



Review

Uncovering the epidemic of HIV among men who have sex with men in Central Asia[☆]



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ABSTRACT

Background: Research among people who inject drugs (PWID) in Central Asia has described same sex behavior among male PWID and may be associated with HIV and other infections. Little is known about the population of men who have sex with men (MSM) and the burden of HIV among MSM in Central Asian countries.

Methods: We conducted a comprehensive search of peer-reviewed publications and gray literature on MSM and HIV in the region. Search strategies included terms for MSM combined with five Central Asian countries and neighbors, including Mongolia, Afghanistan, and Xinjiang Province, China.

Results: 230 sources were identified with 43 eligible for inclusion: 12 provided HIV prevalence and population size estimates for MSM, none provided incidence estimates, and no publications for Turkmenistan were identified. National reports estimate HIV prevalence among MSM to range from 1 to 2% in Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Xinjiang, to 10% in Mongolia. Biobehavioral studies estimated HIV prevalence at 0.4% in Afghanistan and 20.2% in Kazakhstan. Sexual identities and behaviors vary across countries. Injection drug use was relatively low among MSM (<5% for most). Non-injection drugs, alcohol use prior to sex, and binge drinking were more common and potentially associated with violence. Criminalization of homosexuality (Afghanistan, Uzbekistan, and Turkmenistan) and stigma has limited research and HIV prevention.

Conclusion: Improved understanding of risks, including potential linkages between sexual exposures and substance use, among MSM are important for response. The little known about HIV among MSM in Central Asia speaks to the urgency of improvements in HIV research, prevention, and care.

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[☆] Supplementary material can be found by accessing the online version of this paper. See [Appendix A](#) for more details.

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1. Introduction

HIV epidemic trends have declined globally in many settings and populations, yet have remained stable or increasing across Eastern Europe and Central Asia (EECA; [UNAIDS, 2012b](#)). The predominant mode of transmission in most affected states, including the largest HIV epidemics in the EECA, Russia and Ukraine, has been among people who inject drugs (PWID; [UNAIDS, 2012b](#); [Strathdee and Stockman, 2010](#)). A comprehensive review of HIV infections among men who have sex with men (MSM) indicates that the HIV epidemic has expanded globally, though relatively little studied in Central Asia ([Beyrer et al., 2012](#)), and the majority of new infections across European and Central Asian countries are now among MSM ([ECDC, 2010](#)). Of the Central Asian states that report to UNAIDS and/or have sufficient data, Kyrgyzstan and Kazakhstan have reported increasing epidemic trends among adults since 2001, while Tajikistan's epidemic has been stable ([UNAIDS, 2012b](#)). Turkmenistan does not report on HIV to the outside world, and the status of the HIV epidemic in this closed state is unclear. Data from Uzbekistan are similarly limited ([UNAIDS, 2012b](#)). Though HIV prevalence is estimated to be less than 1% among adult populations regionally, coverage of ART remains fairly low, estimated at 6% in Afghanistan and between 20 and 29% of those that reported coverage estimates in the last UNAIDS report (Tajikistan, Kazakhstan, Kyrgyzstan) ([UNAIDS, 2012a](#)).

