not experience secondary effects, if present, the most common symptoms can include nausea, vomiting, diarrhea, headaches, abdominal pain, and weight loss (Fang et al., 2019). PrEP requires initial bloodwork and testing, screening for HIV, hepatitis, and syphilis, and further testing for adequate kidney function. After starting PrEP medications, follow up bloodwork is required after the first month, then every three months thereafter, primarily to monitor kidney function and ensure users remain HIV sero-negative (Fang et al., 2019).

Beyond the medical considerations are the psychological aspects related to PrEP use, the most common of which is the theory of risk compensation occurring with PrEP use. The gained risk reduction benefits of PrEP participation have been theorized to be contradicted by an individual’s new willingness to participate in more risk like behaviors, such as a reduction in

condom usage during sex, and general increased rates of casual sex participation in MSM (Koester et al., 2017). Holt et al (2012) identifies around 8% of studied PrEP participants have expressed a decreased likeliness to use condoms after PrEP program participation, as other studies identify some interviewed participants have expressed that they are now more willing to participate in condomless sex after starting PrEP (Sun et al., 2017). Individuals choosing to participate in condomless sex are often very aware of the potential for contracting other sexually transmitted infections (STI), but this risk has been often theorized to not negate the perceived benefits of participation in condomless sex due to increased pleasure and feelings of improved intimacy stemming from having sex without a condom (da Silva-Brandao & Ianni, 2020). Some individuals described participating in condomless sex after starting PrEP as a liberating experience, as they felt freed from the looming concern surrounding the risk of potential HIV contraction which preoccupied their previous sexual encounters (Grace et al, 2018).

A qualitative exploration on the influence of PrEP on gay and bisexual MSM (gbMSM) by Gafos et al., (2019) confirmed that some participants do report decreased condom use when starting PrEP. However, this study described that many interviewed gbMSM had personal risk reduction “rules” before participating in PrEP, such as condom usage, strategic positioning, sero-sorting, avoiding ejaculation during anal sex (insertive partner), and post exposure prophylaxis (PEP), and the contexts of participating in increased levels of risk taking prior to PrEP participation were more likely influenced under the social, cultural, and environmental impacts of what was described as the “gay scene”. Many interviewed participants described fluctuating patterns of risk in relation to sexual behaviour around the time they started PrEP (Gafos et al., 2019), with many describing an actual reduction in sexual activity around the time of PrEP initiation. Others described patterns such as a decrease in sexual risk reduction, an increase in

risk taking behaviour initially followed by reduction in risk taking over time, and finally a period of inconsistent practices in “risky” sex and “safer” sex, although no participants could say for sure if these changes in practices were specifically related to PrEP initiation or due to other external factors (Gafos et al., 2019). The theory of risk compensation in PrEP users, while numerically only supported for a fragment of those who do actively use PrEP, has even become a cited barrier to hesitancy for providers to prescribe PrEP to clients (Calabrese et. al., 2017).

Sexual Pleasure and Barriers to Sexual Pleasure

Sexual pleasure is a concept defined as a physical and or psychological satisfaction associated with or derived from solitary or shared erotic experiences (Global Advisory Board for Sexual Health and Wellbeing, 2016). Often perceived as something that occurs alongside sexual activity on all accounts, pleasure is anything but a given - with aspects of guilt, disappointment, and even fear causing havoc on the individuals psyche and creating limitations to one’s sexual expressiveness and experiences of pleasure (Hull, 2008). The World Association for Sexual Health (WAS) Declaration of Sexual Rights highlighted the need to identify sexual pleasure as a priority in health, identifying the need to achieve recognition of sexual pleasure as a component itself of health and well-being, and to move away from the viewpoint of sexual health a solely the absence of disease and to start toward the inclusion and even promotion of sexual pleasure (Hull, 2008). Sexual pleasure is more than just a hopeful outcome in the pursuit of sexual activity, as a large body of literature describes that sexual health, sexual rights, and sexual pleasure are fundamental pillars to achieving better health and wellbeing (Ford et. al., 2019). Sexual pleasure is associated with improvements in physical and mental health and wellbeing, and a wellbeing promotion that impacts relationship quality and general life satisfaction as well (Laan et. al., 2021).

Identifying the influences pleasure has on wellbeing highlights a need to engage with sexual pleasure more actively as a feature of sexual rights and sexual health, however barriers exist as the incorporation of pleasure into components of health promotion begin to occur. Firstly, the societal view and control of sexuality, including sexual desire, passion and pleasure have influenced health promotion efforts as they are often perceived as threats to societal norms (Ford et. al., 2019). This includes sex for the pursuit of nothing more than pleasure, sex outside of marriages, and even sex beyond heteronormative behaviours. Advocates for sexual well-being are urged to respect and advocate for sexual diversity as it leads to better health and well-being (Ford et. al., 2019). A second barrier exists in the way sexual pleasure is rooted in gender inequality, where women, transgender and intersex persons are judged more harshly in their sexual behaviour and desire in comparison to heterosexual men. A clear need for advocacy, acceptance and role modeling exists for those whose sexual desire and behaviours are frowned upon solely due to gender or sexual orientation (Ford et. al., 2019). Lastly, barriers to sexual pleasure include systemic oppression, systems of power and social inequality. The intersectionality of gender, sexuality and race plays a large part in not only the pleasure, but the health and well-being of minority groups (Ford et. al., 2019). Not only is there disproportionate attainability of sexual health services for some groups, but even a negative systemic or societal perception of sexual health practices for focal group influences not only the care services available, but the promotion of positive sexual health experiences, and in turn positive sexual pleasure related experiences (Ford et. al., 2019).

PrEP and Pleasure in MSM

The MSM population are of no exception to impacts of pleasure in relation to the above noted barriers, such as systemic oppression, social inequality, and societal views. Positive

dimensions of sexuality in the MSM population, such as the importance of affection, sexual well-being and pleasure have largely been neglected as a whole, with health literacy and health promotion initiatives being no exception (Calabrese, Rosenberger, Schick, & Novak, 2015). In fact, the branding of MSM sex is quickly associated with a risk-taking activity, largely in part to the disproportionate HIV and STI contraction rates seen within this population. Pleasure seeking itself however plays a key part in health promotion and prevention in this population – identified as an essential component to sexual satisfaction (Calabrese, Rosenberger, Schick, & Novak, 2015).

PrEP usage has shown evidence of improving perceived sexual pleasure in MSM, due to removing actual or anticipatory barriers to pleasure, such as psychological items like stress or anxiety, or physical items such as condoms (Mabire et al, 2019). PrEP allows participants to feel physically closer to their sexual partner, and participate in fluid exchange when preferred, creating a more pleasurable sexual experience (Mabire et al, 2019). While sexual intercourse for MSM cannot simply be reduced to anal sex, during anal sex specifically MSM's relationship with condom usage has shown usage to be a perceived barrier to pleasure. Condom usage in the MSM population has been negatively associated with the absence of pleasure during anal sex, being presented at times as unnatural, sensation reducing, and irritating which overall contributes to decreases in sexual desire, increased anxiety and overall, less pleasurable sexual experiences (da Silva-Brandao & Ianni, 2020; Mabire et al, 2019). The initiation of PrEP has allowed for many MSM to feel more comfortable reducing their rate of condom usage with sexual partners, thus improving overall sexual pleasure (Mabire et al, 2019).

In addition, sexual positioning (i.e., being insertive or receptive partner during anal sex) has an impact on sexual pleasure for some MSM, with positioning being chosen based on

preference, but sometimes influenced by PrEP or condom usage. Given that receptive anal sex does pose an increased risk of HIV compared to penetrative anal sex, for some MSM, simply being on PrEP allows them to feel they are able to choose their preferred sexual position more freely and to better enjoy intimacy (Mabire et al, 2019). Among MSM who prefer to engage in condomless sex, there is a reported improvement to sexual quality and pleasure despite some anxiety related to HIV contraction at times; however, such concerns have not been found to have an overall effect on likelihood for condom use (Mabire et al, 2019).

CHAPTER 3 – Theoretical Framework

The section below will discuss theoretical concepts that are relevant to the research study to not simply define, but to provide relevant background knowledge pertaining to the prominent concepts in this study. This is done so with the aim to provide a foundation of knowledge to be used as a structure to support the components of this research study.

Risk

Lupton (1999) describes risk as something that was historically projected through its association with probability – i.e., a balance between concepts of loss and gain, and through participating in risk there became opportunity to make gains, but also suffer losses. Modern definitions of risk have evolved to associate risk with dangerous or hazardous situations, where risk no longer serves the opportunity for great gains, but focuses more on the potential losses (Lupton, 1999). Risk and hazard therefore intertwine in a modern perspective, incorporating multiple elements and subtleties of risk behaviours. Lupton (1999) identifies three major theoretical perspectives to risk and participates in critical review of each of these risk theories. These perspectives are (1) the risk society, (2) the cultural/symbolic, and (3) the governmentality perspectives, each of which associate itself with different views of risk and difference social responses to it.

The risk society, a concept that is heavily influenced and embedded in the work of Ulrich Beck and further contributed to by Anthony Giddens, pillars itself on the notion that western society continues to move itself away from the early area of modernity, known as the way of life shaped by industrial process, and is moving toward the period in which Beck terms late modernity, a time marked by dangers and hazards proliferating from industrialization, urbanization and globalization (Lupton, 1999). This new modernity therefore focuses on the

prevention and mitigation of the “bad”, and risk avoidance becomes a focal political and personal aspect of everyday life (Lupton, 1999). This theoretical perspective identifies that historically, risk has been associated with the natural outcomes of the world. Items such as famine, disease, and natural disaster took precedence as the risk creating events, where now in this new period of modernity, the human responsibility holds the strongest attachment to risk and therefore the largest responsibility for risk minimization (Lupton, 1999). Due to the largely human connection to risk, the association with expert identification, calculation and opinion are heavily relied on to seek advice on how to deal with these everyday risks, removing the reliability of traditions, local knowledge, and religious beliefs/habits as the historic approach to informed risk decision making (Lupton, 1999). The reliance on expert opinion and information creates an area for suspicion, as experts disagree and governments fail to act on identified risks, creating a continual challenge of uncertainty about what information to trust and ultimately what to do about risk. This theory therefore paints risk as a highly political concept (Lupton, 1999).

