

Contemporary Approaches to Addressing HIV Prevention Needs Among Sexual and Gender
Diverse Individuals in Kazakhstan

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Abstract

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Renewed efforts are needed to address rapidly rising HIV incidence among sexual and gender diverse (SGD) individuals—particularly cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men—in Kazakhstan. Intervention research is uniquely positioned to advance HIV prevention through surveying factors shaping the HIV epidemic among MSM and TSM in Kazakhstan, developing and testing the effects of an HIV prevention intervention, and assessing overall social impacts of conducting research. This research proceeded to describe strategies and lessons learned during implementation of a stepped wedge clinical trial of an intervention designed to increase the number of MSM and TSM in the HIV care continuum in Kazakhstan cities of Almaty, Shymkent, and Nur-Sultan. Thus, this three-paper dissertation aimed to: (1) identify psychosocial factors associated with lifetime, past-12-month, and past-6-month HIV testing among a sample of MSM and TSM enrolled in the clinical trial; (2) describe the process of implementing remote training of facilitators for remotely delivering the HIV preventive intervention; and (3) assess social impacts of participating in the clinical trial. MSM and TSM from the study cities were recruited into the clinical trial and administered a structured behavioral survey at their primary visit and at follow-up visits every six months thereafter. After a period of no intervention implementation (‘pre-implementation period’), the intervention was implemented sequentially every six months in the study cities. Among 304 MSM and TSM enrolled in the clinical trial

during the pre-implementation period, lifetime and past-12-month HIV testing were positively associated with polydrug use and negatively with sexual transmission HIV risk, and past-6-month HIV testing was negatively associated with sexual risk. The process of developing and implementing remote training of facilitators was guided by a protocol outlining phases involving formative assessment and planning, fundamentals training, and feedback loop and technical assistance. Out of 627 MSM and TSM who completed their primary assessment during the clinical trial, 579 (92%) returned for at least one follow-up visit; of these individuals, 88% reported at least one positive social impact, while 2% reported at least one negative social impact. Findings underscore the value of expanding access to substance use treatment for HIV prevention among MSM and TSM in Kazakhstan, the viability of remote training of facilitators for remote intervention delivery, and the feasibility of conducting HIV prevention research involving MSM and TSM with many benefits and few risks.

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Dedication

To the sexual and gender diverse folx in Kazakhstan who took the time to share their experience.

Introduction

Purpose

The overarching goal of this research was to illustrate contemporary approaches to addressing HIV prevention needs among sexual and gender diverse (SGD) individuals in Kazakhstan (Figure 0-1), with a focus on cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men. Studies undertaken in this research employed data from an HIV prevention trial in Kazakhstan (ClinicalTrials.gov Identifier: NCT02786615) to: (1) identify psychosocial factors associated with HIV testing among a sample of MSM and TSM enrolled in the clinical trial; (2) describe the process of implementing remote training of facilitators for remotely delivering a manualized HIV prevention intervention; and (3) assess social impacts of participating in the clinical trial. This primarily exploratory and descriptive research aimed to address critical gaps in the literature on health and wellbeing of SGD individuals in Kazakhstan and advance insights for and commitment to conducting ethically appropriate intervention research within the context of concurrent contemporary social issues.

Figure 0-1. Map of Kazakhstan



Rationale

Contrary to the global decline in HIV incidence, the number of new HIV infections in Kazakhstan increased by 76% between 2010 and 2020 (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021). Kazakhstan was one of the 15 countries in the world and the only country in Central Asia—a region covering Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan—to experience >50% increase in HIV incidence during that period (UNAIDS, 2021). Evidence suggests that the HIV epidemic in Kazakhstan is driven by substance use, particularly injection drug use (El-Bassel, 2014; Jiwatram-Negrón et al., 2018; UNAIDS, 2021). Accordingly, extensive HIV prevention research has focused on reducing transmission risks and promoting linkage to care among people who inject drugs (Davis et al., 2019; Gilbert et al., 2018; McCrimmon et al., 2019; Terlikbayeva et al., 2013).

Despite representing the second highest HIV prevalence rate among key populations in Kazakhstan, MSM in the country have received relatively little attention in HIV prevention research. In the multi-city study of population size estimation of MSM in Kazakhstan, 3.2% of men aged 18-59, on average across four urban areas, were estimated to be MSM (Wu et al., 2017). However, a substantially higher proportion of MSM (6.5%), compared with members of the general population (0.3%), were estimated to be living with HIV (UNAIDS, 2021). Further, the number of new HIV infections in this population increased seven-fold between 2009 and 2017 (Eurasian Coalition on Male Health [ECOM], 2018).

Treatment targets for people living with HIV have been summarized in the *90-90-90* (UNAIDS, 2017): 90% of people living with HIV will know their status; 90% of people diagnosed with HIV will receive antiretroviral therapy (ART); and 90% of people receiving ART will have viral suppression. HIV testing is the only reliable way of achieving the first of the 90-

90-90 targets—HIV status awareness—and subsequently facilitating linkage to services supporting the other treatment targets—antiretroviral therapy and viral suppression—among people diagnosed with HIV (Bendetson et al., 2017). Moreover, research highlights value of HIV testing in promoting engagement of individuals screened negative in the continuum of prevention including routine testing, risk reduction counseling, and biomedical interventions such as condoms and pre-exposure prophylaxis (PrEP) (Jenness et al., 2020; Zucker et al., 2018). Given these benefits, improving HIV testing uptake is a key strategy for advancing HIV prevention.

Against these targets, epidemiological surveillance in Kazakhstan has demonstrated opportunities for improvement in increasing linkage to care among SGD individuals living with HIV; as of 2017, merely 18% of MSM living with HIV reported knowing their status, 65% received ART, and 70% had viral suppression (Republican AIDS Center [RCAIDS], 2017, as cited in Wu, 2018). Data for TSM living with HIV are sparse. Although HIV testing is recommended for key populations and offered free of charge in Kazakhstan, evidence suggests that it may not be adequately reaching SGD individuals. A recent cross-sectional multi-city study of MSM and TSM in Kazakhstan found that the rates of HIV testing were 80% for the lifetime period, and lower within 12 months (61%) and 6 months (43%) preceding the time of assessment (Paine et al., 2021). In another multi-city study, half (50%) of MSM in Kazakhstan reported receiving an HIV test in the past 12 months (Wu et al., 2017). Despite rising HIV incidence and suboptimal uptake of HIV testing among SGD individuals, psychosocial factors associated with HIV testing have not been studied extensively in this context.

Stigma and discrimination have been cited as major deterrents to HIV care engagement among SGD individuals globally (Altman et al., 2012). In Kazakhstan, SGD individuals seeking HIV-related care, including testing and treatment, may be subject to multiple forms of stigma

and discrimination particularly based on their perceived or real statuses of HIV, sexual and gender diversity, or both. Indeed, harassment in medical settings and absence of legal protection for SGD individuals and/or people living with HIV in Kazakhstan have been widely reported (ALMA-TQ, 2016; ECOM, 2018; 2020; Levitanus, 2022). Further, a recent study found that HIV stigma and internalized homophobia were negatively associated with HIV testing in a sample of MSM and TSM in Kazakhstan (Paine et al., 2021). The hostile context of HIV care may push SGD individuals in Kazakhstan into avoidance or hiding from HIV prevention efforts including direct services as well as research and surveillance.

Substance use has been investigated extensively in the context of HIV prevention among SGD individuals globally. Evidence supports robust associations and synergistic interactions of substance use with HIV infection and sexual transmission risk behaviors among SGD individuals (Mimiaga et al., 2015; Poteat et al., 2016; Stall & Purcell, 2000). Moreover, studies have claimed that certain types and patterns of substance use, such as sexualized drug use and polydrug use, were associated with elevated risks of HIV/STI infection and sexual risk behaviors among diverse SGD populations (Guerra et al., 2020; Lim et al., 2015; Tobin et al., 2016; Yu et al., 2014). With respect to associations of substance use with HIV care engagement, results and speculations are mixed. Studies finding positive associations have posited higher risk perception as an enabling factor of engagement in HIV care (Liu et al., 2019). On the other hand, diminished odds of HIV care among MSM who use substances have been attributed to lower or incorrect risk perception and higher stigma (Batchelder et al., 2021; Guadamuz et al., 2015). Studies from Kazakhstan have delineated stigma as a potential barrier to care utilization (Paine et al., 2019; Stringer et al., 2019). More research is needed to examine psychosocial factors

associated with engagement in HIV care and prevention among SGD individuals in Kazakhstan to inform intervention development.

Widespread stigma and discrimination pose ethical and practical challenges for conducting HIV prevention research in Kazakhstan. Despite having value in advancing the science of HIV prevention intervention, HIV prevention trials, especially involving individuals with stigmatized identities, may cause significant and unknown harms to participants. Ethics review committees are tasked with ensuring that risks, or probabilities of harm, related to study participation are reduced in relation to benefits (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Explicit statement of potential harms—and not benefits—related to study participation during the informed consent procedures appears commonplace (Rennie et al., 2019). However, a growing number of studies assessing social impact of HIV prevention research, referring to potential benefits or harms of research participation to personal relationships, social status, health, and other aspects of life (Allen & Lau, 2008), have shown that, contrary to expectations of reviewers and researchers, beneficial or positive social impacts were commonly reported and harmful or negative social impacts were rarely reported by participants (Andrasik et al., 2020; Dubé et al., 2020; Gilbertson et al., 2019; Sugarman et al., 2015). Social impact assessment is needed to identify participant-informed approaches to addressing ethical and practical challenges of conducting HIV prevention research.

Furthermore, ethical and practical considerations for conducting HIV prevention research may change in response to real-world conditions and demands, including changing demographics of focus populations, advances in technology, and global health crises. Adaptation of evidence-based interventions (EBIs) to settings/platforms and/or focus populations different from originally designed for may introduce a new set of skills and techniques of intervention delivery

that facilitators must learn. Moreover, as demonstrated by shifting of work modalities, from in-person to remote, at the outset of the COVID-19 pandemic, adaptations may occur unexpectedly and demand rapid adjustments (Orkin et al., 2021). Real-world circumstances require (re-)training of facilitators focused on building competence and motivation for delivering adapted EBIs with fidelity.

Studies undertaken in this research are guided by minority stress theory. Minority stress describes conflict that arises at the juxtaposition of minority needs and experiences and dominant social structures (Meyer, 1995, 2003). This conflict, chronically manifest through distal/external stressors such as stigma and discrimination and proximal/internal stressors such as vigilance, concealment, and internalized homophobia, instigates (mal)adaptive responses such as mental distress and substance use in stigmatized minority individuals (Meyer, 1995; Testa et al., 2015). Beyond psychosocial health outcomes, minority stress factors have been posited to negatively impact utilization of health care services among SGD individuals in global settings (Green et al., 2022; Rood et al., 2018; Sha et al., 2021). As noted above, widespread stigma and discrimination based on sexual and gender diverse identities and behaviors as well as HIV statuses, have been reported in Kazakhstan. The minority stress perspective thus serves as an important framework for understanding engagement of SGD individuals in HIV prevention strategies in Kazakhstan including linkage to testing and treatment services along the HIV care continuum as well as participation in HIV prevention research.

This three-paper dissertation presents contemporary approaches to addressing HIV prevention needs among SGD individuals in Kazakhstan. Investigation of psychosocial factors associated with HIV testing can inform development of interventions to promote linkage to care. Shifts in modality of intervention delivery from in-person to remote generate new components

and considerations for facilitators to learn quickly. Remote format has unique advantages over in-person format when training facilitators for remotely delivering interventions. Given high levels of stigma and discrimination in Kazakhstan, social impact assessment is necessary to inform ethical and practical considerations for future research.

Aims

Aim 1: To examine the rates of HIV testing among a sample of MSM and TSM in Kazakhstan, and identify substance use and sexual behavior correlates of the three separate outcome variables: Lifetime, past-12-month, and past-6-month HIV testing;

Aim 2: To describe the process of developing and implementing remote training of facilitators for remote delivery of a manualized, multisession intervention designed to increase the number of MSM in the HIV care continuum in Kazakhstan;

Aim 3: To assess negative social impacts and positive social impacts of participating in a longitudinal HIV prevention trial among a sample of MSM and TSM in Kazakhstan, and identify correlates of endorsing positive social impacts.

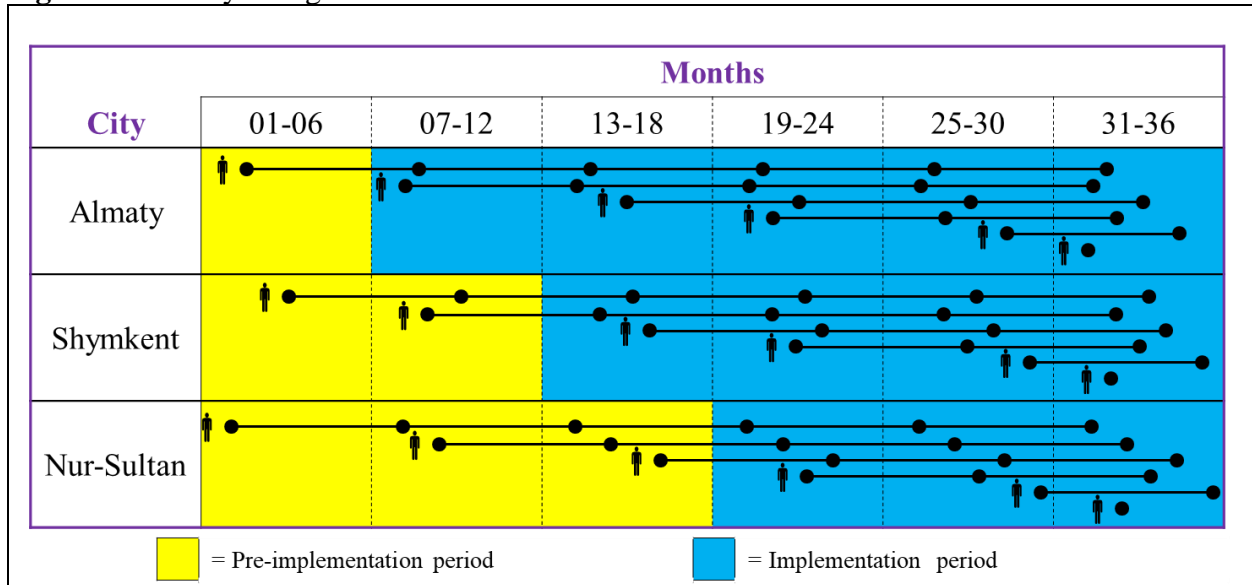
Methods

Study Design

Data for the studies presented in this dissertation were from an HIV prevention trial in Kazakhstan (ClinicalTrials.gov Identifier: NCT02786615). The study aimed to test the efficacy of a crowdsourcing and peer-actuated network intervention for increasing the number of MSM and TSM in the HIV care continuum in three Kazakhstan cities: Almaty, Shymkent, and Nur-Sultan. The trial used a stepped wedge design to test the intervention effects. As illustrated in Figure 0-2, during the ‘pre-implementation period’ (July 2018 – February 2019), recruitment of participants and data collection took place concurrently across the study cities before the study intervention

was implemented. After this period, the intervention was deployed across the study cities every six months in a sequential and staggered manner: March 2019 in Almaty; August 2019 in Shymkent, and March 2020 in Nur-Sultan.

Figure 0-2. Study Design and Timeline of an HIV Prevention Trial in Kazakhstan



Participants

Recruitment involved several non-probability sampling methods that had been used in behavioral health research with SGD communities in global settings, including Kazakhstan (Ellard-Gray et al., 2015; Wu et al., 2017). Study staff identified venues that were branded towards or frequented by SGD individuals in each of the study cities. These venues included physical social/commercial spaces (e.g., cafés, bars, malls, parks, community-based organizations, private house gatherings) as well as digital social networking platforms (e.g., VKontakte, Facebook, Telegram, Hornet, Grindr). Where appropriate or possible, for each venue, the staff assessed elements of logistics that would be useful for recruitment, including hours of operation, accessibility, and safety. Interested individuals completed an assessment to determine their eligibility. Eligibility requirements included:

- Being 18 years of age or older;

- Identifying as man or being assigned male at birth;
- Reporting consensual sex with another man in the past 12 months;
- Reporting binge drinking (operationalized as ‘consuming five or more alcoholic beverages within a two-hour period’ [National Institute on Alcohol Abuse and Alcoholism, n.d.]), illicit drug use, or both in the past 90 days; and
- Residing in a study city.

Procedures

Participants verbally provided informed consent at their primary visit. A structured behavioral survey was administered in a private setting by the study staff using Qualtrics (Provo, UT) via computer-based personal interviewing at primary visit and follow-up visits every six months thereafter. Over the 36-month study period, each participant could complete up to six follow-up visits. All survey items were developed in English and translated to Russian and Kazakh.

Between July 2018 and February 2022, 982 individuals were screened for eligibility, and 649 (61%) participants were determined eligible for the study. Of the study-eligible participants, 629 (97%) returned for their primary visit; of them, 579 (92%) were subsequently retained for at least one follow-up visit. Paper 1 used behavioral assessment data collected at primary visits that were completed during the ‘pre-implementation period’ ($N=304$). Paper 3 used behavioral assessment data collected at follow-up visits throughout the clinical trial ($N=2648$).

Study procedures were implemented in partnership with a local research organization, Columbia University Global Health Research Center of Central Asia, and were approved by the Institutional Review Boards at Columbia University and Al-Farabi Kazakh National University.

Chapter 1

Polydrug Use, Sexual Risk, and HIV Testing Among Sexual and Gender Diverse Individuals in
Kazakhstan

Abstract

We sought to examine substance use and sexual risk correlates of HIV testing among cisgender, gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men in Kazakhstan. We analyzed primary assessment data of 304 participants from three Kazakhstan cities enrolled in an HIV prevention trial prior to intervention deployment. Multivariable logistic regression analyses revealed that lifetime HIV testing was positively associated with polydrug use (*Adjusted Odds Ratio [AOR]*=4.4, *95% Confidence Interval [CI]*=2.0, 9.9) and negatively with sexual risk involving a casual partner (*AOR*=0.4, *95% CI*=0.2, 1.0). Similarly, recent HIV testing was positively associated with polydrug use (*AOR*=2.7, *95% CI*=1.4, 5.2) and negatively with sexual risk involving a casual partner (*AOR*=0.5, *95% CI*=0.3, 0.9). Current HIV testing was negatively associated with sexual risk involving a primary partner (*AOR*=0.6, *95% CI*=0.3, 0.9). Findings support the value of integrating drug treatment with HIV testing among MSM and TSM in Kazakhstan.

Introduction

Between 2010 and 2020, the number of new HIV infections in Kazakhstan increased by 73%—the largest increase in Central Asia and the 12th largest in the world (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021). As observed globally, sexual and gender diverse individuals—particularly cisgender gay, bisexual, and other men who have sex with men (MSM) and transgender women (TGW)—in Kazakhstan are disproportionately affected by the HIV epidemic (UNAIDS, 2021). Between 2009 and 2017, HIV incidence among MSM grew seven-fold (European Coalition on Male Health [ECOM], 2018). As of 2020, HIV prevalence among MSM in Kazakhstan was estimated to be 6.5%, compared with 0.3% in the general population (UNAIDS, 2021). TGW in Kazakhstan are sparsely represented in national epidemiological data. Still, aggregated regional data depict elevated HIV vulnerability in this group compared with the general population (UNAIDS, 2021).

HIV status awareness among people living with HIV is dependent on HIV testing, a pillar of the UNAIDS 90-90-90 targets for ending the HIV/AIDS epidemic (UNAIDS, 2017). In addition to facilitating linkage to HIV care, HIV status awareness has been linked to engagement in risk reduction behaviors (Dokubo et al., 2014; Huerga et al., 2017). Although regular HIV testing is recommended for key populations and offered free of charge in Kazakhstan (Ministry of Healthcare of the Republic of Kazakhstan, 2020), extant evidence suggest it may not be adequately reaching MSM and TGW (Paine et al., 2021; Wu et al., 2018; Wu et al., 2017). In earlier research with a multi-city sample of MSM and transgender and nonbinary individuals who have sex with men (TSM), we found that only 61% reported HIV testing in the past 12 months (Paine et al., 2021). Despite rising HIV incidence and suboptimal uptake of testing

among MSM and TSM in this context, little is known about psychosocial factors associated with HIV testing (Paine et al., 2021).

Broadly, HIV epidemiology among MSM and TSM is shaped by co-occurring psychosocial factors, including illicit substance use of the “[use] of a substance for a purpose not consistent with legal or medical guidelines” (World Health Organization [WHO], 1994). The intertwining epidemics of illicit substance use and HIV among MSM and TSM are well documented (Poteat et al., 2016; Stall & Purcell, 2000). Heavy alcohol use and sexualized drug use or ‘chemsex’ are among the most consistent forms of illicit substance use associated with HIV infection and sexual HIV risk indicators such as condomless anal sex (CAS) (Guerra et al., 2020; Vosburgh et al., 2012). Moreover, polydrug use has been found to be associated with HIV infection and risk indicators (Daskalopoulou et al., 2014; Mao et al., 2021; Mimiaga et al., 2018; Sewell et al., 2017) among diverse MSM groups in global settings.

Research on the links between illicit substance use and HIV among MSM and TSM in Kazakhstan is nascent but emerging. In our earlier work with a multi-city sample of MSM and TSM, we found that 68% reported binge drinking and 41% reported illicit drug use in the past 30 days (Paine et al., 2021). In the same sample, both binge drinking and illicit drug use in the past 90 days were associated with higher odds of HIV infection (Wu et al., 2020). In a sample of Almaty-based MSM, non-injection drug use was positively associated with CAS (Berry et al., 2012). To our knowledge, however, whether and, if so, how illicit substance use is associated with HIV testing among MSM and TSM in Kazakhstan is not well-understood. This article aims to address this critical gap by investigating substance use, sexual risk, and HIV testing among a sample of MSM and TSM in Kazakhstan. We expect that likelihood of HIV testing would differ by patterns (e.g., single, poly) of illicit substance use.

Methods

This study uses data from an HIV prevention trial with MSM and TSM in Kazakhstan funded by the National Institute on Drug Abuse (NIDA). The trial used a stepped wedge design to test the intervention effects of increasing the number of MSM and TSM in the HIV care continuum in three geographically disparate and most populous Kazakhstan cities (hereafter ‘study cities’): Almaty, Shymkent, and Nur-Sultan (formerly Astana). For the current study, we analyzed behavioral survey data of 304 participants collected at their primary assessment when all three study cities were in the pre-implementation phase (July 2018 – February 2019). Procedures for the present study were reviewed and approved by the Institutional Review Boards at Columbia University and Al-Farabi Kazakh National University.

Participants

Recruitment of study participants involved several non-probability sampling methods that have been used in behavioral health research with MSM in global settings, including Kazakhstan (Ellard-Gray, Jeffrey, Choubak, & Crann, 2015; Wu et al., 2017). First, study staff mapped and recruited from physical social/commercial spaces (e.g., cafés, bars, malls, parks, community-based organizations, private house gatherings) as well as digital social networking platforms (e.g., VKontakte, Facebook, Telegram, Hornet, Grindr) that were branded towards or frequented by MSM and TSM in each of the study cities (Wu et al., 2018). To ensure representation of diverse lived experiences among MSM and TSM, the study enlisted respondents’ help and wisdom in identifying additional recruitment venues and disseminating recruitment information and related materials within their social networks.

Next, MSM and TSM completed a screening assessment that determined their study eligibility. MSM and TSM were eligible to participate in the study if, at the time of eligibility

assessment, they met the following inclusion criteria: being 18 years of age or older; identifying as man at any point in their life or being assigned male at birth; having consensual sex with another man in the past 12 months; engaging in binge drinking; illicit drug use, or both in the past 90 days; and residing in one of the three study cities. Of 495 individuals who were screened during the pre-implementation phase, 317 (64%) met the eligibility criteria. Of those who met the eligibility criteria, 304 individuals completed their primary assessment during the dates noted earlier.

Procedures

After providing informed consent, participants completed a structured survey that elicited information on a range of behavioral health indicators based on standardized measures, as well as sociodemographic characteristics. Survey items were developed in English, translated into Russian and Kazakh. Surveys were administered in Russian or Kazakh by Research Assistants using a computer-assisted personal interviewing method. To mitigate social desirability bias, Research Assistants were trained to elicit the most accurate responses from respondents while minimizing potential loss of safety, privacy, and confidentiality. All participant responses were entered directly into a survey hosted on Qualtrics (Provo, UT).

Measures

HIV Testing

HIV testing was self-reported, using items adapted from the HIV/HCV Testing Domains Measure questionnaire (National Institute on Drug Abuse [NIDA], 2013). Any prior HIV testing was assessed using one item that asked, “Have you ever been tested for HIV?” Participants were coded as having lifetime HIV testing (0=no, 1=yes) if they reported ever being tested for HIV.

Participants endorsing lifetime HIV testing were probed about the length of time—in years, months, and days—since their most recent HIV test.

Self-reported periods since the most recent HIV test were converted into days. For participants reporting no prior HIV testing, the period since the most recent HIV test was computed as their age in days. Subsequently, periods since the most recent HIV test were binned at 365 and 180 days ('past 12 months' and 'past 6 months' respectively); for brevity, we denote this as recent (e.g., past 12 months) and current (e.g., past 6 months) HIV testing and code accordingly (0=no, 1=yes).

Sexual HIV Risk

HIV risk indicators were assessed using items adapted from the HIV Risk Behaviors questionnaire (NIDA, 2013). Participants were asked how many men they had sex (anal, oral, or both) within the past 12 months. Participants who reported having had sex with at least one man were asked whether they considered him as their primary partner. Anyone not endorsed as the primary partner was coded as a casual partner. Participants were asked how many times they had anal sex with their primary or casual partner in the past 90 days. Of those incidents, participants were asked how many times a condom was used from start to finish and how many times they or their partner were drunk, buzzed, or high within two hours before or during the reported sex.

For each participant, the number of male sex partners in the past 12 months was dichotomized; self-reporting having two or more sex partners denoted having multiple male sex partners (0=no, 1=yes). Frequencies of using a condom and being drunk, buzzed, or high within two hours before or during anal sex that exceeded the total number of anal sex acts were rectified to equal the frequency of anal sex acts. Participants were coded as having condomless anal sex (CAS) if reporting no condom use, and having chemsex if reporting being drunk, buzzed, or high

within two hours before or during anal sex at least once. For each of the partnership types (e.g., primary, casual), CAS and chemsex acts were combined into a composite variable that coded participant responses as indicating sexual risk (0=no, 1=yes) if reporting any CAS, any chemsex, or both in the past 90 days. For those reporting no anal sex, CAS and chemsex acts were imputed as zero.

Substance Use

Substance use was assessed using items adapted from the HIV Risk Behaviors questionnaire (NIDA, 2013). We first assessed prior incidents of using (0=no, 1=yes) alcohol and the following drugs: marijuana and other cannabinoids, heroin and other opioids, stimulants, cocaine, hallucinogens or psychedelics, inhalants, and club drugs. When appropriate, local or street names were used to describe the drugs. Participants reporting any prior alcohol use were probed about any prior incident of binge drinking, operationalized as “consuming five or more alcohol beverages within a two-hour period” (National Institute on Alcohol Abuse and Alcoholism [NIAAA], n.d.). For those reporting no alcohol use, binge drinking incidents were imputed as zero. For all other substances, the incidents of lifetime use were combined into a composite variable that coded participant responses as engaging in no drug use, single-drug use, and polydrug (e.g., two or more drugs) use (Dai et al., 2019; Wilkerson et al., 2018).

Sociodemographic Covariates

Residence was assessed using one item offering the following response categories: ‘Almaty,’ ‘Nur-Sultan,’ and ‘Shymkent.’ Participants were asked to provide a positive integer for their age, in years, at the time of assessment. Gender identity and sex assigned at birth were assessed by asking participants, “Which gender do you currently identify as?” and “Why sex were you assigned at birth?” For both items, response categories included ‘female/woman,’

‘male/man,’ and ‘other.’ Sexual orientation was assessed by asking participants, “How do you identify sexually?” Response categories included ‘heterosexual/straight,’ ‘homosexual/gay,’ ‘bisexual,’ and ‘other.’ Education status was assessed with one item offering the following response categories: ‘less than basic secondary school (e.g., did not complete Grade 9),’ ‘basic secondary school (e.g., completed Grade 9),’ ‘upper secondary school (e.g., completed Grade 10-11),’ ‘vocational post-secondary school,’ ‘undergraduate (e.g., obtained a bachelor’s degree),’ ‘graduate (e.g., obtained a master’s or doctoral degree),’ and ‘other.’ Employment status was assessed with one item offering the following response categories: ‘working: full-time,’ ‘working: part-time,’ ‘retired,’ ‘unemployed, looking for work,’ ‘unemployed, not looking for work,’ ‘unemployed, temporary (e.g., sick leave, maternity leave, etc.),’ ‘disabled, permanently or temporarily,’ ‘homemaker,’ ‘student,’ and ‘other.’

For all categorical items, participants who selected ‘other’ were asked to provide descriptions of terms that best represented the characteristics assessed. Then, an inductive approach was employed to recategorize any write-in responses as existing response options if they were determined to be synonymous or interchangeable, otherwise maintaining the remaining write-in responses coded as ‘other’ (Krueger et al., 2020). Responses for age were divided into two categories based on clinical and cultural relevance (Berry et al., 2012; WHO, 2021): ‘ages 18-24’ and ‘ages 25 or older.’ Responses for gender identity and sex assigned at birth were combined to create the gender modality variable with two response categories (Ashley, 2021): ‘cisgender’ and ‘transgender or nonbinary.’ Responses for the education question were collapsed into three categories: ‘secondary level completed,’ ‘vocational level completed,’ and ‘university-or-higher level completed.’ Responses for the employment question

were collapsed into two categories: ‘employed (full-time or part-time)’ and ‘else (e.g., unemployed, retired, homemaking, student, other).’

Data Analysis

All statistical analyses were completed in SPSS version 25.0 (IBM Corp., 2017). Frequency analyses were conducted to describe the sociodemographic and behavioral characteristics of MSM and TSM in the sample, and Pearson chi-square tests were performed to compare these characteristics between MSM and TSM who reported any versus no prior HIV test. Next, binary logistic regression analyses identified substance use and sexual risk factors independently associated with each of the three binary outcomes: lifetime, recent, and current HIV testing. Odds ratio (*OR*) and their respective 95% confidence intervals (*95% CI*) and *p*-values were calculated to interpret associations. Each of the substances was assessed separately in univariable models, but, due to small sample sizes, dropped in multivariable models. All multivariable models were adjusted for sociodemographic characteristics. For the models examining correlates of recent and current HIV testing, analyses were restricted to participants who had not received a positive HIV test within the respective periods.

Results

Table 1-1 presents sociodemographic and behavioral characteristics of the sample (*N*=304) as well as comparisons by lifetime HIV testing status at the time of assessment. Participants were between the ages of 18 and 68 years; one-third (33%) were between 18 and 24 years old. Ninety-two percent of participants identified as cisgender and 8% as transgender or nonbinary. Most participants reported a sexual orientation other than straight, identifying as either gay (54%) or bisexual (45%). The majority had pursued education beyond the compulsory

level (i.e., secondary level), completing vocational (35%) or university of higher (45%) level education, and had been employed full-time or part-time (78%).

The most frequently reported substance ever used were alcohol, with 90% of participants endorsing binge drinking, followed by marijuana (58%) and inhalants (45%). Three-quarters (76%) of participants reported a lifetime history of any illicit drug use, the majority of which involved polydrug use. Most participants (87%) reported having two or more male sex partners in the past 12 months. Forty-one percent of participants reported having CAS, chemsex, or both with their primary partner in the past 90 days; the proportion was higher (61%) with a casual partner.

Results of univariable logistic regression analyses estimating behavioral correlates of HIV testing are shown in Table 1-2. Lifetime HIV testing was associated with higher odds of lifetime use of marijuana ($OR=2.8$, 95% $CI=1.5$, 4.9), hallucinogens ($OR=9.4$, 95% $CI=1.3$, 70.4), and inhalants ($OR=2.7$, 95% $CI=1.5$, 5.1), and polydrug use ($OR=4.4$, 95% $CI=2.1$, 9.0) compared with no drug use. Similarly, recent HIV testing was associated with higher odds of lifetime use of marijuana ($OR=2.0$, 95% $CI=1.2$, 3.2), hallucinogens ($OR=2.5$, 95% $CI=1.0$, 6.0), inhalants ($OR=2.2$, 95% $CI=1.3$, 3.6), and club drugs ($OR=3.5$, 95% $CI=1.3$, 9.6), and polydrug use ($OR=2.8$, 95% $CI=1.5$, 5.1) compared with no drug use. Current HIV testing was associated with higher odds of lifetime use of marijuana ($OR=1.8$, 95% $CI=1.1$, 2.8) and with lower odds of sexual risk involving a primary male partner in the past 90 days ($OR=0.6$, 95% $CI=0.4$, 1.0).