The predominant mode of HIV transmission across the region has been parenteral exposures among PWID ([UNAIDS, 2012b](#); [Strathdee et al., 2010](#); [Strathdee and Stockman, 2010](#); [Jolley et al., 2012](#)), with slightly higher prevalence reported among male than female PWID ([Des Jarlais et al., 2013](#)). Prior to the initiation of HIV research among MSM in Central Asia, earlier research among PWID and other key populations, including truckers, and prisoners, began to identify same-sex behaviors and risk for HIV among these groups, particularly in Tajikistan and Afghanistan, and continue to be documented to-date ([Beyrer et al., 2009](#); [Stachowiak et al., 2006](#); [Thorne et al., 2010](#); [Todd et al., 2007a, 2007b, 2011](#), Afghanistan National Strategic Framework for HIV/AIDS (2008), [Todd et al., 2010](#); [JHU and NACP, 2010](#); [Vu et al., 2013](#)). In these analyses, there is often increased magnitude in risks for infection, though associations rarely remain significant, likely due to relatively small samples sizes. In Afghanistan, for example, the adjusted odds ratio comparing MSM-PWID to other male PWID was 1.35 for HBV infection (95% CI: 0.61–3.00). In bivariate models, syphilis infection (OR: 1.44, 95% CI: 1.10–1.89) and HCV (OR: 1.59, 95% CI: 1.04–2.44) were significantly higher for PWID-MSM but not significant in multivariable models ([Todd et al., 2010, 2007a](#)). Among PWID in Kabul, ever having sex with a male was one risk factor for HCV (37% prevalence), along with ever being in prison, and risky injection practices ([JHU and NACP, 2010](#)). These findings establish a research agenda to understand the risk for and prevalence of HIV and STI among MSM in Central Asia and highlight the importance of assessing and intervening on the multiple parenteral and sexual risk behaviors for HIV among both MSM and PWID groups.

Given the high prevalence of HIV among MSM in both concentrated and generalized epidemics globally, understanding the epidemiology and potential risks for HIV among MSM is important to informing HIV programs and intervening proactively to mitigate future epidemics. We review the available data on HIV prevalence and sociobehavioral risks, including investigating linkages of substance use risks among MSM in Central Asia. These include: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, as well as the related countries and regions of Mongolia, Afghanistan, and the Xinjiang (formerly East Turkestan) region of Western China, which together comprise the very large Central Asian region. We present information that has been gathered about

risks for HIV among MSM and present gaps and areas of improvement for further research and surveillance.

2. Methods

We conducted a comprehensive search in March 2013 to assess HIV epidemiology, substance use, and other sociobehavioral risks for HIV among MSM in five Central Asian countries and Mongolia, Afghanistan, and Xinjiang Province, China. A systematic literature review was conducted through searches in Pubmed and Embase to identify peer-reviewed publications. Given a hypothesis of limited publications, we searched by combining country and MSM terms and later restricted, according to criteria, during the abstract review. We focused the search on recent publications, limited to January 1, 2005 to March 30, 2013, and English language publications. No publications were excluded on the basis of study design or sample size. The peer-reviewed literature search was supplemented by a comprehensive search of gray literature available in websites related to substance use, HIV, and/or MSM in these countries. We abstracted data on HIV prevalence, estimated MSM population size, as well as self-reported substance use, sexual risks, exposure and uptake of HIV prevention. Full details of our search terms, gray literature search, and data abstraction are presented in the Supplementary Material.¹ [Fig. 1](#) displays the PRISMA search process.

3. Results

A total of 230 non-duplicate peer-reviewed publications and reports were identified. Four non-English publications were excluded from analysis. Of these, 43 were eligible with 12 providing quantitative information for HIV or population prevalence estimates and 20 providing information on sociobehavioral characteristics, exposures, and human rights. Five publications provided samples sizes, totaling 2373 participants from four of the included countries. The majority of information specifically related to HIV prevalence among MSM comes from national surveillance, UNAIDS reports, and UNGASS indicators ([Mongolia National Committee on HIV and AIDS, 2012](#); [Afghanistan National AIDS Control Program, 2010](#); [Republic of Tajikistan, 2011](#); [Government of Kazakhstan, 2010](#); [UNAIDS, 2012a,b](#)). No data on MSM in Turkmenistan, and no regional data on HIV incidence were identified. National reports provided HIV prevalence estimates for MSM ranging from 1 to 2% for Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan in 2011, and high as 6.8% in Tashkent, Uzbekistan (2009; [UNAIDS, 2012a, 2012b](#)). A marked increase from 2 to 10% prevalence has been reported between 2005 and 2011 in Mongolia ([UNAIDS, 2012b, 2012a](#); [Mongolia National Committee on HIV and AIDS, 2012](#)). National reports are compiled to present the overview of the country's epidemiology and coverage of interventions and often exclude details of the methodology, sample size, and location(s) of surveillance. This makes it difficult to assess reliability and generalizability of estimates. Substantial changes in estimates may be an artifact of changes or improvements in surveillance rather than an actual increase in HIV prevalence among these men, as experts have explained for the observed increase from 2 to 10% in Mongolia ([Mongolia National Committee on HIV and AIDS, 2012](#)). Other concerns, such as the potential impact of selection bias on the certainty of point estimates in national surveillance ([Hogan et al., 2012](#)) and the influence of heterogeneity of epidemics within countries on pooled estimates ([Platt et al., 2013](#)), should be considered when reviewing surveillance estimates. Currently, government run surveillance and programs face social barriers, as articulated by the Tajikistan report, "Tajik MSM remain one of the most difficult groups to reach. . . there is no credible assessment regarding their number. Social stigma toward homosexuality in Tajikistan makes this population inaccessible for the health and social services" ([Republic of Tajikistan, 2011](#)).