The cultural/symbolic theory is influenced by the work of Mary Douglas. The pillar to this theory identifies those ideas about risks stem from a shared cultural understanding and practice, founded on social expectations and responsibilities (Lupton, 1999). These pre-identified cultural beliefs allow people to make of the notions of risk, and risk itself, and therefore risk is not individualistic but communally shared. Similar to the theory of risk society, the cultural/symbolic theory identifies that risk is a political concept used for blame and responsibility shifting. However, this theory maintains that risk continues to be rooted in earlier western responses and traditional societies, differing from the risk society perspective (Lupton, 1999). This theoretical perspective draws on Douglas’ previous work and formalizes the belief that risks, and risk associated practices are a way of maintaining social stability, order and cohesion, as risk

protection functions to protect symbolic boundaries and manage threats to the social order (Lupton, 1999). From this perspective, risks are activities or behaviours that are perceived to threaten moral principles and the individuals who pose such risks are therefore deemed 'responsible', laying claim this theory encompasses not only the political, but additionally the moral and ethical as well (Lupton, 1999).

The last theoretical perspective to risk is the governmentality, which draws on work by Michael Foucault's related to modern societal control and organization and creates the invitation for voluntary citizen participants. Risk in this theory is seen as a concept emergent from modernization, drawing from particular interest in the discourses surrounding and constructing risk, and further interest in the way risk is talked and acted upon within social groups (Lupton, 1999). Risk is identified as a major structure in which individuals as a society are asked to self-regulate, highlighting that to be a 'good citizen', overtly oppressive strategies are hardly used, and the focus on self-regulated actions are subtly encouraged (enforced) to create risk preventative action (Lupton, 1999). As discourses proliferate, more and more risk avoidance actions are required to uphold the standard of a good citizen, and those who do not conduct themselves in risk avoidant behaviors may become subject to moral judgement (Lupton, 1999). Similar to theoretical concepts derived through work by Douglas, this approach aims to highlight the ways in which a government increasingly devotes the protection against risks to the individual and the impacts that change has on the viewpoints of fellow community members and ultimately ourselves (Lupton, 1999).

Desire, Happiness, and the Connection to Pleasure

Desire fulfillment theory of well-being, known also as desire satisfaction theory, in its most simple approach describes that getting what we want (i.e., fulfilling our immediate desires)

is good for us in the sense that it delivers happiness – and in the alternative perspective, not getting what we want is not good for us (Heathwood, 2015). The stronger the desire, the more happiness experienced when we get what we want, and alternatively the more harm done when we do not get what we want. In other words, a desire is fulfilled when a specific (desired) outcome occurs and is not solely dependent on a feeling of fulfillment (Heathwood, 2015). There is potential for one action to satisfy multiple desires, but this in theory only results in the happiness experienced because these desires were satisfied. The pursuit to satisfy multiple desires at once to achieve greater pleasure lends itself to the theory of hedonism; however, it can be argued that pleasure does not contribute to overall greater happiness. Pleasure itself is fleeting. It is the satisfaction of the thing being desired at the time that may cause pleasure that creates the happiness experienced (Heathwood, 2022). The desire itself does not have to be moral – in fact, the argument stemming from the fulfillment theory of well-being is that an immoral desire creates the same amount of happiness and internal well-being in contrast to more moral desires. The only impact on internal well-being and happiness may be due to future consequences, and not from immediate actions (Heathwood, 2022). A classic example of such being drinking champagne, where during the drinking it is satisfying, and with continued desire to indulge there is consistent delivery of desire satisfaction and therefore pleasure, with the consequence being the next morning where the consequence of satisfying the previous night's desires may catch up to us.

In the context of this research study, the utilization of the desire fulfillment theory is neither to speak of the long-term consequence that may stem from indulging in desires, nor is it to test what provides overall happiness during a lifetime. Simply fulfilling a desire is a source of happiness, be it potentially fleeting. The definition of happiness itself is the source of discourse

but thought of consisting of multiple components including hedonia (pleasure) and eudaimonia (a good or well lived life) (Kringelbach & Berridge, 2010). This point, therefore, associated pleasure as a vital component of happiness, linking the connection between the two. Achieving happiness, in the lens of fulfilling desires in accordance with the desire-satisfaction theory, therefore largely involves pleasure.

Stigma

The Greeks first originated the term stigma as a means of reference toward bodily features that were designed to be seen to signify something abnormal or unusual. Stigma was taken as a literal marker, creating signs that were marked on people or things, through cut or burns, and advertised in an area that would be highly visible to the public (Goffman, 1997). Often these markings would be displayed on those who society perceived as lesser, such as criminals or slaves. Stigma remained an evolving concept over time, and through times of Christianity stigma turned into markings that helped establish categorization of people, specifically bodily signs of holy grace and bodily signs of the physical disorder (Goffman, 1997).

Currently, stigma is seen as a concept similar to its origins, without the literal bearing of a uniform mark. The organization of people into groups based on common attributes is a longstanding societal means of social categorization. As such, with every new interaction one has, the first impression typically arises from the physical and social observations occurring throughout the interaction, and either consciously or subconsciously humans begin to categorize these along with other similar interactions had had in the past to therefore label a new person with a type of social identity (Goffman, 2009). The anticipations for this person based on the specific social identity created for them are then shifted further from normative expectations into righteous demands. Often, demands are at times illuminated only when the question arises of if

this specific person will meet those demands and this leads to realization that pressure has been placed on the ideas of what this person before us should be (Goffman, 2009).

This leads us into two categorization types of virtual social identity and actual social identity (Goffman, 2009). Virtual identity is composed from the identity that an observer places on someone based on characterization in retrospect of meeting, interacting, or hearing about a person or thing. The attributes and respective categories that one could be proven to possess are known as the actual social identity (Goffman, 2009). Simply described, society has identified the idealized ‘normal’ and normal identity, and when we see deviation away from said normal, we tend to exhibit behaviors toward or make assumptions against this person due to their being different. This leads to a development of a social perception of being lesser than a person that may be considered normal, when something they exhibit traits that stray from the established normal. Stigma, therefore, is defined as an attribute that is deeply discrediting, and the concept of a “spoiled identity”, or an identify outside the “normal” involves a person being linked to stigma (Goffman, 2009).

Three different types of stigma hold the most prominence; physical stigma (associated with bodily abnormalities), stigma of character and character blemishes (e.g weak will, unnatural passion, treacherous or rigid beliefs, homosexuality, dishonesty, suicidal ideation, etc.), and group or tribal stigma (e.g., race, religion, and nationality). In all instances of stigma there exists the same sociological features – that an individual who may have initially been accepted in ordinary social interactions is found to possess a trait that draws attention to itself and discounts all other attributes that person may have (Goffman, 2009). In essence, once someone possesses a trait that places them in a category perceived outside the normal, other attributes alone fail to break the notion of stigmatization and it continues to exist due to this trait. And once one is

stigmatized by a perceiver, they are in essence regarded as something non-human, and discriminated against knowingly or unknowingly (Goffman, 2009). Stigma theory is used to explain away the perceived inferiority of others, often rationalizing the strong animosity displayed through necessary means (Goffman, 2009).

Responses to being stigmatized vary. Some may cite stigma as an excuse for failed accomplishments, failed relationships, and so on. Others may attribute areas of stigma as a blessing in disguise, or learn to accept limitations of normal, and learn to accept and embrace stigma (Goffman, 1997). Most commonly, however, individuals try to conceal themselves by changing things about oneself to draw attention away from the part(s) that are being stigmatized against. This is seen in examples of using plastic surgery to correct bodily blemishes, or eye surgery to correct vision (Goffman, 1997). Some individuals may attempt to indirectly correct the exact cause of the stigmatization through hyper-fixation on mastery of activities perceived prior as not possible to complete based on the grounds of one's shortcomings, such as a blind person who may become an expert in sports that would normally require sight (Goffman, 1997). The risk to concealment strategies, is that individuals can become more self-conscious of the thing being stigmatized itself, or more parts of self that could be stigmatized against, which can lead to feelings of depression, social isolation, anger, anxiety, and impaired self-perception (Goffman, 1997).

Stigma is not infinite but does require changes at a magnitude great enough to alter social perception to reverse stigmatization (Fitzpatrick, 2008). For an example listed in Goffman's work, homosexuality is a dominating categorization of stigma discussed. At one time, it was seen as a crime to be homosexual, and even listed as a psychiatric disorder until its eventual removal in 1974. However, the transition away from homosexuality being a sign of criminal activity or

psychiatric illness allowed for the emergence of improved social acceptance (Fitzpatrick, 2008).

This change in viewpoint does not eliminate all prejudice, abuse, or discrimination MSM continue to experience, but does help to improve the notion that discrimination toward this categorization of person – one that has been labelled with a new identity that is no longer approved for societal stigmatization (Fitzpatrick, 2008).

CHAPTER 4 – Methodology

The Ottawa STI clinic PrEP-RN and Primary Research Study

This thesis draws on research from the University of Ottawa, School of Nursing, in collaboration with the Ottawa Public Health sexual health clinic (herein: SHC). In response to unchanged rates of new HIV diagnoses among MSM, Dr. Patrick O’Byrne (principal investigator) and team launched Canada’s first nurse-led HIV prevention service within the Ottawa SHC, known as PrEP-RN. As part of this pilot, nurses completing STI follow-up or sexual health visits offered PrEP referrals to individuals deemed to be at potentially elevated risk for HIV based on objective indicators, including STI diagnosis (rectal chlamydia, rectal gonorrhea, or infectious syphilis), HIV contact, PEP use, or based on nurses’ clinical judgment. While clinical judgement was not explicitly defined within the research, it is theorized that “clinical judgement” would include elements of critical thinking and clinical decision making (Manetti, 2019) in consideration of risk practices of individual patients (e.g., persons diagnosed with multiple genital chlamydia or gonorrhea infections, gbMSM participating in chemsex, persons from ethnic or racial groups who are known to be disproportionately affected by HIV, etc.) the risk indicators and any potential additional context upon patient presentation. Those who accepted a referral were offered to attend care at the nurse-led PrEP-RN clinic, in which registered nurses completed assessments, testing, and monitoring for PrEP under medical directives from nurse practitioners.

The original study aimed to achieve the following:

1. Establish the 1st PrEP-RN clinic in tandem with GayZone and an RN led PEP program.
2. Evaluate a PrEP-RN clinic

3. Foster PrEP administration and capacity among primary health care providers in Ottawa.

The PrEP-RN clinic launched in August 2018 at the SHC. The original research study was a mixed method exploratory observational field trial with nested qualitative interviews. Field data were collected from two items: (1) clinical visits, including patients risk factors, PrEP use, and engagement in care within the PrEP-RN clinic, and (2) qualitative interviews with patients who accessed PrEP-RN services. These interviews were exploratory, designed to obtain information related to participants perceptions experiences with PrEP use and accessing HIV prevention services, while also leaving room for participants to raise points they feel were important based off their own experiences.

