



Quarterly Research Digest on HIV and Key Populations

March 2015

The LINKAGES Project is pleased to provide this quarterly compilation of article abstracts from the peer-reviewed literature related to HIV and key populations in Africa, Asia and Pacific, Eastern Europe, Latin America, the Caribbean, and the Middle East. Abstracts are grouped by type of key population. This quarterly digest includes articles published between December 1, 2014 and March 1, 2015. For open access articles, we include the link to the full text.

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Key Populations General

1. **HIV self-testing among key populations: an implementation science approach to evaluating self-testing.** Tucker, J. D., W. Chongyi, et al. *Journal of Virus Eradication* 2015; 1: 38–42.

OBJECTIVES: To review methods for measuring HIV self-testing (HIVST) among key populations, including both conventional approaches and implementation science approaches. **METHODS:** We reviewed the literature on evaluating HIVST among key populations. **RESULTS:** Simple HIV self-tests have already entered markets in several regions, but metrics required to demonstrate the benefits and costs of HIVST remain simplistic. Conventional measurements of sensitivity, specificity, acceptability, and behavioural preferences must be supplemented with richer implementation science measurement tools and innovative research designs in order to capture data on the following components: how self-testing affects subsequent linkage to confirmatory testing, preventive services and onward steps in the HIV continuum of care; how self-testing can be marketed to reach untested subpopulations; and how self-

testing can be sustained based on overarching organisational and financial models. We outline an implementation science research agenda that incorporates these components, drawing from evaluation study designs focused on HIVST and testing in general. CONCLUSION: HIVST holds great promise for key populations, but must be guided by implementation research to inform programmes and scale up.

2. **Scaled-Up Mobile Phone Intervention for HIV Care and Treatment: Protocol for a Facility Randomized Controlled Trial.** L'Engle, K. L. and K. Green. *JMIR Mhealth Uhealth* 2015 4(1): e11.
Online at: <http://www.researchprotocols.org/2015/1/e11/>

BACKGROUND: Adherence to prevention, care, and treatment recommendations among people living with HIV (PLHIV) is a critical challenge. Yet good clinical outcomes depend on consistent, high adherence to antiretroviral therapy (ART) regimens. Mobile phones offer a promising means to improve patient adherence and health outcomes. However, limited information exists on the impact that mobile phones for health (mHealth) programs have on ART adherence or the behavior change processes through which such interventions may improve patient health, particularly among ongoing clients enrolled in large public sector HIV service delivery programs and key populations such as men who have sex with men (MSM) and female sex workers (FSW). **OBJECTIVE:** Our aim is to evaluate an mHealth intervention where text message reminders are used as supportive tools for health providers and as motivators and reminders for ART clients to adhere to treatment and remain linked to care in Ghana. Using an implementation science framework, we seek to: (1) evaluate mHealth intervention effects on patient adherence and health outcomes, (2) examine the delivery of the mHealth intervention for improving HIV care and treatment, and (3) assess the cost-effectiveness of the mHealth intervention. **METHODS:** The 36-month study will use a facility cluster randomized controlled design (intervention vs standard of care) for evaluating the impact of mHealth on HIV care and treatment. Specifically, we will look at ART adherence, HIV viral load, retention in care, and condom use at 6 and 12-month follow-up. In addition, participant adoption and satisfaction with the program will be measured. This robust methodology will be complemented by qualitative interviews to obtain feedback on the motivational qualities of the program and benefits and challenges of delivery, especially for key populations. Cost-effectiveness will be assessed using incremental cost-effectiveness ratios, with health effects expressed in terms of viral load suppression and costs of resources used for the intervention. **RESULTS:** This study and protocol was fully funded, but it was terminated prior to review from ethics boards and study implementation. **CONCLUSIONS:** This cluster-RCT would have provided insights into the health effects, motivational qualities, and cost-effectiveness of mHealth interventions for PLHIV in public sector settings. We are seeking funding from alternate sources to implement the trial.

3. **Estimating the size of populations at high risk for HIV using respondent-driven sampling data.** Handcock, M. S., K. J. Gile, et al. *Biometrics* 2015.
Online at: <http://onlinelibrary.wiley.com/store/10.1111/biom.12255/asset/biom12255.pdf?v=1&t=i6s9q09l&s=7f2103ec66482a80cd840fb99dc94c0530acb9fa>

The study of hard-to-reach populations presents significant challenges. Typically, a sampling frame is not available, and population members are difficult to identify or recruit from broader sampling frames. This is especially true of populations at high risk for HIV/AIDS. Respondent-driven sampling (RDS) is often used in such settings with the primary goal of estimating the prevalence of infection. In such populations, the number of people at risk for infection and the number of people infected are of fundamental importance. This article presents a case-study of the estimation of the size of the hard-to-reach population based on data collected through RDS. We study two populations of female sex workers and men-who-have-sex-with-men in El Salvador. The approach is Bayesian and we consider different forms of prior information, including using the UNAIDS population size guidelines for this region. We show that the method is able to quantify the amount of information on population size available in RDS samples. As separate validation, we compare our results to those estimated by extrapolating from a capture-recapture study of El Salvadorian cities. The results of our case-study are largely comparable to those of the capture-recapture

study when they differ from the UNAIDS guidelines. Our method is widely applicable to data from RDS studies and we provide a software package to facilitate this.

4. **Predictors of internalised HIV-related stigma: a systematic review of studies in Sub-Saharan Africa.**

Pantelic, M., Y. Shenderovich, et al. *Health Psychol Rev* 2015: 1-45.

Online at: <http://www.tandfonline.com/doi/abs/10.1080/17437199.2014.996243>

OBJECTIVE: This systematic review aims to synthesize evidence on predictors of internalised HIV stigma amongst people living with HIV in Sub-Saharan Africa. **METHOD:** PRISMA guidelines were used. Studies were identified through electronic databases, grey literature, reference harvesting and contacts with key researchers. Quality of findings was assessed through an adapted version of the Cambridge Quality Checklists. **RESULTS:** A total of 590 potentially relevant titles were identified. Seventeen peer-reviewed articles and one draft book chapter were included. Studies investigated socio-demographic, HIV-related, intra-personal and inter-personal correlates of internalised stigma. Eleven articles used cross-sectional data, six articles used prospective cohort data and one used both prospective cohort and cross-sectional data to assess correlates of internalised stigma. Poor HIV-related health weakly predicted increases in internalized HIV stigma in three longitudinal studies. Lower depression scores and improvements in overall mental health predicted reductions in internalized HIV stigma in two longitudinal studies, with moderate and weak effects respectively. No other consistent predictors were found. **CONCLUSION:** Studies utilizing analysis of change and accounting for confounding factors are necessary to guide policy and programming but are scarce. High-risk populations, other stigma markers that might layer upon internalised stigma, and structural drivers of internalised stigma need to be examined.

5. **Factors influencing frontline health service providers' likelihood to recommend a future, preventive HIV vaccine to key populations in Karnataka, south India.** McClarty, L. M., R. R. Lorway, et al. *Vaccine* 2015 33(5): 656-63.

The HIV epidemic in the south Indian state of Karnataka disproportionately burdens key populations of men who have sex with men and female sex workers. Despite having successfully reduced HIV incidence among certain key populations through the use of targeted intervention, India's HIV epidemic remains one of its greatest public health issues. The best long-term strategy for managing the global HIV epidemic might involve a preventive vaccine; however, vaccine availability cannot guarantee its accessibility or acceptability. Vaccine recommendations from frontline health service providers have previously been identified as useful strategies to enhance vaccine uptake among target groups. This study used structured interviews to explore frontline health service providers' self-identified likelihood to recommend a future, preventive HIV vaccine to key populations in Karnataka. A modified social ecological model was then used to categorise factors that might prevent health service providers from recommending an HIV vaccine. Overall, 83% of health service providers reported that they would be very likely to recommend an HIV vaccine to men who have sex with men and female sex workers, while less than one-third of participants identified one or more barrier to vaccine recommendation. Intrapersonal, interpersonal, and structural/political factors were most commonly reported to act as potential barriers to future HIV vaccine recommendation among health service providers in Karnataka. This study adds to the limited body of literature focussing on future HIV vaccine acceptability in low- and middle-income countries and highlights some of the several complexities surrounding vaccine acceptability and uptake among key populations in Karnataka.

6. **Effect of rapid HIV testing on HIV incidence and services in populations at high risk for HIV exposure: an equity-focused systematic review.** Pottie, K., O. Medu, et al. *BMJ Open* 2014 4(12): e006859.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4267075/pdf/bmjopen-2014-006859.pdf>

OBJECTIVE: To assess the effects of rapid voluntary counselling and testing (VCT) for HIV on HIV incidence and uptake of HIV/AIDS services in people at high risk for HIV exposure. **DESIGN:** Cochrane systematic review and meta-analysis. **DATA SOURCES:** We searched PubMed, EMBASE, AIDSearch, LILACS, Global

Health, Medline Africa, PsychInfo, CINAHL, Cochrane CENTRAL, Cochrane HIV/AIDS Group Specialized Register and grey literature from 1 January 2001 to 5 June 2014 without language restriction. DATA SELECTION: We included controlled studies that compared rapid VCT with conventional testing among people at risk for HIV exposure. DATA EXTRACTION: Two reviewers extracted data. We used Cochrane risk of bias tool and GRADE criteria: risk of bias, inconsistency, indirectness, imprecision and publication bias. For observational studies we used the Newcastle-Ottawa Scale. We used the PRISMA-Equity reporting guideline. RESULTS: From 2441 articles, we included 8 randomised controlled trials and 5 observational studies. Rapid VCT was associated with a threefold increase in HIV-testing uptake (relative risk (RR)=2.95 95% CI 1.69 to 5.16) and a twofold increase in the receipt of test results (RR=2.14, 95% CI 1.08 to 4.24). Women accepted testing more often than men in rapid VCT arm, but no differences in effect for age or socioeconomic status. Observational studies also showed rapid VCT led to higher rates of uptake of testing. Heterogeneity was high. A cluster-randomised trial reported an 11% reduction in HIV incidence in intervention communities (RR=0.89, 95% CI=0.63 to 1.24) over 3 years trial. CONCLUSIONS: Rapid VCT in health facilities and communities was associated with a large increase in HIV-testing uptake and receipt of results. This has implications for WHO guidelines. The routine use of rapid VCT may also help avoid human rights violations among marginalised populations where testing may occur without informed consent and where existing stigma may create barriers to testing.

7. **Key Populations in Sub-Saharan Africa: Population Size Estimates and High Risk Behaviors.** Abdul-Quader, A. S., E. Gouws-Williams, et al. *AIDS Behav* 2014. Online at: http://download.springer.com/static/pdf/879/art%253A10.1007%252Fs10461-014-0963-0.pdf?auth66=1425324926_237d7a661a7812cdc9d5b83d3ce81a4b&ext=.pdf

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Men who have Sex with Men

1. **Sampling methodologies for epidemiologic surveillance of men who have sex with men and transgender women in Latin America: an empiric comparison of convenience sampling, time space sampling, and respondent driven sampling.** Clark, J. L., K. A. Konda, et al. *AIDS Behav* 2014 18(12): 2338-48. Online at: http://download.springer.com/static/pdf/854/art%253A10.1007%252Fs10461-013-0680-0.pdf?auth66=1425324964_117097383f67d501eceda5eeefca1339&ext=.pdf

Alternatives to convenience sampling (CS) are needed for HIV/STI surveillance of most-at-risk populations in Latin America. We compared CS, time space sampling (TSS), and respondent driven sampling (RDS) for recruitment of men who have sex with men (MSM) and transgender women (TW) in Lima, Peru. During concurrent 60-day periods from June-August, 2011, we recruited MSM/TW for epidemiologic surveillance using CS, TSS, and RDS. A total of 748 participants were recruited through CS, 233 through TSS, and 127 through RDS. The TSS sample included the largest proportion of TW (30.7 %) and the lowest percentage of subjects who had previously participated in HIV/STI research (14.9 %). The prevalence of newly diagnosed HIV infection, according to participants' self-reported previous HIV diagnosis, was highest among TSS recruits (17.9 %) compared with RDS (12.6 %) and CS (10.2 %). TSS identified diverse populations of MSM/TW with higher prevalences of HIV/STIs not accessed by other methods.

2. **'They think that gays have money': gender identity and transactional sex among Black men who have sex with men in four South African townships.** Masvawure, T. B., T. G. Sandfort, et al. *Cult Health Sex* 2015: 1-15.

Transactional sex has not been studied much among men who have sex with men in Africa. Consequently, little is understood about attitudes towards the practice, the circumstances that give rise to it or how transactional sex relationships are managed. We conducted in-depth interviews with 81 Black men aged

20-44 from four low-resourced townships in Tshwane, South Africa. We found that transactional sex was a widely used strategy for initiating and sustaining relationships with regular and casual partners, and was motivated by both the need for subsistence and for consumption. Alcohol-based exchanges in particular provided men in the townships with a covert and safe platform to communicate erotic, sexual and romantic attraction to other men, and bars and other drinking places were a popular venue for meeting potential sexual partners. The majority of 'feminine-identifying' men had engaged in transactional sex as the providers of money and material goods compared to men who identified as either 'masculine' or as 'both masculine and feminine'. Surprisingly, however, this did not necessarily give them greater control in these relationships. Our study provides an initial foray into a complex sociosexual phenomenon and suggests that gender identity is an important construct for understanding transactional sex relationships among men in Africa.

3. **Critique and Lessons Learned from using Multiple Methods to Estimate Population Size of Men who have Sex with Men in Ghana.** Quaye, S., H. Fisher Raymond, et al. *AIDS Behav* 2015.

Online at: http://download.springer.com/static/pdf/457/art%253A10.1007%252Fs10461-014-0943-4.pdf?auth66=1425324958_1ca08ccfcc106006675c30eaaad123a2e&ext=.pdf

Population size estimation of key populations at risk of HIV is essential to every national response. We implemented population size estimation of men who have sex with men (MSM) in Ghana using a three-stage approach within the 2011 Ghana Men's Study: during the study's formative assessment, the larger integrated bio-behavioral surveillance (IBBS) survey; and during the stakeholder meeting. We used six methods in combination within the three-stage approach (literature review, mapping with census, unique object multiplier, service multiplier, wisdom of the crowd, and modified Delphi) to generate size estimates from 16 locations (4 IBBS survey sites and 12 other locations) and used the estimates from the 16 sites to extrapolate the total MSM population size of Ghana. We estimated the number of MSM in Ghana to be 30,579 with a plausible range of 21,645-34,470. The overall estimate suggests that the prevalence of MSM in Ghana is 0.48 % of the adult male population. Lessons learned are shared to inform and improve applications of the methods in future studies.

4. **Burden and Correlates of HIV Risk among Men Who Have Sex with Men in Nagaland, India: Analysis of Sentinel Surveillance Data.** Saha, M. K., T. Mahapatra, et al. *PLoS One* 2015 10(2): e0117385.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4331270/pdf/pone.0117385.pdf>

BACKGROUND: Dynamics of HIV epidemic are largely understudied among men having sex with men (MSM) in India, while their potentially critical role in HIV spread is often stressed. Unfortunately, the epidemic has probably concentrated in this hard-to-reach population in the north-eastern high HIV-prevalent areas, especially in the bordering state of Nagaland, where HIV prevalence among MSM was found to be 2nd highest in the whole country. Dearth of information regarding the socio-behavioral correlates of HIV acquisition among MSM in this remote hilly region thus called for detailed analyses of the HIV Sentinel Surveillance (HSS) data. METHODS: During the first ever conducted HSS among MSM in Nagaland, between March and May, 2011, as per the operational guideline of Indian National AIDS Control Program, 243 MSM were recruited, interviewed and tested for HIV. Anonymous data on socio-demographics, sexual behavior and laboratory results were analyzed using SAS version-9.2 to conduct descriptive and logistic regression analyses. RESULTS: Among the recruited MSM, mean age was 28.30 years, 46.09% were illiterate, 27.16% were unemployed, 57.02% identified them as Kothi (predominantly receptive anal sex partner), 14.81% were bisexual, 19.75% exchanged money for sex (within last 1 year) with men and 13.58% were HIV sero-positive. Increasing age (for 25-34yrs, adjusted odds ratio: AOR = 3.89, p = 0.046; reference = <25yrs), middle school (AOR = 3.44, p = 0.046) or higher (AOR = 4.47, p = 0.034) education (reference = illiterate), being Kothi [AOR = 3.60, p = 0.026; reference = double-decker: (involved in both insertive and receptive roles)] and having paid and received money for sex with a man (AOR = 7.32, p = 0.026; reference = didn't exchange money) were strongly associated with higher risk of HIV in both bivariate and multivariate analyses. CONCLUSION: HIV burden was found to be alarmingly high among MSM in Nagaland. Targeted interventions for high-risk MSM, especially those who were

older, educated, self-identified as kothis and involved in paid sex, seemed to be the need of the hour.