Table 1-1. Sociodemographic and Behavioral Characteristics of a Sample of MSM and TSM in Kazakhstan ($N=304$): Total and Stratified by Lifetime HIV Testing Status

Variable	Total ($N=304$) n (%)	Never Tested ($n=61$) n (%)	Tested ($n=243$) n (%)	p^a
Residence				
Almaty	139 (45.7)	26 (42.6)	113 (46.5)	.19
Shymkent	102 (33.6)	26 (42.6)	76 (31.3)	
Nur-Sultan	63 (20.7)	9 (14.8)	54 (22.2)	
Age groups (years)				
18-24	101 (33.2)	32 (52.5)	69 (28.4)	<.001
25 or older	203 (66.8)	29 (47.5)	174 (71.6)	
Gender modality				
Cisgender	279 (91.8)	54 (88.5)	225 (92.6)	.30
Transgender or nonbinary	25 (8.2)	7 (11.5)	18 (7.4)	
Sexual orientation				
Gay	164 (53.9)	24 (39.3)	140 (57.6)	.04
Bisexual	136 (44.7)	36 (59.0)	100 (41.2)	
Straight	4 (1.3)	1 (1.6)	3 (1.2)	
Education status				
Secondary level completed	62 (20.4)	19 (31.1)	43 (17.7)	.03
Vocational level completed	105 (34.5)	22 (36.1)	83 (34.2)	
University or higher level completed	137 (45.1)	20 (32.8)	117 (48.1)	
Employment status				
Employed	236 (77.6)	46 (75.4)	190 (78.2)	.64
Other (i.e., unemployed, retired, homemaking, student)	68 (22.4)	15 (24.6)	53 (21.8)	
Binge drinking, lifetime	273 (89.8)	54 (88.5)	219 (90.1)	.71
Illicit drug use, lifetime				
Marijuana	175 (57.6)	23 (37.7)	152 (62.6)	<.001
Heroin/Opioids	41 (13.5)	6 (9.8)	35 (14.4)	.35
Stimulants	59 (19.4)	7 (11.5)	52 (21.4)	.08
Cocaine	22 (7.2)	3 (4.9)	19 (7.8)	.43
Hallucinogens	34 (11.2)	1 (1.6)	33 (13.6)	.01
Inhalants	136 (44.7)	16 (26.2)	120 (49.4)	<.01
Club drugs	33 (10.9)	3 (4.9)	30 (12.3)	.10
Illicit drug use pattern, lifetime				
None	72 (23.7)	25 (41.0)	47 (19.3)	<.001
Single	94 (30.9)	21 (34.4)	73 (30.0)	
Poly (i.e., 2 or more)	138 (45.4)	15 (24.6)	123 (50.6)	
# Male sex partners, past 12 months				
0-1	41 (13.5)	10 (16.4)	31 (12.8)	.46
Multiple (i.e., 2 or more)	263 (86.5)	51 (83.6)	212 (87.2)	
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a primary male partner, past 90 days	125 (41.1)	21 (34.4)	104 (42.8)	.24
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a casual male partner, past 90 days	186 (61.2)	43 (70.5)	143 (58.8)	.10

^a Pearson chi-square tests

Table 1-2. Univariable Logistic Regression Analyses: Associations of Lifetime ($N=304$), Recent ($n=283$), and Current ($n=279$) HIV Testing with Substance Use and Sexual Risk Among a Sample of MSM and TSM in Kazakhstan

Variable	Lifetime HIV Testing ($N=304$)		Recent HIV Testing ($n=283^a$)		Current HIV Testing ($n=279^b$)	
	OR (95% CI)	<i>p</i>	OR (95% CI)	<i>p</i>	OR (95% CI)	<i>p</i>
Binge drinking, lifetime	1.2 (0.5, 2.9)	.71	1.1 (0.5, 2.5)	.77	0.6 (0.3, 1.3)	.18
Illicit drug use, lifetime						
Marijuana	2.8 (1.5, 4.9)	<.001	2.0 (1.2, 3.2)	<.01	1.8 (1.1, 2.8)	.02
Heroin/Opioids	1.5 (0.6, 3.9)	.35	1.1 (0.6, 2.4)	.72	0.9 (0.4, 1.9)	.78
Stimulants	2.1 (0.9, 4.9)	.09	1.4 (0.7, 2.6)	.30	1.0 (0.5, 1.8)	.90
Cocaine	1.6 (0.5, 5.7)	.44	1.4 (0.5, 3.8)	.50	0.6 (0.2, 1.6)	.29
Hallucinogens	9.4 (1.3, 70.4)	.03	2.5 (1.0, 6.0)	.04	1.8 (0.8, 3.9)	.12
Inhalants	2.7 (1.5, 5.1)	<.01	2.2 (1.3, 3.6)	<.01	1.5 (0.9, 2.4)	.10
Club drugs	2.7 (0.8, 9.2)	.11	3.5 (1.3, 9.6)	.01	1.9 (0.8, 4.1)	.13
Illicit drug use pattern, lifetime						
None	Ref.		Ref.		Ref.	
Single	1.8 (0.9, 3.7)	.08	1.7 (0.9, 3.2)	.10	1.0 (0.5, 1.9)	.94
Poly (i.e., 2 or more)	4.4 (2.1, 9.0)	<.001	2.8 (1.5, 5.1)	<.01	1.7 (1.0, 3.2)	.07
# Male sex partners, past 12 months						
0-1	Ref.		Ref.		Ref.	
Multiple (i.e., 2 or more)	1.3 (0.6, 2.9)	.46	1.6 (0.8, 3.2)	.18	1.3 (0.6, 2.5)	.51
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a primary male partner, past 90 days	1.4 (0.8, 2.6)	.24	1.2 (0.7, 1.9)	.50	0.6 (0.4, 1.0)	.04
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a casual male partner, past 90 days	0.6 (0.3, 1.1)	.10	0.7 (0.4, 1.1)	.11	0.8 (0.5, 1.4)	.45

OR: Crude Odds Ratio

CI: Confidence Interval

^a Restricted to individuals who had not received a positive HIV test within the prior 12 months of primary assessment

^b Restricted to individuals who had not received a positive HIV test within the prior 6 months of primary assessment

Results of multivariable logistic regression analyses are shown in Table 1-3. Statistically significant associates observed in univariable analyses remained in multivariable models after adjusting for sociodemographic covariates. Specifically, lifetime HIV testing was associated with higher odds of polydrug use (*adjusted OR* [AOR]=4.4, 95% CI=2.0, 9.9) compared with no drug use, and with lower odds of sexual risk involving a casual partner in the past 90 days (AOR=0.4, 95% CI=0.2, 1.0). Similarly, recent HIV testing was associated with higher odds of polydrug use (AOR=2.7, 95% CI=1.4, 5.2), and with lower odds of sexual risk involving a casual partner (AOR=0.5, 95% CI=0.3, 0.9). Current HIV testing was associated with lower odds of sexual risk

involving a primary partner ($AOR=0.6$, $95\% CI=0.3, 0.9$). Binge drinking was not statistically significantly associated with any of the HIV testing outcomes.

Table 1-3. Multivariable Logistic Regression Analyses: Associations of Lifetime ($N=304$), Recent ($n=283$), and Current ($n=279$) HIV Testing with Substance Use and Sexual Risk Among a Sample of MSM and TSM in Kazakhstan

Variable	Lifetime HIV Testing ($N=304$)		Recent HIV Testing ($n=283^a$)		Current HIV Testing ($n=279^b$)	
	AOR (95% CI)	<i>p</i>	AOR (95% CI)	<i>p</i>	AOR (95% CI)	<i>p</i>
Binge drinking, lifetime	1.4 (0.5, 3.7)	.56	1.4 (0.6, 3.3)	.43	0.6 (0.3, 1.5)	.28
Illicit drug use pattern, lifetime						
None	Ref.		Ref.		Ref.	
Single	1.9 (0.9, 4.0)	.10	1.7 (0.9, 3.4)	.13	1.0 (0.5, 1.9)	.91
Poly (i.e., 2 or more)	4.4 (2.0, 9.9)	<.001	2.7 (1.4, 5.2)	<.01	1.8 (0.9, 3.4)	.09
# Male sex partners, past 12 months						
0-1	Ref.		Ref.		Ref.	
Multiple (i.e., 2 or more)	1.7 (0.7, 4.7)	.26	2.1 (1.0, 4.8)	.07	1.5 (0.7, 3.4)	.31
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a primary male partner, past 90 days	1.2 (0.6, 2.3)	.62	1.1 (0.6, 1.8)	.84	0.6 (0.3, 0.9)	.03
Sexual HIV risk (i.e., condomless anal sex, chemsex, or both) with a casual male partner, past 90 days	0.4 (0.2, 1.0)	.04	0.5 (0.3, 0.9)	.02	0.7 (0.4, 1.2)	.15

AOR: Adjusted Odds Ratio

CI: Confidence Interval

^a Restricted to individuals who had not received a positive HIV test within the prior 12 months of primary assessment

^b Restricted to individuals who had not received a positive HIV test within the prior 6 months of primary assessment

Discussion

This study sought to examine associations between substance use, sexual risk, and HIV testing among a multi-city sample of Kazakhstan-based MSM and TSM. Overall, illicit substance use prevalent in the sample, with the majority reporting lifetime histories of binge drinking (90%) and any illicit drug use (76%). Illicit drug use, but not binge drinking, was statistically associated with HIV testing; we were able to partially reject the null hypothesis.

We found that illicit drug use—specifically, using two or more drugs—was positively associated with lifetime and recent HIV testing (Note: The levels of significance for these associations indicate inference will remain even accounting for multiple comparisons). Our findings differ from studies suggesting substance use as a major barrier to linkage to HIV care

among MSM and TSM (Bukowski et al., 2018; Mehta et al., 2015). Illicit drug use is a major driver of HIV transmission in Kazakhstan (Davlidova et al., 2021; El-Bassel, Shaw, Dasgupta, & Strathdee, 2014), and has been a target of HIV prevention programs (Boltaev et al., 2013; McCrimmon et al., 2019; Shaw et al., 2017). It is reasonable to posit that MSM and TSM who had ever illicitly used multiple drugs concurrently were exposed to and motivated to obtain testing by HIV prevention resources in the context of substance use treatment. Future studies exploring whether and which specific combinations of polydrug use are associated with substance use treatment may further aid HIV prevention efforts. Alternatively, HIV testing might not have been voluntary for some MSM and TSM, especially those who injected drugs and/or interfaced with the criminal legal system. In Kazakhstan, injection drug use is specified as a criminal offense (Altice et al., 2016; UNAIDS, 2021), and people who inject drugs and people involved in the criminal legal system are often subject to involuntary HIV testing (Terlikbayeva et al., 2013). Future research should explore experiences of injection drug use, criminal legal system involvement, and involuntary HIV testing among MSM and TSM in Kazakhstan and the implications of those experiences for HIV prevention.

Sexual risk, on the other hand, was negatively associated with HIV testing. Research with MSM in other lower- and middle-income countries have indicated low risk perception as a major barrier to HIV testing (Guadamuz et al., 2015; Pines et al., 2016); it is possible that MSM and TSM in this sample who engaged in sexual risk also perceived themselves to be at low risk. Moreover, their access to HIV testing might have been limited by stigma, another commonly cited barrier to HIV testing among MSM (Guadamuz et al., 2015; Pines et al., 2016). Indeed, stigma against individuals living with or at risk of HIV as well as sexual and gender diverse individuals in Kazakhstan has been documented (ECOM, 2018; Latypov, Rhodes, & Reynolds,

2013; UNAIDS, 2021), and has been linked to reduced care utilization (Paine et al., 2021; Smolak & El-Bassel, 2013; Stringer et al., 2019). Stigma against drug use has also been reported as a deterrent to health care utilization among MSM who have chemsex in England (Hibbert et al., 2021). Alternatively, our findings suggest that MSM and TSM who received HIV testing were less likely to indicate sexual transmission HIV risk. This may demonstrate the claim that individuals who engage in preventive behaviors like HIV testing also practice risk reduction behaviors (Dilley et al., 2007). Future research should assess barriers and facilitators of HIV testing to help elucidate potential targets of intervention for HIV testing promotion among MSM and TSM who engage in HIV risk sexual behaviors in Kazakhstan.

Several limitations prompt caution when interpreting these findings. First, non-probability sampling of MSM and TSM residing in urban areas and reporting substance use and sexual risk behaviors may limit the generalizability of findings to the larger populations of MSM and TSM in Kazakhstan. Next, despite efforts to elicit the most accurate information, collecting self-reported data may have introduced response biases resulting from some participants' choosing not to disclose sensitive information or having difficulty remembering lifetime event occurrences. Further, while lifetime substance use might have preceded recent and current HIV testing, temporal connections cannot be established with certainty. In fact, the cross-sectional design of the study limits temporal or causal inference from the analyses of factors associated with HIV testing. Still, our findings provide empirical support to better understand and address the needs of MSM and TSM at elevated risk of HIV.

Conclusions

Taken together, our findings warrant renewed efforts to promote HIV testing among MSM and TSM in Kazakhstan. Access and adherence to substance use treatment involving

biomedical and psychosocial interventions have been consistently linked to reductions in HIV risk and infection (Metzger et al., 2010; Sorensen & Copeland, 2000). Offering HIV testing within the context of substance use treatment may optimize the reach and retention of MSM and TSM who illicitly use substances into HIV care in Kazakhstan. HIV testing providers should be trained to assess and address HIV risk indicators linked to illicit substance use. Otherwise, service provision that extends beyond interactions with such historically oppressive institutions as medical and criminal legal systems may be advantageous. To that end, the tasks of providing promoting HIV testing can be sourced to community-based organizations and social network members with prior testing experience and knowledge.

Chapter 2

Remote Training of Facilitators for Remote Intervention Delivery: Strategies and Lessons
Learned from an HIV Prevention Trial Involving Sexual and Gender Diverse Individuals in
Kazakhstan

Abstract

Training of facilitators (TOF) is critically important for successful implementation of increasingly complex evolving behavioral health interventions for HIV prevention among sexual and gender diverse (SGD) individuals. Remote TOF, a modality of training where trainers and trainees are positioned in spatially disparate locations, has emerged as an alternative/additive to traditional, in-person TOF for delivery of in-person HIV prevention interventions. Amid a rapid transition in intervention science toward incorporation of technology and adaptation of intervention delivery to remote format, literature on TOF for remote intervention delivery remains sparse. In this study, we describe a process of remotely developing and implementing TOF of a remotely delivered intervention using examples from a recent HIV prevention trial involving cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men in Kazakhstan. In addition to known advantages, we found that remote TOF offers a distinct opportunity of imparting key skills and techniques specific to remote intervention delivery. We conclude with highlighting these distinct opportunities as well as lessons learned that can be useful in future intervention science efforts of developing and implementing TOF for remote intervention delivery.

Introduction

Sexual and gender diverse (SGD) individuals, including cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men, have been proficient users of advances in digital technology in fulfilling basic needs. Internet-based social networking services, for instance, have served as avenues for securing, with greater efficiency and privacy, essential yet hidden or hard-to-reach resources, such as connection to other similar individuals and SGD-friendly health care information and services (Dahlhamer et al., 2017; Grov et al., 2014; Miles, 2018; Paz-Bailey et al., 2017). SGD individuals also represent populations disproportionately affected by the HIV epidemic (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021). Higher rates of HIV prevalence and technology use among SGD individuals have made technology-enhanced intervention a viable approach to HIV prevention. Indeed, HIV prevention interventions harnessing technology have proliferated, and shown promise in achieving desired clinical outcomes in diverse SGD populations (Knight et al., 2017; Nelson et al., 2020; Veronese et al., 2020).

Procedures of implementing evidence-based interventions (EBIs) for HIV prevention are increasingly complex and demand rigorous training of facilitators (TOF) focused on enhancing competence and motivation in intervention delivery (Collins & Sapiano, 2016). Studies indicated that TOF and other capacity building efforts were linked to implementation of EBIs for HIV prevention (Jeffries IV et al., 2017; Kelly et al., 2000; Wao et al., 2015). Although TOF for intervention delivery has traditionally been conducted in-person—for instance, through face-to-face workshops—remote training has been growing in popularity as an alternative/additional format. For the purposes of this study, the term ‘remote training’ will be used to describe a method whereby training components are deployed using digital technology and trainers and

trainees are in spatially disparate locations. Whereas in-person training can be resource-intensive and inaccessible commonly due to high travel demands and production costs, remote training has been observed to enable widespread and flexible access across a geographically dispersed area, as well as efficient deployment of training materials (Cunningham & Card, 2014; Richmond et al., 2017); these advantages in turn offered the benefits of cost reduction and quality control (Ballew et al., 2013; Sage, 2014). Furthermore, remote training has demonstrated effectiveness in improving knowledge, self-efficacy, and clinical/practical skills among health care professionals (Knapp et al., 2011; Richmond et al., 2017).

Moreover, real-world conditions like technological advances, stigma and discrimination, and global pandemics may introduce new intervention components and ethical considerations for facilitators to quickly learn and adapt to, and to be incorporated into TOF itself. For instance, the COVID-19 pandemic and mitigation measures have prompted adaptation of in-person delivery of MSM-focused HIV preventive interventions to a remote format (Klasko-Foster et al., 2022; Wu et al., 2022). Intervention adaptation to remote format and incorporation of technology present a new set of risks and benefits to study participants (Fisher et al., 2020). Conducting research in the context of high levels of stigma and discrimination necessitates building trust and rapport with members of focus populations as well as development of safety plans and risk mitigation strategies (Sugarman et al., 2018); this might be particularly salient if intervention facilitators are not considered to be members of the target population. Although critically important, guidelines for developing and implementing TOF for remote intervention delivery are limited. Several studies described procedures for implementing remote TOF, and highlighted its feasibility and acceptability for delivering EBIs, in-person, in clinical and community settings (Gavarkovs et al., 2019; Renfro et al., 2018; Valladares et al., 2014).

To our knowledge, remote TOF for remote intervention delivery has not been studied, especially in lower- to middle-income countries. To address this gap, we described a process of developing and implementing remote TOF for remote delivery of *Peer Reach and Influencer-Driven Engagement in HIV Care Continuum (PRIDE in HIV Care for short)*, a crowdsourcing and peer-actuated network intervention for increasing engagement of MSM and TSM in the HIV care continuum in Kazakhstan. In this article, we outlined the steps and strategies involved in this process, and presented lessons learned—especially those related to TOF for remotely delivered interventions (vs. in-person interventions)—that can inform future intervention science effort conducting remote TOF for remote intervention delivery.

Methods

Study Design

The clinical trial of *PRIDE in HIV Care* (ClinicalTrials.gov Identifier: NCT02786615) used a stepped wedge design, by which the intervention was rolled out sequentially across three major cities of Kazakhstan: Almaty, Shymkent, and Nur-Sultan (Paine et al., 2021; Wu et al., 2020). These cities were estimated to have the highest numbers of SGD individuals and experience rapid growths in new HIV infections nationally (Wu et al., 2017; Wu, 2018). After a period of data collection without any intervention (July 2018 – February 2019), the intervention was sequentially implemented in each study city, spaced six months apart: March 2019 in Almaty; August 2019 in Shymkent; and March 2020 in Nur-Sultan. During a city's implementation phase, the intervention was offered to interested and consenting study participants in that city. The study procedures were approved by the Institutional Review Boards of Columbia University and Al-Farabi Kazakh National University.

Intervention

PRIDE in HIV Care was designed and manualized by the study's Principal Investigator and Project Directors (the 'developers'), and delivered to study participants by Project Directors, Site Coordinators, and Research Assistants (the 'facilitators'). Framed within the Network-Individual-Resource model for HIV prevention (Johnson et al., 2010), the intervention aimed to recruit and motivate MSM and TSM in Kazakhstan to engage peers in the HIV care continuum. The intervention also incorporated constructs of social cognitive (Bandura, 1986) and social marketing (Storey et al., 2015) theories in activities designed to promote testing and treatment among intervention recipients and their peers. In its original form, the intervention consisted of four group sessions (target group size of 4-6 study participants) covering the following topics: (1) Crowdsourcing to identify HIV-related care services in one's city of residence and ways of safely accessing them; (2) building skills as a peer influencer in 'multiplying' HIV prevention knowledge, strategies, and motivation in various settings (e.g., online vs. offline, public/open vs. private/closed); (3) leveraging existing and emerging technologies for social marketing of testing and treatment; and (4) addressing potential threat to sustaining one's role as a peer influencer. Based on prior feedback from a working group regarding a need for a more gradual introduction to a group setting, an orientation session was added to be delivered to each intervention recipient individually before the start of a group cycle to provide them space to discuss and address expectations, concerns, and comfort and safety issues. All sessions were delivered in-person at a field office by a trained facilitator.

By March 2020, all study cities had entered the implementation phase. At the same time, the outset of the COVID-19 pandemic and mitigation measures (e.g., travel and social restrictions) prompted the study to adapt all in-person activities, including intervention delivery,

to a remote format. The process of adapting intervention delivery to a remote format is described elsewhere (Wu et al., 2022). Briefly, principally due to COVID-19-related restrictions and safety concerns, the intervention was updated and modified to be delivered to single recipients remotely and individually on a teleconferencing platform. We opted against a group format to minimize the impact of technical difficulties and ensure better protection of intervention recipients' privacy and confidentiality when using telecommunications technology (Ronen et al., 2020). The Facilitator's Manual was updated to reflect all modifications.

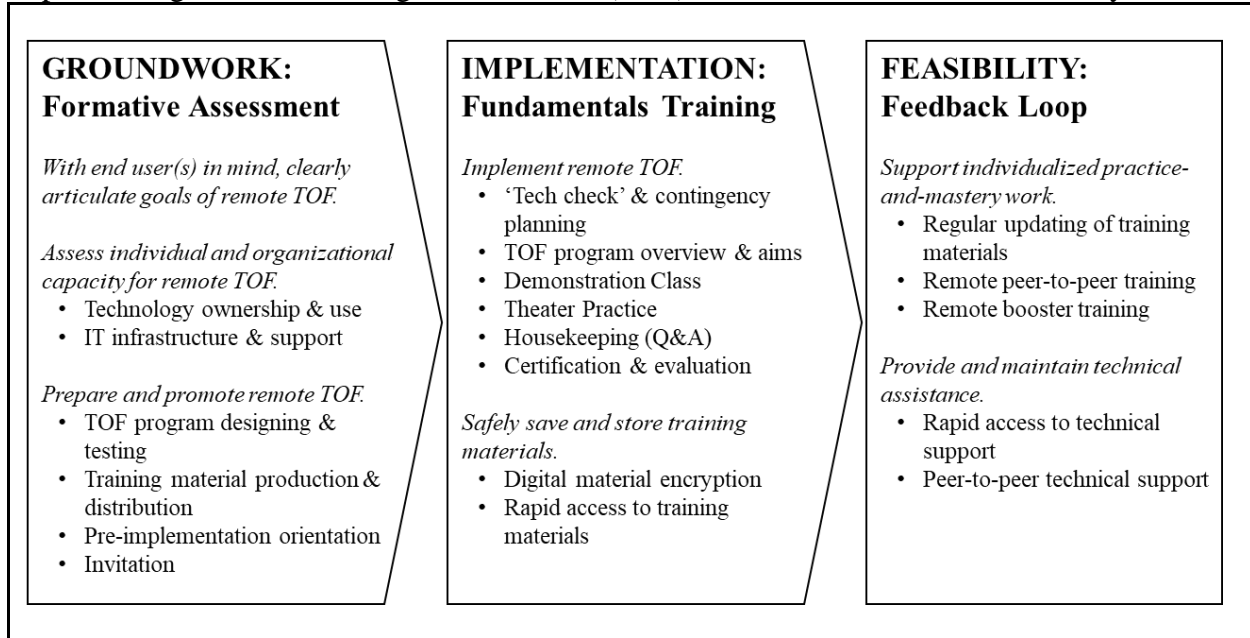
Training of Facilitators

Modifying the intervention delivery format—from in-person, group to remote, individual—generated new intervention components and implementation strategies for the facilitators to learn. Therefore, we planned for training of facilitators (TOF) designed to enhance facilitators' familiarity with new intervention content as well as skills in modified intervention delivery. As the COVID-19 pandemic and mitigation measures persisted, we were forced to plan for remote TOF. However, we soon realized there might be advantages of remote TOF particularly for remote intervention delivery and thus designed remote TOF strategically to realize those advantages.

The process of developing and implementing remote TOF involved three phases (Figure 2-1): (1) 'Groundwork' involving formative assessment and planning of a remote TOF program; (2) 'Implementation' of the remote TOF program focused on enhancing facilitators' familiarity with the fundamentals of the modified intervention; and (3) 'Feasibility' supporting individualized practice-to-mastery of skills involved in delivering the modified intervention through feedback and technical assistance. This process was informed by the MEDIA (Renfro et al., 2018) and ADDIE (Gavarkovs et al., 2019) models, both of which outline five steps involved

in systematically developing and implementing technology-enhanced remote TOF of EBIs in community settings.

Figure 2-1. The GIF (Groundwork-Implementation-Feasibility) Model for Developing and Implementing Remote Training of Facilitators (TOF) for Remote Intervention Delivery



Results

Phase 1. Groundwork

The ‘Groundwork’ phase of remote training of facilitators (TOF) involves formative assessment and planning. First, with end user(s) in mind, we clearly articulated goals of remote TOF. We determined that, for intervention facilitators, the goals of remote TOF are to become familiar with updates in intervention content and shifts in delivery format. We also decided that intensive training provided through a remote workshop was appropriate.

Next, we assessed individual and organizational capacity for remote TOF. To determine the best digital platform to host the workshop, we first surveyed facilitators about their technology ownership and use. Facilitators, in their concurrent role as the study’s Site Coordinator or Research Assistant, had already gained access to a personal computer and some

experience with internet-based computing as part of their job delivering the in-person intervention as well as general research and administrative tasks. Additionally, the recent shifting of team meetings and data collection activities to Zoom or WhatsApp had enhanced facilitators' familiarity with telecommunications technology. These findings informed our decision to provide the workshop remotely and synchronously on Zoom. Zoom was chosen for its availability of services in the languages used by the developers and the facilitators (e.g., Russian, English), features supporting interactivity among users (e.g., audio-visual functions, screen sharing, whiteboard, breakout rooms, in-meeting chat), accessibility via various common computer hardware, and low to no setup fee. Previously, in-person TOF workshops were held four to six weeks prior to intervention implementation. Given the novelty of the modified intervention delivery and training format—thus, a potential need for additional training—we planned for the remote TOF workshop to be held six to eight weeks prior to scheduled intervention implementation (January 2021).

Lastly, roles and tasks were assigned in preparing and promoting the workshop.

Employing a human-centered design approach (Gasson, 2003), the developers and the facilitators collaborated on designing a workshop that would be easily and safely accessible from remote locations. The developers developed and distributed a workshop agenda, along with the updated Facilitator's Manual, to facilitators to review. Activities involving collaboration among workshop attendees were developed on easily accessible platforms. For instance, icebreaker games using texts or graphics used free online design tools like Canva and were developed on PowerPoint slides to be viewed on Zoom via screen share; and a virtual Q&A forum was set up on Padlet where the facilitators could post questions and answers at any time and anonymously during the workshop. The developers worked with IT support staff from the facilitators'

workplace to host a technical assistance meeting pre-workshop for orientating the facilitators to hardware, software, and other devices and platforms required for the workshop. Along with reminders about the workshop, a Zoom link was sent to all workshop attendees ahead of time.

Phase 2. Implementation

The ‘Implementation’ phase of remote TOF focuses on fundamentals training.

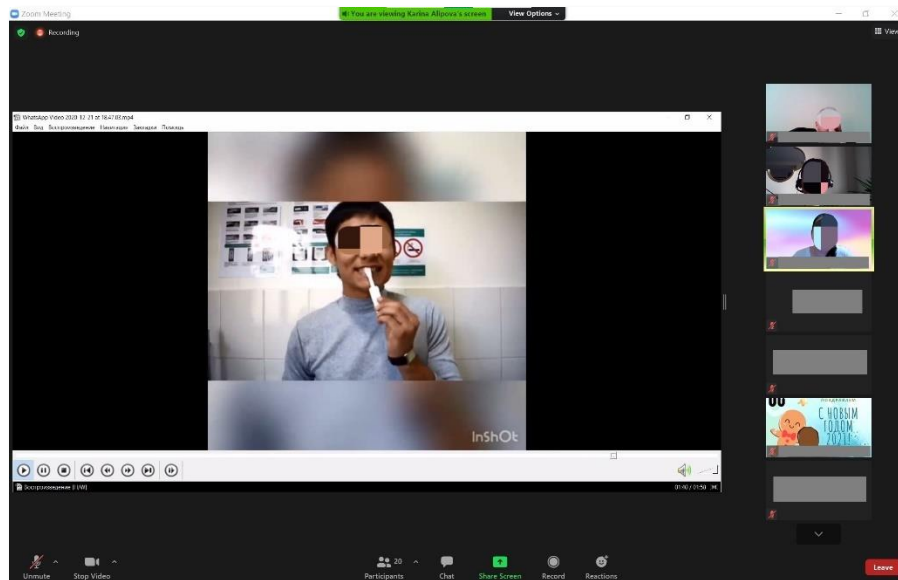
Following formative assessment and planning in the first phase, we implemented the remote TOF workshop. Every day of the workshop started with ‘tech check’ for identifying technical issues and contingency planning for overcoming unexpected technical and/or social disruptions, including limited bandwidth, service interruptions, device malfunctions, and changes in privacy levels in attendee’s environment. Technical issues were addressed through a crowdsourcing approach, whereby attendees were invited to assist in troubleshooting them; the IT staff were also on standby to provide technical assistance. Icebreaker games were first led by the developers, but the facilitators were invited to share ideas for, and even lead, such games. During the workshop, facilitators could post questions on the Padlet-supported virtual Q&A forum (developed in Phase 1); these questions were addressed at the end of each day. We obtained verbal consent from facilitators for recording the workshop.

The workshop had three modules. The first module was Demonstration Class, whereby the developers modeled delivering the intervention, from start to finish, by role-playing as a facilitator. This served as an opportunity to orient the facilitators to the updated Facilitator’s Manual and introduce new or updated intervention components. The second module was Theater Practice, whereby the facilitators practiced intervention delivery through role-play and received feedback. The facilitators were divided into smaller groups; each group was assigned a breakout room where the facilitators took turns practicing delivering a session to a peer facilitator who

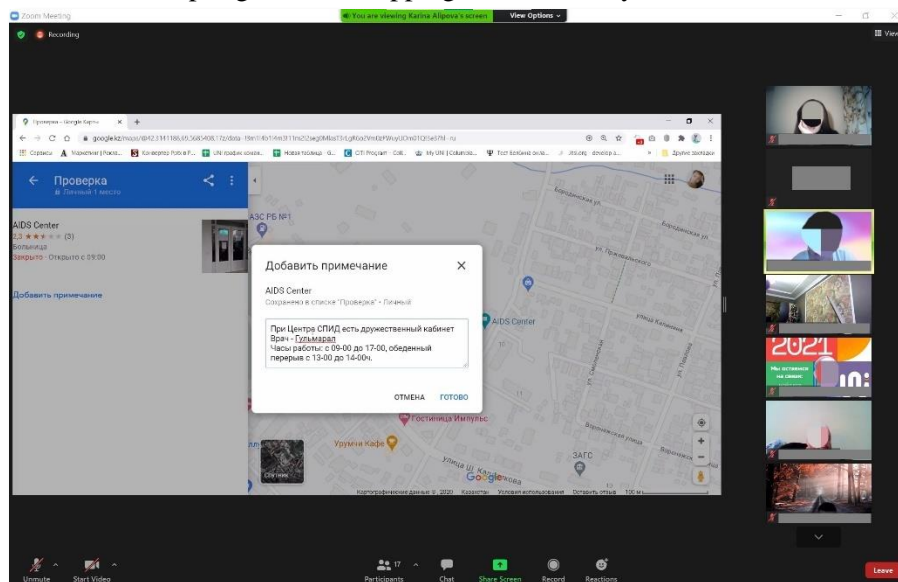
role-played as an intervention recipient, as the other attendees observed. Figure 2-2 depicts segments of theater practice. A facilitator and a mock intervention recipient together viewed a rapid HIV self-testing instruction video (previously produced by study staff from Shymkent) and collaborated on creating a custom map of SGD-friendly HIV care services on Google Maps; to gather relevant information, they browsed the web and social media real-time. Also, they shared the video clip and the Google map via multiple communication channels including instant messaging services, social media platforms, and sexual networking apps. At the end of theater practice, the workshop attendees reconvened in the main room, and provided feedback and elucidated strategies for troubleshooting issues that might arise during remote intervention delivery. Theater practice not only offered the facilitators a chance to anticipate paralleling of various scenarios, opportunities, and challenges from the training in the actual intervention (McNeill & Worthen, 1989), but also generated digital files that could be used as social marketing materials during the intervention. The third module was Administration and Housekeeping. The workshop launched with introductions of all attendees, orientation to training materials and format, and review of the study aims and ethics. The last day of the workshop was reserved for discussing individual and organizational considerations for intervention implementation, including recruiting intervention recipients, handling challenging situations, time management, and clinical supervision.