This field study research aimed to answer the following questions:

1. What is the uptake of PrEP-RN re: # of eligible patients based on target population criteria, # of accepted referrals, # of patients who attend vs no-show PrEP-RN appointments, # of patients transferred to primary care after 12 months, # of patients who have STI/HIV diagnoses within 12 months of being transferred to primary care, and # of patients who remain eligible for PrEP-RN after 12 months?
2. What are the patient outcomes of PrEP-RN re: STI/HIV diagnosis, serum creatinine, follow-up after syphilis treatment, program retention, PrEP adherence?
3. What is the burden of depression/anxiety for PrEP-RN patients?
4. How many patients who access PrEP-RN have vs do not have private medical insurance to cover PrEP? How many patients without insurance discontinue PrEP after completion of their starter pack (i.e., at the time of transfer to Trillium)?
5. What is the effect of PrEP-RN on our PEP clinic?

6. What is the cost of a PrEP-RN clinic?

Interviews aimed to answer the questions of:

1. What are patients' experiences/rationale for accessing PrEP-RN?
2. How do patients who access PrEP-RN conceptualize HIV risk?
3. What recommendations do patients have to improve PrEP-RN?

Interviews occurred from June-September 2020, which allowed sufficient time for participant to reflect on their experiences with the PrEP-RN clinic and care. Due to limitations for in-person gatherings during the COVID-19 pandemic, interviews were conducted virtually via Microsoft Teams by a research assistant who had no affiliations with the PrEP-RN clinic. The interviews were audio recorded and transcribed verbatim by an alternate research assistant. The resulting transcription of such audio recordings formulates the basis for research data surrounding this paper.

There was no semi-structured interview guides, as questioning occurred based on probes that present themselves throughout the interview. Some intended conversation direction including but not limited to participants reasoning for seeking PrEP, the experiences both with seeking and using PrEP, and their conceptualizations of risk, safety, HIV, health, and mental health were used to guide conversation when needed. To create an interview structure, the participants were informed of scope and goal of the project. Further, similar to Holt's (2011) work, participants were provided with interview prompts related to the study topic on cards. These included perceptions of PrEP, awareness of PrEP, reasons for using PrEP, current and previous experiences while using PrEP, suggestions for PrEP improvement and perceptions of HIV risk.

Research Design

A secondary analysis of the previously collected qualitative data as described above has been performed for this thesis work. The use of secondary qualitative study materials for analysis is helpful in providing access to rich descriptive data without further intrusion into a specific population (Dufour, Richard & Li, 2019). Secondary analysis allows researchers to access material that is already very limited, such as this where Ottawa's PrEP-RN clinic is the first of its kind.

Data Collection

Original work done by Dr. O'Byrne during the PrEP-RN study divided data collection into two approaches: the field study and interviews.

The field study was completed and included two items: 1. Clinic operations and 2. Patient data. Firstly, *clinic operations* set out to assess overall PrEP-RN clinic outcomes and measure the city wide STI/HIV outcomes along the same timeframe. Data collection included

- Proportion of patients referred to the PrEP-RN program, in comparison to actual uptake of the program and the number of patients receiving PrEP (baseline at 1,3,6,9 & 12 Months).
- Epidemiology measurements relating to STI/HIV diagnosis' in Ottawa at the time of the study period, including rates of serological follow up after syphilis diagnosis.
- Cost relative to running the program.
- Syndemic measurements, including depression and anxiety screening tools of PHQ-9 and GAD-7. This was sourced initially through data collection from the patients chart of identifying drug, alcohol, and tobacco use and history of sexual abuse or assault,

and secondly through completion of the screening tools chosen for their proven validity and recommendation for primary care usage.

- PEP program usage after initiating the PrEP-RN clinic.

Weekly, data were extracted by research assistants, monthly rates of STI/HIV diagnosis numbers and post serological follow up numbers were extracted from the public health databases.

Secondly, *patient data* imputed specific data into Microsoft excel to compile the following.

- Descriptive survey of socioeconomic status and ethnicity
- Chart review including STI/HIV test results, kidney function, duration of PrEP use, breaks in PrEP use, affordability and how PrEP was paid for, retention for uninsured patients, referral of patients diagnosed with HIV during testing, referrals for medical reasons, substance use, historical sexual assault or abuse, vaccinations, STI/HIV diagnoses for the past 12 months.

Descriptive survey completed upon initial enrollment, with chart review occurring and updated after every patient visit.

Secondly, *interviews* were completed in a semi structured and exploratory manner to enable the researcher to obtain data through which they felt important, and to also allow the participant the feeling of importance based on the ability to speak to their own unique experience. Interviews were conducted online via Microsoft Teams and were video/audio recorded lasted approximately 60 minutes in length. General interviews were structured to explore probes as they present through more natural conversation, with the end goal of answering general questions such as reasons for seeking PrEP, experiences with PrEP, and conceptualizations of risk, safety, HIV, health, and mental health.

Sample

In total, fourteen male participants between the ages of 22 and 43 participated in semi-structured interviews after participation in PrEP-RN. Thirteen of these men self-identified as gay, with one identifying of pansexual or bisexual. Nine of fourteen participants had post-secondary education at a university, one at a college, and the rest at or below a high school level of education. Mean average income was approximately 59,000. Range included 10-20k at minimum reported annual income to 120k+ at maximum reported annual income. Ten of the participants identified as white in ethnicity, with one member identifying as black, one as middle eastern, one as Hispanic, and one as mixed. Nine out of fourteen had insurance coverage and all but two members had a history of at minimum one sexually transmitted infection.

Data Analysis

The secondary data analysis occurred based on summative content analysis as described by Hsieh and Shannon (2005), where summative approaches to content analysis occur through identifying and quantifying certain words or content for the purpose of exploring usage of these words and surrounding content in context. In this study this approach allowed for identification of themes associated with the repeated usage of words or phrases. The secondary analysis had predetermined major themes of risk, risk taking and pleasure, so the further summative content analysis allowed for production of sub-themes associated with these pre-determined themes. The research steps were as follows:

1. Familiarize self with content through initial active reading of all participant transcripts.

2. Repeated reading of participant transcripts identifying and highlighting words and phrases commonly used or repeated to generate potential areas of interest related to pre-determined themes of risk, risk taking or pleasure.
3. Review of the highlighted words or phrases in addition to surrounding sentences or paragraphs to provide context and identify meaning.
4. Search for repetitive meaning to produce themes through review of words and phrases in connection to their context as they appear across multiple transcripts.
5. Name and describe identified subthemes aligned to the appropriate theme within risk, risk taking, or pleasure.
6. Present identified subthemes and provide excerpts.

Ethical Considerations

The most important ethical consideration stemming from the primary study was the collections of patients records and patient health information from patient charts. Written consent was obtained from patients for records to be collected and presented without patient identifiers in this study. Further, the primary study screened for anxiety and depression among PrEP-RN participants without follow up resources to address potential positive screening for anxiety and depression. The primary study provided health literacy items and directed participants who may have demonstrated anxiety or depressive like symptoms to appropriate resources. Due to the design of this study being a secondary analysis, this research was built on existing coding relative to the primary study and therefore did not require secondary approval from the ethics review board. No interviews were conducted with research participants by author (Colton Halligan). Instead, further analysis built on existing coding was conducted.

CHAPTER 5 – Results

A primary analysis of PrEP-RN interviews identified two major themes: 1) Motivations for PrEP Initiation and 2) Beliefs about the Benefits of PrEP. The themes from the primary analysis were used as a foundation for the secondary analysis and are briefly described below

The first theme, *motivations for PrEP initiation*; is broken down into personal and external factors (Orser, O’Byrne, & Holmes, 2022). Personal factors included the anxiety and worry associated with contracting HIV through sexual contact, or through introspective realization of their own levels of risk associated with their sexual behavior – leading ultimately to increased stress being the motivating factor behind initiation (Orser, O’Byrne, & Holmes, 2022). Fear of unknown sexual history for their partners also became a source of personal motivation. External factors included increased uptake when PrEP was discussed by medical professionals, particularly nurses, or increased frequency of use occurring within specific social circles (Orser, O’Byrne, & Holmes, 2022). Ultimately, however, the major external uptake factor was PrEP itself being offered at a clinic visit by a nurse (Orser, O’Byrne, & Holmes, 2022).

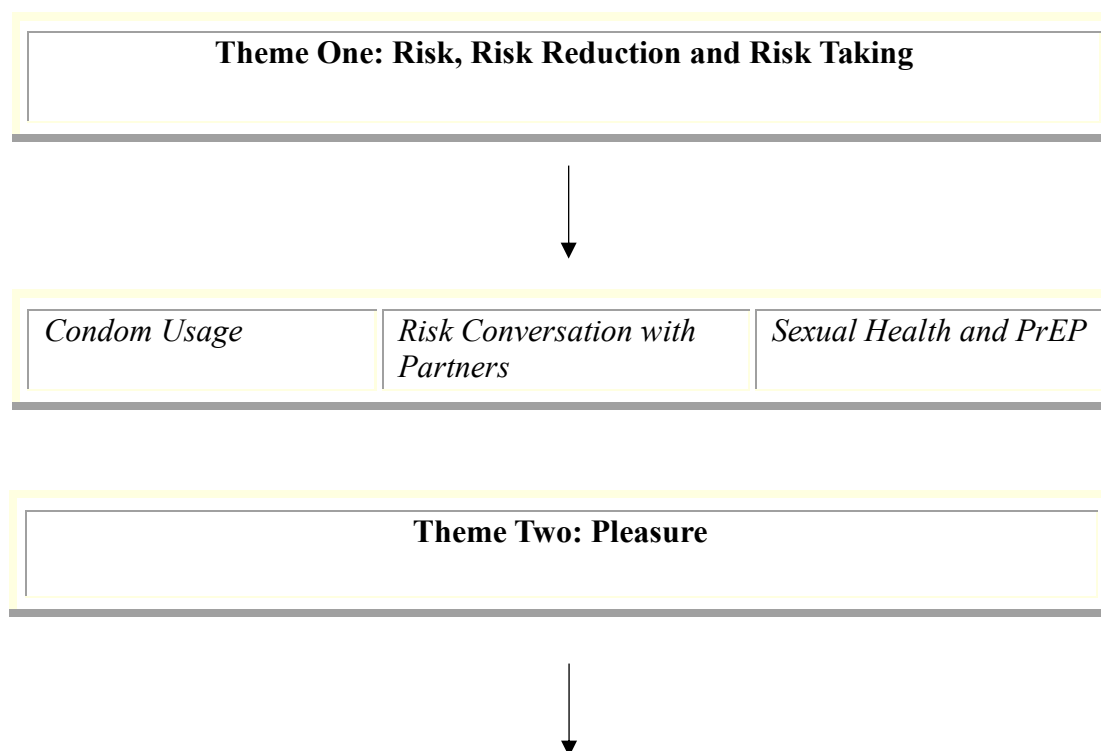
The second theme relates to, *beliefs about the benefits of PrEP*. Despite the knowledge of PrEP use associated with efficacy of HIV reduction, many participants described additional benefits. This was divided into three subthemes. 1) circumventing mistrust; where trust between partners and sexual health history was felt to be harder to obtain through casual conversation for some, and the truth in partners statements about their level of STI/HIV could be falsified or unable to be confirmed (Orser, O’Byrne, & Holmes, 2022). 2) taking control of sexual health; where PrEP was initiated to help reconcile their own HIV risk potential and take personal control of their own health, or to provide additional reassurance for their own sexual health practices promoting a greater level of comfort, control, and risk management (Orser, O’Byrne, & Holmes,

2022). 3) liberating fears surrounding HIV; where initiation and use of PrEP reduced anxieties around casual sex participation, improved the freedom to engage in personal sex preferences and make sex more enjoyable, and overall reduce worry about acquiring HIV (Orser, O’Byrne, & Holmes, 2022).