¹ Supplementary material can be found by accessing the online version of this paper. See [Appendix A](#) for more details.

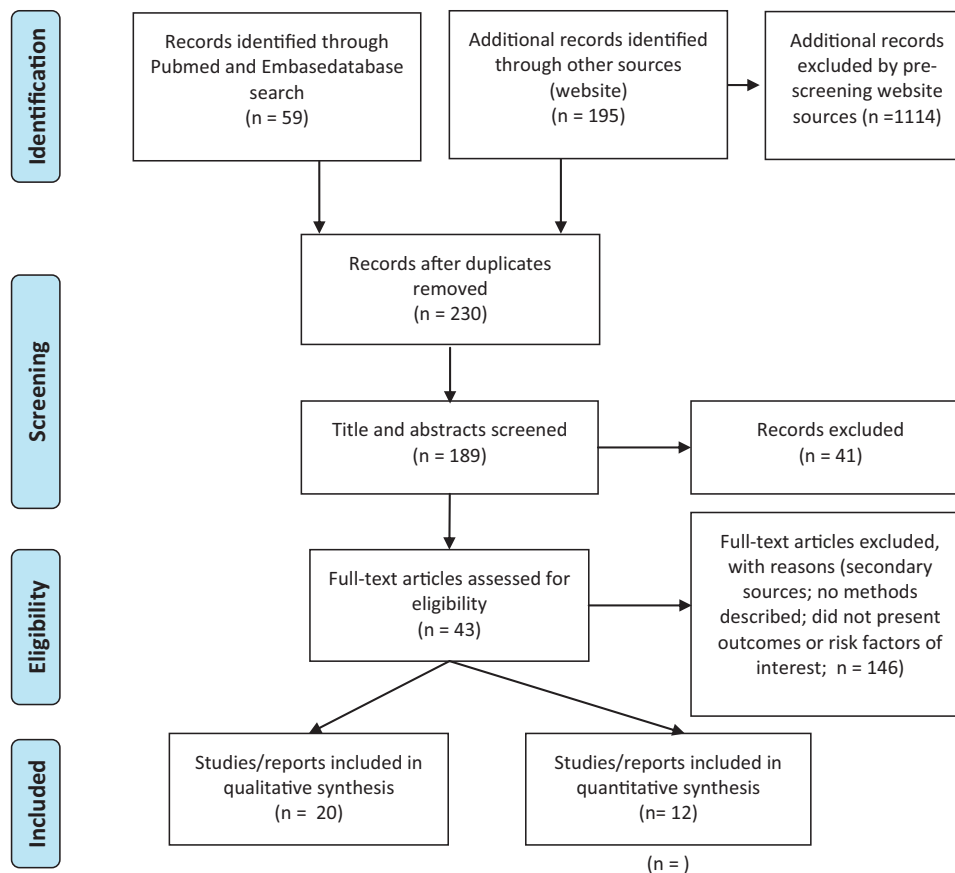


Fig. 1. Study selection: PRISMA flow diagram.