5. **Implementation of a confidential helpline for men having sex with men in India.** Agarwal, A. and M. Hamdallah. *JMIR Mhealth Uhealth* 2015 3(1): e17.
Online at <http://mhealth.jmir.org/2015/1/e17/>

BACKGROUND: In India, men who have sex with men (MSM) often face physical violence and harassment from police and the general society. Many MSM may not openly disclose their sexual identity, especially if they are married to women and have families. Due to pervasive stigma and discrimination, human immunodeficiency virus (HIV) prevention programs are unable to reach many MSM effectively.

OBJECTIVE: The objective of this paper was to describe the design, operations, and monitoring of the Sahaay helpline, a mHealth intervention for the MSM population of India. **METHODS:** We established the "Sahaay" mHealth intervention in 2013; a MSM-dedicated helpline whose main goal was to increase access to comprehensive, community-based HIV prevention services and improve knowledge, attitudes, and behaviors of MSM towards HIV and sexually transmitted infections (STI) in three states of India (Chhattisgarh, Delhi, and Maharashtra). The helpline provided a 24x7 confidential and easy to use interactive voice response system (IVRS) to callers. IVRS function was monitored through an online dashboard of indicators. The system also provided real-time reporting on callers and services provided.

RESULTS: The helpline received more than 100,000 calls from 39,800 callers during the first nine months of operation. The helpline maintained an operational uptime of 99.81% (6450/6462 hours); and answered more than 81.33% (83,050/102,115) of all calls. More than three-fourths of the calls came between 9:00 am-12:00 pm. The most successful promotional activity was "interpersonal communication" (reported by 70.05%, 27,880/39,800, of the callers). Nearly three-fourths of the callers self-identified as MSM, including 17.05% (6786/39,800) as rural MSM and 5.03% (2001/39,800) as a married MSM. Most callers (93.10%, 37,055/39,800) requested information, while some (27.01%, 10,750/39,800) requested counseling on HIV/acquired immune deficiency syndrome (AIDS), STIs, and other health and nonhealth issues. There were 38.97% (15,509/39,800) of the callers that were provided contacts of different HIV/AIDS referral services. Many MSM clients reported increased self-esteem in dealing with their sexual identity and disclosing the same with their family and spouse; and an increase in HIV/AIDS risk-reduction behaviors like consistent condom use and HIV testing. **CONCLUSIONS:** National HIV/AIDS prevention interventions for MSM in India should consider scaling-up this helpline service across the country. The helpline may serve as an important mechanism for accessing hard-to-reach MSM, and thus improving HIV prevention programming.

6. **Prevalence and correlates of HIV among men who have sex with men in Tijuana, Mexico.** Thior, I., E. V. Pitpitan, et al. *JMIR Mhealth Uhealth* 2015 18(1): 19304.
Online at: <http://www.jiasociety.org/index.php/jias/article/view/19304>

INTRODUCTION: Men who have sex with men (MSM) in developing countries such as Mexico have received relatively little research attention. In Tijuana, Mexico, a border city experiencing a dynamic HIV epidemic, data on MSM are over a decade old. Our aims were to estimate the prevalence and examine correlates of HIV infection among MSM in this city. **METHODS:** We conducted a cross-sectional study of 191 MSM recruited through respondent-driven sampling (RDS) in 2012. Biological males over the age of 18 who resided in Tijuana and reported sex with a male in the past year were included. Participants underwent interviewer-administered surveys and rapid tests for HIV and syphilis with confirmation. **RESULTS:** A total of 33 MSM tested positive for HIV, yielding an RDS-adjusted estimated 20% prevalence. Of those who tested positive, 89% were previously unaware of their HIV status. An estimated 36% (95% CI: 26.4-46.5) had been tested for HIV in the past year, and 30% (95% CI: 19.0-40.0) were estimated to have ever used methamphetamine. Independent correlates of being infected with HIV were methamphetamine use (odds ratio [OR] = 2.24, p = 0.045, 95% CI: 1.02, 4.92) and active syphilis infection (OR = 4.33, p = 0.01, 95% CI: 1.42, 13.19). **CONCLUSIONS:** Our data indicate that MSM are a key sub-population in Tijuana at higher risk for HIV. Tijuana would also appear to have the highest proportion among upper-middle-income countries of HIV-positive MSM who are unknowingly infected. More HIV

prevention research on MSM is urgently needed in Tijuana.

7. **Sexual Violence Against Men Who Have Sex with Men in Brazil: A Respondent-Driven Sampling Survey.** Sabido, M., L. R. Kerr, et al. *AIDS Behav* 2015.

Online at: http://download.springer.com/static/pdf/304/art%253A10.1007%252Fs10461-015-1016-z.pdf?auth66=1425324975_608ed04cd955836d81998140b753b653&ext=.pdf

We estimated the prevalence of sexual violence (SV) experience among men who have sex with men (MSM) in Brazil and identified its associated risk factors. We recruited 3859 MSM through respondent driven sampling. A multivariable hierarchical analysis was performed using an ecological model. The prevalence of having ever experienced SV was 15.9 % (95 % confidence interval [CI] 14.7-17.1). SV experience was independently associated with discrimination due to sexual orientation (odds ratio [OR] 3.05; 95 % CI 2.10-4.42), prior HIV testing (OR 1.81; 95 % CI 1.25-2.63), ≤ 14 years at first sex (OR 1.86; 95 % CI 1.28-2.71), first sex with a man (OR 1.89; 95 % CI 1.28-2.79), presenting STI symptoms (last year) (OR 1.66; 95 % CI 1.12-2.47), and having suicidal ideas (last 6 months) (OR 2.08; 95 % CI 1.30-3.35). The high levels of SV against MSM in Brazil place them at a markedly higher risk of SV than the general population. Homophobic prejudice is the strongest determinant of SV and urgently needs to be included at the forefront of the national response to SV.

8. **Understanding the high prevalence of HIV and other sexually transmitted infections among socio-economically vulnerable men who have sex with men in Jamaica.** Figueroa, J. P., C. J. Cooper, et al. *PLoS One* 2015 10(2): e0117686.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4319820/pdf/pone.0117686.pdf>

OBJECTIVES: This study estimates HIV prevalence among men who have sex with men (MSM) in Jamaica and explores social determinants of HIV infection among MSM. **DESIGN:** An island-wide cross-sectional survey of MSM recruited by peer referral and outreach was conducted in 2011. A structured questionnaire was administered and HIV/STI tests done. We compared three groups: MSM who accepted cash for sex within the past 3 months (MSM SW), MSM who did not accept cash for sex (MSM non-SW), and MSM with adverse life events (ever raped, jailed, homeless, victim of violence or low literacy). **RESULTS:** HIV prevalence among 449 MSM was 31.4%, MSM SW 41.1%, MSM with adverse life events 38.5%, 17 transgender MSM (52.9%), and MSM non-SW without adverse events 21.0%. HIV prevalence increased with age and number of adverse life events (test for trend $P < 0.001$), as did STI prevalence ($P = 0.03$). HIV incidence was 6.7 cases/100 person-years (95% CI: 3.74, 12.19). HIV prevalence was highest among MSM reporting high-risk sex; MSM SW who had been raped (65.0%), had a STI (61.2%) and who self identified as female (55.6%). Significant risk factors for HIV infection common to all 3 subgroups were participation in both receptive and insertive anal intercourse, high-risk sex, and history of a STI. Perception of no or little risk, always using a condom, and being bisexual were protective. **CONCLUSION:** HIV prevalence was high among MSM SW and MSM with adverse life events. Given the characteristics of the sample, HIV prevalence among MSM in Jamaica is probably in the range of 20%. The study illustrates the importance of social vulnerability in driving the HIV epidemic. Programs to empower young MSM, reduce social vulnerability and other structural barriers including stigma and discrimination against MSM are critical to reduce HIV transmission.

9. **Transactional Sex and the HIV Epidemic Among Men Who have Sex with Men (MSM): Results From a Systematic Review and Meta-analysis.** Oldenburg, C. E., A. G. Perez-Brumer, et al. *AIDS Behav* 2015.

Online at: http://download.springer.com/static/pdf/139/art%253A10.1007%252Fs10461-015-1010-5.pdf?auth66=1425324952_0935823a3331c1856336b409f5278ac2&ext=.pdf

Engagement in transactional sex has been hypothesized to increase risk of HIV among MSM, however conflicting evidence exists. We conducted a systematic review and meta-analysis comparing HIV prevalence among MSM who engaged in transactional sex to those who did not (33 studies in 17 countries; $n = 78,112$ MSM). Overall, transactional sex was associated with a significant elevation in HIV

prevalence (OR 1.34, 95 % CI 1.11-1.62). Latin America (OR 2.28, 95 % CI 1.87-2.78) and Sub-Saharan Africa (OR 1.72, 95 % CI 1.02-2.91) were the only regions where this elevation was noted. Further research is needed to understand factors associated with sex work and subsequent HIV risk in Latin America and Sub-Saharan Africa.

10. **Longitudinal Analysis of Key HIV-Risk Behavior Patterns and Predictors in Men Who Have Sex with Men, Bangkok, Thailand.** Holtz, T. H., S. Pattanasin, et al. *Arch Sex Behav* 2015 44(2): 341-8.

The HIV incidence among Thai men who have sex with men (MSM) enrolled in the Bangkok MSM Cohort Study (BMCS) has remained high since its inception in 2006. The purpose of this BMCS analysis was to determine: (1) changes in three HIV-risk behaviors (unprotected anal intercourse (UAI), recreational drug use, and multiple sexual partners i.e., more than four male/transgender partner) over time; and (2) factors associated with each one separately. Thai MSM aged 18 years or older and living in Bangkok were eligible to participate in the BMCS. At each follow-up visit, participants were asked to report their sexual and drug behaviors in the previous 4 months. We conducted a longitudinal analysis using generalized estimating equations logistic regression that included 1,569 MSM who were enrolled from 2006 to 2010 and contributed at least one follow-up visit. For each four-month visit increase, we found a 2, 1, and 1 % decrease in odds for reported UAI, recreational drug use, and multiple sexual partners, respectively. We found significant predictors associated with three HIV-risk behaviors such as binge drinking, participation in group sex, and use of erectile dysfunction drugs. The statistically significant decrease in odds of HIV-risk behaviors among the participants is encouraging; however, continued vigilance is required to address the factors associated with HIV-risk behaviors through currently available interventions reaching MSM.

11. **"In the Fell Clutch of Circumstance": HIV and Men Who Have Sex With Men in Sub-Saharan Africa.** Jobson, G., H. Struthers, et al. *Curr HIV/AIDS Rep* 2015.

Men who have sex with men (MSM) in sub-Saharan Africa (SSA) have been repeatedly found to have high risk of HIV infection, and in spite of the differing nature of the HIV epidemic in the general population between East and Southern Africa, and West and Central Africa, MSM are disproportionately affected by HIV across the entire region. Recent research has examined the drivers of HIV risk, and the dynamics of the MSM HIV epidemic in greater detail. However, this growing knowledge has generally not been translated into effective HIV prevention interventions. In part, this is due to the highly stigmatised and frequently criminalised nature of same-sex sexualities in much of the region. Without human-rights-based advocacy targeting governments and interventions aiming to decrease stigma and homophobia, translating research into effective HIV interventions for MSM in SSA at the scale needed to reduce HIV transmission in this population remains highly unlikely.

12. **Predictors of Condom Use among Peer Social Networks of Men Who Have Sex with Men in Ghana, West Africa.** Nelson, L. E., L. Wilton, et al. *PLoS One* 2015 10(1): e0115504.
Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4312093/pdf/pone.0115504.pdf>

Ghanaian men who have sex with men (MSM) have high rates of HIV infection. A first step in designing culturally relevant prevention interventions for MSM in Ghana is to understand the influence that peer social networks have on their attitudes and behaviors. We aimed to examine whether, in a sample of Ghanaian MSM, mean scores on psychosocial variables theorized to influence HIV/STI risk differed between peer social networks and to examine whether these variables were associated with condom use. We conducted a formative, cross-sectional survey with 22 peer social networks of MSM (n = 137) in Ghana. We assessed basic psychological-needs satisfaction, HIV/STI knowledge, sense of community, HIV and gender non-conformity stigmas, gender equitable norms, sexual behavior and condom use. Data were analyzed using analysis of variance, generalized estimating equations, and Wilcoxon two sample tests. All models were adjusted for age and income, ethnicity, education, housing and community of residence. Mean scores for all psychosocial variables differed significantly by social network. Men who reported experiencing more autonomy support by their healthcare providers had higher odds of condom

use for anal (AOR = 3.29, $p < 0.01$), oral (AOR = 5.06, $p < 0.01$) and vaginal (AOR = 1.8, $p < 0.05$) sex. Those with a stronger sense of community also had higher odds of condom use for anal sex (AOR = 1.26, $p < 0.001$). Compared to networks with low prevalence of consistent condom users, networks with higher prevalence of consistent condom users had higher STD and HIV knowledge, had norms that were more supportive of gender equity, and experienced more autonomy support in their healthcare encounters. Healthcare providers and peer social networks can have an important influence on safer-sex behaviors in Ghanaian MSM. More research with Ghanaian MSM is needed that considers knowledge, attitudes, and norms of their social networks in the development and implementation of culturally relevant HIV/STI prevention intervention strategies.

13. **Contributions of an intensive HIV prevention programme in increasing HIV testing among men who have sex with men in Andhra Pradesh, India.** Ramesh, S., P. Mehrotra, et al. *Glob Public Health* 2015: 1-11. Online at: <http://www.tandfonline.com/doi/abs/10.1080/17441692.2014.1003571>

The objective of this study was to identify the factors associated with uptake of HIV testing and to assess their relative contributions in increasing HIV testing. Data are drawn from two rounds of cross-sectional Integrated Behavioural and Biological Assessment (IBBA) surveys of self-identified men who have sex with men (MSM) from Andhra Pradesh, India, recruited through probability-based sampling in 2005-2006 and 2009-2010 (IBBA1, $n = 1621$; IBBA2, $n = 1608$, respectively). Logistic regression model was used to assess the relationship between socio-demographic characteristics, sexual behaviours, programme exposure and HIV testing. Significant factors were further parsed using decomposition analysis to examine the contribution of different components of that factor towards the change in HIV testing. There was a significant increase in the proportion of MSM reporting HIV testing from IBBA1 to IBBA2. Higher literacy levels, being 25-34 years old, being a kothi (predominantly receptive), engaging in both commercial and non-commercial sexual relationships and intervention programme exposure contributed the most to the increase in HIV testing.

14. **Feasibility of Recruiting Peer Educators to Promote HIV Testing Using Facebook Among Men Who have Sex with Men in Peru.** Menacho, L. A., J. T. Galea, et al. *AIDS Behav* 2015. Online at: http://download.springer.com/static/pdf/448/art%253A10.1007%252Fs10461-014-0987-5.pdf?auth66=1425324981_7315d7d92ca08d92418f9f3682d00963&ext=.pdf

A peer leader-based intervention using social media can be an effective means to encourage Peruvian gay men to test for HIV. The objective was to explore the feasibility of recruiting and training leaders to deliver a peer intervention via Facebook to promote HIV testing. Training consisted of three sessions focused on HIV epidemiology, consequences of stigma associated with HIV, and ways to use Facebook. We performed pre- and post-training evaluations to assess HIV knowledge and comfort using Facebook. We trained 34 peer leaders. At baseline, the majority of peer leaders were already qualified and knowledgeable about HIV prevention and use of social media. We found a significant increase in proportion of peer leaders who were comfortable using social media to discuss about sexual partners and about STIs. It is feasible to recruit peer leaders who are qualified to conduct a social media based HIV prevention intervention in Peru.

15. **Homosexuality-related stigma and sexual risk behaviors among men who have sex with men in hanoi, Vietnam.** Ha, H., J. M. Risser, et al. *Arch Sex Behav* 2015 44(2): 349-56. Online at: <http://link.springer.com/article/10.1007%2Fs10508-014-0450-8>

This article examined the associations between three forms of homosexuality-related stigma (enacted, perceived, and internalized homosexual stigmas) with risky sexual behaviors, and to describe the mechanisms of these associations, among men who have sex with men (MSM) in Hanoi, Vietnam. We used respondent-driven sampling (RDS) to recruit 451 MSM into a cross-sectional study conducted from August 2010 to January 2011. Data were adjusted for recruitment patterns due to the RDS approach; logistic regression and path analyses were performed. Participants were young and single; most had

attended at least some college. Nine out of ten participants engaged in sexual behaviors at moderate to high risk levels. Compared to those who had no enacted homosexual stigma, men having low and high levels of enacted homosexual stigma, respectively, were 2.23 times (95 % CI 1.35-3.69) and 2.20 times (95 % CI 1.04-4.76) more likely to engage in high levels of sexual risk behaviors. In addition, there was an indirect effect of perceived homosexual stigma and internalized homosexual stigma on sexual risk behaviors through depression and drug and alcohol use. Our study provides valuable information to our understanding of homosexual stigma in Vietnam, highlighting the need for provision of coping skills against stigma to the gay community and addressing drinking and drug use among MSM, to improve the current HIV prevention interventions in Vietnam.