Through a secondary thematic analysis of participant transcripts from PrEP-RN, two major themes emerged each with the associated subthemes. The first theme, *Risk, Risk reduction and Risk taking*, discussed both risks-related activities and risk reduction activities connected to taking PrEP. Condom usage, risk conversations, and sexual health were identified subthemes. The second theme identified was *Pleasure*, which discussed the pleasurable activities facilitated by PrEP use, including subthemes of pleasure, and stereotyping in PrEP, PrEP and the feeling of being more secure or security, and PrEP and its influence on desire.

Table 1.

Flow chart of secondary analysis themes and subthemes



<i>PrEP, Pleasure and Stereotyping</i>	<i>PrEP and Security</i>	<i>PrEP and Desire</i>
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Theme One: Risk, Risk Reduction and Risk Taking

The categorization of risk, risk reduction and risk taking encompasses the theoretical concepts of risk as discussed by Lupton (1999), viewing risk as the “bad” and risk reduction as a form of mitigating the potential bad. Further, risk reduction techniques discussed may also be viewed in terms of societal self-regulation, focusing as voluntary actions to create preventative measures (Lupton, 1999). In line with the theoretical framework outlining the concept of risk, rates of condom usage, risk taking conversations between sexual partners, and general sexual health were identified themes stemming from the interviews.

Condom Usage

Using search terms such as the words and phrases “protection”, “unprotected”, “unprotected sex”, and “condoms” while reading through participant responses, or through meaning inference based on interviewer questioning prior to a participant response, data were collected and analyzed to provide information on the reported changes to condom usage among PrEP-RN participants. Related to safer sex practices, most participants reduced their level of condom usage while using PrEP. For some, hyper vigilant condom usage prior to PrEP participation resulted in either maintaining or slightly lowered rates of condom usage rates while on PrEP, while for others who reported less consistent condom usage prior to starting PrEP noted larger declines in condom use while on HIV prevention medications.

(Before PrEP) With my partner we didn’t do protected (sex)... If we had other guys we would be protected with them and unprotected with each other... The longer I’ve been on it, the worse it’s been. I’ve been more comfortable with unprotected (sex) (Participant 3, 2020).

I used a condom for anal sex usually unless I was with a partner... (PrEP usage contributed to) feeling more comfortable with unprotected sex with partners, jumping into that a little bit sooner (Participant 4, 2020).

With each other we're not using condoms but if we are outside of it (the relationship) we use condoms... Started using PrEP and it shifted towards us not necessarily using condoms outside the relationship (Participant 5, 2020).

(Before PrEP) I would have been pretty militant, uh, insistent about the condom use but now it's like I have had sex with a condom because the other person wanted to, and that's okay, it has given the option to not (use condoms) (Participant 5, 2020).

A couple years ago when I was having sex, I would use protection more. (After starting PrEP the condom usage is) less often... pretty consistently unprotected (Participant 8, 2020).

Condom usage was a discussed topic in all the participant interviews. In total, nine of fourteen participants identified that the direct use of PrEP, or the general timeframe in which PrEP usage occurred, contributed to an overall reduction in condom usage. For one participant, condom usage reportedly increased with PrEP usage.

I did notice when I started using PrEP, I actually started using more condoms (in the past) I wasn't using condoms nor was I using PrEP... (with PrEP) let's say if I had 6 (sexual partners), I believe I used it (condoms) for like 5 out of 6 times... It was more than before because I would have maybe used it 1 out of 6 (Participant 6, 2020).

The participant describes that at times it was a conscious decision, associating using PrEP with taking care of oneself more and it make them want to take an approach that not only relied on using PrEP but combined other health promotion approaches as well.

I think it was more because I was finally taking care of myself, and, um, protecting myself. It made me kind of want to take a holistic approach, me... and actually use condoms as well (Participant 6, 2020).

Overall, a general finding was reduction in condom use from pre-PrEP usage levels, often associated with increased feelings of comfort relative to participation in condomless sex. Of note, comfort was described a feeling related to the potential exposure or acquisition of HIV mitigated by PrEP use, not comfort with the selected partner; however, participants did note a reduction in condom usage over time (despite reporting they continued to be cautious with risk assessments of their partners).

Risk and conversation with partners

The prevalence of participants discussing partner to partner conversations throughout interviews, and by further searching for inclusion words and phrases such as “conversation” and “partner” throughout participant transcripts, identification of the subtheme surrounding risk taking conversation with partners emerged. PrEP-RN participants identified that PrEP usage themselves has allowed for more open conversations related to personal and partners sexual health practices and risk associated practice, at times both talking about PrEP status but other times generalizing conversation surrounding sexual health history and condom use preference.

It makes for excellent, um, initial conversation... we have that open frank conversation are you on PrEP? (Participant 2, 2020).

Yeah, and I think at the end of the day, its just... maybe even started the conversation about... being more sex positive but also taking responsibility for your sexual health (Participant 7, 2020).

Participants also identified that dating apps typically had sections that allowed for users to identify their HIV status and medication use (including PrEP), and if it was not explicitly mentioned, often the conversation would flow towards a person’s PrEP use status before engaging with a prospective sexual partner.

Well usually it’s just right on their profile, you know. Just says they’re on PrEP, you know. Or if it’s not, you know, then it comes up at some point when you’re

negotiating meeting, you know. Some point you know, it comes up, like “Oh, do you want to use condoms or not? Are you on PrEP or not?” (Participant 1, 2020).

Now I'm like a bit more proactive about asking about status and asking, uh... like what they're doing on their end, which are not necessarily conversations that we've had beforehand (Participant 5, 2020)

In total, 11 of 14 participants noted they routinely had conversations with partners or potential partners regarding STI history, condom usage, and PrEP status. Participants associated the ability to have more open and transparent conversation with partners to reduce feelings of anxiety before engaging in sexual activity, but also identified that they were able to reduce anxiety regardless of what their potential partners answer was, knowing that some people were not always going to be honest during these conversations.

As much as I do ask people what their sexual health habits are, people can lie (Participant 4, 2020)

Overall, PrEP use has promoted the ability for PrEP-RN participants to engage in purposeful conversation surrounding personal sexual health and safe sex practices with partners, with the background knowledge they are protected in the case that people are dishonest or not fully aware of their own health status.

Sexual health and PrEP

PrEP-RN users have identified that since starting PrEP they have been adhering to a more routine STI testing schedule and in general personal frequency of STI testing have increased. This theme was identified by isolating and reviewing mentions of “STI”, “Testing” and “Clinic” in addition to participant response meaning inference based on the prior question by the interviewer.

With PrEP I have to go every three months (to the sexual health clinic). I have to go. It's not up to me to just voluntarily go, like I have to go you know. And I like that. I like the structure. It keeps me in check (Participant 1, 2020).

I wanted to get tested more... and also, doing PrEP through the... Sexual Health Clinic I found myself at the clinic more often and it was a lot more convenient to get tested (Participant 8, 2020).

As part of the checkups, they would usually ask me if I wanted to do like other testing and I would always just say yes (Participant 8, 2020).

I do go (to the clinic) every three months for the follow up blood work and while I do that I usually do the, um, urine test and the, uh, swab samples (Participant 11, 2020).

Six of fourteen participants mentioned specific benefits that PrEP has had on their ability to access sexual health testing and other routine clinic testing beyond simply the prescription of PrEP. Participants identified that participating in PrEP has at times allowed for them to take more control of their own sexual health

Theme Two: Pleasure

Pleasure, previously identified as physiological or psychological satisfaction, sometimes through erotic experiences when discussing sexual pleasure (Global Advisory Board for Sexual Health and Wellbeing, 2016), was identified as a major theme throughout PrEP-RN participant interviews. Participants identified that stereotyping, feelings of security and desire as things that influenced pleasure while taking PrEP.

PrEP, pleasure, and stereotyping

Stigmatization surrounding PrEP primarily includes comments on perceived sexual activity and promiscuity, often the labeling of PrEP users as a “slut”.

Within the gay community there’s this sort of somewhat backlash of people who were just ignorant what PrEP was (they would say) you’re obviously sleeping around, or I don’t trust you because you’re sleeping around, and you know, just I felt like I had to justify why I was on PrEP (Participant 2, 2020).

... Because sometimes people think like “Oh hes on PrEP. He has sex with everybody”. (Participant 9, 2020).

There's a bit of a judgmental factor (with PrEP, like, "Oh, you're on PrEP. You're a slut" (Participant 14, 2020).

Like "Oh if you take PrEP then that must mean you're like an ultra-slut" (Participant 14, 2020).

Judgement from peers or sexual partners have shown to deter participants from sustained usage of PrEP despite the known benefits of reduction in HIV acquisition risks it provides. In addition to comments regarding sexual promiscuity, participants described stereotypes of PrEP used as being inadvertently labelled as being HIV-positive. On this, participants stated:

The whole notion of getting onto PrEP, um to me in me, in my mind, was coupled and linked with people who have HIV (Participant 2, 2020)

I guess they (pharmacists) don't really know about PrEP, so they just look at the drug and there aware of what the drug is, cause a bunch of other patients come in... and purchase this drug, and so it's kind of like "Oh you're HIV positive" (Participant 2, 2022)

Stigma was identified as a prevalent experience in three of fourteen participant interviews, and acknowledgement of stigma surrounding PrEP was identified in 5 of fourteen interviews. Stigmatization from within the MSM community itself was discussed as the largest single source, followed by healthcare provider stigmatization surrounding rationale for use (e.g., pharmacists assuming PrEP medications were for HIV treatment, not prevention). Minimal references were made to stigma from outside the MSM community, in theory due to lack of general population education on PrEP. Awareness for the general population on PrEP, its success and usages were identified as a need through participant interviews.