Observational research has been conducted specifically with MSM in Central Asia, including: sociobehavioral characteristics and biologic endpoints among MSM in Kazakhstan (Berry et al., 2012, 2013), Afghanistan (Vu et al., 2013), and Xinjiang, China (Wu et al., 2013); self-reported HIV diagnosis, behaviors, and exposures to violence in Mongolia (Yasin et al., 2013; Peitzmeyer et al., 2013); and behavioral assessments (no biologic endpoints) in Kazakhstan, Kyrgyzstan, and Tajikistan (PSI, 2010). A small rapid assessment was conducted among 100 MSM in Kabul and Mazar to assess gender perspectives and sexual practices, but did not assess HIV outcomes (Khan et al., 2009). Four studies (six sources) used respondent-driven sampling methods (Berry et al., 2012, 2013; Peitzmeyer et al., 2013; Vu et al., 2013; Yasin et al., 2013; Wu et al., 2013) and three studies (five sources) were conducted by community-based organizations (Berry et al., 2012, 2013; Khan et al., 2009; Peitzmeyer et al., 2013; Yasin et al., 2013). Three studies (five sources) provide multivariable analysis of risk factors associated with HIV infection (Berry et al., 2012, Wu et al., 2013), the relationship between human rights and high risk sexual behaviors (Berry et al., 2013), risk factors for experienced sexual violence (Peitzmeyer et al., 2013), and predictors of HIV testing (Yasin et al., 2013).

Among these studies, HIV prevalence estimates for MSM range from 0.4% in Afghanistan (Vu et al., 2013) to a high of 20.2% in Kazakhstan (Berry et al., 2012), both adjusted for respondent-driven sampling (RDS) weights. Self-reported HIV diagnosis in Mongolia estimated a prevalence of 6.3% (adjusted for RDS weights), though 68% had recently been tested for HIV (last 12 mo.; Yasin et al., 2013). Table 1 presents the HIV prevalence estimates and MSM population size from available research or surveillance

reports. By comparison, a meta-analysis estimated a 6–27% lifetime prevalence of male same sex sexual activity among men in EECA (Cáceres et al., 2006).

Comparisons of national surveillance and observational studies, as in Kazakhstan for example, indicate substantial differences in estimates (Berry et al., 2012; Government of Kazakhstan, 2010). Experts have suggested that the use of community-based approaches may garner trust of participants (Trapence et al., 2012) and the use of RDS in which participants recruit their peers may foster greater access to larger population samples and heterogeneous groups of MSM who may be more hidden and/or at greater risk for HIV (Magnani et al., 2005). Such recruitment methods carry their own limitations as well: improper RDS implementation, insufficient sample sizes, and/or recruitment only of populations attending community-based programs can result in recruitment biases. Most studies have been predominantly conducted in capital cities (Berry et al., 2012; Vu et al., 2013; Yasin et al., 2013), thus, should not be interpreted as nationally representative and further research is needed to assess differences in prevalence and risk in urban, rural, and highly transited areas. Nevertheless, the ability to gain trust and access the population is essential to accurately understanding the underlying epidemiology and risk factors among the MSM populations.

Gender and sexual identities are variable in each country and are important to consider during recruitment as well as to understanding and intervening on behavioral risks. In Afghanistan, approximately half self-identify as feminine figures and/or receptive partners, ascribing to terms such as *ezak* and *koni* (Khan et al., 2009; Vu et al., 2013). In Kazakhstan, approximately 64.5% and 18.8% of MSM self-describe as homosexual and bisexual (Berry et al., 2012), while greater proportions (41.7%) reported bisexual

Table 1
Population size and HIV prevalence estimates of men who have sex with men in Central Asian Countries (2005–13).