16. **Amphetamine-type stimulants and HIV infection among men who have sex with men: implications on HIV research and prevention from a systematic review and meta-analysis.** Thu Vu, N. T., L. Maher, et al. *J Int AIDS Soc* 2015 18(1): 19273.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4302169/pdf/JIAS-18-19273.pdf>

INTRODUCTION: HIV infections and the use of amphetamine-type stimulants (ATS) among men who have sex with men (MSM) have been increasing internationally, but the role of ATS use as a co-factor for HIV infection remains unclear. We aimed to summarize the association between ATS use and HIV infection among MSM. METHODS: We conducted a systematic search of MEDLINE, EMBASE, GLOBAL HEALTH and PsycINFO for relevant English, peer-reviewed articles of quantitative studies published between 1980 and 25 April 2013. Pooled estimates of the association--prevalence rate ratios (PRR, cross-sectional studies), odds ratio (OR, case-control studies) and hazard ratio (HR, longitudinal studies), with 95% Confidence Intervals (CI)--were calculated using random-effects models stratified by study design and ATS group (meth/amphetamines vs. ecstasy). We assessed the existence of publication bias in funnel plots and checked for sources of heterogeneity using meta-regression and subgroup analysis. RESULTS: We identified 6710 article titles, screened 1716 abstracts and reviewed 267 full text articles. A total of 35 publications were eligible for data abstraction and meta-analysis, resulting in 56 records of ATS use. Most studies (31/35) were conducted in high-income countries. Published studies used different research designs, samples and measures of ATS use. The pooled association between meth/amphetamine use and HIV infection was statistically significant in all three designs (PRR = 1.86; 95% CI: 1.57-2.17; OR = 2.73; 95% CI: 2.16-3.46 and HR = 3.43; 95% CI: 2.98-3.95, respectively, for cross-sectional, case-control and longitudinal studies). Ecstasy use was not associated with HIV infection in cross-sectional studies (PRR = 1.15; 95% CI: 0.88-1.49; OR = 3.04; 95% CI: 1.29-7.18 and HR = 2.48; 95% CI: 1.42-4.35, respectively, for cross-sectional, case-control and longitudinal studies). RESULTS in cross-sectional studies were highly heterogeneous due to issues with ATS measurement and different sampling frames. CONCLUSIONS: While meth/amphetamine use was significantly associated with HIV infection among MSM in high-income countries in all study designs, evidence of the role of ecstasy in HIV infection was lacking in cross-sectional studies. Cross-sectional study design, measurement approaches and source populations may also be important modifiers of the strength and the direction of associations. Event-specific measure of individual drug is required to establish temporal relationship between ATS use and HIV infection. HIV prevention programmes targeting MSM should consider including interventions designed to address meth/amphetamine use.

17. **HIV Prevalence and Awareness of Positive Serostatus Among Men Who Have Sex With Men and Transgender Women in Bogota, Colombia.** Zea, M. C., C. A. Reisen, et al. *Am J Public Health* 2015: e1-e8.

OBJECTIVES: We estimated HIV prevalence among men who have sex with men (MSM) and transgender women in Bogota, Colombia, and explored differences between HIV-positive individuals who are aware and unaware of their serostatus. METHODS: In this cross-sectional 2011 study, we used respondent-driven sampling (RDS) to recruit 1000 MSM and transgender women, who completed a computerized questionnaire and received an HIV test. RESULTS: The RDS-adjusted prevalence was 12.1% (95% confidence interval [CI] = 8.7, 15.8), comparable to a previous RDS-derived estimate. Among HIV-positive participants, 39.7% (95% CI = 25.0, 54.8) were aware of their serostatus and 60.3% (95% CI = 45.2, 75.5)

were unaware before this study. HIV-positive-unaware individuals were more likely to report inadequate insurance coverage, exchange sex (i.e., sexual intercourse in exchange for money, goods, or services), and substance use than other participants. HIV-positive-aware participants were least likely to have had condomless anal intercourse in the previous 3 months. Regardless of awareness, HIV-positive participants reported more violence and forced relocation experiences than HIV-negative participants. **CONCLUSIONS:** There is an urgent need to increase HIV detection among MSM and transgender women in Bogota. HIV-positive-unaware group characteristics suggest an important role for structural, social, and individual interventions. (Am J Public Health. Published online ahead of print January 20, 2015: e1-e8. doi:10.2105/AJPH.2014.302307).

18. Emerging themes for sensitivity training modules of African healthcare workers attending to men who have sex with men: a systematic review. Dijkstra, M., E. M. van der Elst, et al. *Int Health* 2015.

Online at: <http://inthehealth.oxfordjournals.org/content/early/2015/01/16/inthehealth.ihu101.full.pdf>

Sensitivity training of front-line African health care workers (HCWs) attending to men who have sex with men (MSM) is actively promoted through national HIV prevention programming in Kenya. Over 970 Kenyan-based HCWs have completed an eight-modular online training free of charge (<http://www.marps-africa.org>) since its creation in 2011. Before updating these modules, we performed a systematic review of published literature of MSM studies conducted in sub-Saharan Africa (sSA) in the period 2011-2014, to investigate if recent studies provided: important new knowledge currently not addressed in existing online modules; contested information of existing module topics; or added depth to topics covered already. We used learning objectives of the eight existing modules to categorise data from the literature. If data could not be categorised, new modules were suggested. Our review identified 142 MSM studies with data from sSA, including 34 studies requiring module updates, one study contesting current content, and 107 studies reinforcing existing module content. ART adherence and community engagement were identified as new modules. Recent MSM studies conducted in sSA provided new knowledge, contested existing information, and identified new areas of MSM service needs currently unaddressed in the online training.

19. Binge Drinking among Men Who Have Sex with Men and Transgender Women in San Salvador: Correlates and Sexual Health Implications. Peacock, E., K. Andrinopoulos, et al. *J Urban Health* 2015.

Online at: <http://link.springer.com/article/10.1007%2Fs11524-014-9930-3>

High rates of heavy alcohol use among men who have sex with men (MSM) and transgender women (TW) have been linked to increased vulnerability for HIV and poor mental health. While theories explaining elevated drinking levels among sexual minorities have been forwarded, few investigations have assessed the potential pathways using empirical data, particularly with an explicit focus on self-stigma and among MSM and TW in low- and middle-income countries. This study examined the relationship between stigma-related stress (specifically, self-stigma and concealment of one's sexual orientation) and binge drinking in a sample of MSM and TW (n = 670) in San Salvador, El Salvador, recruited using respondent-driven sampling. Levels of alcohol consumption among participants were high: only 39 % of the sample did not drink alcohol or did not binge drink, while 34 % engaged in binge drinking at least weekly. Among MSM, high self-stigma was associated with binge drinking at least weekly (adjusted relative risk ratio (aRRR) = 2.1, $p < 0.05$). No such relationship was found with less than weekly binge drinking. Among both MSM and TW, having a female partner was associated with binge drinking less than weekly (aRRR = 3.3, $p < 0.05$) and binge drinking at least weekly (aRRR = 3.4, $p < 0.05$), while disclosure of sexual orientation to multiple types of people was associated with binge drinking less than weekly (aRRR = 2.9 for disclosure to one-two types of people, $p < 0.01$; aRRR = 4.0 for disclosure to three-nine types of people, $p < 0.01$). No such relationship was found with at least weekly binge drinking. Binge drinking at least weekly was marginally associated with a number of sexual health outcomes, including high number of lifetime partners (adjusted odds ratio (aOR) = 1.7, $p < 0.10$), inconsistent condom use with a non-regular partner (aOR = 0.5, $p < 0.10$), and decreased intention to test for HIV in the next 12 months (aOR = 0.6, $p < 0.10$). With the exception of inconsistent condom use with a non-regular partner (aOR = 0.4, $p < 0.05$), binge drinking less

than weekly was not associated with increased sexual risk behavior and was actually associated with increased intention to test for HIV in the next 12 months (aOR = 2.8, $p < 0.01$). These findings support multiple pathways linking stigma-related stress to alcohol use. Specifically, those with high self-stigma and identity concealment may be using alcohol as a maladaptive coping and emotion regulation strategy, while those who have disclosed their sexual orientation to multiple types of people may be more engaged with the sexual minority community, likely in bars and other venues where permissive norms for alcohol use prevail. That this frequency of binge drinking does not appear to be associated with increased sexual risk behavior (and may even be associated with increased intention to test for HIV in the next 12 months) lends further support to the suggestion that these individuals with healthy concepts of the self (as indicated by high levels of disclosure and low levels of risky sexual behavior) may engage in binge drinking because of the influence of the social environment. Further research is needed to establish the pathways linking stigma-related stress to heavy alcohol use so that points of intervention can be identified.

20. Experiences of social oppression among men who have sex with men in a cosmopolitan city in Nigeria.

Sekoni, A. O., O. O. Ayoola, et al. *HIV AIDS (Auckl)* 2015 7: 21-7.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4278793/pdf/hiv-7-021.pdf>

BACKGROUND: In several African countries, men who have sex with men (MSM) are becoming visible, as a result of which they are now victims of human rights violations. This has a negative effect on their ability to access services targeted at human immunodeficiency virus (HIV) prevention and care. The main objective of this study was to document the experiences of social oppression among MSM in Lagos State, Nigeria. **METHODS:** Simple random sampling was used to select three of the seven local government areas in Lagos State that had community centers. Snowball sampling was used to recruit 291 participants. The survey instrument was a pretested questionnaire. The results were presented as means and percentages. Univariate, bivariate, and multivariate analysis was carried out at $P < 0.05$. **RESULTS:** The mean age of the participants was 25.3 \pm 4.6 years, and the majority (66.0%) were currently single and not in a steady relationship. Half of the men self-identified as gay and about 48% as bisexual. Alcohol use occurred in 56.7% of the respondents, about a quarter (25.8%) smoked cigarettes, and 11.0% reported using hard drugs. The commonest acts of human rights violation and or violence reported were aggression 35.7%, alienation 29.9%, verbal abuse 19.2%, physical abuse 17.9%, rape by a man 16.8%, and psychological abuse 20.3%. The predictors of human rights violation were level of education (adjusted odds ratio 2.6, $P=0.019$), marital status (adjusted odds ratio 2.3, $P=0.005$), and sexual orientation (adjusted odds ratio 1.9, $P=0.017$). For physical and sexual abuse, MSM who consumed alcohol and were homosexual/transgender were at risk. **CONCLUSION:** This study showed that a high proportion of MSM had experienced various forms of human rights violation and abuse as a result of their sexual orientation/identity. There is a need to document and quantify these happenings, which can serve as an advocacy tool for reform.

21. Factors associated with loss-to-follow-up during behavioral interventions and HIV testing cohort among men who have sex with men in Nanjing, China. Tang, W., X. Huan, et al. *PLoS One* 2015 10(1): e115691.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4283967/pdf/pone.0115691.pdf>

BACKGROUND: Behavioral interventions (BIs) remained the cornerstone of HIV prevention in resource-limited settings. One of the major concerns for such efforts is the loss-to-follow-up (LTFU) that threatens almost every HIV control program involving high-risk population groups. **METHODS:** To evaluate the factors associated with LTFU during BIs and HIV testing among men who have sex with men (MSM), 410 HIV sero-negatives MSM were recruited using respondent driven sampling (RDS) in Nanjing, China during 2008, they were further followed for 18 months. At baseline and each follow-up visits, each participant was counseled about various HIV risk-reductions BIs at a designated sexually transmitted infection (STI) clinic. **RESULTS:** Among 410 participants recruited at baseline, altogether 221 (53.9%) were LTFU at the 18-month follow-up visit. Overall, 46 participants were found to be positive for syphilis infection at baseline while 13 participants were HIV sero-converted during the follow-up period. Increasing age was less (Adjusted Odds Ratio(aOR) of 0.90, 95% confidence Interval (CI) 0.86-0.94) and official residency of

provinces other than Nanjing (AOR of 2.49, 95%CI 1.32-4.71), lower level of education (AOR of 2.01, 95%CI 1.10-3.66) and small social network size (AOR of 1.75, 95%CI 1.09-2.80) were more likely to be associated with higher odds of LTFU. CONCLUSION: To improve retention in the programs for HIV control, counseling and testing among MSM in Nanjing, focused intensified intervention targeting those who were more likely to be LTFU, especially the young, less educated, unofficial residents of Nanjing who had smaller social network size, might be helpful.

22. HIV and STI prevalence and risk factors among male sex workers and other men who have sex with men in Nairobi, Kenya. Muraguri, N., W. Tun, et al. *J Acquir Immune Defic Syndr* 2015 68(1): 91-6.

Online at:

<http://graphics.tx.ovid.com/ovftpdfs/FPDDNCMCNAPMCN00/fs046/ovft/live/gv023/00126334/00126334-201501010-00013.pdf>

Previous surveys of men who have sex with men (MSM) in Africa have not adequately profiled HIV status and risk factors by sex work status. MSM in Nairobi, Kenya, were recruited using respondent-driven sampling, completed a behavioral interview, and were tested for HIV and sexually transmitted infections. Overlapping recruitment among 273 male sex workers and 290 other MSM was common. Sex workers were more likely to report receptive anal sex with multiple partners (65.7% versus 18.0%, $P < 0.001$) and unprotected receptive anal intercourse (40.0% versus 22.8%, $P = 0.005$). Male sex workers were also more likely to be HIV infected (26.3% versus 12.2%, $P = 0.007$).

23. Sociobehavioral Correlates of HIV Risk among Men Who Have Sex with Men in Chhattisgarh, India: Analysis of Sentinel Surveillance Data. Saha, M. K., T. Mahapatra, et al. *Jpn J Infect Dis* 2015 68(1): 38-44.

Online at: <https://www.jstage.jst.go.jp/article/yoken/advpub/0/advpub/JJID.2013.068/pdf>

Men who have sex with men (MSM) in India are mostly hidden due to stigma and discrimination and are at a higher risk of acquiring human immunodeficiency virus (HIV). HIV Sentinel Surveillance (HSS) reported an increased HIV burden in Chhattisgarh, an important state in central India. This state has the distinction of having the highest HIV prevalence among MSM in India; therefore, it warrants special attention; hence, we focused on the role of MSM in the HIV epidemic in this state. Cross-sectional analysis of the most recent latest (2010-2011) HSS data of 227 MSM in Chhattisgarh revealed a HIV seropositivity of 14.98%. Older age, unemployment, and receiving money for sex with a man were associated with a higher HIV risk. Participants were mostly young (mean age, approximately 26 years), school-level educated (51.98%), urban residents (99.56%), in service (46.26%), not involved in heterosexual activity (97.36%), or paid sex (68.72%). None of the participants reported injection drug use, and almost all of them (98.68%) were kothis. Some of the observed associations lacked statistical power due to sparse data obtained during this initial surveillance among MSM in Chhattisgarh. Therefore, further studies involving a larger population are needed to understand the role of MSM in the dynamics of the HIV epidemic in this state to facilitate the planning of appropriate interventions, as the epidemic is likely to be concentrated among MSM in Chhattisgarh.

24. Personality among Sexually Compulsive Men Who Practice Intentional Unsafe Sex in Sao Paulo, Brazil. do Amaral, M. L., C. H. Abdo, et al. *J Sex Med* 2015 12(2): 557-66.