Figure 2-2. Implementing Remote Training of Facilitators (TOF) for Remote Delivery of *PRIDE in HIV Care Intervention on Zoom* (TOF Workshop: Fall 2020)

2-2a. Remote TOF workshop segment I: Producing a rapid HIV self-testing instruction video



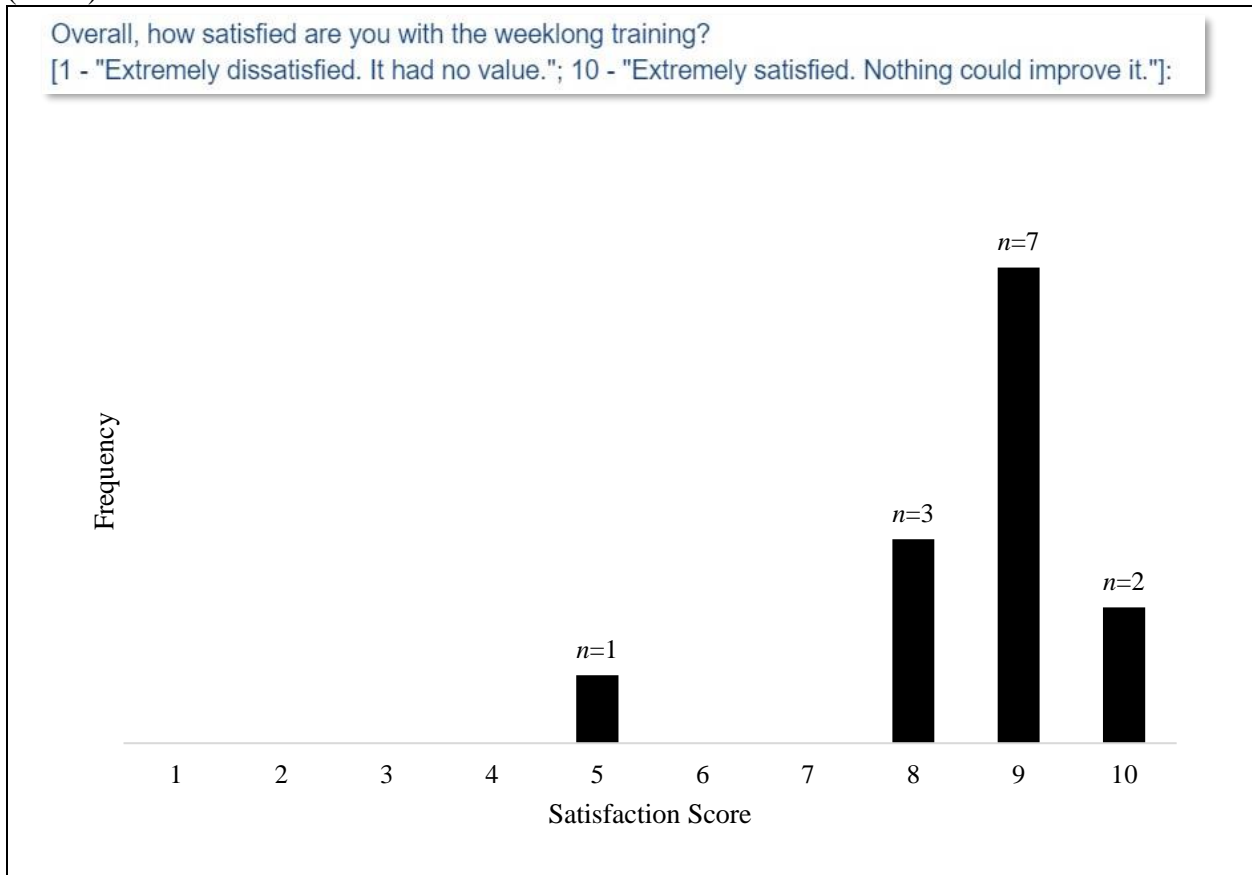
2-2b. Remote TOF workshop segment II: Mapping MSM-friendly HIV care services on Google Maps



The workshop concluded with a training certification ceremony, followed by an anonymous survey soliciting overall satisfaction and other feedback. Admittedly subjective, satisfaction scores, particularly lower scores (e.g., 5 or lower on a 10-point Likert scale), were used to identify areas or individuals to direct additional attention and support to. Of 13 facilitators from Almaty, Shymkent, and Nur-Sultan, all attended the workshop for full duration,

and completed the workshop conclusion survey. Overall satisfaction was assessed on a ten-point Likert scale, ranging from 1 (extremely dissatisfied) to 10 (extremely satisfied). The distribution of satisfaction scores is displayed in Figure 2-3. The majority (12 out of 13) gave a score of 8 or higher; the mean score was 8.6.

Figure 2-3. Survey Question and Responses for Overall Satisfaction with the Remote Training of Facilitators (TOF) Workshop for Remote Delivery of *PRIDE in HIV Care* Intervention (N=13)



Facilitators attending the workshop also provided feedback through open-ended questions. Some facilitators acknowledged the convenience of accessing the workshop from home and the possibilities of remote group interaction, and shared their initial impressions, including feelings of excitement and surprise.

“I did not expect that I would be so interesting to participate in the online training. The warm-ups (icebreaker games) surprised me. It was very convenient that in the morning one could participate in training from home.” (Anonymous)

Some facilitators also shared an area of improvement in the infrastructure supporting their connectivity to the remote workshop.

“This is my first time participating in a long online training. A lot of impressions. Rather not change, but wish: Improved internet speed.” (Anonymous)

These impressions served as a parallel process observation, whereby facilitators could anticipate impressions of excitement and convenience among the recipients of a remotely delivered intervention, as well as concerns about issues of connectivity.

At the conclusion of the remote TOF workshop, the developers safely stored training materials. The workshop generated additional digital training materials, including video recordings, Q&A forum, and custom maps. These materials were individually encrypted if possible and stored in a secure file-sharing portal. Upon request, the materials could be rapidly retrieved and distributed by the developers.

Phase 3. Feasibility

The ‘Feasibility’ phase establishes feedback loop for sustaining individualized TOF. After the workshop, we supported the facilitators becoming more proficient at remote intervention delivery through on-going practice. Some facilitators engaged peer facilitators in remote, synchronous practice sessions. Supplemental materials, including recordings of the

workshop and the virtual Q&A forum, were made available to the facilitators, and could be reviewed asynchronously. The facilitators could also actively participate in updating training resources, such as the virtual Q&A forum. Between the workshop and intervention implementation, two booster training sessions were provided and recorded. Booster training sessions were shorter in duration and focused on troubleshooting common errors made by the facilitators.

To support on-going practice, we continued to provide technical assistance. Facilitators with topical or technical expertise were invited to aid coaching of other facilitators. The developers and the peer coaches met regularly to identify areas and individuals who needed additional support. As the facilitators began delivering the intervention, they systematically provided process measures on the status and quality of intervention activities at the completion of each session; this feedback informed areas of focus for future training.

Discussion

The purpose of our study was to describe a process of developing and implementing remote training of facilitators (TOF) for remotely delivery a multisession HIV preventive intervention, *PRIDE in HIV Care*. The process involved formative assessment and planning that laid the groundwork for a five-day workshop; implementation of the workshop emphasizing fundamentals training in remote intervention delivery; and maintaining feasibility of overall TOF through ongoing individualized practice and feedback. Overall, full retention of the facilitators in the workshop and relatively high satisfaction ratings illustrated feasibility and acceptability of the remote training format among the facilitators of *PRIDE in HIV Care*.

Lessons Learned

Several opportunities of remote training were identified from the process of developing and implementing remote TOF (Figure 2-4). First, remote TOF helped the study conserve resources. Previously, in-person TOF workshops incurred costs of travel and lodging of up to 20 individuals. In addition, one of the intervention developers traveled to study cities in the implementation phase regularly to provide booster training. Holding the TOF workshop and booster training sessions remotely eliminated travel and lodging costs. Commute time was also reduced significantly; this gave the facilitators time to attend to other urgent matters, and thus addressed the burden of competing priorities (Ballew et al., 2013). Another set of reduced costs pertained to production. Training space and equipment that had been rented for the in-person workshops were no longer needed; instead, they were replaced by hardware and software that had already been in possession and in use by the facilitators. Additionally, we used free versions of services (e.g., Zoom, Padlet, Canva, Google Maps, Telegram) to host the workshop and build supplemental materials.

Secondly, remote TOF expanded access to training resources. All Zoom meetings related to development and implementation of remote TOF, including the workshop, could be accessed from virtually anywhere with internet connection. Indeed, the workshop was attended by 16 individuals from at least four cities across Kazakhstan and the U.S. As supplemental materials, including recordings of all training sessions, were built and stored digitally, they could be accessed efficiently and asynchronously. Such flexibility with frequency and time of use could be useful for providing additional training to anyone who did not attend the workshop—for instance, new hires resulting from staff turnovers.

Lastly, remote TOF had the unique advantage of imparting key skills and techniques specific to remote intervention delivery. In developing and implementing remote TOF, particularly the workshop, we utilized many of the same digital services incorporated in the modified intervention. We ensured that the developers and the facilitators not only had access to the same services, but also gained familiarity with using them. Therefore, remote TOF helped narrow the gaps in ownership, knowledge, and comfort with digital technology use more efficiently. Remote TOF also enabled the facilitators to gain skills and strategies needed for remote intervention delivery. It is possible that, for the workshop, being on the same teleconferencing platform as used in the remotely delivered intervention offered the facilitators a chance to quickly observe and practice important processes such as confirming digital accessibility and personal safety through ‘tech checks’ and contingency planning, and operating, often simultaneously, multiple digital services. Skill building extended to reviewing of the recordings of the workshop asynchronously, or synchronously with a peer facilitator remotely. In addition to implementation skills, remote TOF allowed the facilitators to anticipate what recipients of the remotely delivered intervention might experience. For instance, internet connectivity failures or qualms about digital technology use during the remote TOF workshop that some facilitators experienced served as an opportunity for the workshop attendees to acknowledge that the parallel scenarios with intervention recipients were possible and develop strategies to address the issues. Our experience highlights the value of mirroring, as much as possible, components of remote TOF with those of a remotely delivered intervention.

Figure 2-4. Advantages of Remote Training of Facilitators (TOF) for Remote Intervention Delivery

<p><i>Remote TOF conserves resources.</i></p> <ul style="list-style-type: none">• Remote TOF can eliminate costs related to long-distance travel and long-term lodging for a group of any size• Remote TOF can minimize costs related to production (e.g., training space, equipment, personalized materials)• Remote TOF can reduce commute time for individuals and free up time for other tasks, thereby reducing individuals' burden of competing priorities <p><i>Remote TOF expands access.</i></p> <ul style="list-style-type: none">• Remote TOF can cover multiple geographical areas and time zones simultaneously/synchronously• Remote TOF can be accessed from the convenience of a safe, private space (e.g., personal home)• Remote TOF can provide safe storage of and rapid and easy access to digital training materials in a centralized location <p><i>Remote TOF imparts key skills and techniques.</i></p> <ul style="list-style-type: none">• Remote TOF can narrow the gaps in the ownership, knowledge, and comfort of digital technology use among facilitators• Remote TOF can demonstrate skills and strategies used in remotely delivering intervention activities• Remote TOF can help facilitators identify and troubleshoot issues that may arise during remote intervention delivery• Remote TOF can build empathy for recipients of remotely delivered interventions

Despite its many positive attributes, remote TOF also presented challenges. Throughout the process of developing and implementing remote TOF, the facilitators reported technical issues—most commonly, malfunctioning of hardware and software and varying levels of digital literacy and confidence for operating newly incorporated technologies. Technical assistance should be made available early and widely, through various sources, to help mitigate technical issues. Regular ‘tech checks’ and contingency planning can help facilitators expediently identify and handle technical issues. Pre-workshop assessment of and orientation to technology, as well as delegation of support tasks to peer facilitators, may help sustain technical assistance.

Conclusions

Training of facilitators (TOF) is critically important for successful implementation of complex behavioral health interventions. We developed and implemented remote TOF designed to improve competence and motivation in remote delivery of an HIV prevention intervention in Kazakhstan. This study adds to a nascent literature that is largely composed of studies describing remote TOF of interventions delivered in-person and offers a model for developing and implementing remote TOF for remote intervention delivery. Incorporation of advances in technology in health interventions presents new opportunities and challenges that facilitators must adapt to. Remote training is uniquely positioned to enhance skills and techniques specific to remote intervention. As technical issues are inevitable, technical should be made early and widely throughout all stages of TOF.

Chapter 3

Social Impacts of Multi-City HIV Prevention Research Participation Among Sexual and Gender
Diverse Individuals in Kazakhstan

Abstract

Sexual and gender diverse (SGD) individuals—particularly cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men—in Kazakhstan are disproportionately affected by the HIV epidemic. MSM and TSM in Kazakhstan also face high levels of stigma and discrimination, which pose ethical and practical challenges for research needed to develop locally effective means of decreasing HIV incidence. Determining ethics of conducting research in this context necessitates evaluation of risks and benefits related to study participation. MSM and TSM from Almaty, Shymkent, and Nur-Sultan were recruited into an HIV prevention trial and self-reported negative social impacts (NSIs) and positive social impacts (PSIs) during follow-up visits. Between February 2019 and February 2022, 579 MSM and TSM completed 2648 follow-up visits. Overall, PSIs were endorsed extensively, with 515 (89%) participants reporting at least one PSI during their study participation, and individual participant reporting, on average, five PSIs ($\bar{x}=4.8$, $SD=3.4$) at each follow-up visit. Conversely, NSIs were rarely endorsed, with 9 (2%) participants reporting at least one NSI during their study participation, and individual participant reporting virtually no NSI ($\bar{x}=0.0037$, $SD=0.03$). PSI endorsement was positively associated with living in Nur-Sultan ($\beta=1.3$, 95% $CI=0.7, 1.9$) and Shymkent ($\beta=2.8$, 95% $CI=2.2, 3.5$), and reporting binge drinking at least once within the prior 90 days ($\beta=1.2$, 95% $CI=0.4, 2.0$) of primary assessment. Our findings highlight the possibility of conducting HIV prevention research involving individuals with stigmatized identities with many benefits and relatively few risks, and further underscore the value of monitoring social impact in identifying strategies of mitigating risks.

Introduction

The HIV epidemic in Kazakhstan rapidly expanded between 2010 and 2020, contrary to the global trend of decline in the number of new HIV infections (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2021). As observed in other countries, sexual and gender diverse (SGD) individuals—particularly cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men—in Kazakhstan have been disproportionately affected by the epidemic. The number of new HIV infections among MSM increased seven-fold between 2009 and 2017 (Eurasian Coalition on Male Health [ECOM], 2018). In 2020, HIV prevalence in this group was estimated to be 6.5%, compared with 0.3% in the general population (UNAIDS, 2021). Linkage to the HIV care continuum is critically important to HIV prevention, but has been lagging among MSM and TSM in Kazakhstan (Paine et al., 2021; Wu et al., 2020). Renewed efforts of safely engaging SGD individuals living with or at higher risk of HIV in the HIV care continuum are thus warranted.

Research has demonstrated that stigma and discrimination based on real or perceived status of HIV, sexual and gender diversity, or both have contributed to entrenched disparities and gaps in the linkage to the HIV care continuum among SGD individuals (Arreola et al., 2015; Babel et al., 2021; Fontanari et al., 2019). The intertwining relationship between stigma and HIV has been documented in regions geographically and culturally adjacent to Kazakhstan, such as Central Asia and Russia, where the context of HIV care seeking, as well as HIV prevention research, has been rendered hostile or even legally unacceptable for members of SGD communities (Ibragimov & Wong, 2018; Latypov et al., 2013; Wirtz et al., 2013). In Kazakhstan, multiple forms of stigma and discrimination against SGD individuals and people living with HIV, including harassment in healthcare settings and absence of legal protection

(ALMA-TQ, 2016; ECOM, 2018; 2020; Levitanus, 2022), have also been documented, and could undermine HIV prevention efforts. Indeed, a recent multi-city study in Kazakhstan revealed that HIV testing among MSM and TSM was negatively associated with HIV stigma and internalized homophobia (Paine et al., 2021).

Persistent stigma and discrimination pose ethical and practical challenges for research needed to develop locally effective means of decreasing HIV incidence. Although researchers are tasked with ensuring that risks of participating in research are reasonable in relation to benefits, the risk-benefit relationship may not always be evident (Gilbertson et al., 2019). These risks and benefits include negative social impacts (NSIs) and positive social impacts (PSIs) pertaining to personal relationships, social status, health, and other aspects of life (Allen & Lau, 2008). Emerging evidence suggests that PSIs related to participation in HIV prevention research are prevalent, whereas NSIs are uncommon. A cross-protocol analysis of data from 43 preventive HIV vaccine trials in 13 countries ($N=8347$) showed that 81% of participants reported PSIs, and 8% reported NSIs (Andrasik et al., 2020). A multinational HIV prevention trial involving people who inject drugs in China and Thailand ($N=789$) similarly found that 77% of participants reported PSIs, far exceeding 0.5% reporting NSIs (Sugarman et al., 2015). Finally, an HIV cure-related trial involving women living with HIV in the U.S. ($N=31$) also demonstrated reporting of a great number of PSIs ($n=17$) than NSIs ($n=6$) by participants at their exit survey (Dubé et al., 2020). Still, literature on assessment of NSIs and PSIs of HIV prevention research participation, particularly among SGD individuals in Central Asia, is sparse. In this article, we aimed to extend the literature by examining overall incidents of NSIs and PSIs of HIV prevention research participation and differences in PSI endorsement by sociodemographic and psychosocial characteristics among MSM in Kazakhstan.

Methods

We used data from a stepped wedge clinical trial of an intervention aimed at increasing engagement of MSM and TSM who use substances in the HIV care continuum in Kazakhstan (ClinicalTrials.gov Identifier: NCT02786615). After a period of data collection without any intervention (July 2018 – February 2019), the intervention was implemented sequentially, spaced six months apart, across three major cities in Kazakhstan: Almaty (March 2019), Shymkent (August 2019), and Nur-Sultan (March 2020) (Wu et al., 2020). During the implementation phase, participants were invited to complete a manualized intervention that was delivered over four sessions preceded by an orientation session (Wu et al., 2022).

Participants

Recruitment procedures are described in detail elsewhere (Paine et al., 2021). Briefly, individuals from Almaty, Shymkent, and Nur-Sultan were actively and passively presented information about the study at various online and offline venues that were frequented by SGD individuals (Wu et al., 2018). Interested individuals were contacted for structured assessment of their trial eligibility. Eligibility criteria included: being 18 years old or older; identifying as man or being assigned male at birth; reporting consensual sex with another man in the past 12 months; reporting binge drinking, illicit drug use, or both in the past 90 days; and residing in a study city. At every assessment, we inquired respondents about their preferred term(s) to describe ‘men’ who have sex with ‘men.’

Between July 2018 and February 2022, 982 individuals were screened for eligibility, and 649 (61%) were determined eligible for the study. Of the study-eligible individuals, 629 (97%) returned for their primary assessment visit; of them, 579 (92%) were subsequently retained for at least one follow-up visit. Social impacts related to study participation were assessed at follow-up

visits. For this study, we used panel data from 579 MSM and TSM who completed a total of 2648 follow-up visits over a 36-month study period.

Procedures

Participants provided informed consent at their primary visit. A structured behavioral survey was administered by trained Research Assistants on Qualtrics (Provo, UT) via computer-assisted personal interviewing at the primary visit and follow-up visits every six months thereafter. All survey items were developed in English, and translated to Russian and Kazakh. Rapid testing, counseling, and confirmatory testing or treatment referral for HIV, syphilis, gonorrhea, and chlamydia were offered at the primary visit, and the same services for HIV were offered at the final follow-up visit. Of 649 individuals who were screened for eligibility, 629 (97%) completed a primary assessment visit. Due to the study design, while most participants could complete up to six follow-up visits, some, depending on the timing of their primary assessment, could complete fewer follow-up visits. Overall, 579 participants completed at least one follow-up visit. Study procedures were implemented in partnership with a local research organization, Global Health Research Center of Central Asia, and were approved by the Institutional Review Boards at Columbia University and Al-Farabi Kazakh National University.

Measures

Sociodemographic Characteristics

Sociodemographic characteristics at primary assessment included: City of residence (Almaty, Shymkent, Nur-Sultan); age, in years; legal marital status (single, married, no longer with spouse, other); education completion status (less than secondary school, secondary school [i.e., 9th grade]), high school [i.e., 11th grade], vocational education, university [i.e., bachelor's degree], post-graduate work [i.e., master's degree or higher], other); employment status

(employed full-time, employed part-time, retired, unemployed, disability, homemaker, student, other); gender identity (woman, man, other); sex assigned at birth (female, male, other); sexual orientation (straight, gay, bisexual, other); and self-reported HIV status (positive, negative, unknown). Participants choosing ‘other’ were asked to specify their response.

Substance Use

Substance use assessment entailed a series of yes (1) or no (0) questions regarding prior (i.e., lifetime) use of alcohol and the following drugs: marijuana, heroin and other opioids, stimulants, cocaine, hallucinogens or psychedelics, inhalants, and club drugs. When appropriate, local or street names were used to describe the drugs. For alcohol and each of the drugs, participants reporting any prior use were asked, “How many times did you use [alcohol/drug name] in the past 90 days?” Participants endorsing any prior alcohol use were probed about incidents of binge drinking, operationalized as “consuming five or more alcoholic beverages within a two-hour period” (NIAAA, n.d.). Participants reporting any binge drinking were asked about the number of times of binge drinking in the past 90 days.

Social Impact

Negative social impact (NSI) and positive social impact (PSI) items were adapted from the social impact assessment questionnaire used in a multinational HIV prevention study involving people who inject drugs (Sugarman et al., 2019). At each follow-up visit, participants were asked, “Because of your participation in this study, did anything negative or bad happen to you that you have not reported to us already?” Participants endorsing (i.e., reporting ‘yes’) any negative impact related to their study participation were probed with a series of yes (1) or no (0) questions regarding perceived NSIs; “Because of your participation in this study, have you: Been arrested or had trouble with the police or other legal problems? Had trouble getting or keeping

housing? Had trouble getting or keeping a job or trouble with income or economic support? Had trouble getting health care or with health insurance? Had personal trouble with friends, family, or acquaintances? Other, specify?"

Similarly, participants were asked whether anything positive or beneficial happened due to their study participation. Those endorsing any positive impact related to study participation were probed with a series of yes (1) or no (0) questions regarding perceived PSIs; "Because of your participation in this study, have you experienced: Improvement in issues related to HIV in your life? Employment improvement? Financial improvement? Reduction in drug use? Gained knowledge? Life improvement? Physical health improvement? Improved relationships? Reduced stigma? Improved mental health? Improved community or connection to your community? Less homophobia, or handling homophobia better? Less transphobia, or handling transphobia better? Other, specify?"

Study Variables and Data Analysis

Responses for age were dichotomized as 'ages 18-24' and 'ages 25 or older' categories based on clinical and cultural relevance (Berry et al., 2012; World Health Organization [WHO], 2021a). Responses for legal marital status were collapsed into 'single, never married' and 'else (e.g., married, no longer with spouse, other)' categories. Responses for education completion status were dichotomized as 'high school' and 'vocational or college/university' categories. Responses for employment status were collapsed into 'employed (full-time or part-time),' 'unemployed,' and 'else (e.g., retired, disability, homemaker, student, other)' categories. If feasible and appropriate, responses for the 'other' query for sociodemographic characteristics were inductively coded as existing response options, as determined by the authors (VV, YL, EW). In this sample, all descriptions for the 'other' sexual orientation category were recoded as

‘bisexual.’ At their primary assessment, no participant reported being assigned ‘other’ sex at birth.

Substance use analysis focused on use that is inconsistent with medical or legal guidance, in particular, and thus excluded alcohol use and included binge drinking and other drugs. Responses for prior binge drinking were imputed as zero if no prior alcohol use was reported. Responses for binge drinking and drug use in the past 90 days were dichotomized to create a dummy variable denoting any (1) or no (0) recent use. Additionally, these responses were imputed as zero if no prior use was reported. Responses for drug use across all drugs were summed and dichotomized to create a dummy variable denoting any (1) or no (0) drug use.

Two sets of data—one in long format and the other in wide format—were used to analyze NSIs and PSIs. Long format uses each follow-up visit as a case, thus allowing for easy calculation of metrics using visits as the unit of analysis. Wide format uses each study participant as a case (with responses at each follow-up visit constituting separate variables in a case), thus allowing for easy calculation of metrics using study participants as the unit of analysis. For each set of NSI and PSI items in the long format data, responses were summed to compose a count variable of social impact items endorsed at each follow-up visit; this variable was dichotomized to create a dummy variable denoting any (1) or no (0) social impact endorsement. Next, we transformed long format data into wide format. For each set of NSI and PSI items in the wide format data, we calculated the average of counts of social impact items endorsed across all follow-up visits; this average count variable was dichotomized to create a dummy variable so that the value of zero denoted no (0) social impact endorsement, while values greater than zero denoted any (1) social impact endorsement. Finally, for each social impact item, responses across

all follow-up visits were summed and dichotomized to create a dummy variable denoting any (1) or no (0) endorsement of that social impact during study participation.

We conducted frequency analyses to describe the distributions of sociodemographic and substance use characteristics at primary assessment, as well as NSIs and PSIs at follow-up visits. We reported proportions and means for the study variables, and presented write-in response of ‘other’ NSIs in English translation. Additionally, we performed linear regression analyses to test bivariate associations between the average count of PSIs endorsed across follow-up visits and sociodemographic and substance use factors at primary assessment. [Note: We planned to, but did not, perform bivariate analyses for NSIs due to very small numbers of NSIs reported (as presented in Results), thus resulting in insufficient variance.] All statistical analyses were performed using SPSS version 28.0 (IBM Corp., 2021).

Results

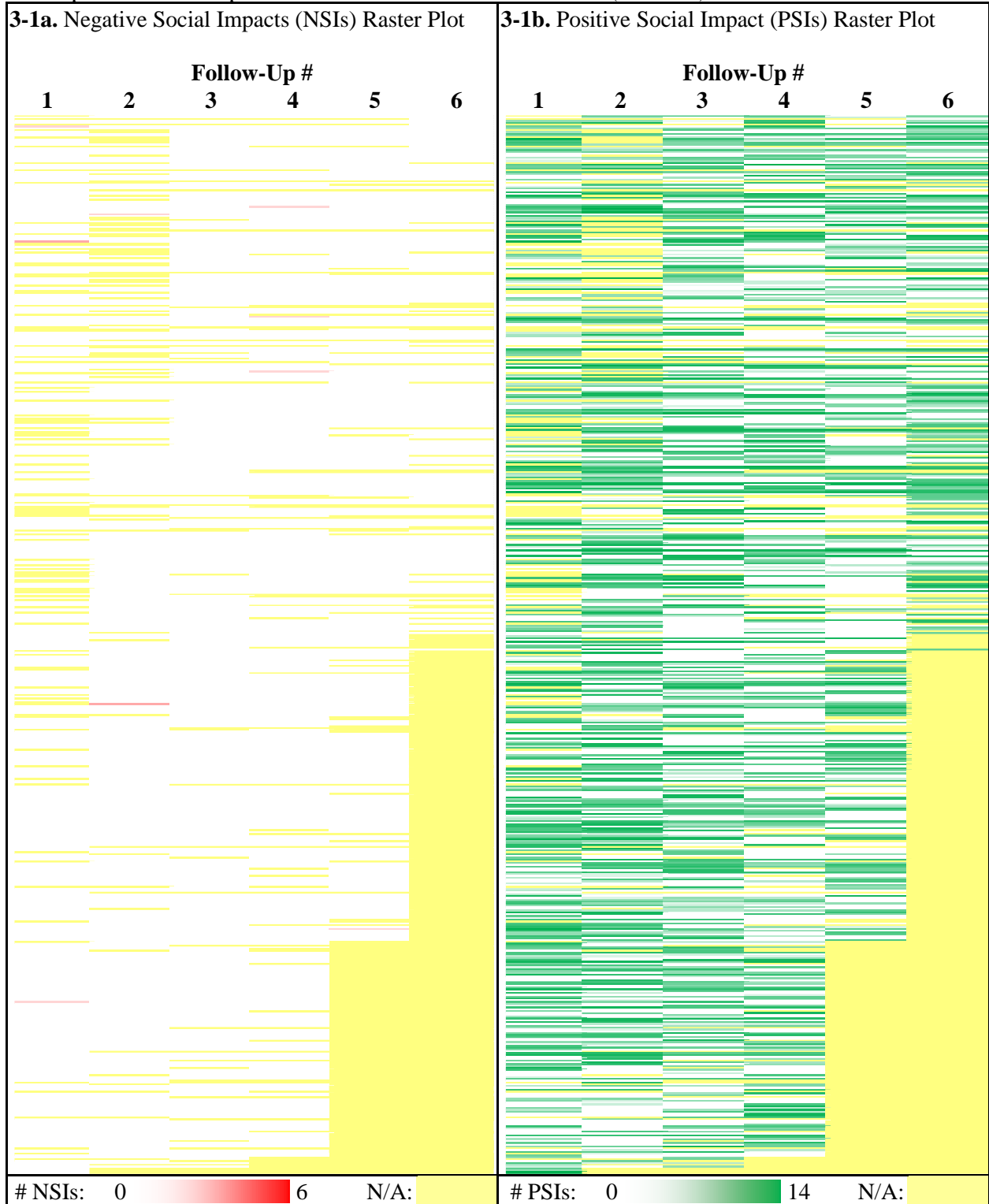
Descriptive statistics for primary-visit sociodemographic and substance use characteristics of MSM and TSM who provided follow-up data are presented in Table 3-1. Approximately one-third (36%) of MSM and TSM in the sample were ages of 18-24. The majority had never been legally married (79%), had pursued education beyond high school, completing vocational or college/university-level education (80%), and were employed (77%). With respect to sexual and gender identities, small minorities reported identifying as woman gender (6%) or other gender (5%) and being assigned female at birth (0.3%). Gay (53%) and bisexual (46%) individuals accounted for the sample’s majority. At primary assessment, 8% of participants reported HIV-positive status and 25% did not know their status. Three-quarters (75%) of this sample reported prior drug use, and 91% prior binge drinking. Less than half (44%) reported recent drug use, and 85% recent binge drinking.

Table 3-1. Primary-Visit Sociodemographic and Substance Use Characteristics of a Sample of MSM and TSM in Kazakhstan Retained in an HIV Prevention Trial (*N*=579)

Variable	<i>n</i> (%)
City of Residence	
Almaty	227 (39.2%)
Nur-Sultan	168 (29.0%)
Shymkent	184 (31.8%)
Age groups (years)	
18-24	207 (35.8%)
25 or older	372 (64.2%)
Legal Marital Status	
Single, never married	455 (78.6%)
Else (e.g., married, no longer with spouse, other)	124 (21.4%)
Education Completion Status	
High school	116 (20.0%)
Vocational or college/university	463 (80.0%)
Employment Status	
Employed (full-time or part-time)	447 (77.2%)
Unemployed	63 (10.9%)
Else (e.g., retired, disability, homemaker, student, other)	69 (11.9%)
Gender Identity	
Woman	32 (5.5%)
Man	521 (90.0%)
Other	26 (4.5%)
Sex Assigned at Birth	
Female	2 (0.3%)
Male	577 (99.7%)
Sexual Orientation	
Straight	10 (1.7%)
Gay	305 (52.7%)
Bisexual	264 (45.6%)
Self-Reported HIV Status	
Positive	46 (7.9%)
Negative	387 (66.8%)
Unknown	146 (25.2%)
Drug Use, Lifetime	432 (74.6%)
Drug Use, Past 90 Days	252 (43.5%)
Binge Drinking, Lifetime	527 (91.0%)
Binge Drinking, Past 90 Days	489 (84.5%)

Figure 3-1 presents a graphical summary of the NSI and PSI data by participant; in this raster format, each row (i.e., raster line) represents a participant and the raster line is divided into columns, with each column indicating whether an NSI or PSI (Figures 3-1a and 3-1b, respectively) was reported for the corresponding follow-up visit. The greater the number of NSIs (out of 6 items) or PSIs (out of 14 items) reported for that interview, the more saturated color (red for NSIs in Figure 3-1a; green for PSIs in Figure 3-1b). If a participant did not complete a particular visit, that is indicated with a yellow element in the raster line. The plots depict a higher volume of more-saturated green raster lines than saturated red lines, indicating many more PSIs than NSIs reported by participants at each follow-up visit.

Figure 3-1. Raster Plots of Negative Social Impacts and Positive Social Impacts of Study Participation in a Sample of MSM and TSM in Kazakhstan ($N=2648$)



N/A: Data not available due to incomplete assessment

Metrics regarding the distributions of NSIs and PSIs are presented in Table 3-2 (long format) and Table 3-3 (wide format). Across 2648 follow-up visits, nine (0.3%) had a report of at least one NSI. Specifically, there were five (0.2%) reports of trouble with friends, family, or acquaintances, and six (0.2%) reports of other NSI. Similarly, of 579 participants, nine (2%) reported an NSI at least once across follow-up visits; five (1%) reported trouble with friends, family, or acquaintances, and six (1%) reported other NSI. Write-in responses to the ‘other NSI’ query are shown in Table 3-4. The themes included ‘loss of privacy’ ($n=4$), ‘stigma/harassment due to study participation’ ($n=1$), and ‘trouble with HIV-related issues’ ($n=1$). There was no report of NSIs related to legal, housing, economic, or health care issues. There was virtually no report of NSI ($\bar{x}=0.0042$, $SD=0.08$) at each follow-up, and participants reported, on average, zero NSI ($\bar{x}=0.0037$, $SD=0.03$) across follow-up visits.