Country	Year, geographic unit	MSM population size estimates		HIV among MSM				Source	References
		Estimated MSM population size	Methodology	HIV prevalence	95% CI	Sample size	Sampling methodology		
Afghanistan	Kabul, 2012	1729	Unique object multiplier	0.4% ^a	NR	207	RDS	IBBS report	(Vu et al., 2013)
Kazakhstan	National, 2005	31,800–41,300	NR	NR	NR	NR	NR	National report	(Republic of Kazakhstan, 2005)
Kazakhstan	Almaty, 2005	NR	NR	1.0%	NR	NR	NR	National report	(UNAIDS, 2010)
Kazakhstan	Almaty, 2010	NR	NR	20.2% ^a	(10.6–29.8)	400	RDS	Research Study	(Berry et al., 2013)
Kyrgyzstan	National, 2006–10	18,000–36,000	NR	NR	NR	NR	NR	National report	(Government of the Kyrgyz Republic, 2010)
Kyrgyzstan	NR	NR	NR	1.1%	NR	NR	NR	National report	(UNAIDS, 2012a)
Mongolia	Ulaanbaatar, 2007	NR	NR	0.90%	NR	118	Convenience	Secondary sentinel surveillance	(Mongolia National Committee on HIV and AIDS, 2008)
Mongolia	Ulaanbaatar, 2009	NR	NR	1.80%	NR	NR	NR	Secondary sentinel surveillance	(Mongolia National Committee on HIV and AIDS, 2010)
Mongolia	NR, 2011	NR	NR	6–10%	NR	NR	RDS	National report	(Mongolia National Committee on HIV and AIDS, 2012)
Mongolia	Ulaanbaatar, 2011	NR	NR	6.3% ^{a,b}	1.1–12.1	313	RDS	Research Study	(Yasin et al., 2013)
Mongolia	Ulaanbaatar, 2012	3164–10,046	NR	NR	NR	NR	NR	National report	(National Committee on and HIV/A Mongolia, 2012)
Tajikistan	NR	NR	NR	1.70%	NR	NR	NR	National report	(UNAIDS, 2012a)
Turkmenistan	NR	NR	NR	NR	NR	NR	NR	NR	
Uzbekistan	Tashkent, 2005	NR	NR	10.8%	NR	NR	NR	National report	(UNAIDS, 2010)
Uzbekistan	Tashkent, 2009	NR	NR	6.8%	NR	NR	NR	National report	(UNAIDS, 2012a)
Uzbekistan	NR, 2011	NR	NR	0.70%	NR	NR	NR	National report	(UNAIDS, 2012a)
Xinjiang, China	National 2008–9	6239	Census, capture-recapture, Delphi, multiplier methods ^c	2.55%	NR	1335	Snowball ^d	61 City Research Study	(Wu et al., 2013)

Note: NR: not reported; RDS: respondent-driven sampling.

^a Adjusted for RDS weights.

^b Self-reported prevalence.

^c Estimates provided by National HIV/AIDS Information System (Wu et al., 2013; Mao et al., 2010).

^d Initiated as RDS with subsequent change to snowball sampling.

identity in Mongolia (Yasin et al., 2013). Across these countries, approximately 20–30% of MSM report being married or living with a female partner (Berry et al., 2012; PSI, 2010; Vu et al., 2013; Yasin et al., 2013). Along with the variability in identities, these findings are important as they may suggest that non-gay identified MSM may be more hidden and difficult to reach by HIV programs or surveillance, particularly if traditional outreach or venue-based approaches that target gay or homosexually identified men are utilized (Magnani et al., 2005).

3.1. Risks for HIV among MSM

Variations in data collection methods, measures, and recall make direct comparisons of associations challenging; however, general summary of the populations can be made with respect to characteristics, risk behaviors, and exposures. The mean numbers of male partners within the last 12 months range: from 1.5 to 9.4 among Kazakh MSM (Berry et al., 2012; PSI, 2010) to 7.9 among Kyrgyz men (PSI, 2010). In Afghanistan, 84% report between 2 and 10 male partners in the last year (Vu et al., 2013) and 24.9% (adjusted) report five or more partners in Mongolia (Yasin et al., 2013). Concurrent sexual partnerships were also reported in Kazakhstan: 16.5% reported concurrent relationships of both genders and 24.0% reported only concurrent male partnerships (Berry et al., 2012). Similar levels of partner concurrency were observed in Mongolia (adj. 17.1%), with half being bisexual (Yasin et al., 2013).