INTRODUCTION: There is evidence of an association between the practice of intentional unsafe sex among men who have sex with men (MSM) and sensation seeking and impulsivity. However, other aspects of personality have been less frequently investigated. AIMS: This study aims to investigate the association between the practice of intentional unsafe sex and personality traits in individuals who sought treatment and met the criteria for compulsive sexual behavior in Sao Paulo, Brazil. METHODS: The sample consisted of 69 sexually compulsive MSM. The participants underwent psychiatric evaluation and an interview to define intentional condomless sex and completed self-report instruments. MAIN OUTCOME MEASURES: The participants completed the following measures: the Temperament and Character Inventory and the Sexual Compulsivity Scale. RESULTS: Twenty-five participants (36%) reported intentional unsafe sex with

casual partners, of whom 84% were gay and 16% bisexual ($P < 0.05$). Fifteen (22%) individuals reported being HIV positive, and 11 (73%) of them practiced intentional unprotected anal intercourse ($P < 0.05$). The mean of sexual compulsivity was associated with men who engaged in intentional unsafe sex ($P = 0.01$). Men who reported intentional unsafe sex scored significantly higher on the novelty seeking temperament dimension ($P < 0.05$) and scored significantly lower on the self-directedness character dimension ($P < 0.001$). However, self-directedness predicted intentional unsafe sex in the multiple logistic regression ($P = 0.001$). CONCLUSIONS: Sexually compulsive individuals who practiced intentional unsafe sex presented lower self-directedness than the group who did not engage in intentional unsafe sex, which suggests less autonomy regarding life itself. To the best of our knowledge, this is the first study to consider intentional unsafe sex in sexually compulsive men. Amaral MLS, Abdo CHN, Tavares H, and Scanavino MdeT. Personality among sexually compulsive men who practice intentional unsafe sex in Sao Paulo, Brazil. *J Sex Med* 2015;12:557-566.

25. **Sexual partner mixing and differentials in consistent condom use among men who have sex with men in Maharashtra, India.** Deshpande, S. and S. Bharat. *Glob Public Health* 2015 10(1): 103-118.

Sexual partner mixing among men who have sex with men (MSM), based on both gender and partnership status, is an understudied theme in India. Using data from Round 2 of the Integrated Bio-behavioral Survey, this paper reports on gender and partnership status-based sexual mixing and levels of consistent condom use (CCU) among MSM in Maharashtra. A total of 689 MSM were sampled using probability-based sampling. Bivariate and regression analyses were carried out on condom use and partnership mixing. Over half (52%) of all MSM reported having only male partners while about one-third (34.5%) reported having partners of both gender. Over 70% of MSM engaged in sex with a mix of casual, regular, commercial and non-commercial partners. MSM with only male partners reported lower CCU as compared to MSM with partners of both genders (47.3% and 62%, respectively, $p = 0.11$). CCU levels differed significantly by status of sex partner. Overall, MSM having 'men only' as partners and those with partners of mixed status have greater risk behaviour in terms of low CCU. HIV prevention interventions need to focus attention on men in 'exclusively male' sex partnerships as well as MSM with a mix of casual, regular and commercial partners.

26. **Alcohol use disorders negatively influence antiretroviral medication adherence among men who have sex with men in Peru.** Ferro, E. G., D. Weikum, et al. *AIDS Care* 2015 27(1): 93-104.

As international guidelines increase access to antiretroviral therapy (ART) globally, ART adherence becomes increasingly important to achieve HIV treatment as prevention (TasP) goals. In the concentrated HIV epidemic among men who have sex with men (MSM) and transgendered women (TGW) in Lima, Peru, the independent correlates of ART nonadherence were examined to inform treatment intervention priorities. Cross sectional survey of HIV-infected MSM and TGW who are engaged in clinical care in Lima, Peru. From June to August 2012, 302 HIV-infected Peruvian MSM/TGW from three clinical care sites were recruited using convenience sampling to participate in a cross-sectional computer-assisted adherence survey. Several standardized screening measures associated with ART nonadherence were examined in order to determine the independent correlates of optimal ($\geq 90\%$) and perfect (100%) adherence, which were assessed using logistic regression. Of the 302 participants recruited, 263 (87.1%) were prescribed ART. Among those prescribed ART, 229 (87.1%) reported optimal and 146 (55.5%) reported perfect adherence. The prevalence of alcohol use disorders (AUD; 43.2%), alcohol dependence (5.3%), recent drug use (6.0%), and depression (44.5%) was high, and most participants had some evidence of neurocognitive impairment. Meeting criteria for having an AUD and depression were collinear ($p < 0.001$). On multivariate analysis, having an AUD was inversely related and the only independent correlate of optimal (AOR = 0.427; 95% CI = 0.187-0.976) and perfect (AOR = 0.552; 95% CI = 0.327-0.930) ART adherence. AUDs are highly prevalent among Peruvian HIV-infected MSM and contribute significantly to ART nonadherence. These findings support the need for screening and treating underlying AUDs. In order to meet HIV TasP goals, evidence-based strategies targeting AUDs are likely to directly improve ART adherence and indirectly improve overall individual health, HIV treatment engagement, and reduce

transmission to sexual partners among this vulnerable and disproportionately affected population.

27. **Men Who Have Sex with Men in Mozambique: Identifying a Hidden Population at High-risk for HIV.**

Nala, R., B. Cummings, et al. *AIDS Behav* 2015 19(2): 393-404.

Online at: http://download.springer.com/static/pdf/97/art%253A10.1007%252Fs10461-014-0895-8.pdf?auth66=1425324948_5d67558d7fb0ad17ae9682d4bb47aa2b&ext=.pdf

The population of men who have sex with men (MSM) has been largely ignored in HIV-related policies and programming in Mozambique and there is little information about the contribution of MSM to the HIV epidemic. An integrated biological and behavioral study among MSM using respondent-driven sampling was conducted in 2011 in Maputo, Beira and Nampula/Nacala. Men who reported engaging in oral or anal sex with other men in the last 12 months answered a questionnaire and provided a blood sample for HIV testing. The prevalence of HIV was 8.2 % (Maputo, n = 496), 9.1 % (Beira, n = 584) and 3.1 % (Nampula/Nacala, n = 353). Prevalence was higher among MSM \geq 25 vs. 18-24 years: 33.8 % vs. 2.4 % ($p < 0.001$), 32.1 vs. 2.8 % ($p < 0.001$), and 10.3 vs. 2.7 % ($p < 0.06$), in each city respectively. The difference in prevalence demonstrates the need to increase prevention for younger MSM at risk for HIV and ensure care and treatment for older HIV-infected MSM.

28. **High prevalence of stigma-related abuse among a sample of men who have sex with men in Tanzania: implications for HIV prevention.** Anderson, A. M., M. W. Ross, et al. *AIDS Care* 2015 27(1): 63-70.

In sub-Saharan Africa, the prevalence of stigma-related abuse and violence among men who have sex with men (MSM) and its potential impact on the HIV/AIDS epidemic is unknown. This study estimated the prevalence and source of violence and abuse among a sample of MSM in Tanzania and characterized the association between levels of violence and sexual and mental health variables. Data were taken from a larger study of 200 MSM in Tanzania. Frequency tabulations, bivariate analysis, and logistic regression were performed to describe the prevalence and source of abuse and to determine the association between levels of violence and sexual demographics and mental health variables. The MSM sample for this study was young (median age 23), somewhat educated with the majority having attained secondary school (80%) and mostly employed (60%). Verbal (48.5%) and moral (32.5%) abuses were the most predominant types of abuse among the sample and were mostly from people in the street and neighbors. Sexual abuse (30%) was mostly from partners, and physical violence (29.5%) was largely from people in the street. Participants in the high-violence level group had a significantly greater number of sexual partners, depression scores, and internalized homonegativity (IH) scores. IH predicted HIV infection and verbal abuse predicted IH. There is a need for an increased awareness of violence and abuse faced by MSM in Tanzania, as well as effective programs to specifically target the issue of violence among MSM, and its implication for mental health and for risky sexual behaviors and HIV transmission.

29. **Exploring repeat HIV testing among men who have sex with men in Cape Town and Port Elizabeth, South Africa.** Siegler, A. J., P. S. Sullivan, et al. *AIDS Care* 2015 27(2): 229-34.

Online at: <http://www.tandfonline.com/doi/pdf/10.1080/09540121.2014.947914>

Despite the high prevalence of HIV among men who have sex with men (MSM) - and the general adult population - in South Africa, there is little data regarding the extent to which MSM seek repeat testing for HIV. This study explores reported histories of HIV testing, and the rationales for test seeking, among a purposive sample of 34 MSM in two urban areas of South Africa. MSM participated in activity-based in-depth interviews that included a timeline element to facilitate discussion. Repeat HIV testing was limited among participants, with three-quarters having two or fewer lifetime HIV tests, and over one-third of the sample having one or fewer lifetime tests. For most repeat testers, the time gap between their HIV tests was greater than the one-year interval recommended by national guidelines. Analysis of the reasons for seeking HIV testing revealed several types of rationale. The reasons for a first HIV test were frequently one-time occurrences, such as a requirement prior to circumcision, or motivations likely satisfied by a single HIV test. For MSM who reported repeat testing at more timely intervals, the most common

rationale was seeking test results with a sex partner. Results indicate a need to shift HIV test promotion messaging and programming for MSM in South Africa away from a one-off model to one that frames HIV testing as a repeated, routine health maintenance behavior.

30. **The Potential Role of Circuit Parties in the Spread of HIV Among Men Who Have Sex with Men in Asia: A Call for Targeted Prevention.** Cheung, D. H., S. H. Lim, et al. *Arch Sex Behav* 2015 44(2): 389-97.

Online at: <http://link.springer.com/article/10.1007%2Fs10508-014-0339-6>

We postulated that the growing popularity of circuit parties may play a role in the escalating HIV prevalence among men who have sex with men (MSM) in Asia. The present study is the first to characterize the sociodemographic and HIV-related behavioral factors of circuit party attendees living in Asia. We analyzed a subset of data from the Asia Internet MSM Sex Survey conducted from January 1 to February 28, 2010. Inclusion criteria included: being biologically male, aged 18 years or above, self-reported sex with another man, and reported international travel in the past 6 months (N = 6,094). From our multivariable logistic regression model, participants' resident country with low HIV prevalence (among MSM) (AOR 1.59, 95 % CI 1.27-2.00) and country of destination with high HIV prevalence were independently associated with higher odds of circuit party attendance (AOR 1.32, 95 % CI 1.14-1.53) during international travel. Statistical interaction indicated circuit party attendees were likely to have traveled from low HIV prevalence (among MSM) countries to high HIV prevalence countries (AOR 1.40, 95 % CI 1.20-1.64). Other independent correlates included unprotected anal sex with a male casual sex partner and recreational drug use during travel. HIV and STI prevention focusing on circuit party attendees may have a pivotal role on the spread of the HIV epidemics among MSM in Asia.

31. **Sexual Stigma, Criminalization, Investment, and Access to HIV Services Among Men Who Have Sex with Men Worldwide.** Arreola, S., G. M. Santos, et al. *AIDS Behav* 2015 19(2): 227-34.

Online at: http://download.springer.com/static/pdf/562/art%253A10.1007%252Fs10461-014-0869-x.pdf?auth66=1425324935_f1d8e65111dc93f24ae5b740cd9042da&ext=.pdf

Globally, HIV disproportionately affects men who have sex with men (MSM). This study explored associations between access to HIV services and (1) individual-level perceived sexual stigma; (2) country-level criminalization of homosexuality; and (3) country-level investment in HIV services for MSM. 3,340 MSM completed an online survey assessing access to HIV services. MSM from over 115 countries were categorized according to criminalization of homosexuality policy and investment in HIV services targeting MSM. Lower access to condoms, lubricants, and HIV testing were each associated with greater perceived sexual stigma, existence of homosexuality criminalization policies, and less investment in HIV services. Lower access to HIV treatment was associated with greater perceived sexual stigma and criminalization. Criminalization of homosexuality and low investment in HIV services were both associated with greater perceived sexual stigma. Efforts to prevent and treat HIV among MSM should be coupled with structural interventions to reduce stigma, overturn homosexuality criminalization policies, and increase investment in MSM-specific HIV services.

32. **Awareness and utilization of HIV services of an AIDS community-based organization in Kuala Lumpur, Malaysia.** Dangerfield, D. T., 2nd, P. Gravitt, et al. *Int J STD AIDS* 2015 26(1): 20-6.

Online at: <http://std.sagepub.com/content/26/1/20.full.pdf>

In Malaysia, homosexuality is illegal; little is known about access to HIV prevention services among Malaysian men who have sex with men (MSM). We analysed PT Foundation outreach data to describe the profiles among MSM who accessed PT Foundation services and to examine factors associated with being aware of PT Foundation and having visited the organization. A survey was administered during weekly outreach throughout Kuala Lumpur from March-December 2012. Pearson's Chi square tests were used to compare demographic and behavioural characteristics of participants who were and were not aware of the PT Foundation. Binary logistic regression was used to identify correlates of MSM visiting the PT Foundation among those who had heard of the organization. Of 614 MSM, this study found significantly

higher awareness of the PT Foundation among MSM who perceived they had "good" HIV knowledge ($p = .026$) and participants who reported always using condoms ($p = .009$). MSM who reported being paid for sex were 2.81 times as likely to visit the PT Foundation compared to men who did not. A subgroup of MSM known to be at high risk for HIV infection is accessing prevention services. Future studies should uncover motivations and barriers of accessing these services among MSM in Malaysia.

33. **Depression and Sexual Dysfunction Among HIV-Positive and HIV-Negative Men Who Have Sex With Men: Mediation by Use of Antidepressants and Recreational Stimulants.** Hart, T. A., B. Mustanski, et al. *Arch Sex Behav* 2015 44(2): 399-409.

Erectile dysfunction and other forms of sexual dysfunction are highly prevalent among HIV+ men who have sex with men (MSM). Research has not previously identified the mechanisms by which depression may be associated with sexual dysfunction among HIV-positive and HIV-seronegative (HIV-negative) MSM. The present study examined the role of antidepressant use, stimulant use, and smoking as mediators of the relation between depression and sexual dysfunction among HIV-positive and HIV-negative MSM. Participants enrolled in the Multicenter AIDS Cohort Study, an ongoing prospective study of the natural and treated histories of HIV infection among MSM in the United States, completed a modified version of the International Index of Erectile Function for MSM. The study sample included 1,363 participants, with 619 HIV-positive men and 744 HIV-negative men. A structural equation model examined depression as a predictor of subsequent sexual dysfunction, mediated by antidepressant use, stimulant use, and smoking. Depression predicted subsequent sexual function among both HIV-negative and HIV-positive MSM. This effect appeared to be both a direct effect and an indirect effect via antidepressant use. Findings suggest that antidepressant medication use may partially explain sexual dysfunction among MSM.

34. **Motivational Interviewing Targeting Risky Sex in HIV-Positive Young Thai Men Who Have Sex with Men.** Rongkavilit, C., B. Wang, et al. *Arch Sex Behav* 2015 44(2): 329-40.

Motivational interviewing (MI) has been shown to reduce sexual risks among HIV-positive men who have sex with men (HMSM) in the US. We conducted a randomized trial of Healthy Choices, a 4-session MI intervention, targeting sexual risks among 110 HIV-positive youth ages 16-25 years in Thailand. Risk assessments were conducted at baseline, 1 month, and 6 months post-intervention. This report presents the analysis of 74 HMSM in the study. There were 37 HMSM in the Intervention group and 37 in the control group. The proportions of participants having anal sex and having sex with either HIV-uninfected or unknown partners in past 30 days were significantly lower in Intervention group than in Control group at 6 months post-intervention (38 vs. 65 %, $p = .04$; and 27 vs. 62 %, $p < .01$, respectively). There were no significant differences in general mental health scores and HIV stigma scores between the two groups at any study visit. Thirty-five (95 %) HMSM in the Intervention group vs. 31 (84 %) in control group attended ≥ 3 sessions. Loss to follow-up was 8 and 30 %, respectively ($p = .04$). Healthy Choices for young Thai HMSM was associated with sexual risk reduction. Improvements in mental health were noted in Intervention group. Healthy Choices is a promising behavioral intervention and should be further developed to serve the needs of young HMSM in resource-limited countries.

35. **Innovative programmatic approaches to HIV prevention and care services for gay men, other men who have sex with men (MSM) and transgender persons using information and communication technology (ICT).** Adams, D., K. Klindera, et al. *Digital Culture & Education* 2014 Nov. Online at: http://www.digitalcultureandeducation.com/uncategorized/v6_i3_editorial.html/

This Special Issue of Digital Culture & Education (DCE) provides innovative programmatic approaches to HIV prevention and care services for gay men, other men that have sex with men (MSM) and transgender persons using information and communication technology (ICT) at a time when these same populations are experiencing an alarming upward trend of new HIV infections. During a successful participatory consultation in Washington D.C. in May 2013 hosted by the U.S. Agency for International Development (USAID) and co-supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), amfAR, the

Foundation for AIDS Research, and the National Institutes of Mental Health (NIMH), representatives from Africa, Asia, the Caribbean, Latin America, Europe, Australia and the United States shared innovative uses of communication technology across HIV research, programs, outreach, advocacy and public-private partnerships. Believing it crucial to share their innovations more widely—through open-access channels—led us to working in partnership with these frontline workers, activists, researchers and educators to further document and share their technological innovations in different global contexts. Importantly, we prioritised working with frontline workers and activists by providing cyclical and targeted writing mentoring to assist them in writing about their successful digital interventions. Disseminating this timely work through open-access channels, like Digital Culture & Education (DCE) means that researchers in less resourced institutions, practitioners and activists in the field and the general public can better understand how ICT, particularly mobile technologies, provides unprecedented opportunities to more effectively reach and engage gay men, other MSM and transgender populations across the HIV prevention, testing, treatment and care cascade.