Table 3-2. Negative Social Impacts and Positive Social Impacts of Study Participation in a Sample of MSM and TSM in Kazakhstan: Long Format ($N=2648$)

3-2a. Negative Social Impacts (NSIs)	
Variable	<i>n</i> (%)
Any NSI	9 (0.3%)
Items	
Other NSI	6 (0.2%)
Trouble with friends, family, or acquaintances	5 (0.2%)
Arrested or trouble with police or other legal problems	0
Trouble getting or keeping housing	0
Trouble getting or keeping job, income, or economic support	0
Trouble getting health care or health insurance	0
3-2b. Positive Social Impacts (PSIs)	
Variable	<i>n</i> (%)
Any PSI	1519 (57.4%)
Items	
Gained knowledge	1445 (54.6%)
Improvement in HIV-related issues	1428 (53.9%)
Improvement in mental health	1162 (43.9%)
Improvement in life	1151 (43.5%)
Improvement in physical health	1133 (42.8%)
Improvement in (connection to) community	1107 (41.8%)
Improvement in relationships	1060 (40.0%)
Less homophobia or improvement in handling homophobia better	940 (35.5%)
Reduction of stigma	894 (33.8%)
Improvement in financial	770 (29.1%)
Improvement in employment	667 (25.2%)
Reduction in drug use	491 (18.5%)
Other PSI	457 (17.3%)
Less transphobia or improvement in handling transphobia better	408 (15.4%)

Figure 3-2. Frequencies of Reports of Negative Social Impacts and Positive Social Impacts Across Follow-Up Visits (N=2648)

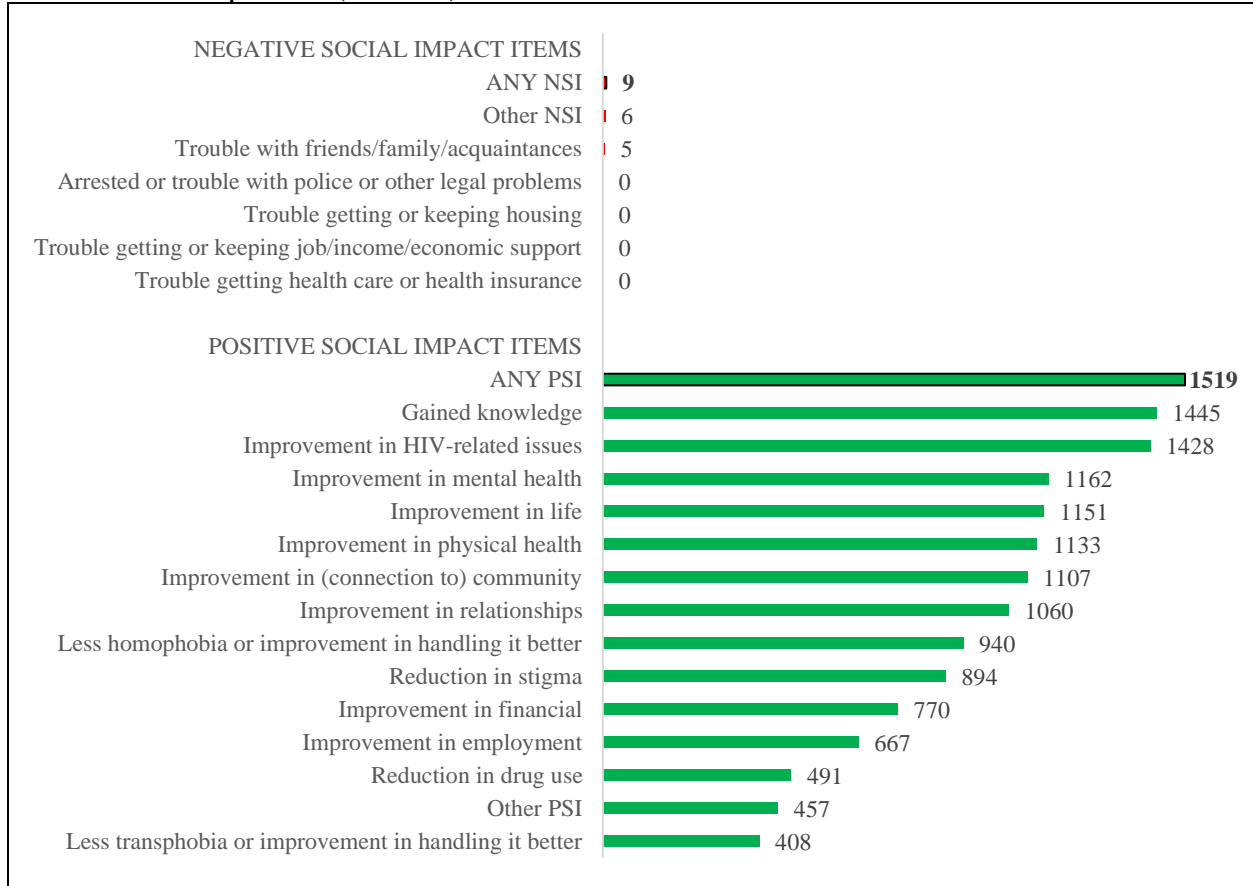


Table 3-3. Negative Social Impacts and Positive Social Impacts of Study Participation in a Sample of MSM and TSM in Kazakhstan: Wide Format (N=579)

3-3a. Negative Social Impacts (NSIs)	
Variable	n (%)
Any NSI	9 (1.6%)
Items	
Other NSI	6 (1.0%)
Trouble with friends, family, or acquaintances	5 (0.9%)
Arrested or trouble with police or other legal problems	0
Trouble getting or keeping housing	0
Trouble getting or keeping job, income, or economic support	0
Trouble getting health care or health insurance	0
3-3b. Positive Social Impacts (PSIs)	
Variable	n (%)
Any PSI	515 (88.9%)
Items	
Gained knowledge	501 (86.5%)
Improvement in HIV-related issues	499 (86.2%)
Improvement in mental health	461 (79.6%)
Improvement in life	447 (77.2%)
Improvement in (connection to) community	446 (77.0%)
Improvement in physical health	435 (75.1%)
Improvement in relationships	433 (74.8%)
Less homophobia or improvement in handling homophobia better	401 (69.3%)
Reduction of stigma	387 (66.8%)
Improvement in financial	351 (60.6%)
Improvement in employment	324 (56.0%)
Reduction in drug use	275 (47.5%)
Other PSI	266 (45.9%)
Less transphobia or improvement in handling transphobia better	237 (40.9%)

Figure 3-3. Frequencies of Reported Negative Social Impacts and Positive Social Impacts Among Study Participants (N=579)

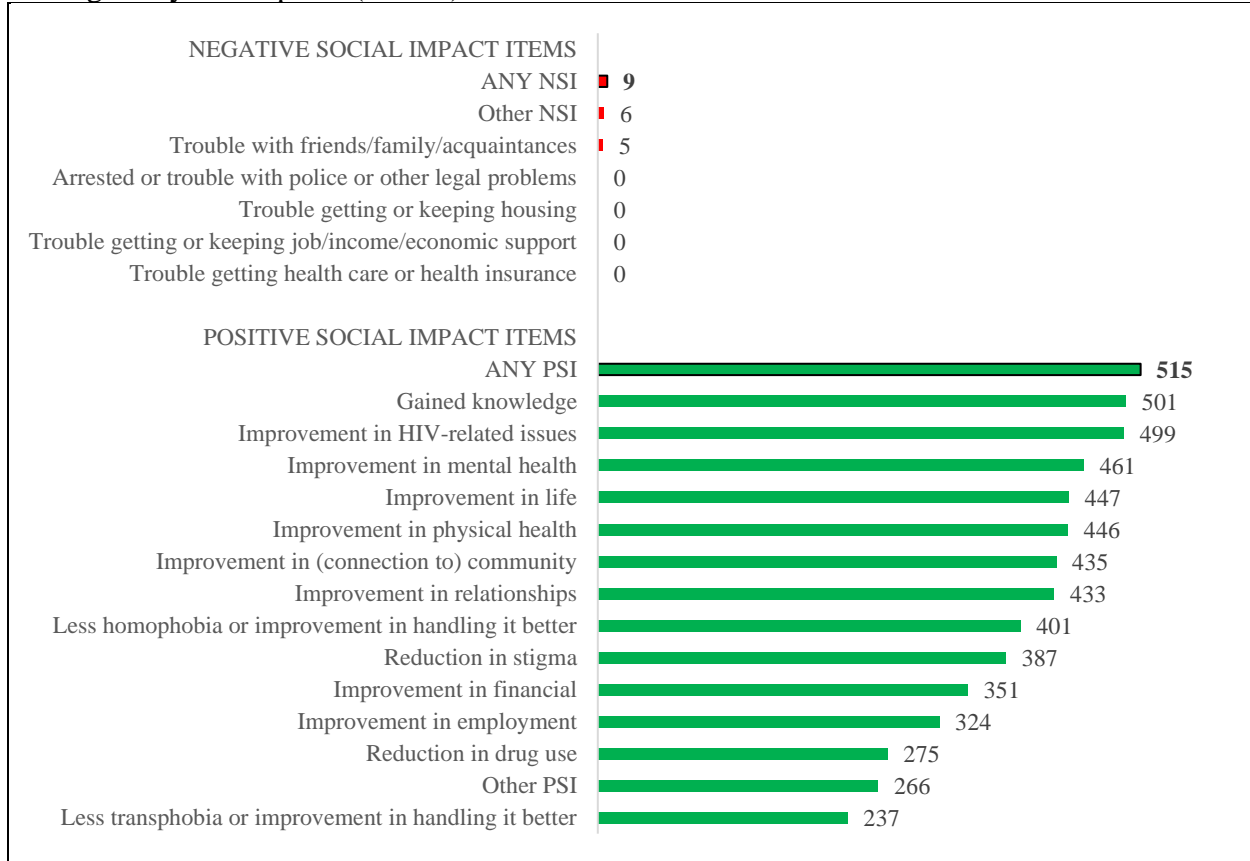


Table 3-4. Write-In Responses for the ‘Other Negative Social Impact’ Item

Themes	Quotes
Loss of privacy	<ul style="list-style-type: none"> • “Disclosure of information about participation in the project, disclosure of HIV+ status, help to ignite negative attitude to the participant.” • “I was contacted by the AIDS Center from Almaty 6 months ago, and I was called by my name and invited to be tested for HIV. They didn’t say how they know information about me.” • “Lack of security of my personal data” • “Breach of confidentiality by another participant”
Stigma/harassment due to study participation	<ul style="list-style-type: none"> • “I constantly battle in social networks with different people who do not know anything about the project, but give negative comments, and I am angry that they do this.”
Trouble with HIV-related issues	<ul style="list-style-type: none"> • “False positive HIV test”

By contrast, at least one PSI was reported at more than half (57%) of follow-up visits.

The most frequently reported PSIs were ‘gained knowledge’ (55%), ‘improvement in HIV-related issues’ (54%), and ‘improvement in mental health’ (44%); the least reported were ‘less transphobia or improvement in handling it better’ (15%), ‘other PSI’ (17%), and ‘reduction in drug use’ (19%). Almost 90% of participants reported a PSI at least once across follow-up visits. Once again, the most commonly endorsed PSIs were ‘gained knowledge’ (87%), ‘improvement in HIV-related issues’ (86%), and ‘improvement in life’ (80%); the least endorsed were ‘less transphobia or improvement in handling it better’ (41%), ‘other PSI’ (46%), and ‘reduction in drug use’ (48%). On average, five PSIs (\bar{x} =5.0, SD =5.0) were reported at each follow-up visit, and participants also reported five PSIs (\bar{x} =4.8, SD =3.4) across follow-up visits.

Table 3-5. Significant Bivariate Associations Between the Average Count of Positive Social Impacts Endorsed Across Follow-Up Visits and Sociodemographic and Substance Use Characteristics at Primary Assessment in a Sample of MSM and TSM in Kazakhstan ($N=579$)

Variable	β	SE	95% CI	p
City of Residence				
Almaty	Ref.			
Nur-Sultan	2.8	0.3	(2.2, 3.5)	<.001
Shymkent	1.3	0.3	(0.7, 1.9)	<.001
Binge Drinking, Past 90 Days	1.2	0.4	(0.4, 2.0)	.002

SE: Standard Error

CI: Confidence Interval

Table 3-5 displays the results of bivariate analyses examining associations between the average count of PSIs endorsed by MSM and TSM across follow-up visits and their sociodemographic and substance use characteristics. Not all variables examined were statistically significantly associated with the average count of PSIs. The average count of PSIs was statistically significantly associated with city of residence and recent binge drinking. Specifically, on average, living in Shymkent and Nur-Sultan, compared with Almaty, was associated with 2.8-point and 1.3-point higher average count of PSIs, respectively. Recent binge drinking was associated with, on average, a 1.2-point higher average count of PSIs.

Discussion

Overall, among MSM and TSM in Kazakhstan in this HIV prevention trial, PSIs related to study participation were endorsed at substantially higher rates than NSIs. Whereas NSIs were very infrequently reported, with an average of virtually zero NSI at each follow-up visit and/or among participants, PSIs were reported extensively, with an average of five PSIs per follow-up visit. PSI endorsement was statistically significantly higher among MSM and TSM living in Shymkent or Nur-Sultan and reporting binge drinking in the prior 90 days at the time of their primary assessment.

To our knowledge, this is the first study to examine experiences of HIV prevention research participation among SGD individuals in Kazakhstan. Our findings are consistent with other studies demonstrating common experiences of PSI and scant reports of NSI (Andrasik et al., 2020; Dubé et al., 2020; Gilbertson et al., 2019; Sugarman et al., 2015; 2019). In our study, the most frequently endorsed PSIs were ‘gained knowledge,’ ‘improvement in HIV-related issues,’ and ‘improvement in mental health.’ The parent study was a clinical trial testing the efficacy of a crowdsourcing and peer-actuated network intervention for increasing engagement

of MSM and TSM in the HIV care continuum in Kazakhstan. The intervention supported MSM and TSM promoting uptake of HIV-related care services through disseminating relevant information within their networks. Therefore, receipt of, or indirect exposure to, the intervention could have contributed to improvement of knowledge and HIV-related issues among participants.

MSM and TSM reporting recent binge drinking were more likely to report a greater number of PSIs. Given that the intervention also focused on increasing engagement in substance use treatment, it is possible that participants reporting recent binge drinking, compared with those reporting no binge drinking, may have more health and/or psychosocial problems, and thus would be more likely to experience a benefit from obtaining resources relevant to their health and wellbeing through study participation. Alternatively, given that alcohol use often occurs in a social context, participants reporting binge drinking could have perceived social aspects of study participation, such as group work and networking opportunities, to be beneficial. Moreover, participants living in Shymkent and Nur-Sultan were also more likely to report a greater number of PSIs. Geographical differences in PSI endorsement had been attributed to differences in access to resources (Andrasik et al., 2020; Sugarman et al., 2019). Given that twice as many MSM were estimated to be living in Almaty as Shymkent or Nur-Sultan, it is reasonable to posit that those living in Almaty had been benefiting from having greater availability of and access to resources outside the study (Wu, 2018; Wu et al., 2017).

Although relatively rare, NSIs warrant careful review and, as necessary, development mitigation strategies. In our study, the most frequently endorsed NSIs were ‘other NSI’ and ‘trouble with friends, family, or acquaintances.’ Other NSIs mostly entailed loss of privacy due to breach of confidentiality by an entity (e.g., HIV care provider) or an individual—in at least

one case, by another study participation. Breach of confidentiality had been reported as an NSI by participants in a multinational preventive HIV vaccine trial (Andrasik et al., 2020). One participant in our sample recounted handling online criticisms about their study participation. Navigating unwanted attention or aggression regarding study participation through confrontation or avoidance had been reported in other studies (Dubé et al., 2020; Gilbertson et al., 2019), and could be interpreted as trouble with personal relationships. Indeed, in our study, trouble with friends, family, or acquaintances was endorsed by five of nine participants reporting any NSI. Although we confirmed with participants that NSIs reported had not resulted due to administration of study procedures, they nonetheless stress the importance of developing and implementing safety plans. Future research involving SGD populations should ensure participants' safety and support their wellbeing. One vital strategy is engaging community stakeholders, for instance, through holding public meetings (e.g., townhalls) where stakeholders can collaboratively address the goals and potential impact of research studies.

There are several limitations to consider when interpreting our findings. First, our design of social impact assessment might have led to overreporting of PSIs and underreporting of NSIs. In this study, assessment of NSIs and PSIs pertained to experiences of study participation and did not specify a timeframe; "Because of your participation in this study, have you experienced [NSI/PSI]?" Responses at subsequent follow-up visits could, therefore, reflect prior experiences. Our approach of binary coding of responses is conservative in reporting of PSIs; on the other hand, dichotomizing multiple reports of the same NSIs could admittedly be overly conservative in reporting of NSIs. Also, our social impact assessment might have led to over-generalization of study participation experiences. The items in both sets of social impact questionnaires reflected categories of impacts that could be interpreted in different ways. Moreover, write-in responses to

the ‘other PSI’ query were not explored in depth in this analysis. Nuances of PSIs could be better understood through analysis of write-in responses. Next, endorsement of social impacts may be subject to social response bias. It has been speculated that fear of losing tangible benefits, such as medical care and compensation, could lead to underreporting of NSIs (Andrasik et al., 2020). Training of staff on data collection procedures ensuring response accuracy and data security should be prioritized. Finally, findings may not be generalizable to larger populations of MSM and TSM in Kazakhstan. This analysis was restricted to data provided by MSM and TSM retained in the HIV prevention trial conducted in three Kazakhstan cities over a three-year period and did not represent experiences of those who did not participate in or had been excluded from the trial. Additionally, despite extensive retention efforts, missing data were incurred through participant dropout and loss to follow-up. It is possible that attrition was related to anticipation of NSI or absence of PSI. Investigation of experiences of MSM and TSM outside this trial or in other trials is warranted to bolster assessment of ethics of conducting HIV prevention research in Kazakhstan.

Despite these limitations, our study identified PSIs and NSIs that can be useful in determining the ethical appropriateness of conducting HIV prevention research involving SGD individuals in the contexts of stigma. As risk mitigation is a critically important ethical consideration in HIV prevention, the infrequent reporting of NSIs in our study is encouraging. It is possible that procedures embedded in our trial to anticipate and address ethical issues contributed to such outcome. For instance, throughout the trial, we mobilized robust community engagement including community advisory board sessions and recruitment venue site visits. This effort extended to engaging participants in sharing their knowledge and wisdom of best practices in conducting research involving SGD individuals in Kazakhstan, such as inquiring and using

preferred/appropriate term(s) to describe ‘men who have sex with men’ with each participant at every visit. Finally, we developed safety plans and conducted staff training for risk mitigation and linkage to care, and monitored social impact during the trial.

Conclusions

With appropriate planning, HIV prevention research can be ethically conducted in settings where diverse sexual and gender characteristics are stigmatized with few NSIs and many PSIs. Following recommendations are derived from findings of this study: (1) Embed systematic assessment of experiences related to study participation; (2) develop safety plans, including risk mitigation strategies, tailored to needs of focus populations and features of research settings/platforms (Fisher et al., 2020; Sugarman et al., 2018); and (3) include PSIs in evaluating ethics of conducting research as well as in obtaining informed consent (Rennie et al., 2019). Our study adds to the literature on social impact assessment in HIV prevention trials and highlights the ethical significance of assessing participant-centered experiences.

Conclusions

Summary of Results

Sexual and gender diverse (SGD) individuals—particularly cisgender gay, bisexual, and other men (MSM) and transgender and nonbinary individuals (TSM) who have sex with men—in Kazakhstan are disproportionately affected by HIV. Efforts to improve safe engagement of SGD individuals in the HIV care continuum are urgently needed. The clinical trial for the *Peer Reach and Influencer-Driven Engagement (PRIDE) in HIV Care Continuum (PRIDE in HIV Care)* intervention was the first intervention research study of HIV prevention among MSM and TSM in Kazakhstan. Conducted over a 4-year period in three most populous Kazakhstan cities—Almaty, Shymkent, and Nur-Sultan—the clinical trial provided opportunities of collaboration among researchers, participants, and community stakeholders in designing and testing a crowdsourcing and peer-actuated network intervention for increasing engagement of MSM and TSM in the HIV care continuum. This dissertation sought to share strategies and lessons learned to inform social work practice, policy, and research for HIV prevention in the context of concurrent contemporary social issues.

Study for Paper 1 examined rates of HIV testing among a sample of MSM and TSM enrolled in the clinical trial for the *PRIDE in HIV Care* intervention, and identified substance use and sexual behavior correlates of the three outcome variables: Lifetime, past-12-month (recent), and past-6-month (current) HIV testing. Both lifetime and recent HIV testing were positively associated with polydrug use and negatively with sexual HIV transmission risk with a casual partner. Current HIV testing was negatively associated with sexual risk with a primary partner. Findings may demonstrate successes of HIV prevention efforts at engaging MSM and TSM who use substances in HIV testing, and underscore the value of integrating HIV-related care and

substance use treatment (Metzger et al., 2010; Sorensen & Copeland, 2000). Moreover, MSM and TSM reporting sexual risk behaviors would benefit from having opportunities to safely disclose sexual behaviors, substance use, or both, and discuss benefits of HIV testing.

Study for Paper 2 described a process of developing and implementing remote training of facilitators (TOF) for remote delivery of the *PRIDE in HIV Care* intervention. The process was guided by the GIF (Groundwork-Implementation-Feasibility) model. The ‘Groundwork’ phase involved formative assessment and planning of a remote TOF workshop; the ‘Implementation’ phase involved execution of the remote workshop that focused on fundamentals training of remote intervention delivery; and the ‘Feasibility’ phase involved feedback loop and technical assistance to support improving remote intervention delivery skills and techniques. In addition to known benefits of remote format of training, including elimination of travel-related costs and expansion of coverage and convenience of access, this remote TOF offered a distinct advantage of exposing the facilitators to the environment and circumstances of remote intervention delivery, thereby offering them opportunities to observe, learn, and practice skills and techniques that can be used during implementation.

Study for Paper 3 assessed negative social impacts (NSIs) and positive social impacts (PSIs) of participating in the clinical trial for the *PRIDE in HIV Care* intervention, and identified correlates of endorsing PSIs. Almost 90% MSM and TSM enrolled in the clinical trial reported at least one PSI, while 2% reported an NSI. PSI endorsement was positively associated with living in Nur-Sultan and Shymkent and with reporting binge drinking at least once in the past 90 days. Findings highlight feasibility of conducting HIV prevention research involving individuals with stigmatized identities with many benefits and few risks, and reinforce a growing call for

inclusion of participant perspectives in identifying risk mitigation strategies and determining ethical appropriateness of research studies.

Studies in this research used self-reported data, which may be subject to social desirability and recall biases. It is possible that self-reports of HIV testing and positive social impacts were higher if these responses were viewed as being more favorable/acceptable. However, (over-)reporting of HIV testing and PSIs may offer an opportunity to identify and engage individuals with prior experience in promoting linkage to HIV care and prevention research among their peers. Despite retention efforts, participant loss to follow-up produced missing data. Loss to follow-up due to anticipation of the absence of benefit related to study participation may lead to over-reporting of PSIs, while loss to follow-up due to anticipation of harm may lead to under-reporting of NSIs. Likewise, binary coding of social impact responses across follow-up visits may also lead to over-reporting of PSIs and under-reporting of NSIs. Further, generalizability of findings to larger SGD and general populations in Kazakhstan may be limited by non-probability sampling methods. Despite these limitations, findings from these studies are informative for social work practice, policy, and research for HIV prevention among members of SGD communities.

Social Work Implications

Practice

In this research, HIV testing was positively associated with polydrug use and negatively with sexual transmission risk. Substance use treatment may be an important strategy for promoting HIV testing uptake among MSM and TSM in Kazakhstan (Metzger et al., 2010; Sorensen & Copeland, 2000). Other health care services, including primary health care and sexual and reproductive health care, may serve as additional sources of HIV care (Bulstra et al.,

2021). Given that sexual transmission accounted for most new HIV infections in Kazakhstan in recent years, the indirect link between sexual transmission risk and HIV testing is concerning (Eurasian Coalition on Male Health [ECOM], 2018). Social workers providing HIV care through substance use treatment or other health care services should identify and address sexual transmission risk. Training of social workers should thus focus on building competence in facilitating discussion of sexual and gender diversity as well as benefits of HIV testing. When possible, HIV care delivery should be sourced to individuals who have direct access to the focus community (World Health Organization [WHO], 2021b). Community-based work is important to consider especially given the potential buffering impact of community-level factors such as sense of connectedness to community in minority stress processes that may otherwise hamper uptake of HIV testing (Kaniuka et al., 2019; Trujillo et al., 2017). Community-driven work can be enhanced through engagement of social workers who are trained in mobilizing and empowering community resources for social action and change (Gutiérrez & Gant, 2018). In Kazakhstan, community-based approaches should actively involve MSM and TSM who use substances, as they may be more likely to have prior and recent HIV testing experiences, and endorse positive social impact from participating in HIV prevention research.

Policy

SGD individuals have been early adopters of advances in digital technology. Increasingly, evidence-based interventions for HIV prevention among SGD individuals are harnessing digital technology (Knight et al., 2017; Nelson et al., 2020; Veronese et al., 2020). Moreover, global pandemics, such as COVID-19, require shifting of delivery of health care interventions from in-person to remote. Taken together, social workers working with SGD individuals would benefit from sustained capacity building, through training and technical

assistance, focused on enhancing their proficiency in the use and understanding of advances in digital technology. In facilitating HIV prevention interventions remotely, social workers should improve understanding of how multiple forms of stigma and discrimination against SGD individuals may persist in cyberspace, thereby undermining HIV prevention approaches deployed virtually. Social workers can address this issue by implementing policies that protect the privacy and confidentiality of intervention recipients to enhance safety for those with stigmatized identities and/or engaging in stigmatized behaviors. Moreover, social workers should continue pursuing funding for organizations to build and ensure adequate cyberinfrastructure and services that support remote and safe intervention delivery. Organizations in resource-limited circumstances or working across a geographically dispersed area, including transnational settings, should consider developing and implementing remote training. The GIF (Groundwork-Implementation-Feasibility) model introduced in this dissertation can be useful in guiding this process.

Research

Additional research on psychosocial and behavioral health conditions associated with engagement in the HIV care continuum among MSM and TSM in Kazakhstan is warranted. Although this study provided important findings on factors associated with HIV testing, its cross-sectional design limited the ability to draw temporal or casual inference. Future research should longitudinally examine factors, including participation in the *PRIDE in HIV Care* intervention, that may lead to HIV testing and treatment outcomes among MSM and TSM in Kazakhstan. How and whether the training of facilitators (TOF) impacted the delivery of the *PRIDE in HIV Care* intervention was beyond the scope of this study. Understanding the impact of TOF on intervention delivery is critical to improving intervention implementation. Future research should

systematically examine individual and organizational factors associated with intervention implementation and how intervention research implementation itself can redress minority stress.

Persistent racial disparities of HIV infection among SGD individuals in the U.S. demonstrate the importance of addressing intersectional stigma (Wu, 2021). While community-based approaches led by peers show promise in improving HIV care outcomes among SGD individuals (Shangani et al., 2017), more efforts are needed to address stigma in healthcare systems. Novel strategies have been developed to engage healthcare systems in improving linkage to care among people who inject drugs in Kazakhstan (McCrimmon et al., 2019). Future research should examine health care providers' experiences of providing services along the HIV care continuum to inform novel strategies of bolstering partnership between SGD communities and healthcare systems in the fight against the HIV/AIDS epidemic.

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Appendix A



Behavioral Survey Instrument: PRIMARY ASSESSMENT

Version: 1.4.0

Participant ID#: [bPID]	
Interviewer's Initials: [bIID]	
Region <i>(Please select the city/region where the Primary Assessment is taking place.):</i> [bRegion]	<input type="checkbox"/> Almaty [0] <input type="checkbox"/> Astana [1] <input type="checkbox"/> Shymkent [2] <input type="checkbox"/> Other [-1], specify below: _____ [bRegion_-1_TEXT]
Date Interview Initiated: [bDateInterview]	_____ / _____ / _____ <i>YYYY [bDateInterview_1] MM [bDateInterview_2] DD [bDateInterview_3]</i>
Start Time: [bTimeStart]	_____ : _____ <i>(24 hour clock)</i> <i>hh [bTimeStart_1] mm [bTimeStart_2]</i>
End Time: [bTimeEnd]	_____ : _____ <i>(24 hour clock)</i> <i>hh [bTimeEnd_1] mm [bTimeEnd_2]</i>

CONSENT E-DOCUMENTATION

[GIVE COPY OF CONSENT INFORMATION FORM TO RESPONDENT]

The purpose of this study is to examine whether a social network-based program can increase the number of sexual-minority men—such as men who have sex with men (MSM)—to use HIV testing and treatment services in Kazakhstan. We are particularly interested in sexual-minority men who might be at elevated risk such as being sexually active and misusing alcohol and drugs.

We will ask you to complete a 90-minute survey, and complete similar ones every 6 months until the end of the study. Surveys will be administered at one of our UNI Project field offices, where a trained research assistant will ask you questions regarding your background, like your age and ethnicity, questions about your attitudes and opinions about sexual and health behaviors, drug use behaviors, how you learn and interact with other sexual-minority men, and other life experiences. The research assistant will use a computer to help ask survey questions and record your responses. Your name will not be recorded on the survey data, only a unique study ID code. You may refuse to answer any questions, to ask that the survey be stopped or segments be skipped if you wish.

The primary risk associated with your participation in this study is loss of confidentiality. Measures (described below) will be taken to minimize this risk. Participation in this study may result in experiencing anxiety and emotional distress, mostly related to confidentiality, questions that prompt disclosure of sensitive information, and HIV/STI testing. The interviewer or other members of the research team can give you information where you can get counseling or other services that should help with these issues.

There is no direct benefit to participants who engage in this study, except to contribute to the enhancement of sexual health of sexual-minority men in Kazakhstan.

To protect your confidentiality, we will assign you a unique ID code. The only records linking your ID code to your name will be stored in a password-protected file on a computer dedicated to the study.

Consent Comprehension: Respondent verbally...	
bCONSENT01. ...described nature of participation in the primary assessment interview:	<input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]
bCONSENT02. ...described potential risks:	<input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]
bCONSENT03. ...described potential benefits:	<input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]
bCONSENT04 ...agreed to participate in the study:	<input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]
bCONSENT99: Respondent: By entering your initials here, you are attesting that informed consent comprehension has been accurately noted by the researcher:	

INTRODUCTION

We would like to thank you once again for agreeing to invest your time and energy to help us with our study. As you might remember from the screening interview you completed with us, I have to read every question in its entirety and present all answer choices in many instances. I will do my best to be fast, and so you can also keep things moving, I will need you to pick a response from the set and type of answer choices we present. It is possible that it might be a bit tough to pick one answer. The best thing to do is to choose the answer that fits best for you. There is no right or wrong, just what is most accurate for you. Of course, feel free to ask me if something isn't clear or you need more information or explanation.

Protecting your privacy and your responses are extremely important to us. We will not share your answers with anyone, and we will keep your information confidential and secure. In fact, your name will not be on the survey. Instead, we will use a generic identification number for you.

If you hear a question and there is nothing we can do to make you feel comfortable answering, just let me know that...simply saying something like "I prefer not to answer that." It is better to say that than to give me a false answer. That level of honesty is much more helpful than—and hopefully easier for you—than giving answers that aren't true. Does that make sense? *[Pause and confirm].*

Before we begin, do you have any remaining questions or concerns? *[Address questions/concerns and repeat until participant indicates no more questions/concerns]*

INITIATION INTO STUDY

bINIT01. Did you hear about this study from someone who is/was already part of the UNI study?

Yes [01]

No [00]

bINIT01a. [If Yes] What was that person's first name? _____ **[First name]**

bINIT01b. [If Yes] Where/how did that person inform you about UNI?

bINIT02. Where [else] did you hear about this UNI study?

Community-based organization or agency or NGO. [00], specify [bINIT02_0_TEXT]: _____

Internet/social network (e.g., Facebook, VK, Grindr, Hornet) [01], specify [bINIT02_1_TEXT]: _____

Newspaper or magazine [02], specify [bINIT02_2_TEXT]: _____

Community event (e.g., activist meeting, health fairs) [03]

Study flier/advertisement or palm card (Note: physical, if electronic, check and enter for internet/social media) [04]

Study staff or contact with study staff [05]

From someone who is/was a study participant [06] ← *Note: Make sure this is captured in bINIT01; go back if necessary*

From someone who was not a study participant (or unsure if that person was in the study) [07]

Other [-1], specify [bINIT02_-1_TEXT]: _____

SOCIODEMOGRAPHICS

bSOCDEM01. In what year were you born?

____ _ [4 digit year]

bSOCDEM02. Which city do you currently reside in?

- Almaty [0]
- Astana [1]
- Shymkent [2]
- Other [-1], specify [bSOCDEM02_-1_TEXT]: _____

bSOCDEM03. Are you a citizen of Kazakhstan?

- Yes [01]
- No [00]

bSOCDEM03a. What country (or countries) are you a citizen of?

bSOCDEM10. What is your current legal marital status?

- Single (never married) [00]
- Married [01]
- No longer with a spouse (e.g., divorced, widowed, separated) [02]
- Other [-1], specify [bSOCDEM10_-1_TEXT]: _____

bSOCDEM20. What is the highest level of education you have completed?

- Less than secondary school (did not complete 9th grade) [00]
- Primary and secondary school (completed 9th grade) [01]
- High school (completed 11th grade) [02]
- Vocational secondary education (2-3 years of college) [03]
- University (bachelor) [04]
- Post-graduate work (master and higher) [05]
- Other [-1], specify [bSOCDEM20_-1_TEXT]: _____

bSOCDEM21. We would like to learn about what you do -- what is your current usual employment pattern? [Select one - If there are equal times for more than one category, select one that best represents the more current situation]

- Working: full-time [00]
- Working: part time [01]
- Retired [02]
- Unemployed, looking for work [03]
- Unemployed, not looking for work [04]
- Unemployed, temporary (sick leave, maternity leave, etc.) [05]
- Disabled, permanently or temporarily [06]
- Homemaker [07]
- Student [08]
- Other [-1], specify [bSOCDEM21_-1_TEXT]: _____

sSOCDEM21a. [If bSOCDEM21 = 00 or 01] Do you work on the books or off the books?

- On the books/formal employment/with a contract [00]
- Off the books/informal employment/without a contract [01]

sSOCDEM21b. [If bSOCDEM21 = 00 or 01] What is your current occupation industry and job title?

bSOCDEM22_1. What is your best estimate of your monthly income during the past six months?