Among Kazakh MSM, almost 40% percent reported unprotected anal intercourse (UAI) in the last year, a risk factor that produced an odds for HIV infection two times higher (AOR: 2.0; 95% CI: 1.04–3.84) than those reporting condom-protected anal intercourse (Berry et al., 2012). Recent UAI (last 12 mo.) was prevalent among 60% of Afghan MSM (Vu et al., 2013). Condom use at last anal sex was reported by 47.8% of MSM in Kyrgyzstan and was substantially lower among MSM in Tajikistan (24.9%; PSI, 2010). Qualitative research among Tajik MSM reported concerns related to purchasing condoms in public places or close to home, likely explaining why only 48.8% had ever purchased condoms and subsequently used condoms during anal intercourse with another man (PSI, 2010). Similarly, among Kazakh men, recent UAI with a male partner was independently associated with difficult access to water - or silicone-based lubricants (AOR: 12.88; 95% CI: 5.65–29.34). In this study, UAI was also independently associated with self-reported recent STI symptoms (AOR: 3.43; 95% CI: 1.41–8.35); recent transactional sex (AOR: 3.18; 95% CI: 1.64–8.35); and use of non-injection drugs (AOR: 3.10; 95% CI: 1.51–6.36; Berry et al., 2012). Recent transactional sex was reported by 58% of Afghan MSM; 50% ever purchased sex from a female sex worker; and 31% recently purchased sex from a man, though no estimates of associations with HIV were provided (Vu et al., 2013). Estimates were lower in Mongolia, with 11.4% and 5.4% paying for or receiving payment for sexual services, respectively (Yasin et al., 2013), and Kazakhstan where 12.9% reported any recent transactional sex (Berry et al., 2012).

As described above, same sex practices continue to be documented among PWID populations. The most recent estimates from Afghanistan indicate that 2–28% of sexually active male PWID interviewed in Herat, Mazar-i-Sharif, Jalalabad, and Charikar, reported sex with a male. Among these PWID populations, HIV prevalence ranged from 0.3 to 13.3% (Vu et al., 2013). Injection drug use among sampled MSM, however, was below 5% across most MSM behavioral studies (Mongolia National Committee on HIV and AIDS, 2012; Vu et al., 2013; Yasin et al., 2013) and highest in Kazakhstan at approximately 8% (Berry et al., 2012). The odds ratio for HIV among Kazakh MSM reporting a history of injection was 1.98 compared to non-injectors and, though not significant, the magnitude suggests

that this may be a risk factor for HIV warranting further investigation (Berry et al., 2012).

Other behavioral risks may include non-injection drug use, which was more common than injection in Kazakhstan (20.5% vs. 8.3%; Berry et al., 2012). Alcohol use may also be a relevant behavioral factor to investigate, considering that 36.3% of Kazakh MSM reported binge drinking (Berry et al., 2012) and 74.4% of Mongolian MSM reported alcohol use prior to sex (Yasin et al., 2013). Increasing possible risk of sexual transmission, experiences of sexual violence had a three times greater odds for those Mongolian MSM reporting weekly alcohol consumption compared to those who did not (AOR = 3.39, 95% CI: 1.69, 6.81; Peitzmeyer et al., 2013). Qualitative data from this study suggests that alcohol use, including binge drinking, and venues with large volumes of people created opportunities for sexual violence to be perpetrated against MSM (Peitzmeyer et al., 2013).

Recent surveillance of Afghan prisoners in Herat and Kabul reported 7.3–14.0% sexual activity between male prisoners, respectively. In these populations, HIV prevalence was estimated to be 0.8 and 0.5%, respectively, though stratified estimates of HIV among those who were MSM were not provided (Vu et al., 2013). Prison may heighten vulnerability to HIV and other infectious diseases due to overcrowding, high-risk sexual behaviors, and lack of access to condoms (Afghanistan National Strategic Framework for HIV/AIDS (2008)). For PWIDs in prison, including PWID-MSM, vulnerability is also related to continued injection where there is low/no access to clean needles (Afghanistan National Strategic Framework for HIV/AIDS (2008)).