36. **Two internet-based approaches to promoting HIV counselling and testing for MSM in China.** Avery, M., G. Meng, et al. *Digital Culture & Education* 2014 Nov.
Online at: http://www.digitalcultureandeducation.com/uncategorized/avery_et_al_html/

The internet is an increasingly popular among gay men and other men who have sex with men (MSM) in China for finding sexual partners. Gay men and other MSM who meet online are at high risk for HIV infection, but less likely to visit 'traditional' venues where they can receive interpersonal HIV prevention interventions. New virtual models are needed to provide HIV prevention messages and services to these gay men and other MSM. FHI 360 and Guangzhou Tongzhi (GZTZ) piloted separate, but complementary, approaches to using information and communications technology to promote uptake of HIV counselling and testing (HCT) among gay men and other MSM in three Chinese provinces (Yunnan, Guangxi and Guangzhou). These approaches included dedicated websites featuring online risk assessment and appointment making, crowd-sourced service promotion messages and dissemination via participants' microblog accounts and social media profiles. Reach was measured using Web analytics and traditional monitoring and evaluation tools, and government partners provided data on HCT uptake. The FHI 360 and GZTZ interventions reached 7,000 and 2.3 million unique visitors, respectively, and contributed to increases in HCT uptake of 26% and 66% as well as to higher rates of HIV case finding. Internet-based interventions like those conducted by FHI 360 and GZTZ represent a promising channel for engaging otherwise difficult-to-reach gay men and other MSM in China.

37. **Reaching men who have sex with men in Ghana through social media: A pilot intervention.** Green, K., P. Girault, et al. *Digital Culture & Education* 2014 Nov.
Online at: http://www.digitalcultureandeducation.com/uncategorized/green_et_al_html/

The prevalence of HIV among men who have sex with men (MSM) in Ghana is more than 15 times greater than the prevalence of HIV among adult males in the general population. The prevalence of HIV among MSM in Accra and Kumasi is 34.4% and 13.6%, respectively. In 2012, the USAID Ghana SHARPER project — which supports HIV prevention and care among MSM — reached less than half of the 30,000 estimated MSM at the project sites. In 2013, SHARPER tested the use of social media by MSM community liaison officers to identify unreached MSM networks. We reached 15,440 unique MSM through social media, and 12,804 MSM through traditional outreach activities involving peer educators. The combined total of 28,244 MSM represented 92% of the estimated number of MSM in the country. There was little overlap among the MSM reached by the two methods. The use of social media is a very important avenue for reaching MSM who are not reached by peer educators in Ghana. The method should be adopted as an integral outreach approach for HIV-prevention interventions in the future.

38. **Bambucha media: Using social media to build social capital and health Seeking behaviour among key populations.** Kahema, C. M., J. Kashiha, et al. *Digital Culture & Education* 2014 Nov.
Online at: <http://www.digitalcultureandeducation.com/volume-6/kahema/>

Recent surveillance data by Tanzania AIDS Commission has shown HIV prevalence among Men who have Sex with Men (MSM), transgender persons (TG) and Sex workers (SWs) to be well above general population estimates. Vulnerability to HIV among the MSM, TG and SWs has been associated with lack of correct and comprehensive information, informed decision, social and internalized stigma, negative legal and policy environment and language barrier. This paper will describe how Information Communication Technologies – ICTs, used by Tanzania Sisi Kwa Sisi Foundation – TSSF, has supported communication and access to the health services especially through outreach and referrals among the MSM, TG, and SWs in Tanzania.

39. **Ending HIV: An innovative community engagement platform for a new era of HIV prevention.** Calmette, Y. *Digital Culture & Education* 2014 Nov.
Online at: http://www.digitalcultureandeducation.com/uncategorized/calmette_html/

ACON is Australia's largest LGBTI health organisation with a primary focus on the prevention of HIV and other sexually transmitted infections (STIs), as well as health promotion with gay men and other men who have sex with men (MSM). This is the group most affected by HIV in New South Wales (NSW), making up around 80% of all new infections annually (NSW Health, 2013). ACON is a community-based organisation, running a number of programs tailored to gay men's sexual subcultures, practices, ethnicities and ages. In February 2013, ACON launched Ending HIV, the first large-scale campaign designed to meet the new targets set out in the NSW HIV Strategy 2012-15: A New Era (NSW Health, 2011). This strategy set the ambitious targets of reducing the transmission of HIV between gay and other homosexually active men in NSW by 60% by 2015, and 80% by 2020. Ending HIV was designed to mobilise the gay community to reach these targets. Ending HIV is an interactive social marketing campaign based on peer-education principles that incorporates communication, campaign and community mobilisation initiatives to reach this goal. Ending HIV has been rolled out nationally and has received a high level of international attention, including winning the 2013 and 2014 Sydney Design Award, Australian Creative Best of the Best, Communication Arts Award of Excellence and the 2014 Graphis Annual Design Award. This article explores the genesis of ACON's innovative engagement platform, which now drives all of ACON's HIV and STI prevention work, and discusses the approach's growing promise for prevention for diverse contexts.

40. **Resistance to the Swedish model through LGBTQ and sex work community collaboration and online intervention.** Dennermalm, N. *Digital Culture & Education* 2014 Nov.
Online at: http://www.digitalcultureandeducation.com/uncategorized/dennermalm_html/

In Sweden, sex workers are often viewed as 'victims in denial' by public health authorities. As a result, Swedish sexual health interventions have traditionally focused on women and utilised face-to-face interventions and exit strategies. Unmistakably, interventions targeting male and/or transgender sex workers that utilise harm reduction approaches or low threshold on-line interventions remain marginalised or non-existent. This stands in opposition to recent Swedish research on the sexual health of men who have sex with men (MSM) and transgender people (TG). This research stresses the need for targeted community-based sexual health services. Recent Swedish research also highlights the success of innovative on-line approaches that help male sex workers and TG understand personal risk to HIV and other sexually transmitted infections (STIs), their legal rights and how to access community-based health services. Responding to the research and not viewing sex workers as victims, this paper outlines the design of Sweden's first bespoke online platform targeting male and transgender sex workers. We outline our unique approach and the steps we undertook to design the Röda Paraplyet webpage (<http://www.rodaparaplyet.org>[1]) in collaboration with male sex workers and Rose Alliance, a leading sex worker organisation. We argue the voices of sex workers are essential to shifting the Swedish discourse around sex work from one of victimisation that limits sex workers access to Sweden's extensive evidence-

based health care to one that is empowering and increases the safety of sex work, explores how to negotiate condom use and educates sex workers about their rights. In conclusion we illustrate how a broad coalition between organised and non-organised sex workers, LGBTQ organisations, academics and the health care system is essential for creating a sustainable platform of multi-disciplinary knowledge to improve the sexual health and legal rights of sex workers in Sweden and globally.

41. **Silueta X: Lobbying to establish a LGBTI counseling and medical Center in Ecuador.** Rodríguez, D. M. Z. Digital Culture & Education 2014 Nov. Online at: <http://www.digitalcultureandeducation.com/volume-6/silueta-x-lobbying-to-establish-a-lgbti-counseling-and-medical-center-in-ecuador/>

In this article, I describe Asociación Silueta X and highlight three of its current virtual campaigns: BESOS LGBTI (Kisses LGBTI), Tiempo de Igualdad (Time for Equality), and Campana Mi Genero en Mi Cedula (My Gender Identity in my ID Card). I specifically outline how Asociación Silueta X uses information, communication technologies ICTs to support advocacy for the lesbian, gay, bisexual, transgender, and intersex (LGBTI) communities in Ecuador. I also outline and describe how Asociación Silueta X engaged in research and advocacy to lobby the Ecuadorian Government to establish the country's first LGBTI counseling and medical center in Guayaquil, Ecuador. This medical center was created not only to meet the needs of LGBTI individuals, but also to improve access to healthcare among Ecuadorian transgender individuals specifically, due to data showing that this population has particularly low levels of access to services.

42. **[Sexual behaviors and practices of men who have sex with men].** Lima, D. J., P. F. Paula, et al. Rev Bras Enferm 2014 67(6): 886-90.

The objective was to identify behaviors and sexual practices of men who have sexual relations with other men in the context of vulnerability to HIV/AIDS. This was a cross-sectional, exploratory and descriptive study. It was carried out in a gay sociability place in Fortaleza, Ceara, Brazil, between November 2010 and March 2011, through interviews with 189 men who have sex with men. The ethical aspects were respected. We found a sample consisting mostly by young, single, and highly educated men. The sexual history demonstrated the early onset of sexual activity, with a high prevalence of sexual intercourse with a partner of the opposite sex. There was also a high prevalence of HIV testing. Sexual practices revealed high prevalence of performing oral and anal sex, as well as high levels of protection in anal sex, despite the low protection in oral sex. A greater incorporation of prevention practices was found compared to the national scene in the beginning of the disease outbreak.

43. **Using virtual spaces to engage HIV-positive men who have sex with men online: considerations for future research and interventions.** Hightow-Weidman, L. and K. E. Muessig. Sex Transm Dis 2014 41(12): 756-8. Online at: <http://graphics.tx.ovid.com/ovftpdfs/FPDDNCMCNAPMCN00/fs046/ovft/live/gv025/00007435/00007435-201412000-00013.pdf>

44. **Making the invisible, visible: a cross-sectional study of late presentation to HIV/AIDS services among men who have sex with men from a large urban center of Brazil.** MacCarthy, S., S. Brignol, et al. BMC Public Health 2014 14: 1313. Online at: <http://www.biomedcentral.com/content/pdf/1471-2458-14-1313.pdf>

BACKGROUND: Late presentation to testing, treatment and continued care has detrimental impacts on the health of HIV-positive individuals as well as their sexual partners' health. Men who have sex with men (MSM) experience disproportionately high rates of HIV both globally and in Brazil. However, the factors that inhibit linkage to care among MSM remain unclear. METHODS: We conducted a cross-sectional study of HIV-positive MSM (n = 740) enrolled in HIV/AIDS services in a large urban center of Brazil from August 2010 to June 2011. Descriptive, bivariate and multivariate statistics were conducted using STATA 12 to

examine the relationship between a range of variables and late presentation, defined as having a first CD4 count <350 cells/mm³. RESULTS: Within the sample, the prevalence of LP was 63.1%. Men who self-identified as heterosexual (AOR 1.54 and 95% CI 1.08 - 2.20) compared to men who self-identified as homosexual and bisexual were at increased odds of late presentation. Additionally, men age 30 and older (AOR 1.56, 95% CI 1.01 - 2.43) compared to individuals age 18-29 experienced increased odds of late presentation among MSM. CONCLUSIONS: The prevalence of LP in this population was higher than noted in the global literature on LP among MSM. Heterosexual men and older age individuals experienced substantial barriers to HIV care. The stigma around same-sex behaviors and the current focus of HIV prevention and treatment campaigns on younger age individuals may limit patients' and providers' awareness of the risk for HIV and access to available services. In addition to addressing HIV-specific barriers to care, developing effective strategies to reduce late presentation in Brazil will require addressing social factors - such as stigma against diverse sexualities - to concretely identify and eliminate barriers to available services. Only in so doing can we make currently invisible people, visible.

45. **Acceptability and willingness among men who have sex with men (MSM) to use a tablet-based HIV risk assessment in a clinical setting.** Jones, J., R. Stephenson, et al. *Springerplus* 2014 3: 708.
Online at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4265639/pdf/40064_2014_Article_1410.pdf

We developed an iPad-based application to administer an HIV risk assessment tool in a clinical setting. We conducted focus group discussions (FGDs) with gay, bisexual and other men who have sex with men (MSM) to assess their opinions about using such a device to share risk behavior information in a clinical setting. Participants were asked about their current assessment of their risk or any risk reduction strategies that they discussed with their healthcare providers. Participants were then asked to provide feedback about the iPad-based risk assessment, their opinions about using it in a clinic setting, and suggestions on how the assessment could be improved. FGD participants were generally receptive to the idea of using an iPad-based risk assessment during healthcare visits. Based on the results of the FGDs, an iPad-based risk assessment is a promising method for identifying those patients at highest risk for HIV transmission.

46. **Transactional sex and prevalence of STIs: a cross-sectional study of MSM and transwomen screened for an HIV prevention trial.** Solomon, M. M., C. R. Nurena, et al. *Int J STD AIDS* 2014.
Online at: <http://std.sagepub.com/content/early/2014/12/16/0956462414562049.full.pdf>

INTRODUCTION: Few studies have characterised the degree of engagement in transactional sex among men and transgender women who have sex with men and explored its association with sexually transmitted infections and human immunodeficiency virus in Ecuador. METHOD: We screened 642 men who have sex with men and transgender women for a pre-exposure prophylaxis clinical trial (iPrEx) in Guayaquil, Ecuador, 2007-2009. We analysed the association of degree of engagement in transactional sex and prevalence of sexually transmitted infections including human immunodeficiency virus using chi-square and analysis of variance tests. RESULTS: Although just 6.2% of those who screened self-identified as sex workers, 52.1% reported having engaged in transactional sex. Compared to those who had never been paid for sex, those who had been paid were more likely to have a sexually transmitted infection (56.6% vs. 45.0%, $p = 0.007$) and trended towards a higher human immunodeficiency virus prevalence (16.6% vs. 10.4%, $p = 0.082$) at screening. Transgender women compared to other men who have sex with men were more likely to have sexually transmitted infections diagnosed at screening (75.6% vs. 50.0%, $p = 0.001$). DISCUSSION: Transactional sex is practiced widely but occasionally among the men who have sex with men and transgender women in Guayaquil who screened for the iPrEx study; however, engaging in transactional sex may not lead to a sex worker self-identification. Both transactional sex and being a transgender woman are associated with sexually transmitted infections prevalence.

47. **HIV-testing behavior and associated factors among MSM in Chongqing, China: results of 2 consecutive cross-sectional surveys from 2009 to 2010.** Li, X., G. Wu, et al. *Medicine (Baltimore)* 2014 93(27): e124.

The high and climbing human immunodeficiency virus (HIV) rates among Chinese men who have sex with men (MSM) bring huge pressure and challenge to acquired immune deficiency syndrome response work in China. This study examined HIV-testing behavior and describes the characteristics of recently tested MSM in Chongqing to address targeting HIV prevention interventions. Two consecutive cross-sectional surveys were conducted among Chongqing MSM using respondent-driven sampling in 2009 and 2010. Information was collected regarding details on demographic characteristics, sexual practices with male and female partners, and HIV-testing experiences. Univariate and multivariate logistic regression analyses were performed to identify factors independently associated with recent HIV testing. The final sample size included in our analyses was 992. The overall HIV prevalence was 13.4%, and HIV prevalence increased significantly from 11.6% in 2009 to 15.4% in 2010 ($P = 0.08$). The overall rate of HIV testing in the past 12 months was 44.6%, and the self-reported rates decreased significantly from 47.8% in 2009 to 41.1% in 2010 ($P = 0.03$). Factors independently associated with recent HIV testing included living in Chongqing >1 year (adjusted odds ratio [AOR] 1.8, 95% confidence interval [CI] 1.1-2.9), the age of most recent male partner ≤ 25 (AOR 1.5, 95% CI 1.1-2.1), not having unprotected insertive anal sex with most recent male partner in the past 6 months (AOR 1.5, 95% CI 1.1-2.0), disclosing HIV status to most recent male partner (AOR 2.8, 95% CI 2.0-3.8), and holding lower level of HIV-related stigma (AOR 1.1 per scale point, 95% CI 1.0-1.1). The extremely high HIV prevalence and low annual testing level put MSM at high risk of HIV infection and transmission, and it is a priority to promote regular HIV testing among this group in order to control the spread of HIV in Chongqing, China.

48. **Setting the scene: locations for meeting sex partners among behaviorally bisexual men in Vientiane, Laos, and opportunities for health promotion.** Bowring, A. L., C. van Gemert, et al. *AIDS Educ Prev* 2014 26(6): 538-53.

Behaviorally bisexual men (BBM) in Vientiane, Laos report high-risk sexual behaviors. We explore settings for meeting sex partners and associated risk behaviors among BBM in Laos. BBM and their sexual partners were recruited in Vientiane Capital using modified snowball sampling (2010). Settings for usually meeting sex partners and associations with risk behaviors were assessed. Among 88 BBM, the most common settings for men meeting male, kathoey, and female sex partners were private residences (48%, 37%, 51%, respectively) and hospitality settings (39%, 31%, 40%, respectively). Hospitality settings were more commonly reported by heterosexual-identifying BBM, and private residences more commonly reported by bisexual/homosexual-identifying BBM. Inconsistent condom use was high across partners and settings. Meeting partners in hospitality settings was associated with reporting a high number of female sex partners and frequently drinking alcohol before sex. Our results suggest that targeted health promotion initiatives in bars, clubs, and beer-shops could reach a high proportion of high-risk bisexual men, particularly heterosexual-identifying BBM.