[write COMPLETE amount of tenge: for example, write 10 000 tenge, not 10]

_____ KZT per month

bSOCDEM23. Which best describes your current living situation? [if more than one location, where have you spent 3 or more days a week?]

- In my home or apartment that I own [00]
- In my home or apartment that I rent [01]
- In my parents' or other family's home or apartment [02]
- In someone else's home or apartment (not family) [03]
- In an institution [04]
- On the street (park, basement, doorway, etc.) [05]
- Other [-1], specify [bSOCDEM23_-1_TEXT]: _____

bSOCDEM24. Who else is/has been living there with you? (check all that apply)

- No one [00]
- Spouse [01]
- An intimate/sexual partner to whom I'm not married [02]
- Own children [03]
- Other children [04]
- One or more parent [05]
- One or more brother and/or sister [06]
- Other relative(s) [07]
- Roommates (non-related, non-sex partners) [08]
- Other [-1], specify [bSOCDEM24_-1_TEXT]: _____

bSOCDEM25. Have you been homeless or without a regular place to sleep in the past 6 months?

- Yes [01]
- No [00]

bSOCDEM26. Have you not had enough money to buy food in the past 6 months?

- Yes [01]
- No [00]

Next, we will ask questions about your gender identities. Gender assignment at birth refers to a “person’s biological sex assigned at birth.” Gender identity refers to “a person’s sense of self as male or female.” While most people’s gender matches their biological sex, someone may be born biologically male, yet have a female gender identity.

bSOCDEM50. What gender do you currently identify as? What is your current gender identification? Do you consider yourself to be...

- Female [00]
- Male [01]
- Other [-1], specify [bSOCDEM50_-1_TEXT]: _____

bSOCDEM51. What gender were you assigned at birth? When you were born, you were [assigned to be a]...

- Girl/Female [00]
- Boy/Male [01]
- Other [-1], specify [bSOCDEM51_-1_TEXT]: _____

bSOCDEM90_1. How old are you? _____ years old

HEALTH

bHEA01. How would you rate your general health status?

- Poor [00]
- Fair [01]
- Good [02]
- Very Good [03]
- Excellent [04]

bHEA02. Compared to one year ago, how would you rate your health in general now?

- Much better now than one year ago [00]
- Somewhat better now than one year ago [01]
- About the same [02]
- Somewhat worse now than one year ago [03]
- Much worse now than one year ago [04]

bHEA10. In the past 6 months, did you seek out medical treatment?

- Yes [01]
- No [00]

bHEA10a. [If YES] What did you seek medical treatment for in the past 6 months? [Check all that apply]

- Liver disease [00]
- Heart disease [01]
- Diabetes [02]
- Cancer [03]
- Gastrointestinal disease [04]
- Urinary tract or kidney disease [05]
- High blood pressure or cholesterol [06]
- Arthritis or joint disease [07]
- Chronic pain [08]
- Asthma or respiratory problems [09]
- Proctology, colon, rectum care [10]
- Reproductive and/or gender-related health (e.g., steroids, gender confirmation/top/bottom surgery, etc.) [11]
- HIV care [12]
- Sexually transmitted infection (STI) [13]
- Tuberculosis [14]
- Mental health [15]
- COVID-19 (coronavirus) [16]
- Other [-1], specify [bHEA10a_-1_TEXT]: _____

bHEA11. Have you ever been hospitalized for physical problems like an illness or injury?

- Yes [01]
- No [00]

bHE11a_1. [If YES] How many days were you hospitalized for physical problems like an illness or injury in the past 6 months?

(If you were not hospitalized in the past 6 months, please write "0".) _____ days

bHEA12. In the past 6 months, have you received emergency services or visited an emergency room for physical problems like an illness or injury? We mean for medical services you receive for yourself, not for others?

- Yes [01]
- No [00]

bHEA12a_1. [If YES] How many time in the past 6 months? _____ times

bHEA12b. [If YES] for what did you seek medical treatment for in the past 6 months? [Check all that apply]

- Drug overdose [00]
- Alcohol poisoning [01]
- Injury [02]
- Heart attack or stroke [03]
- Other [-1], specify [bHEA12b_-1_TEXT]: _____

I am going to read you some statements about the past 12 months. Please tell me if you strongly agree, somewhat agree, are uncertain, somewhat disagree, or strongly disagree with each statement.

bHEA20. If I need medical care, I can get admitted without any trouble

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

bHEA21. It is hard for me to get medical care in an emergency

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

bHEA22. Sometimes I go without the medical care I need because it is too expensive

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

bHEA23. I have easy access to the medical specialists that I need

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

bHEA24. Places where I can get medical care are very conveniently located

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

bHEA25. I am able to get medical care whenever I need it

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

Think of the reasons why you may not have gotten the medical care you needed or that was recommended for you. Please indicate “Agree” or “Disagree” for all of the following reasons for why you may not have gotten needed medical care in the past 6 months.

In the past 6 months...

bHEA30. ...I was unable to pay for medical care.

- Agree [01]
- Disagree [00]

bHEA31. ... I was not sure where to go to get medical care

- Agree [01]
- Disagree [00]

bHEA32. ... I did not have transportation to medical care

- Agree [01]
- Disagree [00]

bHEA33. ... The clinic’s hours of operation were inconvenient for me

- Agree [01]
- Disagree [00]

bHEA34. ... I was treated poorly at a clinic in the past

- Agree [01]
- Disagree [00]

bHEA35. ...I did not want to be seen at a clinic

- Agree [01]
- Disagree [00]

bHEA36. ... I did not trust doctors

- Agree [01]
- Disagree [00]

bHEA37. ...I didn’t really care about taking care of myself

- Agree [01]
- Disagree [00]

bHEA38. ...I did not have child care (anyone with whom to leave children)

- Agree [01]
- Disagree [00]

bHEA39. ...I was too drunk or high

- Agree [01]
- Disagree [00]

COVID RESPONSE & IMPACT

We want to understand how the coronavirus pandemic has affected you and your ability to access health care, including services related to HIV testing/treatment and substance use treatment.

bHEA50. Has COVID or the response to COVID limited your ability to get HIV testing or treatment?

Yes [01]

No [00]

bHEA50a. [If {bHEA50} = YES] Has this happened in the last 6 months?

Yes [01]

No [00]

bHEA50a1. [If {bHEA50a} = YES] Please describe what happened (e.g., how the response to COVID has limited your ability to get HIV testing or treatment).

bHEA51. Has COVID or the response to COVID limited your ability to get services or treatment regarding substance use?

Yes [01]

No [00]

bHEA51a. [If {bHEA51} = YES] Has this happened in the last 6 months?

Yes [01]

No [00]

bHEA51a1. [If {bHEA51a} = YES] Please describe what happened (e.g., how the response to COVID has limited your ability to get services or treatment regarding substance use).

bHEA52. In the last 6 months, what other ways (if any) has COVID and/or the COVID response affected you?

DEPRESSION, ANXIETY, STRESS SCALES (DASS-21)

[Lovibond & Lovibond, 1995]

Please indicate how much each of the following statements applied to you *over the past week* (i.e., 7 days). There are no right or wrong answers. Do not spend too much time on any statement:

bDASS01. I found it hard to wind down.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS02. I was aware of dryness of my mouth.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS03. I couldn't seem to experience any positive feeling at all.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS04. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS05. I found it difficult to work up the initiative to do things.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS06. I tended to over-react to situations.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS07. I experienced trembling (e.g., in the hands).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS08. I felt that I was using a lot of nervous energy.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS09. I was worried about situations in which I might panic and make a fool of myself.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS10. I felt that I had nothing to look forward to.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS11. I found myself getting agitated.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS12. I found it difficult to relax.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS13. I felt down-hearted and blue.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS14. I was intolerant of anything that kept me from getting on with what I was doing.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS15. I felt I was close to panic.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS16. I was unable to become enthusiastic about anything.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS17. I felt I wasn't worth much as a person.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS18. I felt that I was rather touchy.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS20. I felt scared without any good reason.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

bDASS21. I felt that life was meaningless.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

SUBSTANCE USE

We are going to ask some more questions about some things that are potentially a bit more sensitive or private, like drinking alcohol and use of various substances. Please remember that all of your responses are confidential. Also, if there is anything I can do to ensure you are able to answer honestly, please let me know. *[Pause and address issues/ideas with participant]*.

As before, simply saying something like “I prefer not to answer that.” It is better to say that than to give me a false answer. That level of honesty is much more helpful than—and hopefully easier for you—than giving answers that aren’t true. Does that make sense? *[Pause and confirm]*.

Many questions require us to enter a number. Please understand that I will ask for a number, even if you have given me an answer. For instance, if you answer, “every day,” I may ask, “how many times does that represent?” Please give me your best estimate. Does that make sense? *[Pause and confirm]*

Also, for some of the medications, we are specifically focused on non-prescription use. In other words, if you were prescribed the medications and taking them based on a doctor’s orders, that does *not* count. It only counts if you are taking the medications that might have been prescribed or given to someone else, or if you obtained the medications without a prescription. Does that make sense to you...any questions? *[Pause and address issues/ideas with participant]*

Have you ever used (even once, no matter how long ago)...	How many times did you use <u>[drug name]</u> in the past 90 days?	How many times did you use <u>[drug name]</u> in the past 30 days?	How many days ago was the most recent time you used <u>[drug name]</u> ? <i>(if today, enter “0”)</i>
bSUBUSE01. Alcohol (beer, wine, liquor) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to bSUBUSE02</i>	[bSUBUSE01a_1]	[bSUBUSE01b_1]	[bSUBUSE01c_1]
bSUBUSE01.1. <i>[If bSUBUSE01=YES]</i> Had 5 or more drinks within a 2-hour period? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	[bSUBUSE01.1a_1]	[bSUBUSE01.1b_1]	[bSUBUSE01.1c_1]
bSUBUSE02. Cannabinoids: marijuana, hashish, anasha, grass, ruchnyk <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	[bSUBUSE02a_1]	[bSUBUSE02b_1]	[bSUBUSE02c_1]
bSUBUSE03. Heroin (including injected, smoked, sniffed, snorted, any other means) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	[bSUBUSE03a_1]	[bSUBUSE03b_1]	[bSUBUSE03c_1]
bSUBUSE04. Opioids such as methadone and belyi kitayets, or opioid painkillers such as tramadol, Vicodin, oxycontin, Percocet, etc. that were not prescribed to you <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	[bSUBUSE04a_1]	[bSUBUSE04b_1]	[bSUBUSE04c_1]
bSUBUSE05. Stimulants (methamphetamine, crystal meth, ice, salt, MDPB, ephedrine, amphetamines, Ritalin, kontserta, Dexedrine, adderall, diet tablets) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	[bSUBUSE05a_1]	[bSUBUSE05b_1]	[bSUBUSE05c_1]

Have you ever used (even once, no matter how long ago)...	How many times did you use <u>[drug name]</u> in the past 90 days?	How many times did you use <u>[drug name]</u> in the past 30 days?	How many days ago was the most recent time you used <u>[drug name]</u> ? (if today, enter "0")
bSUBUSE06. Cocaine (in powder or rock form; including sniffed, smoked, injected) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	[bSUBUSE06a_1]	[bSubUSE06b_1]	[bSUBUSE06c_1]
bSUBUSE07. Hallucinogens or psychedelics (LSD, PCP, mushrooms) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	[bSUBUSE07a_1]	[bSUBUSE07b_1]	[bSUBUSE07c_1]
bSUBUSE08. Inhalants (kley, aerosols, huff, poppers, etc.) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	[bSUBUSE08a_1]	[bSUBUSE08b_1]	[bSUBUSE08c_1]
bSUBUSE09. "Club drugs" such as ecstasy (MDMA), ketamine (Special K), or others <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	[bSUBUSE09a_1]	[bSUBUSE09b_1]	[bSUBUSE09c_1]
bSUBUSE20. Any other uppers, downers, tranquilizers, etc. that we haven't covered? <input type="checkbox"/> Yes [01], specify below [bSUBUSE20_sp]: <hr/> <input type="checkbox"/> No [00] → confirm, then skip to next row	[bSUBUSE20a_1]	[bSUBUSE20b_1]	[bSUBUSE20c_1]
bSUBUSE30. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below [bSUBUSE30_sp]: <hr/> <input type="checkbox"/> No [00] → skip to next page	[bSUBUSE30a_1]	[bSUBUSE30b_1]	[bSUBUSE31c_1]
bSUBUSE31. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below [bSUBUSE31_sp]: <hr/> <input type="checkbox"/> No [00] → skip to next page	[bSUBUSE31a_1]	[bSUBUSE31b_1]	[bSUBUSE31c_1]
bSUBUSE32. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below [bSUBUSE32_sp]: <hr/> <input type="checkbox"/> No [00] → skip to next page	[bSUBUSE32a_1]	[bSUBUSE32b_1]	[bSUBUSE32c_1]

bSUBUSE39_1. In the past 30 days, how many days did you NOT USE ANY of the above drugs? _____ days

Have you ever used (even once, no matter how long ago)...	a. How many times in the past 90 days?	b. How many times in the past 30 days?	c. How many days ago was the most recent time you injected drug(s)]? (if today, enter "0")
bSUBUSE40. Illicitly injected drugs? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → <i>skip to next page</i>	[bSUBUSE40a_1]	[bSUBUSE40b_1]	[bSUBUSE40c_1]
bSUBUSE40.1. [If Yes] Have you ever registered at a narcology center as an injecting drug user? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]			

[IF bSUBUSE01 = 1 (ever drank alcohol)]

bSUBUSE50. How often do you have a drink containing alcohol?

- Never [00] (confirm, then skip to the next section, [310_SexualBehaviors])
- Monthly or less [01]
- 2 to 4 times a month [02]
- 2 to 3 times a week [03]
- 4 or more times a week [04]

bSUBUSE51. How many drinks containing alcohol do you have on a typical day when you are drinking? [Note: one portion of alcohol is approximately 30mL vodka, 200mL wine or 300-500 mL beer.]

- 1 or 2 [01]
- 3 or 4 [02]
- 5 or 6 [03]
- 7, 8, or 9 [04]
- 10 or more [05]

bSUBUSE52. How often do you have six or more drinks on one occasion?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE53. How often during the last year have you found that you were not able to stop drinking once you had started?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE54. How often during the last year have you failed to do what was normally expected from you because of drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE55. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE56. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE57. How often during the last year have you had a feeling of guilt or remorse after drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

bSUBUSE58. Have you or someone else been injured as a result of your drinking?

- No [00]
- Yes, but not in the last year [01]
- Yes, during the last year [02]

bSUBUSE59. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?

- No [00]
- Yes, but not in the last year [01]
- Yes, during the last year [02]

bSUBUSE70. Have you ever seen any professional for the primary purpose of getting alcohol or drug treatment, including methadone maintenance, or getting help for an alcohol or drug problem?

- Yes [01]
- No [00]

bSUBUSE70a. *[If yes]* In the last 6 months?

- Yes [01]
- No [00]

SEXUAL BEHAVIORS

You are doing great. I appreciate your honesty.

The upcoming questions are going to be about sex. Some questions ask about all your partners, and others ask only about certain partners. In all cases, we are only talking about consensual sex. That is, we are not asking you to report about times where you or someone else was forced to have sex.

When we use the word "sex," we mean oral, anal, and vaginal. When we ask about the times you were a top, we mean a top during anal sex (insertive anal sex, you fucked, your penis was in a man's rectum). When we ask about the times you were a bottom, we mean a bottom during anal sex (receptive anal sex, getting fucked, a man's penis was in your rectum). Do you have any questions about these terms? [Answer questions and ask respondent to give brief definition/description of top and bottom; repeat until respondent gives accurate definitions]

Some questions ask about whether a condom was used. This means male condom but also includes female or anal condoms if you are familiar with those. If a condom broke or slipped off during an act, do not count that as a time a condom was used. When we ask if a condom was used, that means it stayed on and intact the entire time. Do you have any questions? [Answer questions]

bSEX000. How do you identify sexually?

- Heterosexual/straight [00]
- Homosexual/gay/lesbian/queer/down-low [01]
- Bisexual [02]
- Other [-1], specify [bSEX000_-1_TEXT]: _____

bSEX001_1. How many men have you had sex (oral or anal) with in the past year? _____ man/men

bSEX001a. [If ≥ 1] Would you consider your main partner to be this man or one of these men?

- Yes [01] → confirm, then skip to sex with main male partner {bSEX009_1}
- No [00] → skip to sex with all non-main male partners {bSEX019_1}

bSEX001b. [If 0] I just need to confirm that you have not had sex with men in the past year. You had NO oral or NO anal sex with any man in the past year.

- Yes/correct, I DID NOT have any sex with a man in the past year [01] → confirm, then skip to sex with women {bSEX050}
- Incorrect/no, I DID have sex with a man or men in the past year [00] → confirm, then go back to {bSEX001_1}

[MAIN MALE PARTNER]

These questions focus on just the man you consider to be your MAIN [MALE] PARTNER.

bSEX009_1. In the past 90 days, how many times did you have oral sex with this partner?
Please count the number of times giving or receiving. _____ times

bSEX010_1. In the past 90 days, how many times during anal sex were you the top with this partner? This would be with or without a condom, and whether or not you ejaculated. _____ times

bSEX010a. *[If bSEX010_1 = 0]* I just need to confirm that you have not had any anal sex as the top with your main [male] partner in the past 90 days, not even once.

Yes/correct [01] → confirm, then skip to bottoming with main male partner {bSEX011_1}

Incorrect/no [00] → go back to {bSEX010_1}

bSEX010b_1. *[If bSEX010_1 > 0]* How many of these times was a condom used from start to finish? _____ times

bSEX010c_1. *[If bSEX010_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the top with your main [male] partner in the last 90 days? _____ times

bSEX010d_1. *[If bSEX010_1 > 0]* How many of these times was your main [male] partner drunk, buzzed or high within 2 hours before or during sex when you were the top in the last 90 days? _____ times

bSEX011_1. In the past 90 days, how many times were you the bottom with this partner? This would be with or without a condom, and whether or not he ejaculated. _____ times

bSEX011a. *[If bSEX011_1 = 0]* I just need to confirm that you have not had any anal sex as the bottom with your main [male] partner in the past 90 days, not even once.

Yes/correct [01] → confirm, then skip to last time with main male partner {bSEX012}

Incorrect/no [00] → go back to {bSEX011_1}

bSEX011b_1. *[If bSEX011_1 > 0]* How many of these times was a condom used from start to finish? _____ times

bSEX011c_1. *[If bSEX011_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the bottom with your main [male] partner in the last 90 days? _____ times

bSEX011d_1. *[If bSEX011_1 > 0]* How many of these times was your main [male] partner drunk, buzzed or high within 2 hours before or during sex when you were the bottom in the last 90 days? _____ times

bSEX012. The last time you had anal sex with this partner, you were the

Top [00]

Bottom [01]

Both [02]

Never had anal sex with this partner [-2] → confirm, then skip to {bSEX019_1} or {bSEX050_1}

bSEX013. The last time you had anal sex with this partner, was a condom used [from start to finish without slipping or breaking]?

Yes [01]

No [00]

bSEX014. The last time you had anal sex with this partner, were you drunk, buzzed, or high within 2 hours before or during sex?

Yes [01]

No [00]

bSEX015. The last time you had anal sex with this partner, was your partner drunk, buzzed, or high within 2 hours before or during sex?

Yes [01]

No [00]

[ALL NON-MAIN MALE PARTNERS]

ASK IF {bSEX001a} = No [00].

These questions focus on any and all male sexual partner you DO NOT consider to be your main partner.

bSEX019_1. In the past 90 days, how many times did you have oral sex with men [other than a man you consider to be your main partner]? Please count the number of times giving or receiving. _____ times

bSEX020_1. In the past 90 days, how many times were you the top with any of these partners? This would be with or without a condom, and whether or not you ejaculated. _____ times

bSEX020a. [If bSEX020_1 = 0] I just need to confirm that you have not had any anal sex as the top with any other men, not even once.

- Yes/correct [01] → confirm, then skip to bottoming with other male partners {bSEX021_1}
- Incorrect/no [00] → go back to {bSEX020_1}

bSEX020b_1. [If bSEX020_1 > 0] How many of these times was a condom used from start to finish? _____ times

bSEX020c_1. [If bSEX020_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the top with one of these partners in the last 90 days? _____ times

bSEX020d_1. [If bSEX020_1 > 0] How many of these times was your partner drunk, buzzed or high within 2 hours before or during sex when you were the top in the last 90 days? _____ times

bSEX021_1. In the past 90 days, how many times were you the bottom with any of these partners? This would be with or without a condom, and whether or not he ejaculated. _____ times

bSEX021a. [If bSEX021_1 = 0] I just need to confirm that you have not had any anal sex as the bottom with any other [male] partners in the past 90 days, not even once.

- Yes/correct [01] → confirm, then skip to last time with other male partner {bSEX022}
- Incorrect/no [00] → go back to {bSEX021_1}

bSEX021b_1. [If bSEX021_1 > 0] How many of these times was a condom used from start to finish? _____ times

bSEX021c_1. [If bSEX021_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the bottom with one of these partners in the last 90 days? _____ times

bSEX021d_1. [If bSEX021_1 > 0] How many of these times was your partner drunk, buzzed or high within 2 hours before or during sex when you were the bottom in the last 90 days? _____ times

bSEX022. The last time you had anal sex with one of these men, you were the

- Top [00]
- Bottom [01]
- Both [02]
- Never had anal sex with this partner [-2] → confirm, then skip to {bSEX050_1}

bSEX023. The last time you had anal sex with one of these men, was a condom used [from start to finish without slipping or breaking]?

- Yes [01]
- No [00]

bSEX024. The last time you had anal sex with one of these men, were you drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

bSEX025. The last time you had anal sex with one of these men, was he drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

[FEMALE PARTNERS]

bSEX050_1. In the past 90 days, how many times have you had vaginal or anal intercourse *with a woman*? _____ times
This could be with or without a condom and with or without ejaculation.

bSEX050a. *[If bSEX050_1 = 0]* I just need to confirm that you have not had any vaginal or anal sex with any women, not even once.

- Yes/correct [01] → confirm, skip to question {bSEX051}
- Incorrect/no [00] → go back to {bSEX050_1}

bSEX050b_1. *[If bSEX050_1 > 0]* In the past 90 days, how many times have you had vaginal sex with a women? _____ times

bSEX050b0_1. *[If bSEX050b_1 > 0]* How many of these times was a condom used from start to finish? _____ times

bSEX050b1_1. *[If bSEX050b_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during vaginal sex with women in the last 90 days? _____ times

bSEX050b2_1. *[If bSEX050b_1 > 0]* How many of these times was your female partner drunk, buzzed or high within 2 hours before or during vaginal sex in the last 90 days? _____ times

bSEX050c_1. *[If bSEX050_1 > 0]* In the past 90 days, how many times have you had anal sex with a women? _____ times

bSEX050c0_1. *[If bSEX050c_1 > 0]* How many of these times was a condom used from start to finish? _____ times

bSEX050c1_1. *[If bSEX050c_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during anal sex with women in the last 90 days? _____ times

bSEX050c2_1. *[If bSEX050c_1 > 0]* How many of these times was your female partner drunk, buzzed or high within 2 hours before or during anal sex in the last 90 days? _____ times

bSEX051. The last time you had vaginal or anal sex with a woman, was a condom used [from start to finish without slipping or breaking]?

- Yes [01]
- No [00]
- Never had vaginal or anal sex with a woman [-2] → confirm, then skip to (bSEX90)

bSEX052. The last time you had vaginal or anal sex with a woman, were you drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

bSEX053. The last time you had vaginal or anal sex with a woman, was she drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

bSEX90. Please list some words or phrases (as many as you know) that you use to refer to *men who have had or currently have other male sexual partners*. Please note that slang is fine, but we are not asking for derogatory names.

bMSMTERM. If I were to ask you additional questions about such men, such as “Do you know any...?” or “Do you identify as...?”, which term would you prefer me to use?

[Note: If respondent only has “negative” or derogatory terms, ask, “For the rest of this survey, I will use ‘MSM’ which stands for ‘men who have sex with men’ to refer to men who have had other men as sexual partners and enter ‘MSM’ in the response box to the right]

HIV STIGMA

[Genberg et al., 2009]

In this section, we want to ask your thoughts on people living with HIV/AIDS in your community.

Please indicate the extent to which you disagree or agree with the following statements:

bHIVSTIGMA01. Families of people living with HIV/AIDS should be ashamed.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA02. People who have HIV/AIDS are disgusting.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA03. People with HIV/AIDS should be isolated from other people.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA04. People living with HIV/AIDS deserve to be punished.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA05. People who have HIV/AIDS are cursed.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA06. It is reasonable for an employer to fire people who have HIV/AIDS.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA07. People living with HIV/AIDS in this community face rejection from their peers.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA08. People living with HIV/AIDS in this community face verbal abuse or teasing.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA09. People living with HIV/AIDS in this community face ejection from their home by their families.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA10. People living with HIV/AIDS in this community face neglect from their family.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA11. People who have HIV/AIDS should be treated the same as everyone else.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA12. People with HIV/AIDS should be allowed to fully participate in social events in this community.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bHIVSTIGMA13. A person with HIV/AIDS should be allowed to work with other people.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

SEXUAL RISK REDUCTION

Please indicate the extent to which you disagree or agree with the following statement:

bSEXRR00. I would not date a person if I know that s/he has HIV [Visser et al., 2008].

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

We are interested in ways you may have tried to reduce the risk of transmitting or getting HIV in the past 90 days.

bSEXRR01. Did you do any of the following SPECIFICALLY TO REDUCE THE RISK TRANSMITTING OR GETTING HIV? [Check all that apply]

- Did not have any sex [00]
- Did not have any sex with men [01]
- Used condoms or required partner(s) to use condoms [02]
- I only had sex with partners whose HIV status I thought was the same as mine [03]
- I only had sex with people who I thought or knew were HIV-negative [04]
- I only was the insertive partner (top) with men or people who I knew or thought could be HIV-positive [05]
- I avoided ejaculation in the anus (butt) [06]
- I did something alternative to unprotected anal intercourse (mutual masturbation, oral sex only, fisting, golden showers) [07]
- I regularly get tested for HIV from a service provider [08]
- Tested myself for HIV with an at-home HIV test kit [09]
- Tested my partner(s) with an at-home HIV test kit [10]
- I took antiretroviral medication(s) “such as PrEP/PEP if I’m negative, or to reduce my viral load if I’m positive”. [11]
- Made sure my partner took antiretroviral medication(s) and/or my partner was virally suppressed (“had an undetectable viral load”) [12]
- Other [-1], specify [bSEXRR01_-1_TEXT]: _____

bSEXRR02. If you or your sexual partner were HIV-negative, would you want to—or want a HIV-negative partner—to take anti-retroviral medications to avoid becoming infected by HIV? This has been called PrEP or Pre-Exposure Prophylaxis and involves HIV-negative people taking antiretroviral medications such as Truvada that were developed originally to treat people already infected by HIV.

- Yes [01]
- No [00]

bSEXRR03. Have you ever been prescribed an antiretroviral medication from a doctor specifically to treat or prevent becoming infected with HIV?

- Yes [01]
- No [00]

bSEXRR03a. Please tell me who or where you were prescribed such medication(s)?

[Note: We are interested in organization/agency/role rather than a specific individual. If the respondent gives a name, ask the respondent where the person work or what role the person is, e.g., AIDS Center]

HIV CARE CONTINUUM

bHIVCC01. Have you ever been tested for HIV **OTHER THAN AS PART OF THIS STUDY?**

- Yes [01]
- No [00]

bHIVCC01a_1/2/3. [If bHIVCC01 = Yes] How long ago was your most recent HIV test (outside of this study)?
__ Years / __ Months / __ Days Ago

bHIVCC01b. [If bHIVCC01 = Yes] Where was your most recent HIV test (outside of this study)?

- City/Regional AIDS Center [00]
- Trust point / poly-clinic [01]
- Private clinic [02]
- Personal/private home [03]
- Outside of Kazakhstan [04]
- Other [-1], specify [bHIVCC01b_-1_TEXT]: _____

bHIVCC01b1. [If bHIVCC01b = City/Regional AIDS Center] At your most recent HIV test at a City/Regional AIDS Center, which of the following categories of at-risk population did you identify yourself as?

- Sex workers / Code 105 [00]
- Injection or intravenous drug users / Code 102 [01]
- People in prison / Code 112 [02]
- Men who have sex with men / Code 103 [03]
- People living with HIV / Code 113 [04]
- Pregnant women / Code 109 [05]
- Youth / Code N/A [06]
- Other [-1], specify [bHIVCC01b1_-1_TEXT]: _____

bHIVCC01c. What was the result of your most recent HIV test?

- Negative [00]
- Positive [01]
- Indeterminate [02]
- Did not receive the result [03]

bHIVCC02. What would you say is your HIV status?

- HIV-Negative [00] → skip to {bHIVCC60}
- HIV-Positive [01]
- Unknown [02]

SURVEY FLOW DIRECTIVES

If HIV status is negative [{bHIVCC02} = 00], skip to {bHIVCC60}.

If HIV status is positive [{bHIVCC02} = 01], answer {bHIVCC03}, then skip to {bHIVCC10}.

If HIV status is unknown [{bHIVCC02} = 02], answer {bHIVCC03}, then skip to {bHIVCC60}.

bHIVCC03. Do you think you are (legally) eligible to receive services from the AIDS Center in [bSOCDEM02 – Current City]?

- Yes [00]
- No [01]
- "I don't know" [-6]

[HIV-POSITIVE] – [ONLY ASK IF HIV-POSITIVE]

bHIVCC10. When were you first told that you had HIV? (select one)

- Less than 6 months ago [00]
- Less than 1 year ago [01]
- 1-4 years ago [02]
- 5-9 years ago [03]
- More than 10 years ago [04]
- I do not know [-06]

bHIVCC11. Where were you told that you have HIV? (Check all that apply.)

- AIDS Center [00]
- Polyclinic [01]
- In a syringe exchange program/trust point [02]
- In jail/prison [03]
- In a community based program (community VCT program, mobile unit, health fair, etc.) [04]
- Private doctor [05]
- As part of a research study [06]
- Other [-1], specify [bHIVCC11_-1_TEXT]: _____

bHIVCC12_1. How long has it been since your last visit to the AIDS Center or another HIV treatment provider? (Enter “-1” if never)

_____ months

bHIVCC13. Have you registered at the AIDS Center?

- Yes [01]
- No [00]

bHIVCC13a. [If YES] Which city are you currently/most recently registered at the AIDS Center?

- Almaty [00]
- Astana [01]
- Shymkent [02]
- Other [-1], specify [bHIVCC13a_-1_TEXT]: _____

bHIVCC13b. [If No] what are the reasons you haven't registered? (check all that apply)

- Concerns about confidentiality—don't trust provider maintaining confidentiality [00]
- Fear of being stigmatized and/or discriminated against by staff [01]
- Time or money it takes to travel to provider [02]
- Safety of the neighborhood where services are available [03]
- Time an appointment/visit takes [04]
- Cost/charges of services [05]
- Provider's sensitivity, awareness and knowledge of your culture [06]
- Provider's sensitivity, awareness and knowledge of your sexuality [07]
- Concerns about the side effects of medication [08]
- Concerns that friends, coworkers, or family members will find out that you are HIV positive [09]
- Concerns that friends, coworkers, or family members will find out about your sexuality [10]
- Don't like going to see doctors [11]
- Fear of being rejected because of criminal justice history [12]
- Other [-1], specify [bHIVCC13b_-1_TEXT]: _____

bHIVCC14. Have you ever received a CD4 test?

- Yes [01]
- No [00]
- Not sure/don't know [-06]

bHIVCC14a. [If Yes] When was your most recent CD4 test?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- More than one year ago [02]

bHIVCC14a0. [If >1 year ago] What year was your most recent CD4 test? _____ (4 digit year)

bHIVCC14b. [If Yes] Did you receive the results of your most recent test?

- Yes [01]
- No [00]

bHIVCC14c. [If Yes] Do you know the results of your most recent CD4 count as told by your health care professional?

- Yes [01]
- No [00]

bHIVCC14c0_1. [If Yes] What is your CD4 count? _____ cells/ml

bHIVCC15. Have you ever received a Viral Load test from the AIDS Center?

- Yes [01]
- No [00]
- Not sure/don't know [-06]

bHIVCC15a. [If Yes] When was your most recent Viral Load test?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- More than one year ago [02]

bHIVCC15a0. [If >1 year ago] What year was your most recent Viral Load test? _____ (4 digit year)

bHIVCC15b. [If Yes] Did you receive the results of your most recent test?

- Yes [01]
- No [00]

bHIVCC15c. [If Yes] Do you know the results of your most recent Viral Load as told by your health care professional?

- Yes [01]
- No [00]

bHIVCC15c0_1. [If Yes] What is your Viral Load?
(enter "0" if respondent reports "undetectable") _____ copies/ml

[ART] – [ONLY ASK IF HIV-POSITIVE]

bHIVCC20. Have you ever taken medication to treat HIV?

- Yes, I'm taking it now [02]
- Yes, I took it in the past but stopped [01]
- No [00]
- Not sure/don't know [-06]

bHIVCC20a. [If bHIVCC20 = 2 or 1] When did you *first* start treatment for HIV?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- 1-4 years ago [02]
- 5 or more years ago [03]
- Not sure/don't know [-06]

bHIVCC20b. [If bHIVCC20 = 2 or 1] When did you *most recently* start treatment for HIV??

- Since starting treatment I've taken it continuously [-01]
- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- 1-4 years ago [02]
- 5 or more years ago [03]
- Not sure/don't know [-06]

bHIVCC21. What barriers or challenges have you experienced in getting into or staying in HIV care and treatment? (Check all that apply.)