3.2. HIV prevention

Afghanistan and Turkmenistan declined to report coverage indicators for the MSM population in the most recent UNAIDS report (UNAIDS, 2012b). Of the countries that did report, HIV prevention and testing coverage for MSM ranged from 25 to 49% for Kyrgyzstan, Tajikistan, and Uzbekistan (UNAIDS, 2012b). Improvements in prevention and testing coverage was observed for Mongolia, with coverage ranging from 50 to 74%, and Kazakhstan, which ranged from 75 to 100% (UNAIDS, 2012b). Self-reported recent HIV testing varied across observational studies, ranging from a low of 11.3% (adj.) in Afghanistan (Vu et al., 2013), 12.8% in Tajikistan (UNAIDS, 2012a), 23.9% in Kyrgyzstan (PSI, 2010), and 48.9% (adj.) in Mongolia (Yasin et al., 2013). In Kazakhstan, 33.2% (adj.) reported ever testing for HIV (Berry et al., 2012). Multivariable analysis of correlates of recent HIV testing among Mongolian MSM, found negative associations with experience(s) of human rights violations and positive associations with level of education, knowledge of risk related to anal sex, and number of sexual partners (Yasin et al., 2013). Negative beliefs about HIV testing in Tajikistan, such as 'testing is for the promiscuous', may explain low uptake of testing (PSI, 2010). Improving HIV counseling and testing, however, is a key intervention for MSM, given evidence from heterosexual populations that it may reduce unprotected sex acts (Denison et al., 2008) and is also an important mechanism that facilitates early identification and access to treatment for those who are living with HIV infection. Currently, no estimates of treatment coverage of MSM living with HIV and eligible for treatment have been reported among the Central Asian countries (ECDC, 2012).

3.3. The legal and human rights context for MSM/LGBT populations

Homosexual acts remain criminalized in Afghanistan, Turkmenistan, and Uzbekistan, with penalty of imprisonment ranging from two to 10 years (Itaborahy, 2012). The current sentiment and stigma of MSM is believed to have historical roots, linking

back to the once celebrated custom of the 'bacha' and 'bach-abozi', or dancing boys. The cultural practice was later transformed into a criminalized one, when the terms were incorporated into the language of criminal codes in Uzbekistan, Turkmenistan, and Tajikistan (Latypov et al., 2013). While homosexuality has been decriminalized toward the end of the 1990's, in Mongolia, Kazakhstan, Kyrgyzstan, and Tajikistan, there remains significant stigmatization of homosexual and other MSM (HRW, 2013; Latypov et al., 2013; Labrys, 2010; Soros Foundation Kazakhstan, 2009). Service providers and HIV programmers have reported this to be a significant barrier to reaching those who may be at risk for HIV infection (Republic of Tajikistan, 2011; Alisheva et al., 2007; Soros Foundation Kazakhstan, 2009; HRW, 2013; OSI, 2007). And, while Kyrgyzstan has been celebrated for its laws on non-discrimination, it has also been criticized for failing to include sexual orientation or gender identity in these protection efforts (Alisheva et al., 2007; HRW, 2013). Similar criticisms have been voiced by human rights and HIV prevention organizations across Kazakhstan and Mongolia (HRW, 2013; Soros Foundation Kazakhstan, 2009).

The absence of protection may provide opportunities for police violence, coercion and other physical and social violence to continue to be perpetrated against MSM across these countries (Alisheva et al., 2007; Soros Foundation Kazakhstan, 2009). MSM in Mongolia reported substantial lifetime experiences of violence, including verbal harassment (55.8%), physical or verbal abuse by police (14.4%), and physical violence (13.7%; Peitzmeyer et al., 2013). More than 40% of MSM surveyed in Afghanistan reported ever being raped by another man (Vu et al., 2013) and fewer but prevalent, 16–18% reported a history of rape in Kazakhstan (Berry et al., 2013) and Mongolia (last 3years; Peitzmeyer et al., 2013). Physical and sexual violence may increase biologic risk for HIV infection, while violence, including social violence, may have long-term effects detrimental to mental health and which may also influence risk behaviors, including substance use practices (Mayer et al., 2012).