49. **Effectiveness of a combination prevention strategy for HIV risk reduction with men who have sex with men in Central America: a mid-term evaluation.** Firestone, R., J. Rivas, et al. *BMC Public Health* 2014 14: 1244. Online at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4289249/pdf/12889_2014_Article_7349.pdf

BACKGROUND: Despite over a decade of research and programming, little evidence is available on effective strategies to reduce HIV risks among Central American men who have sex with men (MSM). The Pan-American Social Marketing Organization (PASMO) and partners are implementing a HIV Combination Prevention Program to provide key populations with an essential package of prevention interventions and services: 1) behavioral, including interpersonal communications, and online outreach; 2) biomedical services including HIV testing and counseling and screening for STIs; and 3) complementary support, including legal support and treatment for substance abuse. Two years into implementation, we evaluated this program's effectiveness for MSM by testing whether exposure to any or a combination of program

components could reduce HIV risks. METHODS: PASMO surveyed MSM in 10 cities across Guatemala, El Salvador, Nicaragua, Costa Rica, and Panama in 2012 using respondent-driven sampling. We used coarsened exact matching to create statistically equivalent groups of men exposed and non-exposed to the program, matching on education, measures of social interaction, and exposure to other HIV prevention programs. We estimated average treatment effects of each component and all combined to assess HIV testing and condom use outcomes, using multivariable logistic regression. We also linked survey data to routine service data to assess program coverage. RESULTS: Exposure to any program component was 32% in the study area (n = 3531). Only 2.8% of men received all components. Men exposed to both behavioral and biomedical components were more likely to use condoms and lubricant at last sex (AOR 3.05, 95% CI 1.08, 8.64), and those exposed to behavioral interventions were more likely to have tested for HIV in the past year (AOR 1.76, 95% CI 1.01, 3.10). CONCLUSIONS: PASMO's strategies to reach MSM with HIV prevention programming are still achieving low levels of population coverage, and few men are receiving the complete essential package. However, those reached are able to practice HIV prevention. Combination prevention is a promising approach in Central America, requiring expansion in coverage and intensity.

50. **Developing a conceptual framework of seroadaptive behaviors in HIV-diagnosed men who have sex with men.** Ronn, M., P. J. White, et al. *J Infect Dis* 2014 210 Suppl 2: S586-93.

Online at: http://jid.oxfordjournals.org/content/210/suppl_2/S586.full.pdf

BACKGROUND: Seroadaptive behaviors are strategies employed by men who have sex with men (MSM) to reduce the transmission risk for human immunodeficiency virus (HIV). It has been suggested that they contribute to the increasing diagnoses of sexually transmitted infections in HIV-diagnosed MSM. To understand the context in which the reemerging sexually transmitted infections appear, we developed a social epidemiological model incorporating the multiple factors influencing seroadaptive behaviors. METHODS: A literature review of seroadaptive behaviors in HIV-diagnosed MSM was conducted. The literature was synthesized using a social epidemiological perspective. RESULTS: Seroadaptive behaviors are adopted by MSM in high-income countries and are a way for HIV-diagnosed men to manage and enjoy their sexual lives. Influences are apparent at structural, community, interpersonal, and intrapersonal levels. There is little evidence of whether and when the behavior forms part of a premeditated strategy; it seems dependent on the social context and on time since HIV diagnosis. Social rules of HIV disclosure and perception of risk depend on the setting where partners are encountered. CONCLUSIONS: Seroadaptive behaviors are strongly context dependent and can reduce or increase transmission risk for different infectious diseases. Further data collection and mathematical modeling can help us explore the specific conditions in more detail.

51. **[Description of sexual practices of women who have sex with other women to HIV / AIDS in Abidjan (Cote d'Ivoire)].** Konan, Y. E., N. S. Dagnan, et al. *Bull Soc Pathol Exot* 2014 107(5): 369-75.

The response to HIV must be based on all situations of risk and vulnerability related to sexual behavior. Sexual practices of women who have sex with other women to HIV described in his study come within this framework. This transversal and descriptive study on the sexual practices of 150 women who have sex with other women to HIV was conducted from July to September 2010 in Abidjan. Mean age of the respondents was 26.6 years. Among them, 21.3% was illiterate, 41.4% had no earned income and 57.3% was Christians. At the time of data collection, the majority (70.7%) did not know their HIV status. The analysis of sexual practices has found 13.3% of lesbians, bisexual, 36% and 50.7% of women who say they are lesbian even if they have had sex with men. Women who have sex with other women had sexual risk behavior. It was mostly the non-systematic use of the condom during sexual relation (60%). Among the 26.7% of respondents who had lesbian practices with penetration, 40% took no precaution to prevent HIV and other sexually transmitted infections. Taking into account these results could help to develop specific strategies to promote responsible sexual practices among women who have sex with other women.

52. **Earlier anal sexarche and co-occurring sexual risk are associated with current HIV-related risk behaviors among an online sample of men who have sex with men in Asia.** Cheung, D. H., C. Suharlim, et al. *AIDS Behav* 2014 18(12): 2423-31.

Online at: http://download.springer.com/static/pdf/486/art%253A10.1007%252Fs10461-014-0821-0.pdf?auth66=1425324940_571f78943e6ecc741e70cdb2ec98982c&ext=.pdf

Studies of heterosexual populations across the globe and men who have sex with men (MSM) in a few developed countries showed that earlier sexual debut (sexarche) was associated with higher levels of co-occurring and subsequent HIV risk behaviors. We examined the relationships between earlier anal sexarche, unprotected earlier anal sexarche and current HIV risks among MSM from Asia. A cross-sectional online survey was conducted among MSM (N = 10,826) in Asia in 2010. Bivariate and multivariable logistic regressions were used to identify co-occurring (i.e., sexual experiences during sexarche) and current HIV-related risk factors (i.e., past 6 months) associated with earlier anal sexarche (before the age of 18) and unprotected earlier anal sexarche, respectively. Earlier anal sexarche was significantly associated with lack of condom use, being anal receptive or both receptive and insertive, and having a partner who were older during sexarche. It was also associated with current HIV-related risk behaviors including having multiple male sexual partners, having been paid for sex, and increased frequencies of recreational drug use. Unprotected earlier anal sexarche was significantly associated with inconsistent condom use in the past the 6 months. Improved and culturally sensitive sex education at schools should be included in national and regional HIV/AIDS prevention programming and policies in Asia. Such sex education programs should incorporate curriculum that address sexuality, sexual orientation, and sexual behaviors beyond those related to reproductive health.

53. **Sexual motivation, sexual transactions and sexual risk behaviors in men who have sex with men in Dar es Salaam, Tanzania.** Bui, T. C., J. E. Nyoni, et al. *AIDS Behav* 2014 18(12): 2432-41.

Online at: http://download.springer.com/static/pdf/269/art%253A10.1007%252Fs10461-014-0808-x.pdf?auth66=1425324944_177823a5cd3b3c210d02b4cb37404cbb&ext=.pdf

Understanding the associations between sexual motivation and sexual risk behaviors of men who have sex with men (MSM) is critical for developing effective HIV prevention interventions. To examine these associations, we employed data from a survey of 200 MSM in Dar es Salaam, Tanzania, recruited through respondent driven sampling. Results showed that 44.5 % of surveyed participants most often looked for love/affection when having sex, and 36.5 % most often looked for money. Money-motivated MSM were more likely to identify themselves as bisexual, more likely to have anal sex, and had significantly higher numbers of partners of both sexes. Those who most often looked for love/affection were less likely to ask for condom use, to actually use a condom, and to use lubrication in anal sex. MSM with different sexual motivations had dissimilar sexual risk behaviors. Tailored health interventions for each group to reduce these sexual risks for STIs/HIV prevention are needed.

54. **Effects of Internet-based instruction on HIV-prevention knowledge and practices among men who have sex with men.** Kasatpibal, N., N. Viseskul, et al. *Nurs Health Sci* 2014 16(4): 514-20.

HIV infection is increasing among men who have sex with men. In this study, the effects of Internet-based instruction on HIV-prevention knowledge were evaluated. The sample consisted of 162 men-who-have-sex-with-men volunteers in Thailand. The research instruments included a demographic data questionnaire, a knowledge test, and an HIV preventive practice questionnaire. The participants completed these instruments upon entry to the study and four months later. After entry to the study, the participants were given access to a previously-developed Internet-based instruction on HIV risk behaviors. Data were analyzed using descriptive statistics and paired t-test. After accessing the Internet-based instruction, the average score of HIV-prevention knowledge among the sample increased significantly, from 11.17 to 15.09 (maximum score of 20 points). The average score of practicing HIV prevention among the sample increased significantly, from 62.94 to 76.51 (maximum score of 99 points). This study demonstrated that Internet-based instruction was effective in improving HIV-prevention knowledge and

practices among men who have sex with men. This suggests that Internet-based instruction could be developed for use in other countries and evaluated in a similar way.

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People Who Inject Drugs

1. **"First, do no harm": legal guidelines for health programmes affecting adolescents aged 10-17 who sell sex or inject drugs.** Conner, B. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19437.
Online at: <http://www.jiasociety.org/index.php/jias/article/view/19437>

INTRODUCTION: There is a strong evidence base that the stigma, discrimination and criminalization affecting adolescent key populations (KPs) aged 10-17 is intensified due to domestic and international legal constructs that rely on law-enforcement-based interventions dependent upon arrest, pre-trial detention, incarceration and compulsory "rehabilitation" in institutional placement. While there exists evidence and rights-based technical guidelines for interventions among older cohorts, these guidelines have not yet been embraced by international public health actors for fear that international law applies different standards to adolescents aged 10-17 who engage in behaviours such as selling sex or injecting drugs. **DISCUSSION:** As a matter of international human rights, health, juvenile justice and child protection law, interventions among adolescent KPs aged 10-17 must not involve arrest, prosecution or detention of any kind. It is imperative that interventions not rely on law enforcement, but instead low-threshold, voluntary services, shelter and support, utilizing peer-based outreach as much as possible. These services must be mobile and accessible, and permit alternatives to parental consent for the provision of life-saving support, including HIV testing, treatment and care, needle and syringe programmes, opioid substitution therapy, safe abortions, antiretroviral therapy and gender-affirming care and hormone treatment for transgender adolescents. To ensure enrolment in services, international guidance indicates that informed consent and confidentiality must be ensured, including by waiver of parental consent requirements. To remove the disincentive to health practitioners and researchers to engaging with adolescent KPs aged 10-17 government agencies and ethical review boards are advised to exempt or grant waivers for mandatory reporting. In the event that, in violation of international law and guidance, authorities seek to involuntarily place adolescent KPs in institutions, they are entitled to judicial process. Legal guidelines also provide that these adolescents have influence over their placement, access to legal counsel to challenge the conditions of their detention and regular visitation from peers, friends and family, and that all facilities be subject to frequent and periodic review by independent agencies, including community-based groups led by KPs. **CONCLUSIONS:** Controlling international law specifies that protective interventions among KPs aged 10-17 must not only include low-threshold, voluntary services but also "protect" adolescent KPs from the harms attendant to law-enforcement-based interventions. Going forward, health practitioners must honour the right to health by adjusting programmes according to principles of minimum intervention, due process and proportionality, and duly limit juvenile justice and child protection involvement as a measure of last resort, if any.

2. **Findings from Integrated Behavioral and Biologic Survey among Males Who Inject Drugs (MWID) - Vietnam, 2009-2010: Evidence of the Need for an Integrated Response to HIV, Hepatitis B Virus, and Hepatitis C Virus.** Nadol, P., S. O'Connor, et al. *PLoS One* 2015 10(2): e0118304.
Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4333571/pdf/pone.0118304.pdf>

INTRODUCTION: Given the overlapping modes of transmission of HIV, hepatitis B virus (HBV), and hepatitis C virus (HCV), understanding the burden and relationship of these infections is critical for an effective response. Representative data on these infections among males who inject drugs (MWID), the key high-risk population for HIV in Vietnam, are currently lacking. **METHODS:** Data and stored specimens from Vietnam's 2009-2010 Integrated Biologic and Behavioral Survey, a cross-sectional study among high-

risk populations, were used for this analysis. Plasma samples were tested for HIV, HBV, and HCV using commercial assays. A questionnaire was administered to provide demographic, behavior, and service-uptake information. Provincial-level analyses were conducted to profile MWID enrollees and to provide estimates on the prevalence of HIV, HBV, and HCV infection. RESULTS: Among 3010 MWID sampled across 10 provinces, the median (range) HIV prevalence was 28.1% (1.0%-55.5%). Median prevalence for current HBV infection (HBsAg+) was 14.1% (11.7%-28.0%), for previous exposure to HBV (total anti-HBc+) was 71.4% (49.9%-83.1%), and for current or past HCV infection (HCV Ag/Ab+) was 53.8% (10.9%-80.8%). In adjusted analysis, HBsAg+ (aOR: 2.09, 1.01-4.34) and HCV Ag/Ab+ (aOR: 19.58, 13.07-29.33) status were significantly associated with HIV infection; the association with total anti-HBc+ approached significance (aOR: 1.29, 0.99-1.68). CONCLUSION: The prevalence and association between HIV, HBV, and HCV are high among MWID in Vietnam. These findings indicate the need for integrated policies and practice that for the surveillance, prevention, screening, and treatment of both HIV and viral hepatitis among MWID in Vietnam.

3. **Injecting drug users and their health seeking behavior: a cross-sectional study in Dhaka, Bangladesh.**

Shariful Islam, S. M., T. Biswas, et al. *J Addict* 2015 2015: 756579.

Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4322658/pdf/JAD2015-756579.pdf>

INTRODUCTION AND AIM: Injecting drug users (IDUs) are amongst the most vulnerable people to acquisition of HIV/AIDS. This study aims to collect information on IDUs and their health seeking behavior in Bangladesh. DESIGN AND METHODS: A cross-sectional study was conducted among 120 IDUs attending a drug rehabilitation center in Dhaka, Bangladesh. Data were collected on sociodemographics, drug use, health seeking behavior, knowledge of injecting drugs, and sexual behavior. RESULTS: The mean +/- SD and median (IQR) age of the participants were 32.5 +/- 21.3 and 33 (27-38) years, respectively, with only 9.2% females. Injection buprenorphine was the drug of choice for 40% of participants, and 58% of the participants first started drug use with smoking cannabis. 73.3% of participants shared needles sometimes and 57.5% were willing to use the needle exchange programs. 60% of the participants had no knowledge about the diseases spread by injection. Condom use during the last intercourse with regular partners was 11.7% and with any partners 15.8%. CONCLUSION: IDUs in Bangladesh are a high-risk group for HIV/AIDS due to lack of knowledge and risky behaviors. Education and interventions specifically aimed at IDUs are needed, because traditional education may not reach IDUs or influence their behavior.

4. **Within-prison drug injection among HIV-infected male prisoners in Indonesia: A highly constrained choice.** Culbert, G. J., A. Waluyo, et al. *Drug Alcohol Depend* 2015.

BACKGROUND: In Indonesia, incarceration of people who inject drugs (PWID) and access to drugs in prison potentiate within-prison drug injection (WP-DI), a preventable and extremely high-risk behavior that may contribute substantially to HIV transmission in prison and communities to which prisoners are released. AIMS: This mixed method study examined the prevalence, correlates, and social context of WP-DI among HIV-infected male prisoners in Indonesia. METHODS: 102 randomly selected HIV-infected male prisoners completed semi-structured voice-recorded interviews about drug use changes after arrest, drug use cues within prison, and impact of WP-DI on HIV and addiction treatment. Logistic regression identified multivariate correlates of WP-DI and thematic analysis of interview transcripts used grounded-theory. RESULTS: Over half (56%) of participants reported previous WP-DI. Of those, 93% shared injection equipment in prison, and 78.6% estimated sharing needles with >=10 other prisoners. Multivariate analyses independently correlated WP-DI with being incarcerated for drug offenses (AOR=3.29, 95%CI=1.30-8.31, p=0.011) and daily drug injection before arrest (AOR=5.23, 95%CI=1.42-19.25, p=0.013). Drug availability and proximity to drug users while incarcerated were associated with frequent drug craving and escalating drug use risk behaviors after arrest. Energetic heroin marketing and stigmatizing attitudes toward methadone contribute to WP-DI and impede addiction and HIV treatment. CONCLUSIONS: Frequent WP-DI and needle sharing among these HIV-infected Indonesian inmates indicate need for structural interventions that reduce overcrowding, drug supply, and needle sharing, and improve detection and treatment of substance use disorders upon incarceration.