PrEP and Security

PrEP-RN users have identified that PrEP usage has allowed for an increased sense of security during sexual encounters, and in some cases, acted as an anxiety reduction method when participating in sexual intercourse. Words such as "anxiety", "stress", "safety" were isolated in

participant transcripts to identify the emerging theme. Often sex between men has been identified socially as a practice associated with increased risk; however, PrEP participants described the usage of PrEP to actively alleviate looming feelings of anxiety related to sex and the possibility of HIV acquisition or have described some reduced anxiety as a passive effect of PrEP. Related to this, participants shared the following:

... so anything to relieve any of that stress, or anything about meeting guys, or stuff like that, like it makes it so much better for me mentally (Participant 3, 2020).

... So just having that extra layer of safety (since starting PrEP), it's a lot better (Participant 3, 2020).

... I'm like this (using PrEP) is good and I can explore, you know, my relationship with this person and not have feelings of anxiety every time we want to have sex (Participant 7, 2020).

PrEP is like a terrific sexual anxiolytic! (Participant 12, 2020).

(After starting PrEP) my anxiety was a lot better (Participant 14, 2020).

In total, seven of fourteen quoted direct reduction to anxiety associated with taking PrEP. Anxiety reduction was identified as a benefit to PrEP use beyond its sole intention for reducing possibility of HIV acquisition. For these participants, PrEP allowed them to be more open and exploratory in terms of meeting new partners or engaging in new sexual practices because it provided an additional layer of perceived “safety”. Further, as discussed in risk conversation with partners, PrEP provided participants with the ability to have more open and frank conversations with partners, was a source of further anxiety reduction for PrEP users.

PrEP and desire

Analyzing transcripts by searching words and phrases of “libido”, “sex drive”, and “sex or sexual desire”, a subtheme of PrEP and desire has emerged. A major finding in two participant

transcripts was that while taking PrEP, participants reported a decrease in desire for sexual activity and an overall reduction in libido.

... My sex drive has been... quieter since (starting PrEP). Like I don't feel so sexual (Participant 9, 2020).

I did notice that I was also not very, uh, sexual at all. While using the medication (Participant 13, 2020).

That amount of medication... apparently also impacted my libido, so (Participant 13, 2020).

Participants further went on to discuss that although they felt a reduction in libido at the time of starting PrEP, they were unable to confirm the association directly to PrEP as both participants had undergone significant life changes correlating with the start time for PrEP use. The lack of libido was the only prominent note relating to sexual behaviour identified within participant transcripts based on the above search terms. There was no mention to the impact of sexual functionality or sexual arousal in participants. It is important to note that there is the ability to experience sexual arousal without sexual desire, and vice versa (Graziottin, 2000).

One participant response was particularly intriguing, noting that although there was a change in libido, there was an alternative change in approach to meeting new people. The desire for the interaction shifted from assumingly seeking sexual fulfillment to forming an emotional connection with the prospective partner.

It's not like before PrEP. Like before PrEP, my libido was super... super high... and now I'm more focused into nature like getting to know the person and even calling myself demi-sexual (Participant 9, 2020).

CHAPTER 6 – Discussion

Analysis of participant interviews and their separation into main themes and associated subthemes allowed for identification of participant experiences among MSM accessing PrEP in a nurse-led clinic. A first theme included the increased risk practices observed in those participating in PrEP-RN, specifically relating to changes in condom usage for those taking PrEP. Secondly, a theme of improved risk management behaviors was identified, as participants identified PrEP use as a way for them to take control of their own health. Feelings of stigma while using PrEP among participants were identified and compared to feelings of stigma felt across general PrEP users within the literature (not those solely affiliated with PrEP-RN). PrEP and sexual security, and PrEP and sexual desire were additionally discussed. Implications of this study for the nursing practice, research, and education will be presented. Finally, the limitations associated with this secondary analysis will be discussed.

Increased Risk Practices with PrEP-RN

A general reduction in condom usage was a reoccurring theme both in the PrEP-RN participant interviews and within the general literature. Condom usage among PrEP-RN participants was reported to decline due to feelings of decreased perception of risk and an increased perception of safety regarding condomless sex participation both with regular and casual sexual partners. Although this was not a universal finding among PrEP-RN participants, it was by far the most reoccurring theme, spanning across multiple interviews. The reduction of condom usage was reported multiple times by participants as a perceived positive benefit associated with taking PrEP, despite the potential increased risk for STIs associated with this practice. Per the participants, PrEP usage allowed for reduction in anxiety and fear during condomless sex thus resulting in overall more pleasurable sexual experiences.

While the participants benefit of more pleasurable sex is a positive aspect stemming from PrEP use, the reduction of condom usage with PrEP use remains concerning from a broad risk reduction approach due to the potential for other STIs. Condoms provide what is described as a nearly impenetrable barrier for STI pathogenic transmission (Centers for Disease Control and Prevention, 2022), and with rising rates of bacterial STIs within the MSM population (Ramchandani & Golden, 2019), the conclusion that PrEP promotes a reduction in condom usage could frame it to be a key contributor to high ongoing STI rates. It is, however, relevant to note that elevated rates of chlamydia, gonorrhea, and syphilis were observed in MSM prior to the implementation of PrEP and the link between PrEP and secondary STI diagnoses is not conclusive (Ramchandani & Golden, 2019). Moreover, MSM who engage in PrEP participation are offered STI testing every 3 months, which could be useful to identify new STI diagnoses sooner (as opposed to relying on individuals to seek routine screening or to present for testing when symptoms are present). Nonetheless, the need to reduce activities that increase STI potential is crucial, largely due to the health impacts STIs can have on the recipient and healthcare costs associated with testing, diagnosis, treatment, and follow-up of STIs. It is also important to consider that in comparison to HIV, other STIs pale in relation to the associated social and medical risks, and that there is soundness in the rationality for some MSM to prioritize HIV prevention over STI prevention. Condom use in participants could also have been used as a method to reduce HIV risks prior to the implementation of PrEP, and therefore PrEP would eliminate the need for continued condom use moving forward.

Despite the somewhat unclear relation between PrEP usage and an increase in STIs specifically, there is a clear link between PrEP and reduced condom usage, prompting the need to assess PrEP users' willingness to engage in education on condom usage in conjunction with PrEP

medications. In a retrospective study of MSM enrolled in PrEP programs, an identified 85.4% of MSM reported “usually” using condoms prior to PrEP enrollment (>50%); however, after two years of PrEP enrollment, this number declined to only 30% (Ayerdi Aguirrebengoa et. al, 2021). In addition, rates of “occasional” condom use (<50%) before PrEP enrollment was reported in 10% of the surveyed population, with numbers after two years of enrollment climbing to nearly 50%. Finally, rates of never using condoms increased from 4.5% prior to 20% after sustained PrEP enrollment (Ayerdi Aguirrebengoa et. al, 2021). The reported reduction in condom use rates should be addressed within this population to identify if this is related to a gap in education or simply an active choice or personal preference.

PrEP prescription and rates of condom usage have been identified to have a strong link for prescribers’ willingness to provide at risk populations with a PrEP prescription. Initial studies have shown that fewer practitioners were willing to prescribe PrEP to those who did not use condoms and planned to continue to not use condoms, at rates of prescription likelihood being 53% and 45% respectively (Calabrese et. al., 2018). Further, those who used condoms but were likely to discontinue condom use with PrEP use were only 27% likely to receive a prescription for PrEP (Calabrese et. al., 2018). The numerical demonstration of both condom reduction in MSM after sustained PrEP enrollment and further the barrier that condom usage has on prescription from providers highlights an area of educational need.

Improved Self Risk Management Practices with PrEP-RN

PrEP being a way for participants to access more routine sexual health testing, to make more conscious decisions about sexual partners, and to feel more empowered to have sexual health related conversations with prospective and current partners emerged as a theme through interviews. Due to the setup of the PrEP-RN program, participants required a 3-month check in

which during this time participants often opted to be screened for other STIs as well. This contributed to an increased frequency of testing relative to participants typical testing routine, and further a more structured and convenient way of getting routinely tested. As mentioned above, Ramchandani & Golden (2019) noted MSM on PrEP were identified as a population who underwent more frequent STI testing than the comparative population not on PrEP. This finding was reiterated in a study conducted by Hevey, Walsh, & Petroll (2018), who noted that their clinic-based approach to PrEP delivery found that those enrolled in a PrEP medication management program were more likely to complete recommended STI testing. In addition to routine testing, the interviews revealed that PrEP was often used to start the conversation between prospective partners to make more sexually conscious decisions. Some interview participants identified that starting PrEP allowed them to feel more confident asking questions surrounding PrEP usage easier with initial engagement with new potential partners, whereas multiple other participant's identified "hookup" style apps such as Grindr had a section where they allowed for participants to state if they were on PrEP or not which often was brought up in a topic of conversation. Participants were therefore able to take more control of their own sexual health and feel more secure with the choices in their choice of sexual partner or sexual behaviors.

Stigma

Multiple PrEP-RN interview participants identified stigmatization surrounding the usage of PrEP, stemming from both members of their community and at times from potential partners. PrEP-RN users most often described being associated as someone with an increased number of sexual partners when disclosing their PrEP use. This negative stereotyping may negatively impact participant willingness to take long term PrEP, and further may deter those not on PrEP from starting PrEP, eliminating the potential for any risk reduction entirely (Calabrese &

Underhill, 2015). The stigma surrounding PrEP use is not exclusively found within the PrEP-RN study and is in fact so universally acknowledged that calls to adjust the way PrEP is advertised and marketed have been made. Instead of focusing on PrEP as a tool to reduce HIV in those that may be seen as high risk, Golub (2018) argues that instead, promoting PrEP as an anxiety reduction technique in the context of acquiring HIV, or as a way to take control of one's own sexual health, could both act as a more sufficient way to draw in users and potentially reduce the associated stigma.

Similar to the experiences of some PrEP-RN participants, those using PrEP may feel mislabeled as a “whore”, “dirty”, or “a slut” (Dubov, Galbo Jr, Altice, & Fraenkel, 2018). There also appears to be a generational divide in those who use PrEP and even older members of the MSM community, attributing the idea that the older generation places a larger importance on the need for HIV avoidance and sexual security on the younger generation, as they feel like more information is available on how to maintain HIV safety. Often older members of the community feel like PrEP is used among the younger generation as an excuse for participation in sex without a condom (Dubov, Galbo Jr, Altice, & Fraenkel, 2018).

To link Goffman's work, stigmatization of the MSM community from the viewpoint of the public has seen exponential improvements since its initial classification as criminal act and a psychiatric disorder. This change in classification does not eliminate all social bias, aspects of discrimination or stigma. While it may no longer be the socially accepted viewpoint to have reservations towards the MSM community, these feelings continue to exist in the modern era and pollute even settings where stigma and bias should not exist yet continue to. Stigma continues to exist even from within the MSM community itself, as policed promiscuity from MSM who view PrEP users as a “slut” validate the historical social lean toward judgement of MSM and gay sex.