4. Discussion

There is emerging HIV research and surveillance conducted among MSM in Central Asia, though comparisons are challenged by differences in methodology and reporting. Research and surveillance, which provide information about populations and their needs, are informative for communities, policy makers, and programmers to understanding the relevance of reported data to their programs and decisions. Information about methods, samples size, and whether estimates are national or subnational should be included in publications to allow decision makers to assess study quality, representativeness, and generalizability, as applicable, to the populations they serve. Improvements in surveillance, standardization of research practices, confidential methods, and collaborations with community-based organizations may ensure reach to and inclusion of hidden MSM and improve understanding of the true HIV prevalence and risks among MSM.

Data that do exist suggest that HIV is prevalent in the population and establishes an agenda for future research on prevalence and sociobehavioral risks for HIV among MSM. Given evidence of male same sex practices among other high risk populations, including prisoners and PWID, research should also endeavor to include assessments of sex between men and provide HIV prevention services across key populations. Research among MSM in this region identified low levels of injecting drug use and more common use of non-injecting drugs, alcohol intake prior to sex, and binge drinking. Further research into the extent to which these

influence sexual risk behaviors and social risk exposures is warranted.

Research may also investigate potential mechanisms through which other social and individual factors influence substance use. For example, mental health research among MSM and LGBT populations has suggested that homophobia and social norms may contribute to depression and increased substance use (Mayer et al., 2012). The criminalization of homosexuality and stigmatization of sexual minorities in this region may similarly affect mental health and substance use among MSM. Venues such as bars and clubs may also facilitate access to alcohol and substances when MSM meet and may influence sexual risk behaviors (Bourne, 2012). Social barriers may prevent MSM from meeting in public spaces and may promote social and sexual encounters in hidden or high risk areas, where alcohol and other substances may be provided. In Mongolia, accounts of physical and sexual violence were reported to occur at private house parties and often within the context of alcohol consumption (Peitzmeyer et al., 2013). Clear evidence from research and community-based organizations highlights the prevalence of violence perpetrated against MSM/LGBT populations and establishes an agenda to evaluate effective methods to mitigate violence and provide care for survivors of violence.

The current absence of HIV research, or few, estimates that suggest low prevalence, should not be interpreted as an absence of risk for HIV transmission and acquisition among MSM. That so little is known about HIV among MSM in the four decades of the pandemic speaks to the urgency of greatly expanded activities across the spectrum of HIV services, from HIV surveillance to prevention, treatment, and care. Effective comprehensive HIV prevention programs may be informed by and respond to high quality evidence of the range of individual, social, and structural factors that influence risk for HIV among MSM in Central Asia.

The Central Asia region is politically and economically diverse, with emerging democracies, like Kyrgyzstan, repressive dictatorships such as Uzbekistan and Turkmenistan, and countries now classed as middle income, such as Kazakhstan. While many have been Global Fund (GF) recipients in the past, Kazakhstan, as an example, has reached income levels which make it too wealthy for GF aid. This means in-country leadership will be key for improving HIV responses. In repressive states, donor aid may achieve little absent real reform in the health and human rights sectors for all people at risk for HIV, including MSM. To date, stigma and discrimination prevent MSM from accessing services. And, service providers face criminal risk for providing important HIV prevention services and information, as most recently witnessed in Uzbekistan (Canning, 2010). These realities have generated difficult policy and program conundrums for the region, and for those who seek to improve HIV programs for key populations across it: how to assist communities at risk when government policies oppose needed changes; how to engage with activists where repression and/or are widespread; and, how to support health professionals working in these systems to improve program effectiveness. Regional level advocacy, and engagement with multi-lateral players such as the UN and the Global Fund, may be effective approaches for change. As HIV spread continues in the region, the pressure on governments to respond will likely increase. The next few years will be critical to the trajectory of HIV in the region and improved responses for HIV among MSM will be key to success.

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Contributors

The manuscript concept was developed by CB, AW, AP, AK, FH. AW, AM, and an information specialist LR, developed the search terms. A research assistant (AM) conducted the Pubmed, EMABASE, and Website searches and abstracted data. AW reviewed abstracted data and checked identified publications. AW and CB wrote the first draft. AP, AK, and FH reviewed and provided additional input and edits.

Conflict of interest

None declared.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.drugalcdep.2013.06.031>.

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