5. **Drug injecting and HIV risk among injecting drug users in Hai Phong, Vietnam: a qualitative analysis.**

Ahmed, T., T. Long, et al. *BMC Public Health* 2015 15(1): 32.

Online at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4324409/pdf/12889_2015_Article_1404.pdf

BACKGROUND: Hai Phong, located in northern Vietnam, has become a high HIV prevalence province among Injecting Drug Users (IDUs) since the infection shifted from the southern to the northern region of the country. Previous research indicates high levels of drug and sex related risk behaviour especially among younger IDUs. Our recent qualitative research provides a deeper understanding of HIV risk behaviour and highlights views and experiences of IDUs relating to drug injecting and sharing practices. **METHODS:** Fifteen IDUs participated in semi-structured interviews conducted in September-October, 2012. Eligible participants were selected from those recruited in a larger scale behavioural research project and identified through screening questions. Interviews were conducted by two local interviewers in Vietnamese and were audiotaped. Ethical procedures, including informed consent and participants inverted question mark understanding of their right to skip and withdraw, were applied. Transcripts were translated and double checked. The data were categorised and coded according to themes. Thematic analysis was conducted and a qualitative data analysis thematic framework was used. **RESULTS:** Qualitative analysis highlighted situational circumstances associated with HIV risks among IDUs in Hai Phong and revealed three primary themes: (i) places for injecting, (ii) injecting drugs in small groups, and (iii) sharing practices. Our results showed that shared use of jointly purchased drugs and group injecting were widespread among IDUs without adequate recognition of these as HIV risk behaviours. Frequent police raids generated a constant fear of arrest. As a consequence, the majority preferred either rail lines or isolated public places for injection, while some injected in their own or a friend inverted question marks home. Price, a heroin crisis, and strong group norms encouraged collective preparation and group injecting. Risk practices were enhanced by a number of factors: the difficulty in getting new syringes, quick withdrawal management, punitive attitudes, fear of arrest/imprisonment, lack of resources, incorrect self-assessment, and risk denial. Some of the IDU participants emphasised self-care attitudes which should be encouraged to minimise HIV transmission risk. **CONCLUSION:** The IDUs inverted question mark experiences in Hai Phong identified through our data broaden our qualitative understanding about the HIV transmission risk among IDUs and emphasize the need to strengthen harm reduction services in Vietnam.

6. **Characterization of HBV among HBV/HIV-1 co-infected Injecting Drug Users from Mombasa, Kenya.**

Kibaya, R. M., R. W. Lihana, et al. *Curr HIV Res* 2015.

BACKGROUND: Hepatitis B (HBV) and Human Immunodeficiency virus (HIV) are both bloodborne viruses. Markers of either active or past HBV infection are present in many HIV infected patients. Worldwide, HBV prevalence varies geographically and endemicity is classified as low (<2%) or high (>8%). Genotypically, prevalence varies among different populations, with genotype A having a wide distribution. In Kenya, the prevalence of HIV-1/HBV co-infection ranges from 6-53% depending on the sub-population, with genotype A as the most common. **OBJECTIVE:** To determine the prevalence and characterize HBV in HBV/HIV co-infected injecting drug users (IDUs) from Mombasa, Kenya. **METHODS:** Blood samples were collected from HIV-infected IDUs in Mombasa, Kenya. Hepatitis B surface antigen (HBsAg) was tested by enzyme immunoassay (EIA). HBV DNA was extracted by SMITEST R&D kit. Polymerase chain reaction (PCR) was done; followed by population sequencing of HBV preS, core and full genome using specific primers. Analysis was done phylogenetically with reference sequences from the Genbank. **RESULTS:** Seventy two HIV-positive samples were collected from IDUs in Mombasa in February and March 2010. Of these, 10 (13.89%) were HBsAg-positive by EIA. Nine of the 10 samples (12.5%) were PCR positive for HBV in the preS region; from these, four HBV full length sequences were obtained. Phylogenetic analysis showed that all belonged to genotype A1. **CONCLUSIONS:** The prevalence of HBV co-infection among HIV-infected IDUs in Mombasa, Kenya was 12.5%. Phylogenetically, sequences obtained from this study showed clusters that were distinct from reported Kenyan reference sequences from the Genbank. The findings point to an existence of a transmission network among IDUs in Mombasa. This further suggests that HBV genotypes in Kenya may be regionally diverse.

7. **Influence of different drugs on HIV risk in people who inject: systematic review and meta-analysis.** Tavitian-Exley, I., P. Vickerman, et al. *Addiction* 2015.

AIMS: To systematically assess risk of HIV acquisition by type of drug injected across different settings. **METHODS:** A systematic review and meta-analysis were conducted. Databases were searched for studies of HIV incidence in people who inject different drugs (PWID). Pooled HIV incidence rate ratio (IRR) was used to compare HIV risk between injecting a given drug and not-injecting, when possible, or with those reported not to have injected the substance, otherwise. Pooled estimates of crude IRR were derived using random effects models. Variations in IRR were assessed in sub-group analyses, by drug and geographical region. **RESULTS:** Of 5779 studies screened, 15 were included. HIV incidence was reported for people injecting cocaine (8, North-America, Europe), amphetamine-type stimulants (ATS) (4, West- and Eastern-Europe, Asia), heroin (11, all settings), opiates-stimulants (4, North America, West-, Eastern-Europe) and opiates-sedatives (5, Europe, Asia). HIV risk in cocaine injectors was 3.6 times (95%CI: 2.8-4.7, I² =0%; N=4) that of non-injectors and 3.0 for ATS injectors (95%CI: 2.2-4.1, I² =0%; N=2). Higher sexual risk was reported in cohorts injecting stimulants. Compared to not-injecting, HIV IRR was 2.8 (95%CI: 1.7-4.7, I² =77%; N=6) for all heroin injectors and 3.5 (95%CI: 2.3-5.2, I² =40%; N=5) for heroin injectors in Asia and Europe. **CONCLUSION:** The risk of HIV acquisition in people who inject drugs appears to vary by drug type but differences are not statistically significant, precluding conclusive grading of risk. This article is protected by copyright. All rights reserved.

8. **HIV-related characteristics among female partners of injecting drug users in Kelantan, Malaysia: a descriptive study.** Mohd Nasarruddin, A., W. M. Wan Mohammad, et al. *AIDS Care* 2015 27(3): 301-6. Online at: <http://www.tandfonline.com/doi/pdf/10.1080/09540121.2014.985182>

Kelantan, a northeastern state in Peninsular Malaysia, is one of the states that has been acutely hit by injecting drug user (IDU)-driven HIV epidemic, in addition to having a high number of infected women in Malaysia. This cross-sectional study describes the socio-demographic characteristics, HIV risk factors, risk perception, and adoption of preventive behaviors among female partners of IDUs in Kelantan. Out of 101 women, the majority of them are from low socioeconomic background and have no other risk factors besides heterosexual HIV transmission from their male IDU partners. Although 45.5% have not been tested for HIV and more than half (53.5%) of them did not use condoms during sexual intercourse, only 44.6% of the women perceived themselves to be at risk of being infected with HIV. Most of the women (86.1%) were willing to undergo voluntary counseling and testing (VCT). Female partners of IDUs continue to be vulnerable to HIV due to having sexual contact with IDUs, and also due to their socioeconomic position in the community. To prevent HIV transmission among female partners of IDUs, consolidating HIV prevention efforts from multiple approaches is needed.

9. **How do drug market changes affect characteristics of injecting initiation and subsequent patterns of drug use? Findings from a cohort of regular heroin and methamphetamine injectors in Melbourne, Australia.** Horyniak, D., M. Stoove, et al. *Int J Drug Policy* 2015 26(1): 43-50. Online at: <http://www.sciencedirect.com/science/article/pii/S0955395914002643>

BACKGROUND: Changes in drug market characteristics have been shown to affect drug use patterns but few studies have examined their impacts on injecting initiation experiences and subsequent patterns of injecting drug use (IDU). **METHODS:** We collected data on self-reported injecting initiation experiences and past-month patterns of IDU from 688 regular heroin and methamphetamine injectors in Melbourne, Australia, who initiated injecting across three different drug market periods (prior to the Australian heroin shortage ('high heroin')/immediately following the shortage ('low heroin')/'contemporary' markets (fluctuating heroin and methamphetamine availability)). We used univariable and multivariable logistic regression to examine the relationship between period of injecting initiation and first drug injected, and multinomial logistic regression for the relationship between period of injecting initiation and current injecting patterns. **RESULTS:** 425 participants (62%) reported initiating injecting in the high heroin period, 146 (21%) in the low heroin period, and 117 (17%) in the contemporary period. Participants who initiated

injecting during the low heroin period were twice as likely to initiate injecting using a drug other than heroin (AOR: 1.94, 95% CI: 1.27-2.95). The most common patterns of drug use among study participants in the month preceding interview were polydrug use (44%) and primary heroin use (41%). Injecting initiation period was either non-significantly or weakly associated with current drug use pattern, which was more strongly associated with other socio-demographic and drug use characteristics, particularly self-reported drug of choice. CONCLUSION: The drug market period in which injecting initiation occurred influenced the first drug injected and influenced some aspects of subsequent drug use. In the context of highly dynamic drug markets in which polydrug use is common there is a need for broad harm reduction and drug treatment services which are flexible and responsive to changing patterns of drug use.

10. **Methadone maintenance therapy and HIV counseling and testing are associated with lower frequency of risky behaviors among injection drug users in China.** Wang, M., W. Mao, et al. *Subst Use Misuse* 2015 50(1): 15-23.

Three consecutive cross-sectional surveys were conducted among injection drug users (IDUs). Of 2,530 participants, 47.7% reported ever sharing needles, 78.2% having had unprotected sex in the last month, 34.4% not receiving either methadone maintenance therapy (MMT) or HIV voluntary counseling and testing (VCT), 4.8% ever receiving MMT-only, 36.6% ever receiving VCT-only, and 24.2% ever receiving both MMT and VCT. MMT-only and the combination of MMT and VCT had significant associations with needle sharing and on unprotected sexual behaviors. Effectively integrating VCT into MMT services is a logical way to maximize the impact of both interventions on risky behaviors among IDUs.

11. **Effects of transnational migration on drug use: an ethnographic study of Nepali female heroin users in Hong Kong.** Tang, W. M. *Int J Drug Policy* 2015 26(1): 8-14.

BACKGROUND: Past studies of female drug users in South Asia tend to focus on their plights, for instance, how they have been driven to drug use and encounter more problems than their male counterparts, such as HIV/AIDS and sexual abuse. Few studies focus on their active role--how they actively make use of resources in the external environment to construct their desired femininity through drug consumption. Furthermore, little is known about the situation of female South Asian drug users who are living overseas. This paper is a study of transnational migration, drug use and gender--how transnational migration influences the drug use of female transnational migrants. METHODS: An 18-month ethnography has been carried out in a Nepali community in Hong Kong and 13 informants were interviewed. Data were coded and analyzed by using the grounded-theory approach. Themes related to the drug use of the female Nepali heroin users were identified. RESULTS: The findings show that there are three important themes that significantly affect the drug use of female Nepali heroin users, which include (1) their relationships with intimate partners, (2) their means of support, and (3) their legal status in migration. CONCLUSIONS: The findings are consistent with the concept of post-structuralism in gender and transnationalism theories. Female Nepali heroin users in Hong Kong are neither active agents nor passive victims; their active/passive role is largely dependent on their reconfigured opportunities and constraints in transnational migration. Thus, transnationalism should be taken as an important perspective to study the situation of female drug users in a globalized context.

12. **Contextual factors associated with rushed injecting among people who inject drugs in Thailand.** Ti, L., K. Hayashi, et al. *Prev Sci* 2015 16(2): 313-20.

People who inject drugs (IDU) often rush their injections; however, the prevalence and predictors of rushing during injecting has not been well studied. We sought to identify correlates of rushed injecting among a community-recruited sample of IDU in Bangkok, Thailand. Data were derived from IDU who participated in the Mitsampan Community Research Project in Bangkok between July and October in 2011. Multivariate logistic regression was used to identify the prevalence and factors associated with frequent rushed injecting, defined as rushing injections at least 25 % of the time in the last 6 months. Among 437 participants, 27 % reported frequent rushed injecting. In multivariate analyses, factors

positively and independently associated with frequent rushed injecting included: syringe sharing, injecting in public places, and having noticed increased police presence where drugs are bought or used. Many Thai IDU in this setting reported frequent rushed injecting and factors known to increase HIV risk were found to be associated with this behavior. These findings reinforce the need for public health interventions that address the broader social and physical risk environment where drug injecting takes place.

13. **Bambucha media: Using social media to build social capital and health Seeking behaviour among key populations.** Kahema, C. M., J. Kashiha, et al. *Digital Culture & Education* 2014 Nov. Online at: <http://www.digitalcultureandeducation.com/volume-6/kahema/>

Recent surveillance data by Tanzania AIDS Commission has shown HIV prevalence among Men who have Sex with Men (MSM), transgender persons (TG) and Sex workers (SWs) to be well above general population estimates. Vulnerability to HIV among the MSM, TG and SWs has been associated with lack of correct and comprehensive information, informed decision, social and internalized stigma, negative legal and policy environment and language barrier. This paper will describe how Information Communication Technologies – ICTs, used by Tanzania Sisi Kwa Sisi Foundation – TSSF, has supported communication and access to the health services especially through outreach and referrals among the MSM, TG, and SWs in Tanzania.

14. **Female sexual partners of male people who inject drugs in Vietnam have poor knowledge of their male partners' HIV status.** Hammett, T. M., S. Phan, et al. *J Acquir Immune Defic Syndr* 2014.

BACKGROUND: Vietnam's HIV epidemic is concentrated among male people who inject drugs (PWID) and their female sexual partners (SPs) may be at risk for infection. HIV prevention interventions for SPs were implemented in Hanoi, Dien Bien Province, and Ho Chi Minh City (HCMC) and data from linked surveys used to evaluate these interventions offered an unusual opportunity to assess knowledge of HIV status within couples. METHODS: Linked surveys (behavioral interviews and HIV testing) among 200 PWID-SP couples in Hanoi, 300 in Dien Bien, and 249 in HCMC. RESULTS: HIV prevalence among male PWID was 53% in Hanoi, 30% in Dien Bien, and 46% in HCMC, and lower among their SPs: 44%, 10%, and 37%, respectively. Comparison of SPs' beliefs regarding male PWID partners' HIV status with the PWIDs' actual test results revealed that 32% of SPs in Dien Bien and 44% in Hanoi and HCMC lacked correct knowledge of their male partners' status. This proportions was slightly lower (21%-33%) among SPs whose PWID partners reported having been previously tested and received HIV+ results. DISCUSSION:: SP interventions reached HIV-negative women in serodiscordant relationships and some improvements occurred in condom use and relationship characteristics. Nevertheless, our findings suggest that at least 11,000 SPs in Vietnam may be at high risk for HIV infection due to incorrect knowledge of their partners' HIV status. Interventions should be strengthened in terms of HIV testing, disclosure and treatment, as well as empowerment of SPs as individuals, within couples, and as communities.

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Sex Workers

1. **Bridging the Epidemic: A Comprehensive Analysis of Prevalence and Correlates of HIV, Hepatitis C, and Syphilis, and Infection among Female Sex Workers in Guangxi Province, China.** Chen, Y., Z. Shen, et al. *PLoS One* 2015 10(2): e0115311.

INTRODUCTION: Female sex workers (FSWs) are at highest risk for contracting HIV and facilitating the current heterosexual HIV epidemic in Guangxi, China, yet little is known of the impact of recent harm reduction campaigns in the province. We analyzed sentinel surveillance data collected between 2010 and 2012 in Guangxi to explore correlations between the prevalence of HIV, hepatitis C (HCV), and syphilis and

risk behaviors of different categories of FSWs in Guangxi. METHODS: The sentinel surveillance data for 5,1790 FSWs in all 14 prefectures and 64 city/county regions of Guangxi, China from 2010 to 2012 were collected. Differences between three categories of FSWs (grouped by venue) and disease trends (HIV, HCV, and syphilis) by year were analyzed using bivariate and multivariate logistic regression analyses as to evaluate risk factors correlated with HIV, HCV, or syphilis infection. RESULTS: HIV and HCV prevalence remained constant across the three FSW categories; however, syphilis prevalence showed a significant increase from 5.7% to 7.3% for low-tier FSWs. Most cases with HIV, HCV, syphilis and intravenous drug use were seen in low-tier FSWs. Testing positive for HIV and syphilis were most correlated with being HCV positive (AOR 4.12 and AOR 4.36), only completing elementary school (AOR 3.71 and AOR 2.35), low tier venues (AOR 2.02 and AOR 2.00), and prior STI (AOR 1.40 and AOR 3.56), respectively. HCV infection was correlated with ever injecting drugs (AOR 60.65) and testing positive for syphilis (AOR 4.16) or HIV (AOR 3.74). CONCLUSIONS: This study highlights that low tier FSWs with lower formal education levels are the most vulnerable population at risk for acquiring and transmitting HIV, HCV, and syphilis in Guangxi, China. Condom distribution with evolution to safer sex practices are the reasons to explain the non-increasing prevalence of HIV, HCV in Guangxi for 2010-2012.