- Concerns about confidentiality—don't trust provider maintaining confidentiality [00]
- Fear of being stigmatized and/or discriminated against by staff [01]
- Time or money it takes to travel to provider [02]
- Safety of the neighborhood where services are available [03]
- Time an appointment/visit takes [04]
- Cost/charges of services [05]
- Provider's sensitivity, awareness and knowledge of your culture [06]
- Provider's sensitivity, awareness and knowledge of your sexuality [07]
- Concerns about the side effects of medication [08]
- Concerns that friends, coworkers, or family members will find out that you are HIV positive [09]
- Concerns that friends, coworkers, or family members will find out about your sexuality [10]
- Don't like going to see doctors [11]
- Fear of being rejected because of criminal justice history [12]
- Other [-1], specify [bHIVCC21_-1_TEXT]: _____

bHIVCC22. Have you ever had AIDS Center medical specialists deliver ARV medication to your home?

- Yes, in the past 6 months [02]
- Yes, but more than 6 months ago [01]
- No, never [00]

bHIVCC22a. [If bHIVCC22 = 2] In the past 6 months, how often have AIDS Center medical specialists delivered ARV medication to you?

- Every day or almost every day [03]
- Every week [02]
- Every month [01]
- Less than once per month [00]
- Other [-1], specify [bHIVCC22a_-1_TEXT]: _____

bHIVCC23. What other services besides ARV medications are provided by these medical specialists from the AIDS Center at your home? (Check all that apply)

- Inviting for testing at the AIDS Center (CD4, viral load) [00]
- Consultations on HIV medications [01]
- Referrals to other medical services (drug treatment, TB services) [02]
- Referrals to other social services [03]
- Other [-1], specify [bHIVCC23_-1_TEXT]: _____

[MEDICATION ADHERENCE] – [ONLY ASK IF HIV-POSITIVE]

bHIVCC30. Do you know the name of the ART medication you are currently on, or one that you have been on in the past 6 months?

Yes [01]

No [00]

bHIVCC30a. [If Yes] Please list the HIV medications (ARV therapy) that you have taken in the past 6 months. Please write the name as you know it. You may list up to 4 medications.

Medication 1 [bHIVCC30a_1_TEXT]: _____

Medication 2 [bHIVCC30a_2_TEXT]: _____

Medication 3 [bHIVCC30a_3_TEXT]: _____

Medication 4 [bHIVCC30a_4_TEXT]: _____

bHIVCC31_1. Roughly, how many pills per day are you prescribed to take? _____ pills

bHIVCC32_1. Number of pills missed yesterday? _____ pills

bHIVCC33_1. Total number of pills missed in past 2 days (“total” means including yesterday)? _____ pills

bHIVCC34_1. Total number of pills missed in past 3 days? _____ pills

bHIVCC35_1. Total number of pills missed in past 2 weeks? _____ pills

bHIVCC36_1. Over the last 30 days, what is your best guess as to the percentage of pills did you took as prescribed (at the right time)?
[0 means you have taken no medicine, 50 means you have taken half of your medicine at the right day and time, and 100% means you have taken every single dose of medicine at the right day and time.] _____ % (0-100)

[HIV MEDICATION KNOWLEDGE] – [ONLY ASK IF HIV-POSITIVE]

The following questions are to evaluate your knowledge about medication for HIV/AIDS. Please choose “true” or “false”. If you don’t know the answer, then please select “I don’t know”

bHIVCC40. Antiretroviral medication aims to reduce or suppress the activity of the HIV virus in the body.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC41. Taking antiretroviral medications on time helps keep the right amount of medicine in one’s system.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC42. Resistance can be caused when a drug is not taken on schedule or when doses are reduced or missed.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC43. Resistance to a particular drug means that the drug is not working because the virus is no longer susceptible to it.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC44. If the HIV virus is resistant to one medication, then it may be resistant to others.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC45. CD4 counts are used to measure immune system functioning.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC46. Viral load measures the amount of HIV virus in the blood.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC47. If an HIV+ person has an “undetectable” amount or “less than detectable level” of virus, it means that person is no longer able to infect someone else.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC48. Sometimes lab results say that a person’s viral load is “undetectable” or “less than detectable level.” This means that there is no virus left.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC49. An elevated viral load over time will lead to a decline in CD4 count.

- True [01]
- False [00]
- I don’t know [-06]

bHIVCC50. Taking antiretroviral therapy exactly as prescribed is likely to reduce viral load.

- True [01]
- False [00]
- I don't know [-06]

bHIVCC51. Taking antiretroviral therapy exactly as prescribed is likely to increase CD4 count.

- True [01]
- False [00]
- I don't know [-06]

[PrEP WILLINGNESS] – [ONLY ASK IF HIV-NEGATIVE OR HIV-STATUS UNKNOWN]

The following questions assess how you would obtain and administer PrEP. Once again, PrEP or Pre-Exposure Prophylaxis involves HIV-negative people taking antiretroviral medications such as Truvada that were developed originally to treat people already infected by HIV.

PrEP can be administered in several different ways: (1) one pill taken orally every day; (2) pills taken orally only around specific risk events; (3) injection that is long-lasting and administered every 4-8 weeks.

bHIVCC60. How likely would you take *one pill orally every day* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

bHIVCC61. How likely would you take *pills taken orally only around specific risk events* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

bHIVCC62. How likely would you take *injection that is long-lasting and administered every 4-8 weeks* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

bHIVCC63. Among the current options, what is your ideal/preferred way of administering PrEP?

- One pill taken orally every day [00]
- Pills taken orally only around specific risk events [01]
- Injection that is long-lasting and administered every 4-8 weeks [02]
- Other [-1], specify [bHIVCC63_-1_TEXT]: _____

bHIVCC64. If PrEP is not free, how much would you be willing to pay for PrEP per month?

_____ tenge per month

bHIVCC65. If the government pays for the half of the price, would you pay for the other/remaining half?

- Yes [0+]
- No [00]

PEER EDUCATION/OUTREACH ACTIVITIES [AND INTENTIONS]

In this section, we're going to ask about possible ways and times you may have engaged other *{bMSMTERM}* regarding HIV testing and treatment. We might be asking about speaking personally to people, using mobile device-specific apps and services (e.g., Grindr, Mamba, WhatsApp), or the internet, things that run in a web browser on a computer (e.g., websites, YouTube, Facebook).

We do understand that some services cross these lines (e.g., you can access them on the web or via a mobile device app; instant message/texting is personal communication but also mobile device specific). We'll leave it up to you which category those fall in, but please only count them once. Also, I'm happy to quickly change a prior answer if you change your mind when hearing a subsequent question.

bPEERACT00_1. In the past 6 months, how many times have you engaged or spoken with *{bMSMTERM}* in person (e.g., face-to-face, telephone) about HIV testing and/or treatment? _____ times

bPEERACT00a. *[If bPEERACT00_1 = 0]* I just need to confirm that you did not speak or talk in person or by phone with any *{bMSMTERM}* about HIV testing and/or treatment, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *{bMSMTERM}* [01] → confirm, then skip to bPEERACT01_1

Incorrect/no, I DID engage personally with *bMSMTERM}* [00] → confirm, GO BACK TO bPEERACT00_1

bPEERACT00b_1. *[If bPEERACT00_1 ≥ 1]* What is your estimate on the number of *{bMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{bMSMTERM}*

bPEERACT01_1. In the past 6 months, how many times have you used an app or service specifically for mobile devices to engage other *{bMSMTERM}* about HIV testing and/or treatment for? _____ times

bPEERACT01a. *[If bPEERACT01_1 = 0]* I just need to confirm that you did not engage or try to engage with any *{bMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *bMSMTERM}* [01] → confirm, then skip to bPEERACT02_1

Incorrect/no, I DID engage personally with *bMSMTERM}* [00] → confirm, GO BACK TO bPEERACT01_1

bPEERACT01b_1. *[If bPEERACT01_1 ≥ 1]* What is your estimate on the number of *{bMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{bMSMTERM}*

bPEERACT02_1. In the past 6 months, how many times have you posted something or interacted on the web to engage other *{bMSMTERM}* about HIV testing and/or treatment for? _____ times

bPEERACT02a. *[If bPEERACT02_1 = 0]* I just need to confirm that you did not engage or try to engage with any *{bMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *bMSMTERM}* [01] → confirm, then skip to bPEERACT03_1

Incorrect/no, I DID engage personally with *bMSMTERM}* [00] → confirm, GO BACK TO bPEERACT02_1

bPEERACT02b_1. *[If bPEERACT02_1 ≥ 1]* What is your estimate on the number of *{bMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{bMSMTERM}*

bPEERACT03_1. In the past 6 months, how many times have you done something to try to engage other *{bMSMTERM}* in HIV testing and treatment? _____ times

bPEERACT03a. *[If bPEERACT03_1 = 0]* I just need to confirm that you did not engage or try to engage with any *{bMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *bMSMTERM}* [01] → confirm, then skip to bPEERACT10

Incorrect/no, I DID engage personally with *bMSMTERM}* [00] → confirm, GO BACK TO bPEERACT03_1

bPEERACT03_sp. *[If bPEERACT03_1 ≥ 1]* What were these ways?

bPEERACT03b_1. *[If bPEERACT03_1 ≥ 1]* What is your estimate on the number of *{bMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{bMSMTERM}*

How much do you disagree or agree with the following statements

bPEERACT10. In the next 6 months, I want to reach out to other {bMSMTERM} in order to encourage or help him/them to get tested or treatment for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

bPEERACT11. Sometime in the next 6 months, I am likely to reach out to others and/or post something in order to encourage and help {bMSMTERM} to get tested or treatment for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

PEER EDUCATOR/OUTREACH OUTCOME EXPECTANCIES

[Latkin et al, 2003]

Please indicate the extent to which you disagree or agree with the following statements:

bPEEROE01. It is important to me to help {bMSMTERM} find ways to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEEROE02. {bMSMTERM} must get tested and treated for HIV, even if it means they cannot keep their sexuality private while doing so

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEEROE03. I am proud to do outreach that will help other {bMSMTERM} to get tested and/or treated for HIV.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEEROE04. I've gained respect by doing outreach

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEEROE05. I am willing to take the time and effort to help {bMSMTERM} reach other {bMSMTERM} to spread the word about how to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

PEER EDUCATOR/OUTREACH SELF EFFICACY

[Latkin et al, 2003]

Please indicate the extent to which you disagree or agree with the following statements:

bPEERSE01. I feel comfortable talking with {bMSMTERM} about ways to get tested for HIV testing and receive HIV medications

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE02. I can share ways how {bMSMTERM} can get such services respectfully and safely (for example, specific friendly doctors or nurses, or what {bMSMTERM} should or should not say in certain circumstance)

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE03. I can successfully get other {bMSMTERM} to get tested and/or treated for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE04. I am able to protect the privacy and safety of {bMSMTERM} while I am doing outreach

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE05. It is impossible to do outreach to {bMSMTERM} about HIV testing and treatment without threatening my safety and/or wellbeing

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE06. I am able to motivate other {bMSMTERM} to get HIV testing or treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

bPEERSE07. I can help {bMSMTERM} reach other {bMSMTERM} to spread the word about how to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

SOCIAL NETWORK METHODS SELF EFFICACY

[El Ouiridi et al., 2015]

In this section, we want to ask how confident you feel about using social network methods (e.g., social media) to accomplish certain activities.

bSOCNETSE01. I can be very effective using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE02. I can have a positive impact on the lives of other {bMSMTERM} through social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE03. I can share on social media with other {bMSMTERM} information about how they can get HIV testing and/or treatment in a safe manner.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE04. I can find important and interesting information by reading other people's content on social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE05. I can use social media as an effective way of connecting with other {bMSMTERM}.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE06. I can communicate very effectively using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE10. I can effectively engage other {bMSMTERM} in HIV prevention and/or treatment using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

bSOCNETSE11. I am able to strengthen and grow a community of {bMSMTERM} who support each other through social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

PEER EDUCATOR/OUTREACH SOCIAL SUPPORT

[Latkin et al, 2003]

bPEERSS01_0. How many friends or associates do you have that you can talk to about HIV, either online or in real life?

_____ people

bPEERSS01a_0. How many of these are *{bMSMTERM}*?

_____ people

bPEERSS02. How many of your friends and associates are or would encourage you to engage in activities related to helping *{bMSMTERM}* being more willing and able to get HIV testing and treatment?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

bPEERSS03. If your friends and associates knew you were engaging in activities related to helping *{bMSMTERM}*, how many would have a negative reaction to this?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

bPEERSS04. How many of your family members are or would encourage you to engage in activities related to helping *{bMSMTERM}* being more willing and able to get HIV testing and treatment?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

bPEERSS05. If your family members knew you were engaging in activities related to helping *{bMSMTERM}*, how many would have a negative reaction to this?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

bPEERSS10. What proportion of your family members know about your sexuality, specifically that you have had sex with men?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

bPEERSS11. What proportion of your family members are or do you think would be supportive if they knew you were [a] {bMSMTERM}?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

bPEERSS12. Except for your male sexual partners, what proportion of your friends and associates know about your sexuality, specifically that you have had sex with men?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

bPEERSS13. Except for your male sexual partners, what proportion of your friends and associates are or do you think would be supportive if they knew you were [a] {bMSMTERM}?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

bPEERSS20_1. What percentage of your friends and associates do you think are {bMSMTERM}?

[0 would be none and 100 would correspond to all. It is fine to give your best guess or approximation since you might not know definitively for everyone.] _____ percent

INTERNALIZED HOMOPHOBIA SCALE (IHP)

[Herek et al., 1998]

Please indicate the extent to which you disagree or agree with the following statements:

bINTHOM01. I often feel it best to avoid personal or social involvement with other {bMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM02. I have tried to stop being attracted to men in general.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM03. If someone offered me the chance to be completely heterosexual, I would accept the chance.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM04. I wish I weren't {bMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM05. I feel alienated from myself because of being {bMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM06. I wish that I could develop more erotic feelings about women.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM07. I feel that being {bMSMTERM} is a personal shortcoming for me.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM08. I would like to get professional help in order to change my sexual orientation from {bMSMTERM} to straight.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

bINTHOM09. I have tried to become more sexually attracted to women.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

EXPERIENCES OF DISCRIMINATION

[Herek & Berrill, 1990]

In this section, we want to know how you have been treated in different environment and settings. We want to know whether you have experienced discrimination based on your sexual orientation and/or gender identity/expression.

Please answer all questions, even if you have not experienced the incident.

[Victimization]

Have you ever, in your lifetime...	How often have you, in the past 6 months...
bEXPDIS01. Had verbal insults directed at you? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS01a. Had verbal insults directed at you? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS02. Been threatened with physical violence? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS02a. Been threatened with physical violence? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS03. Had your personal property damaged or destroyed? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS03a. Had your personal property damaged or destroyed? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS04. Had objects thrown at you? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS04a. Had objects thrown at you? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS05. Been chased or followed? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS05a. Been chased or followed? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS06. Been spat upon? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS06a. Been spat upon? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS07. Been punched, hit, kicked, or beaten? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS07a. Been punched, hit, kicked, or beaten? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS08. Been assaulted or wounded with a weapon? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS08a. Been assaulted or wounded with a weapon? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS09. Been sexually harassed (without assault)? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS09a. Been sexually harassed (without assault)? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS10. Been sexually assaulted? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS10a. Been sexually assaulted? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
bEXPDIS11. Been harassed by police (without assault)? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	bEXPDIS11a. Been harassed by police (without assault)? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]

<p>bEXPDIS12. Been beaten or assaulted by police?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS12a. Been beaten or assaulted by police?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS20. Been outed against your will?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS20a. Been outed against your will?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS21. Been threatened to be outed?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS21a. Been threatened to be outed?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS22. Been insulted on social media?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS22a. Been insulted on social media?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS23. Been threatened with physical violence towards you or your property on social media?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS23a. Been threatened with physical violence towards you or your property on social media?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>

[Discrimination]

Have you ever, in your lifetime...	How often have you, in the past 6 months...
<p>bEXPDIS50. Experienced work-related discrimination (e.g., being denied employment or fired from a job, being denied a promotion or salary increase, receiving an unfair work evaluation)?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS50a. Experienced work-related discrimination (e.g., being denied employment or fired from a job, being denied a promotion or salary increase, receiving an unfair work evaluation)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS51. Been evicted or denied housing?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS51a. Been evicted or denied housing?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS52. Experienced discrimination from a service provider in a HIV-related care setting (e.g., AIDS Center)?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS52a. Experienced discrimination from a service provider in a HIV-related care setting (e.g., AIDS Center)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS53. Experienced discrimination from a service provider in a general healthcare setting (e.g., hospitals, clinics, pharmacies)?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS53a. Experienced discrimination from a service provider in a general healthcare setting (e.g., hospitals, clinics, pharmacies)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS54. Experienced discrimination in commercial establishments (e.g., bars, restaurants, retail stores, supermarkets, hotels)?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS54a. Experienced discrimination in commercial establishments (e.g., bars, restaurants, retail stores, supermarkets, hotels)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS55. Experienced discrimination from the police, lawyers, or in the courts?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS55a. Experienced discrimination from the police, lawyers, or in the courts?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS56. Experienced discrimination from a member/members of your family of origin (e.g., being rejected, isolated, ignored and/or disowned, being kicked out of the house, being left out of wills and other family traditions/activities, being made to feel inferior to other family members)?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>bEXPDIS56a. Experienced discrimination from a member/members of your family of origin (e.g., being rejected, isolated, ignored and/or disowned, being kicked out of the house, being left out of wills and other family traditions/activities, being made to feel inferior to other family members)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>bEXPDIS99. Any other experiences of discrimination?</p> <p><input type="checkbox"/> Yes [01], specify below [bEXPDIS99_sp]:</p> <p>_____</p> <p><input type="checkbox"/> No [00] → <i>skip to next page</i></p>	<p>bEXPDIS99a. Any other experiences of discrimination?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>

CONNECTEDNESS TO SEXUAL/GENDER MINORITY COMMUNITY/COMMUNITIES

[Frost & Meyer, 2012]

We want to ask you questions about sexual/gender minority communities in your city of residence, and the degree to which you feel connected to them. By sexual/gender minority community, we don't mean any particular neighborhood or social group, but in general, groups of gay men, bisexual men and women, lesbians, transgender individuals, *{bMSMTERM}*, etc.

Please indicate the extent to which you disagree or agree with the following statements:

BSGMCOMM01. I feel I'm a part of a sexual/gender minority community in *{bSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM02. Participating in a sexual/gender minority community in *{bSOCDEM02}* is a positive thing for me.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM03. I feel a bond with a sexual/gender minority community.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM04. I am proud of sexual/gender minority communities in *{bSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM05. It is important for me to be politically active in a sexual/gender minority community in *{bSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM06. If we work together, lesbian, gay, bisexual and transgender people can solve problems in sexual/gender minority communities in *{bSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM07. I really feel that any problems faced by sexual/gender minority communities in *{bSOCDEM02}* are also my own problems.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

BSGMCOMM08. I feel a bond with other *{bMSMTERM}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

MOTIVATION FOR STUDY PARTICIPATION

bSOCIMP10. What motivated or motivates you to participate in the UNI study?

bSOCIMP11. What motivates or would motivate you to participate in activities designed to support you in reaching out to other *{bMSMSTERM}* in Kazakhstan about improving their health?

END MATTER

bEND90. If we carry out other studies in the future, may we try to contact you to participate? We will never reveal anything about this study nor any responses/information you provided earlier?

Yes [01]

No [00]

bEND90a. *[If bEND90=Yes]* Do you have any special instructions for us or any information you would like us to keep in mind (e.g., things you don't want us to say, types of studies you don't want to participate in, etc.)?

Well that's it and we did it! Once again, thank you for your valuable time and information!

bENDNOTES. Notes *[Indicate anything noteworthy about interview, respondent, clarification(s), etc.]*

bENDPID. Participant ID Re-Entry: _____

Appendix B



Intervention Training Workshop Conclusion Survey: **REMOTE WORKSHOP** (06-10 October 2020)

elxTraining01. What did you like the most about the weeklong training?

elxTraining02. What would you recommend to change or improve for this weeklong training?

elxTraining03. Overall, how satisfied are you with the weeklong training?

[1 – “Extremely dissatisfied. It had no value.”; 10 – “Extremely satisfied. Nothing could improve it.”]

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

elxTraining04. Is there anything that you would like to let us know?

Appendix C



Behavioral Survey Instrument: FOLLOW-UP VISIT

Version: 1.5.0

Participant ID#: [fPID]	(Regex: 13-digit alpha-numeric code, e.g., ##AAAA#####)
Follow-Up #: [fPeriod]	<input type="checkbox"/> 06 [01] <input type="checkbox"/> 12 [02] <input type="checkbox"/> 18 [03] <input type="checkbox"/> 24 [04] <input type="checkbox"/> 30 [05] <input type="checkbox"/> 36 [06] <input type="checkbox"/> Other [-1], specify [fPeriod_1_TEXT]: _____
Is this the participant's final Follow-Up? [fFinal]	<input type="checkbox"/> No [00] <input type="checkbox"/> Yes [01]
Most Recent Prior Assessment/Interview Date (Please enter the date of this participant's most recent prior interview.) [fDateInterview_Prior]	_____ / _____ / _____ YYYY [fDateInterview_Prior_1] MM [fDateInterview_Prior_2] DD [fDateInterview_Prior_3]
Interviewer's Initials: [fInterviewerID]	
Region (Please select the city/region where the Follow-Up Assessment is taking place.): [fRegion] *Note: This can be different from where Baseline Assessment took place.	<input type="checkbox"/> Almaty [0] <input type="checkbox"/> Other [-1], specify below: <input type="checkbox"/> Astana [1] _____ <input type="checkbox"/> Shymkent [2] [fRegion_-1_TEXT]
Date Interview Initiated: [fDateInterview]	_____ / _____ / _____ YYYY [fDateInterview_1] MM [fDateInterview_2] DD [fDateInterview_3]
Start Time: [fTimeStart]	_____ : _____ (24 hour clock) hh [fTimeStart_1] mm [fTimeStart_2]
End Time: [fTimeEnd]	_____ : _____ (24 hour clock) hh [fTimeEnd_1] mm [fTimeEnd_2]

INTRODUCTION

We would like to thank you once again for agreeing to invest your time and energy to help us with our study. As you might remember from previous interviews you completed with us, I have to read every question in its entirety and present all answer choices in many instances. I will do my best to be fast, and so you can also keep things moving, I will need you to pick a response from the set and type of answer choices we present. It is possible that it might be a bit tough to pick one answer. The best thing to do is to choose the answer that fits best for you. There is no right or wrong, just what is most accurate for you. Of course, feel free to ask me if something isn't clear or you need more information or explanation.

Protecting your privacy and your responses are extremely important to us. We will not share your answers with anyone, and we will keep your information confidential and secure. In fact, your name will not be on the survey. Instead, we will use a generic identification number for you.

If you hear a question and there is nothing we can do to make you feel comfortable answering, just let me know that...simply saying something like "I prefer not to answer that." It is better to say that than to give me a false answer. That level of honesty is much more helpful than—and hopefully easier for you—than giving answers that aren't true. Does that make sense? *[Pause and confirm]*.

Before we begin, do you have any remaining questions or concerns? *[Address questions/concerns and repeat until participant indicates no more questions/concerns]*

FOLLOW THROUGH WITH STUDY

fINIT00. To the best of your recollection, how long ago was your most recent interview with us?

By interview, we mean a private interview where you answered a bunch of survey questions just like we are going to today. (Note: Interview means an assessment session, not an intervention session.)

__ Months Ago

fINIT02. Since your last interview, where [else], if any, did you hear about this UNI study?

- Community-based organization or agency or NGO. [00], specify [fINIT02_1_TEXT]: _____
- Internet/social network (e.g., Facebook, VK, Grindr, Hornet) [01], specify [fINIT02_2_TEXT]: _____
- Newspaper or magazine [02], specify [fINIT02_3_TEXT]: _____
- Community event (e.g., activist meeting, health fairs) [03]
- Study flier/advertisement or palm card (Note: physical, if electronic, check and enter for internet/social media) [04]
- ~~Study staff or contact with study staff [05]~~
- From someone who is/was a study participant [06]
- From someone who was not a study participant (or unsure if that person was in the study) [07]
- Other [-1], specify [fINIT02_-1_TEXT]: _____

fINIT10. Since your last interview, did you attend any other UNI activities (e.g., programs, social events, or anything else run by UNI, including stopping by on your own)?

- Yes [01]
- No [00]

SOCIDEMOGRAPHICS

fSOCDEM01. In what year were you born?

____ _ [4 digit year]

fSOCDEM02. Which city do you currently reside in?

- Almaty [0]
- Astana [1]
- Shymkent [2]
- Other [-1], specify [fSOCDEM02_-1_TEXT]: _____

fSOCDEM03. Are you a citizen of Kazakhstan?

- Yes [01]
- No [00]

fSOCDEM10. What is your current legal marital status?

- Single (never married) [00]
- Married [01]
- No longer with a spouse (e.g., divorced, widowed, separated) [02]
- Other [-1], specify [fSOCDEM10_-1_TEXT]: _____

fSOCDEM21. We would like to learn about what you do -- what is your current usual employment pattern? [Select one - If there are equal times for more than one category, select one that best represents the more current situation]

- Working: full-time [00]
- Working: part time [01]
- Retired [02]
- Unemployed, looking for work [03]
- Unemployed, not looking for work [04]
- Unemployed, temporary (sick leave, maternity leave, etc.) [05]
- Disabled, permanently or temporarily [06]
- Homemaker [07]
- Student [08]
- Other [-1], specify [fSOCDEM21_-1_TEXT]: _____

fSOCDEM21a. [If fSOCDEM21 = 00 or 01] Do you work on the books or off the books?

- On the books/formal employment/with a contract [00]
- Off the books/informal employment/without a contract [01]

fSOCDEM21b. [If fSOCDEM21 = 00 or 01] What is your current occupation industry and job title?

fSOCDEM22_1. What is your best estimate of your monthly income during the past six months?

[write COMPLETE amount of tenge: for example, write 10 000 tenge, not 10]

_____ KZT per month

fSOCDEM23. Which best describes your current living situation? [if more than one location, where have you spent 3 or more days a week?]

- In my home or apartment that I own [00]
- In my home or apartment that I rent [01]
- In my parents' or other family's home or apartment [02]
- In someone else's home or apartment (not family) [03]
- In an institution [04]
- On the street (park, basement, doorway, etc.) [05]
- Other [-1], specify [fSOCDEM23_-1_TEXT]: _____

fCOVID25. Do you currently live with anyone (e.g., in the same space/place) who is 65 years old or older?

- Yes [01]
- No [00]

fSOCDEM25. Have you been homeless or without a regular place to sleep in the past 6 months?

- Yes [01]
- No [00]

fSOCDEM26. Have you not had enough money to buy food in the past 6 months?

- Yes [01]
- No [00]

Next, we will ask questions about your gender identities. Gender assignment at birth refers to a “person’s biological sex assigned at birth.” Gender identity refers to “a person’s sense of self as male or female.” While most people’s gender matches their biological sex, someone may be born biologically male, yet have a female gender identity.

fSOCDEM50. What gender do you currently identify as? What is your current gender identification? Do you consider yourself to be...

- Female [00]
- Male [01]
- Other [-1], specify [fSOCDEM50_-1_TEXT]: _____

fSOCDEM51. What gender were you assigned at birth? When you were born, you were [assigned to be a]...

- Girl/Female [00]
- Boy/Male [01]
- Other [-1], specify [fSOCDEM51_-1_TEXT]: _____

fSOCDEM90_1. How old are you? _____ years old

HEALTH

fHEA01. How would you rate your general health status?

- Poor [00]
- Fair [01]
- Good [02]
- Very Good [03]
- Excellent [04]

fHEA02. How does your health in general now compare to what it was at the time of your last interview, that is {fINIT00 Response} ago?

- Much better now than {fINIT00 Response} ago [00]
- Somewhat better now than {fINIT00 Response} ago [01]
- About the same [02]
- Somewhat worse now than {fINIT00 Response} ago [03]
- Much worse now than {fINIT00 Response} ago [04]

fCOVID20. Do you have a chronic illness?

- Yes [01]
- No [00]
- Don't know [-6]

fCOVID20a. [If YES] Which one(s)? (Chronic illnesses)

fHEA10. In the past 6 months, did you seek out medical treatment?

- Yes [01]
- No [00]

fHEA10a. [If YES] What did you seek medical treatment for in the past 6 months? [Check all that apply]

- Liver disease [00]
- Heart disease [01]
- Diabetes [02]
- Cancer [03]
- Gastrointestinal disease [04]
- Urinary tract or kidney disease [05]
- High blood pressure or cholesterol [06]
- Arthritis or joint disease [07]
- Chronic pain [08]
- Asthma or respiratory problems [09]
- Proctology, colon, rectum care [10]
- Reproductive and/or gender-related health (e.g., steroids, gender confirmation/top/bottom surgery, etc.) [11]
- HIV care [12]
- Sexually transmitted infection (STI) [13]
- Tuberculosis [14]
- Mental health [15]
- COVID-19 (coronavirus) [16]
- Other [-1], specify [fHEA10a_-1_TEXT]: _____

fHEA11. In the past 6 months, have you been hospitalized for physical problems like an illness or injury?

- Yes [01]
- No [00]

fHE11a_1. [If YES] How many days were you hospitalized for physical problems like an illness or injury in the past 6 months? _____ days

fHEA12. In the past 6 months, have you received emergency services or visited an emergency room for physical problems like an illness or injury? We mean for medical services you receive for yourself, not for others?

- Yes [01]
- No [00]

fHEA12a_1. [If YES] How many time in the past 6 months? _____ times

fHEA12b. [If YES] for what did you seek medical treatment for in the past 6 months? [Check all that apply]

- Drug overdose [00]
- Alcohol poisoning [01]
- Injury [02]
- Heart attack or stroke [03]
- Other [-1], specify [fHEA12b_-1_TEXT]: _____

I am going to read you some statements about the past 6 months. Please tell me if you strongly agree, somewhat agree, are uncertain, somewhat disagree, or strongly disagree with each statement.

fHEA20. If I need medical care, I can get admitted without any trouble

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

fHEA21. It is hard for me to get medical care in an emergency

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

fHEA22. Sometimes I go without the medical care I need because it is too expensive

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

fHEA23. I have easy access to the medical specialists that I need

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

fHEA24. Places where I can get medical care are very conveniently located

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

fHEA25. I am able to get medical care whenever I need it

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly disagree [04]

Think of the reasons why you may not have gotten the medical care you needed or that was recommended for you. Please indicate “Agree” or “Disagree” for all of the following reasons for why you may not have gotten needed medical care in the past 6 months.

In the past 6 months...

fHEA30. ...I was unable to pay for medical care.

- Agree [01]
- Disagree [00]

fHEA31. ... I was not sure where to go to get medical care

- Agree [01]
- Disagree [00]

fHEA32. ... I did not have transportation to medical care

- Agree [01]
- Disagree [00]

fHEA33. ... The clinic’s hours of operation were inconvenient for me

- Agree [01]
- Disagree [00]

fHEA34. ... I was treated poorly at a clinic in the past

- Agree [01]
- Disagree [00]

fHEA35. ...I did not want to be seen at a clinic

- Agree [01]
- Disagree [00]

fHEA36. ... I did not trust doctors

- Agree [01]
- Disagree [00]

fHEA37. ...I didn’t really care about taking care of myself

- Agree [01]
- Disagree [00]

fHEA38. ...I did not have child care (anyone with whom to leave children)

- Agree [01]
- Disagree [00]
- Not applicable (e.g., I do not have children) [-2]

fHEA39. ...I was too drunk or high

- Agree [01]
- Disagree [00]

COVID RESPONSE & IMPACT

We want to understand how the coronavirus pandemic has affected you and your ability to access health care, including services related to HIV testing/treatment and substance use treatment.

fHEA50. Has COVID or the response to COVID limited your ability to get HIV testing or treatment?

- Yes [01]
- No [00]
- Not applicable (e.g., I did not need this service or treatment) [-2]

fHEA50a. [If {fHEA50} = YES] Has this happened in the last 6 months?

- Yes [01]
- No [00]

fHEA50a1. [If {fHEA50a} = YES] Please describe what happened (e.g., how the response to COVID has limited your ability to get HIV testing or treatment).

fHEA51. Has COVID or the response to COVID limited your ability to get services or treatment regarding substance use?

- Yes [01]
- No [00]
- Not applicable (e.g., I did not need this service or treatment) [-2]

fHEA51a. [If {fHEA51} = YES] Has this happened in the last 6 months?

- Yes [01]
- No [00]

fHEA51a1. [If {fHEA51a} = YES] Please describe what happened (e.g., how the response to COVID has limited your ability to get services or treatment regarding substance use).

fHEA52. In the last 6 months, what other ways (if any) has COVID and/or the COVID response affected you?

DEPRESSION, ANXIETY, STRESS SCALES (DASS-21)

[Lovibond & Lovibond, 1995]

Please indicate how much each of the following statements applied to you *over the past week* (i.e., 7 days). There are no right or wrong answers. Do not spend too much time on any statement:

fDASS01. I found it hard to wind down.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS02. I was aware of dryness of my mouth.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS03. I couldn't seem to experience any positive feeling at all.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS04. I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS05. I found it difficult to work up the initiative to do things.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS06. I tended to over-react to situations.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS07. I experienced trembling (e.g., in the hands).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS08. I felt that I was using a lot of nervous energy.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS09. I was worried about situations in which I might panic and make a fool of myself.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS10. I felt that I had nothing to look forward to.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS11. I found myself getting agitated.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS12. I found it difficult to relax.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS13. I felt down-hearted and blue.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS14. I was intolerant of anything that kept me from getting on with what I was doing.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS15. I felt I was close to panic.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS16. I was unable to become enthusiastic about anything.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS17. I felt I wasn't worth much as a person.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS18. I felt that I was rather touchy.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS19. I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS20. I felt scared without any good reason.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

fDASS21. I felt that life was meaningless.