Stigma within health services, health literacy, and within healthcare providers themselves limits appropriate access to healthcare services within MSM, and limits engagement in HIV targeted programming (Kutner, Wu, Balán, & Meyers, 2020). It is estimated that less than 50% of MSM are asked about sexual history during routine checkups due to provider insecurity surrounding the subject, overarched by a lack of focal MSM related training for modern medical professionals (Kutner, Wu, Balán, & Meyers, 2020). Access to appropriate HIV protection and prevention strategies such as PrEP are impacted due to providers lack of knowledge, lack of competent assessment ability, and lack of available educational resources, all stemming from historical perception, therefore identifying stigma as a contributor to ongoing health disparities (Kutner, Wu, Balán, & Meyers, 2020).

This lack of knowledge related to PrEP is concerning both from a health disparity perspective, but also from the perspective that stigmatization continues to occur within the MSM community itself regarding PrEP and its usage, as evidenced by the literature above. As Fitzpatrick (2009) discussed, areas where societal force no longer drives stigma and when stigma occurs within the group itself, the medical profession can play an impactful and leading role in changing the perception of said stigma. This is currently unable to occur due to providers lack of broadened insight into not only PrEP itself, but lack of guidance to improve providers comfort, knowledge or intervention skills related to MSM and sexuality (Kutner, Wu, Balán, & Meyers, 2020).

PrEP and Sexual Safety

PrEP-RN participants described a reduction of anxiety surrounding HIV acquisition and generalized increased feelings of safety associated with their experiences of sexual interactions since starting PrEP. This increased feeling of safety was described as a key factor contributing to

a more stress free, more open, and ultimately a more pleasurable sexual experience for participants in the PrEP-RN program. Those who participated in PrEP discussed that this intervention allowed them to freely choose to not use condoms if that is their preference during sex, or for those participants who routinely do not use condoms or did not use condoms prior to PrEP, it has reduced some of that stress and or anxiety that they may have experienced relating to sex in the past.

While the reduction in sex related anxiety is a clearly emergent theme, it is unclear if anxiety reduction alone contributes to more pleasurable sex. In fact, quantitative studies have failed to identify significant measurable differences in pleasure pre and post PrEP usage despite confirmation of reducing pre and post PrEP use anxiety associated with the fear of HIV contraction (Whitfield et al., 2019). Participants in alternative PrEP studies have often described the usage of PrEP as providing peace of mind, and an extra layer of protection, and additional qualitative studies have shown an overwhelming amount of evidence for simply the stress and anxiety reduction benefits that being on PrEP has for MSM (Whitfield et al., 2019). There has been such an overwhelming amount of support for the psychosocial benefits of PrEP use in conjunction to the benefits of transmission reduction that the question at times has been raised of is PrEP worth promoting for the psychosocial benefits alone, even if the criteria for risk qualification is not explicitly met, which has been met with further prescriber uncertainty (Smith, Holt, Haire & Newman, 2021).

PrEP, Desire, and Satisfaction

A few PrEP-RN patients noted a decrease in sexual libdo and a reduction in overall sexual activity participation since starting the medication. This finding comes with contrasting literature supports, as some literature relates the potential increased sexual pleasure experienced with PrEP

use as something that promotes increased sexual desire (Van Dijk et. Al., 2021). However, participants in the PrEP-RN study could not solely attribute PrEP use to the experienced changes in libido, as some participants had recently described undergoing a geographical move, changes in individual relationships, or other underlying factors that could have some influence on libido. It is important to note the above distinction in participant interview analysis that separates the notion that libido goes hand in hand with sexual arousal. There is no mentioned change to sexual function associated with PrEP use – the change occurs strictly with a reduction in sexual desire.

In similar PrEP use studies, often patterns of sexual behaviour have been identified to be influenced by changes to their age, life stage, change in geographical location and changes in current relationship status and could not solely attribute changes to behaviour on PrEP usage (Gafos et. al, 2019). Many participants have demonstrated a reduction in sexual activity in general, or a reduction in sexual intercourse that is seen as higher risk (ex. sex without a condom or receptive anal sex) (Gafos et. al, 2019). There appears to be a theme of some participants reducing sexual activity once starting PrEP in both general PrEP participants and in come PrEP-RN participants, but this cannot be directly correlated solely to the start of PrEP usage, as contextual life factors cannot be ruled out entirely.

To relate desire in the context of PrEP use to desire as a part of the desire satisfaction theory, there are assumptions made to the rationality for the reduction of sexual desire throughout usage. PrEP itself allows for the prevention of HIV without the penalization of sexual pleasure (Calabrese & Underhill, 2015) and often theorized one of the driving factors for PrEP uptake itself is the ability to enhance one's sexual desires and need satisfaction while being able to protect oneself from HIV (Gamarel & Golub, 2020). However, literature has demonstrated that in comparison to those using PrEP, men in serodiscordant partnerships are more likely to have

conversations with motivation to express satisfaction and intimacy goals, due to the increased need to have these conversations to be able to achieve pleasure but remain safe with the increased risk of acquiring HIV (Gamarel & Golub, 2020). In the context of PrEP use, there is supportive literature that with the reduction in HIV risk, there is less purposeful conversation around intimacy goals yet a larger potential for goal congruence with the alleviation of HIV risk (Gamarel & Golub, 2020). A further assumption through analysis is that the reduction of sexual desire appears to become more relevant in the context of the tangible change PrEP has the reduction of sexual risk in general. While the influence of PrEP on libido and sexual behaviour is a topic requiring more research, the need to promote purposeful goal driven conversation to establish sexual and intimacy goals between PrEP users will improve satisfaction and goal congruence, allowing for overall improved desire satisfaction.

Implications for Nursing

Clinical

Implications for nursing practice and sexual health education include focusing on promotion of safer sex strategies, such as routine condom usage when prescribing or following up with PrEP users. This education should be individually tailored, to both serve educational needs (if any), but also promote participant informed decision making and autonomy with choice to use or not use condoms. Promotion of routine condom usage will contribute to the continued risk reduction for STIs apart from HIV as needed, as this study has demonstrated there is a potential for decreased rate of condom usage related to PrEP use.

The continued advertisement for where to access sexual health services and the need to access routine sexual health services needs further promotion, as this study has identified that PrEP provided users a way to access more routine sexual health services, specifically in 3-month

intervals; however, enrollment in PrEP should not be a sole driver in the promotion of routine health service access for historically at-risk populations. Focusing on asking specific questions related to sexual health history and risk factors is needed, as evidence has shown risk for STIs/HIV is not nearly assessed enough among current care providers.

Research

Additional nursing research should include a primary study of PrEP-RN participants or PrEP participants in general on concepts such as risk, risk taking and pleasure to be able to properly tailor questions to the target research material and not be reliant on a secondary analysis of previously collected materials. Additional studies on how MSM self-perceive their risk levels should be completed. Studying the impact that low-medium or high-risk perception has on risk taking or sexual behavior would allow for insight into both defining a general risk perception and a risk behavior trend in MSM. Further, completing this study in prospective PrEP users would allow for individual risk change to be qualitatively measured in pre/post data while on PrEP. Lastly, continued monitoring of patient experience should occur as PrEP-RN is still a relatively new approach to PrEP delivery.

For the continued monitoring of patient experiences, emphasis should be placed on identifying a method where feedback can be easily provided and seen as a positive opportunity to support the improvement of PrEP-RN. Providers of PrEP-RN should be accessed and interviews as key stakeholders to continue to work toward improvement of service provision. Further, purposeful research into delivering quantitative results depicting a correlation (or lack thereof) between pleasure and anxiety reduction because of PrEP use should be completed, to identify if there is benefit to reducing the risk threshold for PrEP prescriptions to capture more psychosocial benefits for the MSM population. Further investigation into PrEP and the impact on libido and

sexual behaviors should also be completed, so this can either be listed as a potential adverse effect or discredited as associated to PrEP in general. Lastly, research on PrEP users embracing the ‘promiscuity’ label to combat the stigma associated with gay sex should be discussed, with these labels being reclaimed and embraced in sex positive MSM subcommunities.

Education

Improved education for nursing and care providers not only with PrEP but generalized to the MSM community needs to be completed. The lingering stigma surrounding the risk practices of MSM has impacted education for care providers surrounding competent assessment ability and educational resources, all which led to potential inadequate care provision and a continued cycle of health disparity within the MSM community. Improvements to stigma, both within the general and MSM community, cannot change without first improving our care provision and education, turning health care providers into more of a resource versus the current feel of a passive bystander. From a risk perspective, education surrounding condom usage rates in those newly prescribed or on PrEP should be focused on with health care professionals so they can be the driving advocate behind continued condom use promotion to decrease associated risk of acquiring STIs. From a pleasure and security perspective, education for nursing should be completed to allow for holistic views to MSM care provision, where nurses can be strong advocates for the psychosocial benefits to treatment approach’s that incorporated, as there is prominent findings to the anxiety reduction that PrEP provides in correlation with the improved protection from HIV acquisition.

Study Limitations

Study limitations include the utilization of secondary material not collected with the intent to answer questions solely surrounding the concepts of risk, risk taking and pleasure.

Interviews conducted with MSM prior to enrollment in PrEP- RN related to perceived sexual risk and risk taking, sexual pleasure, desire, stigma, and perceptions on PrEP could have allowed for more comprehensive analysis of changes in pleasure, desire, risk taking and risk prevention and also allow for insight into pre/post comparative stigma experience. The usage of secondary sourced material also provides opportunity for researcher bias occurring when coding meaning to patient statements, as alternative conceptualization may occur apart from the intent from the primary researcher. Lack of study material on perceived risk and risk taking, pleasure, desire, and stereotyping presented a limitation. In general, a lack of research surrounding PrEP and its connection to concepts such as risk, risk taking and pleasure provides issues with comparative analysis, and PrEP-RN being the first of its kind provides challenges in comparison to research outside of the nurse-led model. Further, the sample size consisted mostly of gay white men which does not allow for proper representation of proper sexual, general, ethnic, or racial diversity in which different themes may have emerged. Lastly, at the time of interview collection a large portion of participants had identified that they were no longer taking PrEP for varying reasons.

Conclusion

Using interview transcripts collected from participants of a nurse led PrEP service, PrEP-RN, led by Dr. Patrick O’Byrne, concepts such as risk, risk-taking and pleasure were isolated to produce themes for secondary analysis. The identification of a general reduction in condom use among PrEP-RN participants identifies an increased risk-taking activity, that is not independent of current literature relating to PrEP studies, but still provides a major area where improvements can be made to the PrEP-RN to promote further risk reduction. Further, provider unwillingness to prescribe PrEP to those who indicate the intent to reduce condom usage provides a potential educational opportunity for those looking to prescribe PrEP.

Improvements in STI testing frequency among PrEP-RN participants was a reiterated theme in the literature as a welcome risk reduction method that stemmed from the routine PrEP checkups that the PrEP-RN program provided. The ability to increase testing frequency and allow individuals more opportunity to better manage their own sexual health may be the most unintentional benefit of the PrEP-RN program. In addition, PrEP use allowed partners to participate in more open communication with potential and actual partners about their own PrEP status and related sexual health, once again allowing individuals to make more informed sexual choices and reduce risk in interactions with partners.

The associated stigma that has been identified among PrEP-RN participants (and further exemplified in other literature studies that surrounds those who use PrEP) should be a prompt for providers to reshape the public view of PrEP and reframe the way PrEP is marketed as a risk reduction tool in hopes to avoid issues with PrEP uptake or continuation. The reduction in anxiety and fear that PrEP users have expressed gives us a positive psychosocial benefit to usage that may in turn enhance pleasure in their own sexual experiences but is an area with loose

association that requires continued research to clearly draw a conclusion to the impacts PrEP has on pleasure.

Overall, this project has allowed for identification of positive and negative risk and risk reduction activities associated with the PrEP-RN program and identified areas where pleasure may be impacted or enhanced through associated experiences with PrEP, often comparing these findings to results displayed with other similar PrEP programs. With PrEP-RN being the first of its kind, any re-occurrent thematic identification that can lead to program changes or improvements allows for the continued drive to achieve the most program success possible.

There is a need to continue to promote condom use within PrEP-RN participants to contribute to risk reduction activities, as well as a stigma surrounding PrEP usage that needs to be addressed before potential rates of PrEP usage are impacted in relation to this associated stigma. However, the anxiety and fear reduction, the increased frequency of STI testing, and the empowerment participants mentioned in relation to their own sexual health care all demonstrates that PrEP is a medication that needs to be prescribed, promoted, and researched due to its current and future benefits – and that nurses could play an instrumental role in this process.

References

- Arkell, C. (2021). *Pre-exposure prophylaxis (PrEP)*. Catie. <https://www.catie.ca/en/fact-sheets/prevention/pre-exposure-prophylaxis-prep>
- Ayerdi Aguirrebengoa, O., Vera García, M., Arias Ramírez, D., Gil García, N., Puerta López, T., Clavo Escribano, P., & Rodríguez Martín, C. (2021). Low use of condom and high STI incidence among men who have sex with men in PrEP programs. *PloS one*, *16*(2), e0245925.
- Bbosa, N., Kaleebu, P., & Ssemwanga, D. (2019). HIV subtype diversity worldwide. *Current Opinion in HIV and AIDS*, *14*(3), 153-160.
- Bosh, K. A., Johnson, A. S., Hernandez, A. L., Prejean, J., Taylor, J., Wingard, R., ... & Hall, H. I. (2020). Vital signs: deaths among persons with diagnosed HIV infection, United States, 2010–2018. *Morbidity and Mortality Weekly Report*, *69*(46), 1717.
- Calabrese, S. K., Earnshaw, V. A., Underhill, K., Krakower, D. S., Magnus, M., Hansen, N. B., ... & Dovidio, J. F. (2018). Prevention paradox: Medical students are less inclined to prescribe HIV pre-exposure prophylaxis for patients in highest need. *Journal of the International AIDS Society*, *21*(6), e25147.
- Calabrese, S. K., Magnus, M., Mayer, K. H., Krakower, D. S., Eldahan, A. I., Hawkins, L., Underhill, K., Hansen, N. B., Kershaw, T. S., Betancourt, J. R., & Dovidio, J. F. (2017). "Support Your Client at the Space That They're in": HIV Pre-Exposure Prophylaxis (PrEP) Prescribers' Perspectives on PrEP-Related Risk Compensation. *AIDS patient care and STDs*, *31*(4), 196–204. <https://doi.org/10.1089/apc.2017.0002>
- Calabrese, S. K., Rosenberger, J. G., Schick, V. R., & Novak, D. S. (2015). Pleasure, affection, and love among Black men who have sex with men (MSM) versus MSM of other races:

Countering dehumanizing stereotypes via cross-race comparisons of reported sexual experience at last sexual event. *Archives of Sexual Behavior*, 44(7), 2001-2014.

Calabrese, S. K., & Underhill, K. (2015). How stigma surrounding the use of HIV preexposure prophylaxis undermines prevention and pleasure: a call to destigmatize “truvada whores”. *American Journal of Public Health*, 105(10), 1960-1964.

Centres for Disease Control and Prevention (2022). *Benefits of Routine Screening*.

<https://www.cdc.gov/hiv/clinicians/screening/benefits.html>

Centres for Disease Control and Prevention (2011). *CDC Trial and Another Major Study Find PrEP Can Reduce Risk of HIV Infection among Heterosexuals*.

<https://www.cdc.gov/nchhstp/newsroom/2011/prepheterosexuals.html>

Centers for Disease Control and Prevention. (2022). *Condoms and STDs: Fact sheet for public health personnel*. <http://www.cdc.gov/condomeffectiveness/latex.html>

Centers for Disease Control and Prevention (CDC. (2001). hiV and aidS--united States, 1981-2000. *MMWR. Morbidity and Mortality Weekly Report*, 50(21), 430-434.

Centers for Disease Control and Prevention. (2021). *PrEP for HIV Prevention in the U.S.* from <https://www.cdc.gov/nchhstp/newsroom/fact-sheets/hiv/PrEP-for-hiv-prevention-in-the-US-factsheet.html>

Centres for Disease Control and Prevention (2021). *Sexually Transmitted Infections Treatment Guidelines, 2021*. [https://www.cdc.gov/std/treatment-guidelines/msm.htm#:~:text=HIV%20Risk%20Among%20Men%20Who,one%20in%20253%20\(191\).](https://www.cdc.gov/std/treatment-guidelines/msm.htm#:~:text=HIV%20Risk%20Among%20Men%20Who,one%20in%20253%20(191).)

Choi, S. K., Holtgrave, D. R., Bacon, J., Kennedy, R., Lush, J., McGee, F., & Rourke, S. B. (2016). Economic evaluation of community-based HIV prevention programs in Ontario:

- evidence of effectiveness in reducing HIV infections and health care costs. *AIDS and Behavior*, 20(6), 1143-1156.
- da Silva-Brandao, R. R., & Ianni, A. M. Z. (2020). Sexual desire and pleasure in the context of the HIV pre-exposure prophylaxis (PrEP). *Sexualities*, 23(8), 1400-1416.
- Dubov, A., Galbo Jr, P., Altice, F. L., & Fraenkel, L. (2018). Stigma and shame experiences by MSM who take PrEP for HIV prevention: a qualitative study. *American Journal of Men's Health*, 12(6), 1843-1854.
- Dufour, I. F., Richard, M. C., & Li, J. (2019). Theorizing from secondary qualitative data: A comparison of two data analysis methods. *Cogent Education*, 6(1), 1690265.
- Eisinger, R. W., Dieffenbach, C. W., & Fauci, A. S. (2019). HIV viral load and transmissibility of HIV infection: undetectable equals untransmittable. *Jama*, 321(5), 451-452.
- Fang, W., Mphoyi, B. I., Motake, D. R., Liu, J., Li, W., Mei, F., & Wang, J. (2019). Efficacy, adherence and side effects of PreP for HIV-1 prevention. *Int J Biol*, 11, 80.
- Fields, S. D., & Tung, E. (2021). Patient-focused selection of PrEP medication for individuals at risk of HIV: a narrative review. *Infectious Diseases and Therapy*, 1-22.
- Fitzpatrick, M. (2008). Stigma. *British Journal of General Practice*, 58(549), 294-294.
- Ford, J. V., Corona Vargas, E., Finotelli Jr, I., Fortenberry, J. D., Kismödi, E., Philpott, A., & Coleman, E. (2019). Why pleasure matters: Its global relevance for sexual health, sexual rights and wellbeing. *International Journal of Sexual Health*, 31(3), 217-230.
- Frank, T. D., Carter, A., Jahagirdar, D., Biehl, M. H., Douwes-Schultz, D., Larson, S. L., & Hosseinzadeh, M. (2019). Global, regional, and national incidence, prevalence, and mortality of HIV, 1980–2017, and forecasts to 2030, for 195 countries and territories: a

- systematic analysis for the Global Burden of Diseases, Injuries, and Risk Factors Study 2017. *The Lancet HIV*, 6(12), e831-e859.
- Gafos, M., Horne, R., Nutland, W., Bell, G., Rae, C., Wayal, S. & McCormack, S. (2019). The context of sexual risk behaviour among men who have sex with men seeking PrEP, and the impact of PrEP on sexual behaviour. *AIDS and Behavior*, 23(7), 1708-1720.
- Gamarel, K. E., & Golub, S. A. (2020). Sexual goals and perceptions of goal congruence in individuals' PrEP adoption decisions: A mixed-methods study of gay and bisexual men who are in primary relationships. *Annals of Behavioral Medicine*, 54(4), 237-248.
- Global Advisory Board for Sexual Health and Wellbeing. (2016). *Working definition of sexual pleasure*. <http://www.gab-shw.org/our-work/working-definition-of-sexual-pleasure/>
- Goffman, E. (1997). Selections from stigma. *The Disability Studies Reader*, 203, 215.
- Goffman, E. (2009). *Stigma: Notes on the management of spoiled identity*. Simon and schuster.
- Golub, S. A. (2018). PrEP stigma: implicit and explicit drivers of disparity. *Current HIV/AIDS Reports*, 15(2), 190-197.
- Golub, S. A., Fikslin, R. A., Goldberg, M. H., Peña, S. M., & Radix, A. (2019). Predictors of PrEP uptake among patients with equivalent access. *AIDS and Behavior*, 23(7), 1917-1924.
- Government of Canada (2021). *Estimates of HIV incidence, prevalence and Canada's progress on meeting the 90-90-90 HIV targets*. <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/summary-estimates-hiv-incidence-prevalence-canadas-progress-90-90-90.html>
- Government of Canada (2021). *Trends in HIV pre-exposure prophylaxis use in eight Canadian provinces, 2016-2020*. <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/summary-estimates-hiv-incidence-prevalence-canadas-progress-90-90-90.html>

health/services/publications/diseases-conditions/hiv-trends-pre-exposure-prophylaxis-canadian-provinces-2016-2020.html

Graziottin, A. (2000). Libido: the biologic scenario. *Maturitas*, 34, S9-S16.

Haddad, N., Robert, A., Popovic, N., Varsaneux, O., Edmunds, M., Jonah, L., & Archibald, C.

(2019). Sexually transmitted infections among MSM: Newly diagnosed cases of HIV in those aged 50 years and older and those less than 50: 2008–2017. *Canada Communicable Disease Report*, 45(11), 283.