- Did not apply to me at all [00]
- Applied to me to some degree, or some of the time [01]
- Applied to me a considerable degree, or a good part of time [02]
- Applied to me very much, or most of the time [03]

SUBSTANCE USE

We are going to ask some more questions about some things that are potentially a bit more sensitive or private, like drinking alcohol and use of various substances. Please remember that all of your responses are confidential. Also, if there is anything I can do to ensure you are able to answer honestly, please let me know. *[Pause and address issues/ideas with participant].*

As before, simply saying something like “I prefer not to answer that.” It is better to say that than to give me a false answer. That level of honesty is much more helpful than—and hopefully easier for you—than giving answers that aren’t true. Does that make sense? *[Pause and confirm].*

Many questions require us to enter a number. Please understand that I will ask for a number, even if you have given me an answer. For instance, if you answer, “every day,” I may ask, “how many times does that represent?” Please give me your best estimate. Does that make sense? *[Pause and confirm]*

Also, for some of the medications, we are specifically focused on non-prescription use. In other words, if you were prescribed the medications and taking them based on a doctor’s orders, that does *not* count. It only counts if you are taking the medications that might have been prescribed or given to someone else, or if you obtained the medications without a prescription. Does that make sense to you...any questions? *[Pause and address issues/ideas with participant]*

In the past 6 months, have you used (even once)...	How many times did you use <u>[drug name]</u> in the past 90 days?	How many times did you use <u>[drug name]</u> in the past 30 days?	How many days ago was the most recent time you used <u>[drug name]</u> ? (if today, enter “0”)
fSUBUSE01. Alcohol (beer, wine, liquor) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to bSUBUSE02	{fSUBUSE01a_1}	{fSUBUSE01b_1}	{fSUBUSE01e_1}
fSUBUSE01.1. [If fSUBUSE01=YES] Had 5 or more drinks within a 2-hour period? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE01.1a_1}	{fSUBUSE01.1b_1}	{fSUBUSE01.1e_1}
fSUBUSE02. Cannabinoids: marijuana, hashish, anasha, grass, ruchnyk <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE02a_1}	{fSUBUSE02b_1}	{fSUBUSE02e_1}
fSUBUSE03. Heroin (including injected, smoked, sniffed, snorted, any other means) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE03a_1}	{fSUBUSE03b_1}	{fSUBUSE03e_1}
fSUBUSE04. Opioids such as methadone and belyi kitayets, or opioid painkillers such as tramadol, Vicodin, oxycontin, Percocet, etc. that were not prescribed to you <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE04a_1}	{fSUBUSE04b_1}	{fSUBUSE04e_1}
fSUBUSE05. Stimulants (methamphetamine, crystal meth, ice, salt, MDPB, ephedrine, amphetamines, Ritalin, kontserta, Dexedrine, adderall, diet tablets) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE05a_1}	{fSUBUSE05b_1}	{fSUBUSE05e_1}

In the past 6 months, have you used (even once)...	How many times did you use <u>[drug name]</u> in the past 90 days?	How many times did you use <u>[drug name]</u> in the past 30 days?	How many days ago was the most recent time you used <u>[drug name]</u> ? (if today, enter "0")
fSUBUSE06. Cocaine (in powder or rock form; including sniffed, smoked, injected) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE06a_1}	{fSUBUSE06b_1}	{fSUBUSE06e_1}
fSUBUSE07. Hallucinogens or psychedelics (LSD, PCP, mushrooms) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE07a_1}	{fSUBUSE07b_1}	{fSUBUSE07e_1}
fSUBUSE08. Inhalants (kley, aerosols, huff, poppers, etc.) <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE08a_1}	{fSUBUSE08b_1}	{fSUBUSE08e_1}
fSUBUSE09. "Club drugs" such as ecstasy (MDMA), ketamine (Special K), or others <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE09a_1}	{fSUBUSE09b_1}	{fSUBUSE09e_1}
fSUBUSE20. Any other uppers, downers, tranquilizers, etc. that we haven't covered? <input type="checkbox"/> Yes [01], specify below {fSUBUSE20_sp}: <hr/> <input type="checkbox"/> No [00] → confirm, then skip to next row	{fSUBUSE20a_1}	{fSUBUSE20b_1}	{fSUBUSE20e_1}
fSUBUSE30. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below {fSUBUSE30_sp}: <hr/> <input type="checkbox"/> No [00] → skip to next page	{fSUBUSE30a_1}	{fSUBUSE30b_1}	{fSUBUSE30e_1}
fSUBUSE31. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below {fSUBUSE31_sp}: <hr/> <input type="checkbox"/> No [00] → skip to next page	{fSUBUSE31a_1}	{fSUBUSE31b_1}	{fSUBUSE31e_1}
fSUBUSE32. Anything else? (other drugs, substances, pills/medications not prescribed by a doctor)? <input type="checkbox"/> Yes [01], specify below {fSUBUSE32_sp}: <hr/> <input type="checkbox"/> No [00] → skip to next page	{fSUBUSE32a_1}	{fSUBUSE32b_1}	{fSUBUSE32e_1}

fSUBUSE39_1. In the past 30 days, how many days did you NOT USE ANY of the above drugs? _____ days

In the past 6 months, have you (even once)...	a. How many times in the past 90 days?	b. How many times in the past 30 days?	c. How many days ago was the most recent time you injected drug(s)? (if today, enter "0")
fSUBUSE40. Illicitly injected drugs? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00] → skip to next page	[fSUBUSE40a_1]	[fSUBUSE40b_1]	[fSUBUSE40c_1]
fSUBUSE40.1. [If Yes] Have you ever registered at a narcology center as an injecting drug user? <input type="checkbox"/> Yes [01] <input type="checkbox"/> No [00]			

[IF fSUBUSE01 = 1 (drank alcohol in the past 6 months)]

fSUBUSE50. How often do you have a drink containing alcohol?

- Never [00] (confirm, then skip to {fSUBUSE70})
- Monthly or less [01]
- 2 to 4 times a month [02]
- 2 to 3 times a week [03]
- 4 or more times a week [04]

fSUBUSE51. How many drinks containing alcohol do you have on a typical day when you are drinking? [Note: one portion of alcohol is approximately 30mL vodka, 200mL wine or 300-500 mL beer.]

- 1 or 2 [01]
- 3 or 4 [02]
- 5 or 6 [03]
- 7, 8, or 9 [04]
- 10 or more [05]

fSUBUSE52. How often do you have six or more drinks on one occasion?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE53. How often during the last year have you found that you were not able to stop drinking once you had started?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE54. How often during the last year have you failed to do what was normally expected from you because of drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE55. How often during the last year have you been unable to remember what happened the night before because you had been drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE56. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE57. How often during the last year have you had a feeling of guilt or remorse after drinking?

- Never [01]
- Less than monthly [02]
- Monthly [03]
- Weekly [04]
- Daily or almost daily [05]

fSUBUSE58. Have you or someone else been injured as a result of your drinking?

- No [00]
- Yes, but not in the last year [01]
- Yes, during the last year [02]

fSUBUSE59. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?

- No [00]
- Yes, but not in the last year [01]
- Yes, during the last year [02]

fSUBUSE70. Since the time of your last interview, that is {fINIT00 Response} ago, have you seen any professional for the primary purpose of getting alcohol or drug treatment, including methadone maintenance, or getting help for an alcohol or drug problem?

- Yes [01]
- No [00]

**fSUBUSE70a. [If yes YES; AND if {fINIT00 Response} >6months] In the last 6 months?
(Note: If {fINIT00 Response} was less than 6 months, then check YES.)**

- Yes [01]
- No [00]

SEXUAL BEHAVIORS

You are doing great. I appreciate your honesty.

The upcoming questions are going to be about sex. Some questions ask about all your partners, and others ask only about certain partners. In all cases, we are only talking about consensual sex. That is, we are not asking you to report about times where you or someone else was forced to have sex.

When we use the word “sex,” we mean oral, anal, and vaginal. When we ask about the times you were a top, we mean a top during anal sex (insertive anal sex, you fucked, your penis was in a man's rectum). When we ask about the times you were a bottom, we mean a bottom during anal sex (receptive anal sex, getting fucked, a man's penis was in your rectum). Do you have any questions about these terms? *[Answer questions and ask respondent to give brief definition/description of top and bottom; repeat until respondent gives accurate definitions]*

Some questions ask about whether a condom was used. This means male condom but also includes female or anal condoms if you are familiar with those. If a condom broke or slipped off during an act, do not count that as a time a condom was used. When we ask if a condom was used, that means it stayed on and intact the entire time. Do you have any questions? *[Answer questions]*

fSEX000. How do you identify sexually?

- Heterosexual/straight [00]
- Homosexual/gay/lesbian/queer/down-low [01]
- Bisexual [02]
- Other [-1], specify [fSEX000_-1_TEXT]: _____

fSEX001_1. How many men have you had sex (oral or anal) with in the past year? _____ man/men

fSEX001a. [If ≥ 1] Would you consider your main partner to be this man or one of these men?

- Yes [01] → confirm, then skip to sex with main male partner {fSEX009_1}
- No [00] → skip to sex with all non-main male partners {fSEX019_1}

fSEX001b. [If 0] I just need to confirm that you have not had sex with men in the past year. You had NO oral or NO anal sex with any man in the past year.

- Yes/correct, I DID NOT have any sex with a man in the past year [01] → confirm, then skip to sex with women {fSEX050}
- Incorrect/no, I DID have sex with a man or men in the past year [00] → confirm, then go back to {fSEX001_1}

[MAIN MALE PARTNER]

These questions focus on just the man you consider to be your MAIN [MALE] PARTNER.

fSEX009_1. In the past 90 days, how many times did you have oral sex with this partner?

Please count the number of times giving or receiving.

_____ times

fSEX010_1. In the past 90 days, how many times during anal sex were you the top with this partner? This would be with or without a condom, and whether or not you ejaculated.

_____ times

fSEX010a. [If fSEX010_1 = 0] I just need to confirm that you have not had any anal sex as the top with your main [male] partner in the past 90 days, not even once.

Yes/correct [01] → confirm, then skip to bottoming with main male partner {fSEX011_1}

Incorrect/no [00] → go back to {fSEX010_1}

fSEX010b_1. [If fSEX010_1 > 0] How many of these times was a condom used from start to finish?

_____ times

fSEX010c_1. [If fSEX010_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the top with your main [male] partner in the last 90 days?

_____ times

fSEX010d_1. [If fSEX010_1 > 0] How many of these times was your main [male] partner drunk, buzzed or high within 2 hours before or during sex when you were the top in the last 90 days?

_____ times

fSEX011_1. In the past 90 days, how many times were you the bottom with this partner? This would be with or without a condom, and whether or not he ejaculated.

_____ times

fSEX011a. [If fSEX011_1 = 0] I just need to confirm that you have not had any anal sex as the bottom with your main [male] partner in the past 90 days, not even once.

Yes/correct [01] → confirm, then skip to last time with main male partner {fSEX012}

Incorrect/no [00] → go back to {fSEX011_1}

fSEX011b_1. [If fSEX011_1 > 0] How many of these times was a condom used from start to finish?

_____ times

fSEX011c_1. [If fSEX011_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the bottom with your main [male] partner in the last 90 days?

_____ times

fSEX011d_1. [If fSEX011_1 > 0] How many of these times was your main [male] partner drunk, buzzed or high within 2 hours before or during sex when you were the bottom in the last 90 days?

_____ times

fSEX012. The last time you had anal sex with this partner, you were the

Top [00]

Bottom [01]

Both [02]

Never had anal sex with this partner [-2] → confirm, then skip to {fSEX019_1} or {fSEX050_1}

fSEX012a. [If fSEX012 = Top, Bottom, or Both] Did this happen within the {fINIT00 Response} ago?

Yes [01]

No [00] → confirm, then skip to {fSEX019_1} or {fSEX050_1}

fSEX013. The last time you had anal sex with this partner, was a condom used [from start to finish without slipping or breaking]?

Yes [01]

No [00]

fSEX014. The last time you had anal sex with this partner, were you drunk, buzzed, or high within 2 hours before or during sex?

Yes [01]

No [00]

fSEX015. The last time you had anal sex with this partner, was your partner drunk, buzzed, or high within 2 hours before or during sex?

Yes [01]

No [00]

[ALL NON-MAIN MALE PARTNERS]

ASK IF {fSEX001a} = No [00].

These questions focus on any and all male sexual partner you DO NOT consider to be your main partner.

fSEX019_1. In the past 90 days, how many times did you have oral sex with men [other than a man you consider to be your main partner]? Please count the number of times giving or receiving. _____ times

fSEX020_1. In the past 90 days, how many times were you the top with any of these partners? This would be with or without a condom, and whether or not you ejaculated. _____ times

fSEX020a. [If fSEX020_1 = 0] I just need to confirm that you have not had any anal sex as the top with any other men, not even once.

- Yes/correct [01] → confirm, then skip to bottoming with other male partners {fSEX021_1}
- Incorrect/no [00] → go back to {fSEX020_1}

fSEX020b_1. [If fSEX020_1 > 0] How many of these times was a condom used from start to finish? _____ times

fSEX020c_1. [If fSEX020_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the top with one of these partners in the last 90 days? _____ times

fSEX020d_1. [If fSEX020_1 > 0] How many of these times was your partner drunk, buzzed or high within 2 hours before or during sex when you were the top in the last 90 days? _____ times

fSEX021_1. In the past 90 days, how many times were you the bottom with any of these partners? This would be with or without a condom, and whether or not he ejaculated. _____ times

fSEX021a. [If fSEX021_1 = 0] I just need to confirm that you have not had any anal sex as the bottom with any other [male] partners in the past 90 days, not even once.

- Yes/correct [01] → confirm, then skip to last time with other male partner {fSEX022}
- Incorrect/no [00] → go back to {fSEX021_1}

fSEX021b_1. [If fSEX021_1 > 0] How many of these times was a condom used from start to finish? _____ times

fSEX021c_1. [If fSEX021_1 > 0] How many of these times were you drunk, buzzed or high within 2 hours before or during sex as the bottom with one of these partners in the last 90 days? _____ times

fSEX021d_1. [If fSEX021_1 > 0] How many of these times was your partner drunk, buzzed or high within 2 hours before or during sex when you were the bottom in the last 90 days? _____ times

fSEX022. The last time you had anal sex with one of these men, you were the

- Top [00]
- Bottom [01]
- Both [02]
- Never had anal sex with this partner [-2] → confirm, then skip to {fSEX050_1}

fSEX022a. [If fSEX022 = Top, Bottom, or Both] Did this happen within the {fINIT00 Response} ago?

- Yes [01]
- No [00] → confirm, then skip to {fSEX050_1}

fSEX023. The last time you had anal sex with one of these men, was a condom used [from start to finish without slipping or breaking]?

- Yes [01]
- No [00]

fSEX024. The last time you had anal sex with one of these men, were you drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

fSEX025. The last time you had anal sex with one of these men, was he drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

[FEMALE PARTNERS]

fSEX050_1. In the past 90 days, how many times have you had vaginal or anal intercourse *with a woman*? _____ times
This could be with or without a condom and with or without ejaculation.

fSEX050a. *[If fSEX050_1 = 0]* I just need to confirm that you have not had any vaginal or anal sex with any women, not even once.

- Yes/correct [01] → confirm, skip to question {fSEX051}
- Incorrect/no [00] → go back to {fSEX050_1}

fSEX050b_1. *[If fSEX050_1 > 0]* In the past 90 days, how many times have you had vaginal sex with a women? _____ times

fSEX050b0_1. *[If fSEX050b_1 > 0]* How many of these times was a condom used from start to finish? _____ times

fSEX050b1_1. *[If fSEX050b_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during vaginal sex with women in the last 90 days? _____ times

fSEX050b2_1. *[If fSEX050b_1 > 0]* How many of these times was your female partner drunk, buzzed or high within 2 hours before or during vaginal sex in the last 90 days? _____ times

fSEX050c_1. *[If fSEX050_1 > 0]* In the past 90 days, how many times have you had anal sex with a women? _____ times

fSEX050c0_1. *[If fSEX050c_1 > 0]* How many of these times was a condom used from start to finish? _____ times

fSEX050c1_1. *[If fSEX050c_1 > 0]* How many of these times were you drunk, buzzed or high within 2 hours before or during anal sex with women in the last 90 days? _____ times

fSEX050c2_1. *[If fSEX050c_1 > 0]* How many of these times was your female partner drunk, buzzed or high within 2 hours before or during anal sex in the last 90 days? _____ times

fSEX051. The last time you had vaginal or anal sex with a woman, was a condom used [from start to finish without slipping or breaking]?

- Yes [01]
- No [00]
- Never had vaginal or anal sex with a woman [-2] → confirm, then skip to {fMSMTERM}

fSEX051a. *[If fSEX051 = YES or NO]* Did this happen within the {fINIT00 Response} ago?

- Yes [01]
- No [00] → confirm, then skip to {fMSMTERM}

fSEX052. The last time you had vaginal or anal sex with a woman, were you drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

fSEX053. The last time you had vaginal or anal sex with a woman, was she drunk, buzzed, or high within 2 hours before or during sex?

- Yes [01]
- No [00]

fMSMTERM. In thinking about *men who have had or currently have other male sexual partners*, if I were to ask you additional questions about such men, such as “Do you know any...?” or “Do you identify as...?”, which term would you prefer me to use?

[Note: If respondent only has “negative” or derogatory terms, ask, “For the rest of this survey, I will use ‘MSM’ which stands for ‘men who have sex with men’ to refer to men who have had other men as sexual partners and enter ‘MSM’ in the response box to the right]

HIV STIGMA

[Genberg et al., 2009]

In this section, we want to ask your thoughts on people living with HIV/AIDS in your community.

Please indicate the extent to which you disagree or agree with the following statements:

fHIVSTIGMA01. Families of people living with HIV/AIDS should be ashamed.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA02. People who have HIV/AIDS are disgusting.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA03. People with HIV/AIDS should be isolated from other people.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA04. People living with HIV/AIDS deserve to be punished.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA05. People who have HIV/AIDS are cursed.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA06. It is reasonable for an employer to fire people who have HIV/AIDS.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA07. People living with HIV/AIDS in this community face rejection from their peers.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA08. People living with HIV/AIDS in this community face verbal abuse or teasing.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA09. People living with HIV/AIDS in this community face ejection from their home by their families.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA10. People living with HIV/AIDS in this community face neglect from their family.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA11. People who have HIV/AIDS should be treated the same as everyone else.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA12. People with HIV/AIDS should be allowed to fully participate in social events in this community.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fHIVSTIGMA13. A person with HIV/AIDS should be allowed to work with other people.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

SEXUAL RISK REDUCTION

Please indicate the extent to which you disagree or agree with the following statement:

fSEXRR00. I would not date a person if I know that s/he has HIV [Visser et al., 2008].

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

We are interested in ways you may have tried to reduce the risk of transmitting or getting HIV in the past 90 days.

fSEXRR01. Did you do any of the following SPECIFICALLY TO REDUCE THE RISK TRANSMITTING OR GETTING HIV? [Check all that apply]

- Did not have any sex [00]
- Did not have any sex with men [01]
- Used condoms or required partner(s) to use condoms [02]
- I only had sex with partners whose HIV status I thought was the same as mine [03]
- I only had sex with people who I thought or knew were HIV-negative [04]
- I only was the insertive partner (top) with men or people who I knew or thought could be HIV-positive [05]
- I avoided ejaculation in the anus (butt) [06]
- I did something alternative to unprotected anal intercourse (mutual masturbation, oral sex only, fisting, golden showers) [07]
- I regularly get tested for HIV from a service provider [08]
- Tested myself for HIV with an at-home HIV test kit [09]
- Tested my partner(s) with an at-home HIV test kit [10]
- I took antiretroviral medication(s) “such as PrEP/PEP if I’m negative, or to reduce my viral load if I’m positive”. [11]
- Made sure my partner took antiretroviral medication(s) and/or my partner was virally suppressed (“had an undetectable viral load”) [12]
- Other [-1], specify [fSEXRR01_-1_TEXT]: _____

fSEXRR02. If you or your sexual partner were HIV-negative, would you want to—or want a HIV-negative partner—to take anti-retroviral medications to avoid becoming infected by HIV? This has been called PrEP or Pre-Exposure Prophylaxis and involves HIV-negative people taking antiretroviral medications such as Truvada that were developed originally to treat people already infected by HIV.

- Yes [01]
- No [00]

fSEXRR03. Since your last interview, that is {fINIT00 Response} ago, have you been prescribed an antiretroviral medication from a doctor specifically to treat or prevent becoming infected with HIV?

- Yes [01]
- No [00]

fSEXRR03a. Please tell me who or where you were prescribed such medication(s)?

[Note: We are interested in organization/agency/role rather than a specific individual. If the respondent gives a name, ask the respondent where the person work or what role the person is, e.g., AIDS Center]

HIV CARE CONTINUUM

fHIVCC00. What would you say is your HIV status?

- HIV-Negative [00]
- HIV-Positive [01] → skip to {fHIVCC03}
- Unknown [02]

SURVEY FLOW DIRECTIVES

If HIV status is negative [{fHIVCC00} = 00], answer {fHIVCC01}, then skip to {fHIVCC60}.

If HIV status is positive [{fHIVCC00} = 01], answer {fHIVCC03}, then skip to {bHIVCC10}.

If HIV status is unknown [{fHIVCC00} = 02], answer {fHIVCC01} and {fHIVCC03}, then skip to {bHIVCC60}.

[If fHIVCC00 = 00 or 02] fHIVCC01. Since your last interview, that is {fINIT00 Response} ago, have you been tested for HIV at an AIDS Center / at a private clinic / at home?

- Yes [01]
- No [00]

fHIVCC01b. [If fHIVCC01 = Yes] Where was your most recent HIV test (outside of this study)?

- City/Regional AIDS Center [00]
- Trust point / poly-clinic [01]
- Private clinic [02]
- Personal/private home (e.g., self-testing) [03]
- Outside of Kazakhstan [04]
- Other [-1], specify {fHIVCC01b_-1_TEXT}: _____

fHIVCC01b1. [If fHIVCC01b = City/Regional AIDS Center] At your most recent HIV test at a City/Regional AIDS Center, which of the following categories of at-risk population did you identify yourself as?

- Sex workers / Code 105 [00]
- Injection or intravenous drug users / Code 102 [01]
- People in prison / Code 112 [02]
- Men who have sex with men / Code 103 [03]
- People living with HIV / Code 113 [04]
- Pregnant women / Code 109 [05]
- Youth / Code N/A [06]
- Other [-1], specify {fHIVCC01b1_-1_TEXT}: _____

fHIVCC01c. [If fHIVCC01 = Yes] What was the result of your most recent HIV test?

- Negative [00]
- Positive [01]
- Indeterminate [02]
- Did not receive the result [03]

[If fHIVCC00 = 01 or 02] fHIVCC03. Do you think you are (legally) eligible to receive services from the AIDS Center in {fSOCDEM02 – Current City}?

- Yes [00]
- No [01]
- "I don't know" [-6]

[HIV-POSITIVE]

[ONLY ASK IF HIV-POSITIVE]

fHIVCC10. When were you first told that you had HIV? (select one)

- Less than 6 months ago [00]
- Less than 1 year ago [01]
- 1-4 years ago [02]
- 5-9 years ago [03]
- More than 10 years ago [04]
- I do not know [-06]

fHIVCC11. Where were you told that you have HIV? (Check all that apply.)

- AIDS Center [00]
- Polyclinic [01]
- In a syringe exchange program/trust point [02]
- In jail/prison [03]
- In a community based program (community VCT program, mobile unit, health fair, etc.) [04]
- Private doctor [05]
- As part of a research study [06]
- Other [-1], specify [fHIVCC11_-1_TEXT]: _____

fHIVCC12_1. How long has it been since your last visit to the AIDS Center or another HIV treatment provider? (Enter “-1” if never)

_____ months

fHIVCC13. Have you registered at the AIDS Center?

- Yes [01]
- No [00]

fHIVCC13a. [If YES] Which city are you currently/most recently registered at the AIDS Center?

- Almaty [00]
- Astana [01]
- Shymkent [02]
- Other [-1], specify [fHIVCC13a_-1_TEXT]: _____

fHIVCC13b. [If No] what are the reasons you haven't registered? (check all that apply)

- Concerns about confidentiality—don't trust provider maintaining confidentiality [00]
- Fear of being stigmatized and/or discriminated against by staff [01]
- Time or money it takes to travel to provider [02]
- Safety of the neighborhood where services are available [03]
- Time an appointment/visit takes [04]
- Cost/charges of services [05]
- Provider's sensitivity, awareness and knowledge of your culture [06]
- Provider's sensitivity, awareness and knowledge of your sexuality [07]
- Concerns about the side effects of medication [08]
- Concerns that friends, coworkers, or family members will find out that you are HIV positive [09]
- Concerns that friends, coworkers, or family members will find out about your sexuality [10]
- Don't like going to see doctors [11]
- Fear of being rejected because of criminal justice history [12]
- Other [-1], specify [fHIVCC13b_-1_TEXT]: _____

fHIVCC14. Have you ever received a CD4 test?

- Yes [01]
- No [00]
- Not sure/don't know [-06]

fHIVCC14a. [If Yes] When was your most recent CD4 test?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- More than one year ago [02]

fHIVCC14a0. [If >1 year ago] What year was your most recent CD4 test? _____ (4 digit year)

fHIVCC14b. [If Yes] Did you receive the results of your most recent test?

- Yes [01]
- No [00]

fHIVCC14c. [If Yes] Do you know the results of your most recent CD4 count as told by your health care professional?

- Yes [01]
- No [00]

fHIVCC14c0_1. [If Yes] What is your CD4 count? _____ cells/ml

fHIVCC15. Have you ever received a Viral Load test from the AIDS Center?

- Yes [01]
- No [00]
- Not sure/don't know [-06]

fHIVCC15a. [If Yes] When was your most recent Viral Load test?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- More than one year ago [02]

fHIVCC15a0. [If >1 year ago] What year was your most recent Viral Load test? _____ (4 digit year)

fHIVCC15b. [If Yes] Did you receive the results of your most recent test?

- Yes [01]
- No [00]

fHIVCC15c. [If Yes] Do you know the results of your most recent Viral Load as told by your health care professional?

- Yes [01]
- No [00]

fHIVCC15c0_1. [If Yes] What is your Viral Load?
(enter "0" if respondent reports "undetectable") _____ copies/ml

[ART]

[ONLY ASK IF HIV-POSITIVE]

fHIVCC20. Have you ever taken medication to treat HIV?

- Yes, I'm taking it now [02]
- Yes, I took it in the past but stopped [01]
- No [00]
- Not sure/don't know [-06]

fHIVCC20a. [If fHIVCC20 = 2 or 1] When did you *first* start treatment for HIV?

- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- 1-4 years ago [02]
- 5 or more years ago [03]
- Not sure/don't know [-06]

fHIVCC20b. [If fHIVCC20 = 2 or 1] When did you *most recently* start treatment for HIV?

- Since starting treatment I've taken it continuously [-01]
- In the past 6 months [00]
- More than 6 months ago, but less than a year ago [01]
- 1-4 years ago [02]
- 5 or more years ago [03]
- Not sure/don't know [-06]

fHIVCC21. What barriers or challenges have you experienced in getting into or staying in HIV care and treatment? (Check all that apply.)

- Concerns about confidentiality—don't trust provider maintaining confidentiality [00]
- Fear of being stigmatized and/or discriminated against by staff [01]
- Time or money it takes to travel to provider [02]
- Safety of the neighborhood where services are available [03]
- Time an appointment/visit takes [04]
- Cost/charges of services [05]
- Provider's sensitivity, awareness and knowledge of your culture [06]
- Provider's sensitivity, awareness and knowledge of your sexuality [07]
- Concerns about the side effects of medication [08]
- Concerns that friends, coworkers, or family members will find out that you are HIV positive [09]
- Concerns that friends, coworkers, or family members will find out about your sexuality [10]
- Don't like going to see doctors [11]
- Fear of being rejected because of criminal justice history [12]
- Other [-1], specify [fHIVCC21_1_TEXT]: _____

fHIVCC22. Have you ever had AIDS Center medical specialists deliver ARV medication to your home?

- Yes, in the past 6 months [02]
- Yes, but more than 6 months ago [01]
- No, never [00]

fHIVCC22a. [If fHIVCC22 = 2] In the past 6 months, how often have AIDS Center medical specialists delivered ARV medication to you?

- Every day or almost every day [03]
- Every week [02]
- Every month [01]
- Less than once per month [00]
- Other [-1], specify [fHIVCC22a_-1_TEXT]: _____

fHIVCC23. What other services besides ARV medications are provided by these medical specialists from the AIDS Center at your home? (Check all that apply)

- Inviting for testing at the AIDS Center (CD4, viral load) [00]
- Consultations on HIV medications [01]
- Referrals to other medical services (drug treatment, TB services) [02]
- Referrals to other social services [03]
- Other [-1], specify [fHIVCC23_-1_TEXT]: _____

[MEDICATION ADHERENCE]

[ONLY ASK IF HIV-POSITIVE]

fHIVCC30. Do you know the name of the ART medication you are currently on, or one that you have been on in the past 6 months?

- Yes [01]
- No [02]

fHIVCC30a. [If Yes] Please list the HIV medications (ARV therapy) that you have taken in the past 6 months. Please write the name as you know it. You may list up to 4 medications.

Medication 1 [fHIVCC30a_1_TEXT]: _____

Medication 2 [fHIVCC30a_2_TEXT]: _____

Medication 3 [fHIVCC30a_3_TEXT]: _____

Medication 4 [fHIVCC30a_4_TEXT]: _____

fHIVCC31_1. Roughly, how many pills per day are you prescribed to take? _____ pills

fHIVCC32_1. Number of pills missed yesterday? _____ pills

fHIVCC33_1. Total number of pills missed in past 2 days (“total” means including yesterday)? _____ pills

fHIVCC34_1. Total number of pills missed in past 3 days? _____ pills

fHIVCC35_1. Total number of pills missed in past 2 weeks? _____ pills

fHIVCC36_1. Over the last 30 days, what is your best guess as to the percentage of pills did you took as prescribed (at the right time)? _____ % (0-100)
[0 means you have taken no medicine, 50 means you have taken half of your medicine at the right day and time, and 100% means you have taken every single dose of medicine at the right day and time.]

[HIV MEDICATION KNOWLEDGE]

[ONLY ASK IF HIV-POSITIVE]

The following questions are to evaluate your knowledge about medication for HIV/AIDS. Please choose “true” or “false”. If you don’t know the answer, then please select “I don’t know”

fHIVCC40. Antiretroviral medication aims to reduce or suppress the activity of the HIV virus in the body.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC41. Taking antiretroviral medications on time helps keep the right amount of medicine in one’s system.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC42. Resistance can be caused when a drug is not taken on schedule or when doses are reduced or missed.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC43. Resistance to a particular drug means that the drug is not working because the virus is no longer susceptible to it.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC44. If the HIV virus is resistant to one medication, then it may be resistant to others.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC45. CD4 counts are used to measure immune system functioning.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC46. Viral load measures the amount of HIV virus in the blood.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC47. If an HIV+ person has an “undetectable” amount or “less than detectable level” of virus, it means that person is no longer able to infect someone else.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC48. Sometimes lab results say that a person’s viral load is “undetectable” or “less than detectable level.” This means that there is no virus left.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC49. An elevated viral load over time will lead to a decline in CD4 count.

- True [01]
- False [00]
- I don’t know [-06]

fHIVCC50. Taking antiretroviral therapy exactly as prescribed is likely to reduce viral load.

- True [01]
- False [00]
- I don't know [-06]

fHIVCC51. Taking antiretroviral therapy exactly as prescribed is likely to increase CD4 count.

- True [01]
- False [00]
- I don't know [-06]

[PrEP WILLINGNESS] – [ONLY ASK IF HIV-NEGATIVE OR HIV-STATUS UNKNOWN]

The following questions assess how you would obtain and administer PrEP. Once again, PrEP or Pre-Exposure Prophylaxis involves HIV-negative people taking antiretroviral medications such as Truvada that were developed originally to treat people already infected by HIV.

PrEP can be administered in several different ways: (1) one pill taken orally every day; (2) pills taken orally only around specific risk events; (3) injection that is long-lasting and administered every 4-8 weeks.

fHIVCC60. How likely would you take *one pill orally every day* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

fHIVCC61. How likely would you take *pills taken orally only around specific risk events* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

fHIVCC62. How likely would you take *injection that is long-lasting and administered every 4-8 weeks* for PrEP?

- Definitely would not [00]
- Probably would not [01]
- Uncertain [02]
- Probably would [03]
- Definitely would [04]

fHIVCC63. Among the current options, what is your ideal/preferred way of administering PrEP?

- One pill taken orally every day [00]
- Pills taken orally only around specific risk events [01]
- Injection that is long-lasting and administered every 4-8 weeks [02]
- Other [-1], specify [bHIVCC63_-1_TEXT]: _____

fHIVCC64. If PrEP is not free, how much would you be willing to pay for PrEP per month?

_____ tenge per month

fHIVCC65. If the government pays for the half of the price, would you pay for the other/remaining half?

- Yes [0+]
- No [00]

PEER EDUCATION/OUTREACH ACTIVITIES [AND INTENTIONS]

In this section, we're going to ask about possible ways and times you may have engaged other *{fMSMTERM}* regarding HIV testing and treatment. We might be asking about speaking personally to people, using mobile device-specific apps and services (e.g., Grindr, Mamba, Telegram, WhatsApp), or the internet, things that run in a web browser on a computer (e.g., websites, YouTube, Facebook).

We do understand that some services cross these lines (e.g., you can access them on the web or via a mobile device app; instant message/texting is personal communication but also mobile device specific). We'll leave it up to you which category those fall in, but please only count them once. Also, I'm happy to quickly change a prior answer if you change your mind when hearing a subsequent question.

fPEERACT00_1. In the past 6 months, how many times have you engaged or spoken with *{fMSMTERM}* in person (e.g., face-to-face, telephone) about HIV testing and/or treatment? _____ times

fPEERACT00a. [If fPEERACT00_1 = 0] I just need to confirm that you did not speak or talk in person or by phone with any *{fMSMTERM}* about HIV testing and/or treatment, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *{fMSMTERM}* [01] → confirm, then skip to fPEERACT01_1

Incorrect/no, I DID engage personally with *{fMSMTERM}* [00] → confirm, GO BACK TO fPEERACT00_1

fPEERACT00b_1. [If fPEERACT00_1 ≥ 1] What is your estimate on the number of *{fMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{fMSMTERM}*

fPEERACT01_1. In the past 6 months, how many times have you used an app or service specifically for mobile devices to engage other *{fMSMTERM}* about HIV testing and/or treatment? _____ times

fPEERACT01a. [If fPEERACT01 = 0] I just need to confirm that you did not engage or try to engage with any *{fMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *{fMSMTERM}* [01] → confirm, then skip to fPEERACT02_1

Incorrect/no, I DID engage personally with *{fMSMTERM}* [00] → confirm, GO BACK TO fPEERACT01_1

fPEERACT01b_1. [If fPEERACT01_1 ≥ 1] What is your estimate on the number of *{fMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{fMSMTERM}*

fPEERACT02_1. In the past 6 months, how many times have you posted something or interacted on the web to engage other *{fMSMTERM}* about HIV testing and/or treatment? _____ times

fPEERACT02a. [If fPEERACT02_1 = 0] I just need to confirm that you did not engage or try to engage with any *{fMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *{fMSMTERM}* [01] → confirm, then skip to fPEERACT03_1

Incorrect/no, I DID engage personally with *{fMSMTERM}* [00] → confirm, GO BACK TO fPEERACT02_1

fPEERACT02b_1. [If fPEERACT02_1 ≥ 1] What is your estimate on the number of *{fMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{fMSMTERM}*

fPEERACT03_1. In the past 6 months, how many times have you done something to try to engage other *{fMSMTERM}* in HIV testing and/or treatment? _____ times

fPEERACT03a. [If fPEERACT03_1 = 0] I just need to confirm that you did not engage or try to engage with any *{fMSMTERM}* in this way, not even once. Is that correct?

Yes/correct, I DID NOT engage personally with any *{fMSMTERM}* [01] → confirm, then skip to fPEERACT10

Incorrect/no, I DID engage personally with *{fMSMTERM}* [00] → confirm, GO BACK TO fPEERACT03_1

fPEERACT03_sp. [If fPEERACT03_1 ≥ 1] What were these ways?

fPEERACT03b_1. [If fPEERACT03_1 ≥ 1] What is your estimate on the number of *{fMSMTERM}* you reached in this manner? I understand if you don't know the exact number, in that case, your best guess is okay to report _____ *{fMSMTERM}*

How much do you disagree or agree with the following statements

fPEERACT10. In the next 6 months, I want to reach out to other {fMSMTERM} in order to encourage or help him/them to get tested or treatment for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fPEERACT11. Sometime in the next 6 months, I am likely to reach out to others and/or post something in order to encourage and help {fMSMTERM} to get tested or treatment for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

PEER EDUCATOR/OUTREACH OUTCOME EXPECTANCIES

[Latkin et al, 2003]

Please indicate the extent to which you disagree or agree with the following statements:

fPEEROE01. It is important to me to help {fMSMTERM} find ways to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEEROE02. {fMSMTERM} must get tested and treated for HIV, even if it means they cannot keep their sexuality private while doing so

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEEROE03. I am proud to do outreach that will help other {fMSMTERM} to get tested and/or treated for HIV.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEEROE04. I've gained respect by doing outreach

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEEROE05. I am willing to take the time and effort to help {fMSMTERM} reach other {fMSMTERM} to spread the word about how to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

PEER EDUCATOR/OUTREACH SELF EFFICACY

[Latkin et al, 2003]

Please indicate the extent to which you disagree or agree with the following statements:

fPEERSE01. I feel comfortable talking with {fMSMTERM} about ways to get tested for HIV testing and receive HIV medications

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE02. I can share ways how {fMSMTERM} can get such services respectfully and safely (for example, specific friendly doctors or nurses, or what {fMSMTERM} should or should not say in certain circumstance)

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE03. I can successfully get other {fMSMTERM} to get tested and/or treated for HIV

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE04. I am able to protect the privacy and safety of {fMSMTERM} while I am doing outreach

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE05. It is impossible to do outreach to {fMSMTERM} about HIV testing and treatment without threatening my safety and/or wellbeing

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE06. I am able to motivate other {fMSMTERM} to get HIV testing or treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

fPEERSE07. I can help {fMSMTERM} reach other {fMSMTERM} to spread the word about how to get HIV testing and treatment

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- Never did outreach / Not willing to do outreach [-2]

SOCIAL NETWORK METHODS SELF EFFICACY

[El Ouiridi et al., 2015]

In this section, we want to ask how confident you feel about using social network methods (e.g., social media) to accomplish certain activities.

fSOCNETSE01. I can be very effective using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE02. I can have a positive impact on the lives of other {fMSMTERM} through social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE03. I can share on social media with other {fMSMTERM} information about how they can get HIV testing and/or treatment in a safe manner.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE04. I can find important and interesting information by reading other people's content on social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE05. I can use social media as an effective way of connecting with other {fMSMTERM}.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE06. I can communicate very effectively using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE10. I can effectively engage other {fMSMTERM} in HIV prevention and/or treatment using social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

fSOCNETSE11. I am able to strengthen and grow a community of {fMSMTERM} who support each other through social media.

- Not at all confident [00]
- Somewhat confident [01]
- Confident [02]
- Very confident [03]

PEER EDUCATOR/OUTREACH SOCIAL SUPPORT

[Latkin et al, 2003]

fPEERSS01_0. How many friends or associates do you have that you can talk to about HIV, either online or in real life?

_____ people

fPEERSS01a_0. How many of these are *{fMSMTERM}*?

_____ people

fPEERSS02. How many of your friends and associates are or would encourage you to engage in activities related to helping *{fMSMTERM}* being more willing and able to get HIV testing and treatment?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

fPEERSS03. If your friends and associates knew you were engaging in activities related to helping *{fMSMTERM}*, how many would have a negative reaction to this?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

fPEERSS04. How many of your family members are or would encourage you to engage in activities related to helping *{fMSMTERM}* being more willing and able to get HIV testing and treatment?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

fPEERSS05. If your family members knew you were engaging in activities related to helping *{fMSMTERM}*, how many would have a negative reaction to this?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

fPEERSS10. What proportion of your family members know about your sexuality, specifically that you have had sex with men?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

fPEERSS11. What proportion of your family members are or do you think would be supportive if they knew you were [a] {fMSMTERM}?

- None of my family members [00]
- Less than half of my family members [01]
- Half of my family members [02]
- More than half of my family members [03]
- All of my family members [04]

fPEERSS12. Except for your male sexual partners, what proportion of your friends and associates know about your sexuality, specifically that you have had sex with men?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

fPEERSS13. Except for your male sexual partners, what proportion of your friends and associates are or do you think would be supportive if they knew you were [a] {fMSMTERM}?

- None of my friends and associates [00]
- Less than half of my friends and associates [01]
- Half of my friends and associates [02]
- More than half of my friends and associates [03]
- All of my friends and associates [04]

fPEERSS20_1. What percentage of your friends and associates do you think are {fMSMTERM}? 0 would be none and 100 would correspond to all. It is fine to give your best guess or approximation since you might not know definitively for everyone.

_____ percent

INTERNALIZED HOMOPHOBIA SCALE (IHP)

[Herek et al., 1998]

Please indicate the extent to which you disagree or agree with the following statements:

fINTHOM01. I often feel it best to avoid personal or social involvement with other {fMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM02. I have tried to stop being attracted to men in general.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM03. If someone offered me the chance to be completely heterosexual, I would accept the chance.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM04. I wish I weren't {fMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM05. I feel alienated from myself because of being {fMSMTERM}.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM06. I wish that I could develop more erotic feelings about women.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM07. I feel that being {fMSMTERM} is a personal shortcoming for me.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM08. I would like to get professional help in order to change my sexual orientation from {fMSMTERM} to straight.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

fINTHOM09. I have tried to become more sexually attracted to women.

- Strongly disagree [00]
- Disagree [01]
- Neither disagree nor agree [02]
- Agree [03]
- Strongly agree [04]

EXPERIENCES OF DISCRIMINATION

[Herek & Berrill, 1990]

In this section, we want to know how you have been treated in different environment and settings. We want to know whether you have experienced discrimination based on your sexual orientation and/or gender identity/expression.

[Victimization]

Have you ever, in your lifetime...	In the past 6 months, how often have you...
fEXPDIS01. Had verbal insults directed at you? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS01a. Had verbal insults directed at you? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS02. Been threatened with physical violence? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS02a. Been threatened with physical violence? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS03. Had your personal property damaged or destroyed? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS03a. Had your personal property damaged or destroyed? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS04. Had objects thrown at you? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS04a. Had objects thrown at you? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS05. Been chased or followed? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS05a. Been chased or followed? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS06. Been spat upon? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS06a. Been spat upon? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS07. Been punched, hit, kicked, or beaten? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS07a. Been punched, hit, kicked, or beaten? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS08. Been assaulted or wounded with a weapon? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS08a. Been assaulted or wounded with a weapon? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS09. Been sexually harassed (without assault)? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS09a. Been sexually harassed (without assault)? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS10. Been sexually assaulted? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS10a. Been sexually assaulted? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]
fEXPDIS11. Been harassed by police (without assault)? <input type="checkbox"/> Yes [0+] <input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i>	fEXPDIS11a. Been harassed by police (without assault)? <input type="checkbox"/> Twice or more [02] <input type="checkbox"/> Once [01] <input type="checkbox"/> Never [00]

<p>fEXPDIS12. Been beaten or assaulted by police?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>fEXPDIS12a. Been beaten or assaulted by police?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS20. Been outed against your will?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>fEXPDIS20a. Been outed against your will?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS21. Been threatened to be outed?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>fEXPDIS21a. Been threatened to be outed?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS22. Been insulted on social media?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>fEXPDIS22a. Been insulted on social media?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS23. Been threatened with physical violence towards you or your property on social media?</p> <p><input type="checkbox"/> Yes [01]</p> <p><input type="checkbox"/> No [00] → <i>confirm, then skip to next row</i></p>	<p>fEXPDIS23a. Been threatened with physical violence towards you or your property on social media?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>

[Discrimination]

Have you ever, in your lifetime...	In the past 6 months, how often have you...
<p>fEXPDIS50. Experienced work-related discrimination (e.g., being denied employment or fired from a job, being denied a promotion or salary increase, receiving an unfair work evaluation)?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS50a. Experienced work-related discrimination (e.g., being denied employment or fired from a job, being denied a promotion or salary increase, receiving an unfair work evaluation)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS51. Been evicted or denied housing?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS51a. Been evicted or denied housing?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS52. Experienced discrimination from a service provider in a HIV-related care setting (e.g., AIDS Center)?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS52a. Experienced discrimination from a service provider in a HIV-related care setting (e.g., AIDS Center)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS53. Experienced discrimination from a service provider in a general healthcare setting (e.g., hospitals, clinics, pharmacies)?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS53a. Experienced discrimination from a service provider in a general healthcare setting (e.g., hospitals, clinics, pharmacies)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS54. Experienced discrimination in commercial establishments (e.g., bars, restaurants, retail stores, supermarkets, hotels)?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS54a. Experienced discrimination in commercial establishments (e.g., bars, restaurants, retail stores, supermarkets, hotels)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS55. Experienced discrimination from the police, lawyers, or in the courts?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS55a. Experienced discrimination from the police, lawyers, or in the courts?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS56. Experienced discrimination from a member/members of your family of origin (e.g., being rejected, isolated, ignored and/or disowned, being kicked out of the house, being left out of wills and other family traditions/activities, being made to feel inferior to other family members)?</p> <p><input type="checkbox"/> Yes [04]</p> <p><input type="checkbox"/> No [00] → confirm, then skip to next row</p>	<p>fEXPDIS56a. Experienced discrimination from a member/members of your family of origin (e.g., being rejected, isolated, ignored and/or disowned, being kicked out of the house, being left out of wills and other family traditions/activities, being made to feel inferior to other family members)?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>
<p>fEXPDIS99. Any other experiences of discrimination?</p> <p><input type="checkbox"/> Yes [01], specify below [fEXPDIS99_sp]: _____</p> <p><input type="checkbox"/> No [00] → skip to next page</p>	<p>fEXPDIS99a. Any other experiences of discrimination?</p> <p><input type="checkbox"/> Twice or more [02]</p> <p><input type="checkbox"/> Once [01]</p> <p><input type="checkbox"/> Never [00]</p>

CONNECTEDNESS TO SEXUAL/GENDER MINORITY COMMUNITY/COMMUNITIES

[Frost & Meyer, 2012]

We want to ask you questions about sexual/gender minority communities in your city of residence, and the degree to which you feel connected to them. By sexual/gender minority community, we don't mean any particular neighborhood or social group, but in general, groups of gay men, bisexual men and women, lesbians, transgender individuals, *{fMSMTERM}*, etc.

Please indicate the extent to which you disagree or agree with the following statements:

fSGMCOMM01. I feel I'm a part of a sexual/gender minority community in *{fSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM02. Participating in a sexual/gender minority community in *{fSOCDEM02}* is a positive thing for me.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM03. I feel a bond with a sexual/gender minority community.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM04. I am proud of sexual/gender minority communities in *{fSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM05. It is important for me to be politically active in a sexual/gender minority community in *{fSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM06. If we work together, lesbian, gay, bisexual and transgender people can solve problems in sexual/gender minority communities in *{fSOCDEM02}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM07. I really feel that any problems faced by sexual/gender minority communities in *{fSOCDEM02}* are also my own problems.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fSGMCOMM08. I feel a bond with other *{fMSMTERM}*.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

COVID-19

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. In Kazakhstan, the first cases of COVID-19 were detected in March 2020. Here, we are going to ask some more questions to better understand your experiences related to COVID-19.

fCOVID00. Do you suspect that you have had, or currently have, COVID-19?

- Absolutely did/do not have COVID-19 [00]
- Probably did/do not have COVID-19 [01]
- Probably did/do have COVID-19 [02]
- Absolutely did/do have COVID-19 [03]
- Don't know / Uncertain [-6]

COVID-19 Testing & Diagnosis

fCOVID01. Have you ever been tested for COVID-19?

- Yes [01]
- No [00]

fCOVID01a. [If YES] Which type(s) of COVID-19 tests did you receive? (CHECK ALL THAT APPLY.)

- PCR test (text/image description) [00]
- CT scan (text/image description) [01]
- EIA (text/image description) [02]
- Other [-1], specify [fCOVID01a_-1_TEXT]: _____
- I cannot remember / Don't know / Uncertain [-6] → Skip to {fCOVID01b}

fCOVID01a1. [If YES to at least 2 types of COVID-19 tests] At your *most recent* COVID-19 test, which type of COVID-19 test did you receive? (SELECT ONE.)

- PCR test [00]
- CT scan [01]
- EIA [02]
- "Other" in {fCOVID01a} [03]

fCOVID01b. [If YES] How long ago was your *most recent* COVID-19 test? __ Years / __ Months / __ Days Ago

fCOVID01c. [If YES] What was the result of your *most recent* COVID-19 test?

- Negative [00]
- Positive [01]
- Indeterminate [02]
- Did not receive the result [03]

fCOVID10. Have you ever been officially diagnosed with COVID-19?

- Yes [01] → answer {fCOVID02a} ~ {fCOVID02c}
- No [00] → skip to {fCOVID02d}

fCOVID10a. [If YES] When were you diagnosed? ____ (Year) / __ (Month)

fCOVID10b. [If YES] What symptoms did you have? (CHECK ALL THAT APPLY.)

- No symptoms [00]
- Fever of 37.8 °C or above, or possible fever symptoms like alternating chills and sweating [01]
- Cough [02]
- Trouble breathing, shortness of breath, or severe wheezing [03]
- Chills or repeated shaking with chills [04]
- Muscle aches [05]
- Sore throat [06]
- Loss of smell or taste, or change in taste [07]
- Nausea, vomiting, or diarrhea [08]
- Headache [09]
- Other [-1], specify [fCOVID02b_-1_TEXT]: _____

fCOVID10c. [If YES] Were you hospitalized for COVID-19?

- Yes [01]
- No [00]

Access to COVID-19 Care

(Adapted, BRIDGE)

I am going to read you some statements about getting medical care related to COVID-19 in the past 6 months. Please tell me how much you agree with each statement.

(NOTE: If you have never had COVID-19, please tell me as best as you can how much you agree with each statement in anticipation of what might/could happen when getting medical care related to COVID-19.)

fCOVID30. When I needed (or if I need) medical care related to COVID-19, I could (or can) get admitted without any trouble.

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

fCOVID31. It was (or would be) hard for me to get medical care related to COVID-19 in an emergency.

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

fCOVID32. Sometimes I went (or would go) without the medical care related to COVID-19 that I needed (or need) because it is too expensive.

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

fCOVID33. I have easy access to the medical specialists of COVID-19 that I needed (or may need).

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

fCOVID34. Places where I can get medical care related to COVID-19 are very conveniently located.

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

fCOVID35. I am able to get medical care related to COVID-19 whenever I need it.

- Very strongly agree [00]
- Strongly agree [01]
- Somewhat agree [02]
- Disagree [03]
- Strongly agree [04]

Ecological Impact of COVID-19

In Kazakhstan, the first case of COVID-19 was reported on March 2020. We want to know whether and/or how the COVID-19 pandemic has affected different aspects of your life.

Employment

fCOVID40. How has the COVID-19 pandemic affected your job?

- No impact on my job [00]
- No impact yet, but anticipate losing job or hours in the future [01]
- Lost job temporarily, but expect to be called back [02]
- Lost job permanently [03]
- Not applicable (e.g., I don't/didn't have a job) [-2]

Substance & Alcohol Use

(Adapted, Smart Couples Study)

fCOVID45. How has your consumption of alcohol changed since the start of the COVID-19 pandemic (e.g., March 2020)?

- I use a lot less [00]
- I use less [01]
- About the same [02]
- I use more [03]
- I use a lot more [04]
- Not applicable (e.g., I don't drink alcohol) [-2]

fCOVID46. How has your smoking of nicotine cigarettes changed since the start of the COVID-19 pandemic (e.g., March 2020)?

- I use a lot less [00]
- I use less [01]
- About the same [02]
- I use more [03]
- I use a lot more [04]
- Not applicable (e.g., I don't smoke nicotine cigarettes) [-2]

fCOVID47. How has your illicit use of substances (e.g., cannabinoids, opioids, heroin, stimulants, cocaine, hallucinogens, inhalants, club drugs, tranquilizers) changed since the start of the COVID-19 pandemic (e.g., March 2020)?

- I use a lot less [00]
- I use less [01]
- About the same [02]
- I use more [03]
- I use a lot more [04]
- Not applicable (e.g., I don't illicitly use substances) [-2]

Barriers to COVID-19 Care

(Adapted, BRIDGE)

Think of the reasons for not getting medical care related to COVID-19 in the past 6 months.

(NOTE: If you have never had COVID-19, please tell me as best as you can which statements *might/could* potentially apply to you when getting medical care related to COVID-19.)

fCOVID60. For what reasons did you not (or would you not) get medical care related to COVID-19? (CHECK ALL THAT APPLY.)

- Unable to pay for medical care related to COVID-19 [00]
- Uncertain where to go to get medical care related to COVID-19 [01]
- Having no transportation to medical care related to COVID-19 [02]
- Inconvenient hours of operation of a clinic providing COVID-19-related medical care [03]
- Poor treatment at a clinic providing COVID-19-related medical care [04]
- Not wanting to be seen at a clinic providing COVID-19-related care [05]
- Having no trust in doctors providing COVID-19-related care [06]
- Not caring about taking care of myself [07]
- Not having child care (anyone with whom to leave children) [08]
- Being too drunk or high [09]
- Other [-1], specify [fCOVID60_-1_TEXT]: _____
- Not applicable (e.g., there were/are no reasons to refuse medical care related to COVID-19) [-2]

COVID-19 Information

(WHO, 2020)

There are multiple sources of information regarding COVID-19. We want to know how much you trust them. Please tell me how much you agree with each statement.

I trust information regarding COVID-19 from...

fCOVID70. ...Public television stations.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID71. ...Daily or weekly newspapers.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID72. ...Conversations with family and friends.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID73. ...Conversations with colleagues.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID74. ...Consultation with health workers.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID75. ...Private television stations.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID76. ...Websites or online news pages.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID77. ...Social media (e.g., Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram).

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID78. ...Radio stations.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID79. ...Official, government press releases.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID80. ...Medical institutions press releases.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID81. ...Opinion polls.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

fCOVID82. ...Celebrities and social media influencers.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]
- I don't use this method [-2]

COVID-19 Vaccine (WHO BI study)

~~There are currently no vaccines available to prevent COVID-19, but many researchers are working to develop and test vaccines.~~

Vaccines are available to dramatically reduce the risk of getting COVID-19.

Need more info?

How do vaccines work? ([RUS](#) / [KAZ](#) / [ENG](#))

Different types of COVID-19 vaccines ([RUS](#) / [KAZ](#) / [ENG](#))

Please share your position on a ~~potential future~~ COVID-19 vaccine:

fCOVID90. I believe a vaccine can help control the spread of COVID-19.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID91. If I knew I had been infected with COVID-19 before, I would not get the vaccine even if it were available.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID92. When everyone else is vaccinated against COVID-19, then I don't have to get vaccinated.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

Please tell me how much you agree with each statement about your decision to get vaccinated.

~~If a COVID-19 vaccine is made available in my country, my decision of whether or not to get vaccinated would depend on...~~

Given that COVID-19 vaccines are made available in Kazakhstan, my decision of whether or not to get vaccinated would depend on...

fCOVID93a. ... Country in which the vaccine produced.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93b. ... Recommendation from my family doctor.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93c. ... Recommendation of the Ministry of Health.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93d. ... Whether the vaccine has been in use for a long time with no serious side effects.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93e. ... Whether the vaccine is used in other countries.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93f. ... Risk of getting infected with COVID-19 at the time when the vaccine is available.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93g. ... How easy it is to get the vaccine (e.g., available out-of-hours or in pharmacies).

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93h. ... Whether the vaccine is free of charge.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID93i. ... Whether a high vaccination uptake would lift restrictions on movement and gathering in groups.

- Strongly disagree [00]
- Disagree [01]
- Agree [02]
- Strongly agree [03]

fCOVID94. Apart from COVID-19, I think everyone should be vaccinated according to the national vaccination schedule.

- Yes [01]
- No [00]
- Don't know [-6]

Next, we would like to know whether you have received a COVID-19 vaccine.

In Kazakhstan, two different vaccines are offered to the general population: Sputnik V (Russia) and QazCOVID-in (Kazakhstan). Both require two doses: the first dose starts building protection; the second dose (received a few weeks later) is needed to get the most protection the vaccine has to offer. Although not yet widely available, Hayat-Vax (China) is another vaccine that requires two doses.

~~(You may also have heard of or gotten a vaccine that only requires one dose.)~~

fCOVID95. Have you ever, in your lifetime, received a COVID vaccine that protects against coronavirus infection?

- Yes, I completed the two-dose COVID vaccination series (i.e., received both of two doses) [03]
- Yes, I initiated the two-dose COVID vaccination series but haven't completed it (i.e., received one of two doses) [02]
- Yes, One of a one-dose vaccine (i.e., manufacturer states does not need/require a second dose) [01]
- No, never [00]
- Unsure / Don't know [-6]

fCOVID95a. [If YES, i.e., {fCOVID95}=01, 02, OR 03] How long ago did you receive your first COVID-19 vaccination dose? [If today, enter "00".]

__ Years (YY) / __ Months (MM) / __ Days (DD) ago

fCOVID95b. [If completed two of a two-dose vaccination series, i.e., {fCOVID95}=03] How long ago did you receive your second COVID-19 vaccination dose? [If today, enter "00".]

__ Years (YY) / __ Months (MM) / __ Days (DD) ago

fCOVID95c. [If completed one of a two-dose vaccination series, i.e., {fCOVID95}=02] Would you get the second dose (i.e., complete the vaccination series)?

- Definitely would [03]
- Probably would [02]
- Probably would not [01]
- Definitely would not [00]
- Not sure / don't know [-6]

fCOVID95d. [If NO, i.e., {fCOVID95}=00] If you were eligible, would you get a COVID vaccine in the next 6 months?

- Definitely would [03]
- Probably would [02]
- Probably would not [01]
- Definitely would not [00]
- Not sure / don't know [-6]

fCOVID999. Has anything positive ever happened to you personally as a result of the COVID pandemic?

Yes [01]

No [00]

fCOVID999a. [If YES] Please describe.

CRIMINAL JUSTICE HISTORY

[Sources: BRIDGE; Bland et al.]

We want to ask you several questions about your involvement with the criminal justice system. If any of the terms are unclear, please ask for clarification.

fCRIMJUST01. Have you ever been arrested?

Yes [01]

No [00]

fCRIMJUST01a. [If fCRIMJUST01 = 01] How many times total in your lifetime have you been arrested? _____ times

fCRIMJUST01b. [If fCRIMJUST01 = 01] How long ago was your most recent arrest? _____ years / _____ months / _____ days ago

fCRIMJUST01c. [If fCRIMJUST01 = 01] The last time you were arrested, what crime were you charged with?

fCRIMJUST02. [If fCRIMJUST01 = 01] Have you ever spent a night or more in jail or prison?

Yes [01]

No [00]

fCRIMJUST02a. [If fCRIMJUST02 = 01] How many times in your lifetime have you been in jail or prison? _____ times

fCRIMJUST02b. [If fCRIMJUST02 = 01] During the most recent period of incarceration, how long were you held in jail or prison for? _____ years / _____ months / _____ days

fCRIMJUST02c. [If fCRIMJUST02 = 01] How long ago were you released from jail or prison? _____ years / _____ months / _____ days ago

fCRIMJUST02d. [If fCRIMJUST02 = 01] The last time you were in jail or prison, what crime were you charged with?

SOCIAL IMPACTS

[HPTN/Sugarman et al., 2015]

fSOCIMP01. Because of your participation in this study, did anything negative or bad happen to you that you have not reported to us already?

Yes [01]

No [00]

[If Yes] **Because of your participation in this study, have you...**

fSOCIMP01a. ...been arrested or had trouble with the police or other legal problems?

Yes [01]

No [00]

fSOCIMP01b. ...had trouble getting or keeping housing?

Yes [01]

No [00]

fSOCIMP01c. ...had trouble getting or keeping a job or trouble with income or economic support?

Yes [01]

No [00]

fSOCIMP01d. ...had trouble getting health care or with health insurance?

Yes [01]

No [00]

fSOCIMP01e. ...had personal trouble with friends, family, or acquaintances?

Yes [01]

No [00]

fSOCIMP01z. ...had any other type of problem?

Yes [01]

No [00]

fSOCIMP01z_sp. *[If Yes]* Please specify:

fSOCIMP02. Has your participation in this study had any positive or beneficial impact on your life?

Yes [01]

No [00]

[If Yes] **Because of your participation in this study, have you experienced...**

fSOCIMP02a. ...Improvement in issues related to HIV in your life?

Yes [01]

No [00]

fSOCIMP02b. ...Employment improvement?

Yes [01]

No [00]

fSOCIMP02c. ...Financial improvement?

Yes [01]

No [00]

fSOCIMP02d. ...Reduction in drug use?

Yes [01]

No [00]

fSOCIMP02e. ... Gained knowledge?

Yes [01]

No [00]

fSOCIMP02f. ...Life improvement?

Yes [01]

No [00]

fSOCIMP02g. ...Physical health improvement?

Yes [01]

No [00]

fSOCIMP02h. ...Improved relationships?

Yes [01]

No [00]

fSOCIMP02i. ...Reduced stigma?

Yes [01]

No [00]

fSOCIMP02j. ...Improved mental health?

Yes [01]

No [00]

fSOCIMP02k. ...Improved community or connection to your community?

Yes [01]

No [00]

fSOCIMP02l. ...Less homophobia, or handling homophobia better?

Yes [01]

No [00]

fSOCIMP02m. ...Less transphobia, or handling transphobia better?

Yes [01]

No [00]

Not applicable [-7]

fSOCIMP02z. ...Other improvement?

Yes [01]

No [00]

fSOCIMP02z_sp. *[If Yes]* **Please specify:**

MOTIVATION FOR STUDY PARTICIPATION

fSOCIMP10. What motivated or motivates you to *continue* to participate in the UNI study?

fSOCIMP11. What motivates or would motivate you to continue to participate in activities designed to support you in reaching out to other {fMSMSTERM} in Kazakhstan about improving their health?

fSOCIMP80. What can we do to make it safer to participate in UNI?

fSOCIMP90. What can we do to make your experience with UNI better?

END MATTER

fENDAMANBOL. Have you heard of the Amanbol (BeOnline) website (URL: www.amanbol.kz)?

- Yes [01]
 No [00]

[Daniels et al., 2016]

The ability to perform an HIV test (including collecting your own specimen, and interpreting the result) often in a private setting of your own choosing, either alone or with someone you trust, is called 'HIV self-testing'. For example, instead of coming to the UNI Project field office, we can send you an HIV self-testing kit with instructions.

fENDHIVSELFTEST01. If we (UNI Project) offered an HIV self-testing kit free of charge, would you be willing to perform an HIV test on your own?

- Yes [01]
 No [00]

fENDHIVSELFTEST01a. [If YES] Would you share the test result with a researcher (e.g., UNI Project staff)?

- Yes [01]
 No [00]

fENDHIVSELFTEST01a1. [If YES] How comfortable would you feel taking a picture of your used HIV self-test swab and sending the picture to a researcher electronically (e.g., email, MMS, live chat messenger)?

- Very uncomfortable [00]
 Somewhat uncomfortable [01]
 Neither uncomfortable nor comfortable [02]
 Somewhat comfortable [03]
 Very comfortable [04]

fENDHIVSELFTEST01a2. [If YES] In what way(s) would you prefer to share the test result with a researcher? **(CHECK ALL THAT APPLY.)**

- By writing and sending the test result electronically (e.g., e-mail, SMS, live-chat messenger) [00]
 By taking and sending a picture of your used self-test swab electronically (e.g., e-mail, SMS, live-chat messenger) [01]
 By directly entering the test result (written or photographed) into a research project website [02]
 By writing and mailing in the test result (e.g., checking a box on a postcard and mailing it) [03]
 By mailing in your used self-test swab [04]
 By phone [05]
 In person [06]
 Other [-1], specify [fENDHIVSELFTEST01a2_-1_TEXT]: _____

fENDHIVSELFTEST01a2a. [Of the methods selected in {fENDHIVSELFTEST01a2}] Which way of sharing the test result would you *most* prefer? **(SELECT ONE.)**

- By writing and sending the test result electronically (e.g., e-mail, SMS, live-chat messenger) [00]
 By photographing and sending an image of the used self-test swab electronically (e.g., e-mail, SMS, live-chat messenger) [01]
 By directly entering the test result (written or photographed) into a research project website [02]
 By writing and mailing in the test result (e.g., checking a box on a postcard and mailing it) [03]
 By mailing in the used self-test swab [04]
 By phone [05]
 In person [06]
 Other [-1], specify [fENDHIVSELFTEST01a2a_-1_TEXT]: _____

fENDHIVSELFTEST01b. [If NO] Why not? (e.g., be willing to perform an HIV test on your own using an HIV self-testing kit)

Well that's it and we did it! Once again, thank you for your valuable time and information!

fEND_ATTENTION. How confident are you (the interviewer) that the participant expended effort and attention to warrant using their responses for this research study? (Abbey & Meloy, 2017)

- Not at all/not very confident (i.e., participant was paying attention to 0-10% of questions) [00]
- Slightly confident (i.e., participant was paying attention to around 25% of questions) [01]
- Somewhat confident (i.e., participant was paying attention to around 50% of questions) [02]
- Moderately confident (i.e., participant was paying attention to around 75% of questions) [03]
- Very confident (i.e., participant was paying attention to 90-100% of questions) [04]

fEND_HONESTY. How confident are you (the interviewer) that the participant responded honestly to “sensitive” questions?

- Not at all/not very confident (i.e., participant responded honestly to 0-10% of “sensitive” questions) [00]
- Slightly confident (i.e., participant responded honestly to around 25% of “sensitive” questions) [01]
- Somewhat confident (i.e., participant responded honestly to around 50% of “sensitive” questions) [02]
- Moderately confident (i.e., participant responded honestly to around 75% of “sensitive” questions) [03]
- Very confident (i.e., participant responded honestly to around 90-100% of “sensitive” questions) [04]

fENDNOTES. Notes *[Indicate anything noteworthy about interview, respondent, clarification(s), etc.]*

fENDPID01. Participant ID Re-Entry: _____

fENDPID02. Participant ID Re-Entry: _____