Heathwood, C. (2015). Desire-fulfillment theory. *The Routledge handbook of philosophy of well-being* (pp. 135-147). Routledge.

Heathwood, C. (2022). Happiness and desire satisfaction. *Noûs*, 56(1), 57-83.

Hevey, M. A., Walsh, J. L., & Petroll, A. E. (2018). PrEP Continuation, HIV and STI Testing

Rates, and Delivery of Preventive Care in a Clinic-Based Cohort. *AIDS education and prevention : official publication of the International Society for AIDS Education*, 30(5), 393–405. <https://doi.org/10.1521/aeap.2018.30.5.393>

HIV.gov (2021, June 5th). *A Timeline of HIV and AIDS*. [https://www.hiv.gov/hiv-](https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline)

[basics/overview/history/hiv-and-aids-timeline](https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline)

Holec, A. D., Mandal, S., Prathipati, P. K., & Destache, C. J. (2017). Nucleotide reverse

transcriptase inhibitors: a thorough review, present status and future perspective as HIV therapeutics. *Current HIV Research*, 15(6), 411-421.

Holt, M., Murphy, D. A., Callander, D., Ellard, J., Rosengarten, M., Kippax, S. C., & de Wit, J.

B. (2012). Willingness to use HIV pre-exposure prophylaxis and the likelihood of decreased condom use are both associated with unprotected anal intercourse and the

- perceived likelihood of becoming HIV positive among Australian gay and bisexual men. *Sexually Transmitted Infections*, 88(4), 258-263.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
- Hull, T. H. (2008). Sexual pleasure and wellbeing. *International Journal of Sexual Health*, 20 (1-2), 133-145.
- Kesten, J. M., Dias, K., Burns, F., Crook, P., Howarth, A., Mercer, C. H., & Weatherburn, P. (2019). Acceptability and potential impact of delivering sexual health promotion information through social media and dating apps to MSM in England: a qualitative study. *BMC Public Health*, 19(1), 1-9.
- Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Klatt, E. C. (2017). Pathology of HIV/AIDS. *The Mercer University of Medicine Savannah*, 6-50.
- Klein, H., & Washington, T. A. (2020). Older versus younger men who have sex with men: Awareness of and potential barriers to the use of pre-exposure prophylaxis (PrEP) medication to prevent the transmission of HIV. *Journal of AIDS and HIV Treatment*, 2(2), 42.
- Koester, K., Amico, R. K., Gilmore, H., Liu, A., McMahan, V., Mayer, K., ... & Grant, R. (2017). Risk, safety and sex among male PrEP users: time for a new understanding. *Culture, Health & Sexuality*, 19(12), 1301-1313.
- Kringelbach, M. L., & Berridge, K. C. (2010). The neuroscience of happiness and pleasure. *Social Research*, 77(2), 659.

- Kutner, B. A., Wu, Y., Balán, I. C., & Meyers, K. (2020). “Talking about it publicly made me feel both curious and embarrassed”: Acceptability, feasibility, and appropriateness of a stigma-mitigation training to increase health worker comfort discussing anal sexuality in HIV services. *AIDS and Behavior*, 24(6), 1951-1965.
- Laan, E. T., Klein, V., Werner, M. A., van Lunsen, R. H., & Janssen, E. (2021). In pursuit of pleasure: A biopsychosocial perspective on sexual pleasure and gender. *International Journal of Sexual Health*, 33(4), 516-536.
- Lupton, D. (Ed.). (1999). *Risk and sociocultural theory: New directions and perspectives*. Cambridge University Press.
- Mabire, X., Puppo, C., Morel, S., Mora, M., Rojas Castro, D., Chas, J., & Préau, M. (2019). Pleasure and PrEP: Pleasure-seeking plays a role in prevention choices and could lead to PrEP initiation. *American Journal of Men's Health*, 13(1), 1557988319827396.
- Manetti, W. (2019, January). Sound clinical judgment in nursing: A concept analysis. In *Nursing forum* (Vol. 54, No. 1, pp. 102-110).
- O’Byrne, P. (2017). *PrEP-RN Community Based, Nurse-Led PrEP*. University of Ottawa, School of Nursing & Ottawa Public Health, Sexual Health Centre.
- O’Byrne, P. (2008). The dissection of risk: a conceptual analysis. *Nursing Inquiry*, 15(1) 30-39.
- Orser, L., O’Byrne, P., & Holmes, D. (2022). Perceptions, motivations, and beliefs about HIV risk and pre-exposure prophylaxis (PrEP) among participants in a nurse-led PrEP service (PrEP-RN). *BMC Infectious Diseases*, 22(1), 1-11.
- Ottawa Public Health. (2017). *Infections*. <https://www.ottawapublichealth.ca/en/reports-research-and-statistics/infectious-diseases.aspx#Infectious-Diseases-of-Public-Health-Significance-by-Year-for-Ottawa-Residents-Incidence-Rate-per-100-000->

- Ottawa Public Health. (2022). *Infectious diseases*. <https://www.ottawapublichealth.ca/en/reports-research-and-statistics/infectious-diseases.aspx#Data-Source-and-Notes-for-Table-1>
- Public Health Agency of Canada (2021). *HIV in Canada: 2020 Surveillance Highlights*. <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/hiv-2020-surveillance-highlights.html>
- Ramchandani, M. S., & Golden, M. R. (2019). Confronting rising STIs in the era of PrEP and treatment as prevention. *Current HIV/AIDS Reports*, 16(3), 244-256.
- Rodger, A. J., Cambiano, V., Bruun, T., Vernazza, P., Collins, S., Degen, O., & Pechenot, V. (2019). Risk of HIV transmission through condomless sex in serodifferent gay couples with the HIV-positive partner taking suppressive antiretroviral therapy (PARTNER): final results of a multicentre, prospective, observational study. *The Lancet*, 393(10189), 2428-2438.
- Ryan, G. (2018). Introduction to positivism, interpretivism and critical theory. *Nurse Researcher*, 25(4), 41-49.
- Schmälzle, R., Renner, B., & Schupp, H. T. (2017). Health risk perception and risk communication. *Policy Insights from the Behavioral and Brain Sciences*, 4(2), 163-169.
- Sharp, P. M., & Hahn, B. H. (2011). Origins of HIV and the AIDS pandemic. *Cold Spring Harbor Perspectives in Medicine*, 1(1), a006841. <https://doi.org/10.1101/cshperspect.a006841>
- Simas, C., Larson, H., Schulz, W., & Boulos, M. N. K. (2017). Utilising social media to support HIV/STI prevention: evidence to inform a handbook for public health agency managers: *ECDC/WHCA Project*, SC12 3a.

- Sinno, J., Doria, N., Cochkanoff, N., Numer, M., Neyedli, H., & Tan, D. (2021). Attitudes and practices of a sample of nova scotian physicians for the implementation of HIV Pre-exposure prophylaxis. *HIV/AIDS (Auckland, NZ)*, 13, 157.
- Smith, A. K., Holt, M., Haire, B., & Newman, C. E. (2021). Issues Associated With Prescribing HIV Pre-exposure Prophylaxis for HIV Anxiety: A Qualitative Analysis of Australian Providers' Views. *Journal of the Association of Nurses in AIDS Care*, 32(1), 94-104.
- Snowden, J. M., Chen, Y. H., McFarland, W., & Raymond, H. F. (2017). Prevalence and characteristics of users of pre-exposure prophylaxis (PrEP) among men who have sex with men, San Francisco, 2014 in a cross-sectional survey: implications for disparities. *Sexually Transmitted Infections*, 93(1), 52-55.
- Spinner, C. D., Boesecke, C., Zink, A., Jessen, H., Stellbrink, H. J., Rockstroh, J. K., & Esser, S. (2016). HIV pre-exposure prophylaxis (PrEP): a review of current knowledge of oral systemic HIV PrEP in humans. *Infection*, 44(2), 151-158.
- Sullivan, P. S., Purcell, D. W., Grey, J. A., Bernstein, K. T., Gift, T. L., Wimbly, T. A., ... & Rosenberg, E. S. (2018). Patterns of racial/ethnic disparities and prevalence in HIV and syphilis diagnoses among men who have sex with men, 2016: a novel data visualization. *American Journal of Public Health*, 108(S4), S266-S273.
- Sun, C. J., Anderson, K. M., Toevs, K., Morrison, D., Wells, C., & Nicolaidis, C. (2019). "Little Tablets of Gold": An Examination of the Psychological and Social Dimensions of PrEP Among LGBTQ Communities. *AIDS Education and Prevention*, 31(1), 51-62.
- Tan DHS, Hull MW, Yoong D, Tremblay C, O'Byrne P, Thomas R, Kille J, Baril JG, Cox J, Giguere P, Harris M, Hughes C, MacPherson P, O'Donnell S, Reimer J, Singh A, Barrett L, Bogoch I, Jollimore J, Lambert G, Lebouche B, Metz G, Rogers T, Shafran S. (2017).

- Canadian guidelines on HIV pre-exposure prophylaxis and non-occupational post-exposure prophylaxis. *Canadian Medical Association Journal*, 189(47): 1448-58
- UNAIDS. (2022). *Global HIV & AIDS statistics – Fact sheet*.
<https://www.unaids.org/en/resources/fact-sheet>
- Van Dijk, M., De Wit, J. B., Guadamuz, T. E., Martinez, J. E., & Jonas, K. J. (2021). Quality of sex life and perceived sexual pleasure of PrEP users in the Netherlands. *The Journal of Sex Research*, 1-6.
- Virgilio, L. (2020). Navigating Current Social and Economic Barriers for Pre-Exposure Prophylaxis (PrEP) Accessibility in Canada. <http://hdl.handle.net/11375/25479>
- Weiss, K. M., Prasad, P., Sanchez, T., Goodreau, S. M., & Jenness, S. M. (2021). Association between HIV PrEP indications and use in a national sexual network study of US men who have sex with men. *Journal of the International AIDS Society*, 24(10), e25826.
- Whitfield, T., Jones, S. S., Wachman, M., Grov, C., Parsons, J. T., & Rendina, H. J. (2019). The Impact of Pre-Exposure Prophylaxis (PrEP) Use on Sexual Anxiety, Satisfaction, and Esteem Among Gay and Bisexual Men. *Journal of Sex Research*, 56(9), 1128–1135.
<https://doi.org/10.1080/00224499.2019.1572064>
- Workowski, K. A., Bachmann, L. H., Chan, P. A., Johnston, C. M., Muzny, C. A., Park, I., & Bolan, G. A. (2021). Sexually transmitted infections treatment guidelines, 2021. *MMWR Recommendations and Reports*, 70(4), 191-199.
- World Health Organization. (2015). *Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV*.
https://apps.who.int/iris/bitstream/handle/10665/186275/9789241509565_eng.pdf