2. **High drop-off along the HIV care continuum and ART interruption among female sex workers in the Dominican Republic.** Zulliger, R., C. Barrington, et al. *J Acquir Immune Defic Syndr* 2015.

BACKGROUND: Engagement in HIV care offers clear individual and societal benefits, but little evidence exists on the care experiences of key populations. METHODS: A cross-sectional survey was conducted with 268 female sex workers (FSW) living with HIV in Santo Domingo, Dominican Republic to describe the HIV care continuum and to determine factors associated with antiretroviral therapy (ART) interruption. RESULTS: FSWs disengaged throughout the care continuum with highest drop-off after ART initiation. Most participants were linked to care (92%), retained in care (85%) and initiated onto ART (78%), but ART discontinuation and irregular adherence were frequent. Only 48% of participants had an undetectable HIV viral load. Overall, 36% of participants ever initiated onto ART reported lifetime experience with ART interruption. The odds of ART interruption were 3.24 times higher among women who experienced FSW-related discrimination (95% confidence interval [CI]: 1.28, 8.20), 2.41 times higher among women who used any drug (95% CI: 1.09, 5.34) and 2.35 times higher among women who worked in a FSW establishment (95% CI: 1.20, 4.60). Internalized stigma related to FSW was associated with higher odds of interruption (adjusted odds ratio [AOR]: 1.09; 95% CI: 1.02, 1.16) and positive perceptions of HIV providers were protective (AOR: 0.91; 95% CI: 0.85, 0.98). CONCLUSIONS: FSWs living with HIV confront multiple barriers throughout the HIV care continuum, many of which are related to the social context and stigmatization of sex work. Given the clear importance of maximizing the potential benefits of engagement in HIV care, there is an urgent need for interventions to support FSWs throughout the HIV care continuum.

3. **'Sex' - It's not only Women's Work: A Case for Refocusing on the Functional Role that Sex Plays in Work for both Women and Men.** Uretsky, E. *Crit Public Health* 2015 25(1): 78-88.

Mention of the term sex work often invokes images of marginalized women at risk for HIV infection. Such images, however, are counterintuitive to the functional role intended by the movement that spawned use of the terms 'sex work' and 'sex worker'. This article looks at the sexual practices of men in urban China to argue for a return to a functional definition of 'sex work', which was originally meant to legitimize the role sex plays in work. The progenitors of this movement intended to use 'sex work' as a means to legitimize sex as an income generating activity for women involved in prostitution. I show that sex can also serve a functional role in the work-related duties of men seeking economic and political success in contemporary urban China. Men in China utilize sex as one way for demonstrating the loyalty necessary to access state-owned and controlled resources in a market economy governed under a Leninist system. Overall the article demonstrates that reclaiming perception of sex work as a functional rather than behavioral category can expand its use for preventing HIV among the broad subset of people who engage in sex as part of their work.

4. **Poverty, Food Insufficiency and HIV Infection and Sexual Behaviour among Young Rural Zimbabwean Women.** Pascoe, S. J., L. F. Langhaug, et al. *PLoS One* 2015 10(1): e0115290.
Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4307980/pdf/pone.0115290.pdf>

BACKGROUND: Despite a recent decline, Zimbabwe still has the fifth highest adult HIV prevalence in the world at 14.7%; 56% of the population are currently living in extreme poverty. DESIGN: Cross-sectional population-based survey of 18-22 year olds, conducted in 30 communities in south-eastern Zimbabwe in 2007. OBJECTIVE: To examine whether the risk of HIV infection among young rural Zimbabwean women is associated with socio-economic position and whether different socio-economic domains, including food sufficiency, might be associated with HIV risk in different ways. METHODS: Eligible participants completed a structured questionnaire and provided a finger-prick blood sample tested for antibodies to HIV and HSV-2. The relationship between poverty and HIV was explored for three socio-economic domains: ability to afford essential items; asset wealth; food sufficiency. Analyses were performed to examine whether these domains were associated with HIV infection or risk factors for infection among young women, and to explore which factors might mediate the relationship between poverty and HIV. RESULTS: 2593 eligible females participated in the survey and were included in the analyses. Overall HIV prevalence among these young females was 7.7% (95% CI: 6.7-8.7); HSV-2 prevalence was 11.2% (95% CI: 9.9-12.4). Lower socio-economic position was associated with lower educational attainment, earlier marriage, increased risk of depression and anxiety disorders and increased reporting of higher risk sexual behaviours such as earlier sexual debut, more and older sexual partners and transactional sex. Young women reporting insufficient food were at increased risk of HIV infection and HSV-2. CONCLUSIONS: This study provides evidence from Zimbabwe that among young poor women, economic need and food insufficiency are associated with the adoption of unsafe behaviours. Targeted structural interventions that aim to tackle social and economic constraints including insufficient food should be developed and evaluated alongside behaviour and biomedical interventions, as a component of HIV prevention programming and policy.

5. **Sexual practices, partner concurrency and high rates of sexually transmissible infections among male sex workers in three cities in Vietnam.** Clatts, M. C., L. A. Goldsamt, et al. *Sex Health* 2015.
Online at: http://www.publish.csiro.au/?act=view_file&file_id=SH14101.pdf

BACKGROUND: This paper examines sexual practices, partner concurrency and sexually transmissible infections (STI)/HIV infection among male sex workers (MSWs) in Vietnam. Methods: Six hundred and fifty-four MSWs, aged 16-35 years, were recruited in Hanoi, Nha Trang and Ho Chi Minh City between 2009 and 2011. Survey measures included demographic characteristics, drug use, types of sexual partners and sexual practices. Subjects were screened for STIs, including HIV. Results: MSWs in Ho Chi Minh City (33%) were more likely than those from the other two sites to be current users of one or more types of illegal drugs (PPP=0.045) and elective female partners (P=0.025). At last sex with a male client partner, only 30% used a condom during anal intercourse. At last sex with an elective female partner, only 31% used a condom during vaginal sex and only 3% during anal sex. Although rates of HIV are low (4%), other STIs are high, including chlamydia (17%), gonorrhoea (29%) and human papillomavirus (33%). Most (57.3%) have never been tested for HIV and only 17% have ever disclosed to a healthcare provider that they have sex with men. Conclusions: Complex patterns of sexual concurrency, coupled with high rates of STIs, signal the urgent need for health services interventions among MSWs, both to improve individual health outcomes and to reduce secondary STI/HIV transmission among sexual partner networks.

6. **Efficacy of a Savings-Led Microfinance Intervention to Reduce Sexual Risk for HIV Among Women Engaged in Sex Work: A Randomized Clinical Trial.** Witte, S. S., T. Aira, et al. *Am J Public Health* 2015 105(3): e95-e102.

OBJECTIVES: We tested whether a structural intervention combining savings-led microfinance and HIV prevention components would achieve enhanced reductions in sexual risk among women engaging in street-based sex work in Ulaanbaatar, Mongolia, compared with an HIV prevention intervention alone. METHODS: Between November 2011 and August 2012, we randomized 107 eligible women who

completed baseline assessments to either a 4-session HIV sexual risk reduction intervention (HIVSRR) alone (n = 50) or a 34-session HIVSRR plus a savings-led microfinance intervention (n = 57). At 3- and 6-month follow-up assessments, participants reported unprotected acts of vaginal intercourse with paying partners and number of paying partners with whom they engaged in sexual intercourse in the previous 90 days. Using Poisson and zero-inflated Poisson model regressions, we examined the effects of assignment to treatment versus control condition on outcomes. RESULTS: At 6-month follow-up, the HIVSRR plus microfinance participants reported significantly fewer paying sexual partners and were more likely to report zero unprotected vaginal sex acts with paying sexual partners. CONCLUSIONS: Findings advance the HIV prevention repertoire for women, demonstrating that risk reduction may be achieved through a structural intervention that relies on asset building, including savings, and alternatives to income from sex work.

7. **Sex worker activism, feminist discourse and HIV in Bangladesh.** Sultana, H. *Cult Health Sex* 2015: 1-12. Online at: <http://www.tandfonline.com/doi/pdf/10.1080/13691058.2014.990516>

This paper explores the relationship between sex worker activism and HIV-related discourse in Bangladesh, relating recent developments in activism to the influence of feminist thought. Following their eviction in 1991 from brothels from red light areas, Bangladeshi sex workers started a social movement, at just about the same time that programmes started to work with sex workers to reduce the transmission of HIV. This paper argues that both sex worker activism and HIV-prevention initiatives find impetus in feminist pro-sex-work perspectives, which place emphasis on individual and collective agency. However, by participating in these programmes, sex workers failed to contest the imagery of themselves as 'vectors' of HIV. In this way, they were unwittingly complicit in reproducing their identity as 'polluting others'. Moreover, by focusing on individual behaviour and the agency of sex workers, HIV programmes ignored the fact that the 'choices' made by sex workers are influenced by a wide range of structural and discursive factors, including gender norms and notions of bodily purity, which in turn have implications for the construction of HIV-related risk.

8. **"Whatever I Have, I Have Made by Coming into this Profession": The Intersection of Resources, Agency, and Achievements in Pathways to Sex Work in Kolkata, India.** Swendeman, D., A. E. Fehrenbacher, et al. *Arch Sex Behav* 2015. Online at: <http://link.springer.com/article/10.1007%2Fs10508-014-0404-1>

This article investigated the complex interplay of choice, socioeconomic structural factors, and empowerment influencing engagement in sex work. The analysis was focused on pathways into and reasons for staying in sex work from in-depth qualitative interviews with participants (n = 37) recruited from the Durbar community-led structural intervention in Kolkata, India. Kabeer's theory of empowerment focused on resources, agency, and achievements was utilized to interpret the results. Results identified that contexts of disempowerment constraining resources and agency set the stage for initiating sex work, typically due to familial poverty, loss of a father or husband as a breadwinner, and lack of economic opportunities for women in India. Labor force participation in informal sectors was common, specifically in domestic, construction, and manufacturing work, but was typically insufficient to provide for families and also often contingent on sexual favors. The availability of an urban market for sex work served as a catalyst or resource, in conjunction with Durbar's programmatic resources, for women to find and exercise agency and achieve financial and personal autonomy not possible in other work or as dependents on male partners. Resources lost in becoming a sex worker due to stigma, discrimination, and rejection by family and communities were compensated for by achievements in gaining financial and social resources, personal autonomy and independence, and the ability to support children and extended family. Durbar's programs and activities (e.g., savings and lending cooperative, community mobilization, advocacy) function as empowering resources that are tightly linked to sex workers' agency, achievements, and sex work pathways.

9. **"Nothing Is Free": A Qualitative Study of Sex Trading Among Methamphetamine Users in Cape Town, South Africa.** Watt, M. H., S. M. Kimani, et al. *Arch Sex Behav* 2015.
Online at: <http://link.springer.com/article/10.1007%2Fs10508-014-0418-8>

South Africa is facing an established epidemic of methamphetamine, known locally as "tik." Globally, methamphetamine has been linked to high rates of sexual risk behaviors, including sex trading. The goal of this study was to qualitatively examine the experiences of sex trading among methamphetamine users in Cape Town, South Africa. Individual in-depth interviews were conducted with 30 active methamphetamine users (17 men and 13 women) recruited from the community. Interviews were conducted in local languages using a semi-structured guide that included questions on sex trading experiences and perceptions of sex trading among methamphetamine users. Interviews were audio-recorded, transcribed, and analyzed using analytic memos and coding with constant comparison techniques. The data revealed that in a setting of high levels of addiction and poverty, sex was an important commodity for acquiring methamphetamine. Women were more likely to use sex to acquire methamphetamine, but men reported opportunistic cases of trading sex for methamphetamine. Four models of sex trading emerged: negotiated exchange, implicit exchange, relationships based on resources, and facilitating sex exchange for others. The expectation of sex trading created a context in which sexual violence against female methamphetamine users was common. Multiple sexual partners and inconsistent condom use in acts of sex trading put methamphetamine users at high risk of HIV. Interventions in this setting should address addiction, which is the primary driver of sex trading among methamphetamine users. Harm reduction interventions may include education about HIV and other sexually transmitted infections, availability of condoms and HIV testing, and sexual violence prevention.

10. **Retention in HIV Care Among Female Sex Workers in the Dominican Republic: Implications for Research, Policy and Programming.** Zulliger, R., C. Maulsby, et al. *AIDS Behav* 2015.
Online at: http://download.springer.com/static/pdf/317/art%253A10.1007%252Fs10461-014-0979-5.pdf?auth66=1425324969_488c1066114f95996ded5bfca6265b83&ext=.pdf

There are clear benefits of retention in HIV care, yet millions of people living with HIV are sub-optimally retained. This study described factors from Andersen's behavioral model that were associated with retention in HIV care among 268 female sex workers (FSWs) living with HIV in the Dominican Republic using two measures of retention: a 6-month measure of HIV clinic attendance and a measure that combined clinic attendance and missed visits. FSWs who ever attended HIV care reported high rates (92 %) of 6-month attendance, but 37 % reported missed visits. Using the combined retention measure, the odds of being retained in HIV care were higher among FSWs with more positive perceptions of HIV service providers [adjusted odds ratio (AOR) 1.17; 95 % confidence interval (CI) 0.109, 1.25] and lower among women who reported recent alcohol consumption (AOR 0.50; 95 % CI 0.28, 0.92) and self-stigmatizing beliefs related to sex work (AOR 0.93; 95 % CI 0.88, 0.98). These findings support the hypothesis that retention in HIV care may be best determined through a combined measure as missed visits are an important mechanism to identify in-care patients who require additional support.

11. **The balancing act: Exploring stigma, economic need and disclosure among male sex workers in Ho Chi Minh City, Vietnam.** Closson, E. F., D. J. Colby, et al. *Glob Public Health* 2015: 1-12.
Online at: <http://www.tandfonline.com/doi/abs/10.1080/17441692.2014.992452>

In Vietnam, there is an emerging HIV epidemic among men who have sex with men (MSM). Male sex workers engage in high-risk sexual behaviours that make them particularly vulnerable to HIV infection. In 2010, 23 MSM in Ho Chi Minh City (HCMC) who recently received payment for sex with another man completed in-depth qualitative interviews exploring motivations for sex work, patterns of sex work disclosure and experiences of social stigma. Interviews were recorded, transcribed and translated into English and analysed using a qualitative descriptive approach. Low wages, unstable employment and family remittances were motivating factors for MSM in HCMC to sell sex. Participants described experiences of enacted and felt social stigma related to their involvement in sex work. In response, they

utilised stigma management techniques aimed at concealment of involvement in sex work. Such strategies restricted sexual communication with non-paying sex partners and potentially limited their ability to seek social support from family and friends. Departing from decontextualized depictions of sex work disclosure, our findings describe how decisions to reveal involvement in sex work are shaped by social and structural factors such as social stigma, techniques to minimise exposure to stigma, economic imperatives and familial responsibilities.

12. **HIV and STI prevalence and risk factors among male sex workers and other men who have sex with men in Nairobi, Kenya.** Muraguri, N., W. Tun, et al. *J Acquir Immune Defic Syndr* 2015 68(1): 91-6. Online at: <http://graphics.tx.ovid.com/ovftpdfs/FPDNCMCNAPMCN00/fs046/ovft/live/gv023/00126334/00126334-201501010-00013.pdf>

Previous surveys of men who have sex with men (MSM) in Africa have not adequately profiled HIV status and risk factors by sex work status. MSM in Nairobi, Kenya, were recruited using respondent-driven sampling, completed a behavioral interview, and were tested for HIV and sexually transmitted infections. Overlapping recruitment among 273 male sex workers and 290 other MSM was common. Sex workers were more likely to report receptive anal sex with multiple partners (65.7% versus 18.0%, $P < 0.001$) and unprotected receptive anal intercourse (40.0% versus 22.8%, $P = 0.005$). Male sex workers were also more likely to be HIV infected (26.3% versus 12.2%, $P = 0.007$).

13. **Examining negative effects of early life experiences on reproductive and sexual health among female sex workers in Tijuana, Mexico.** Oza, K. K., J. G. Silverman, et al. *Int J Gynaecol Obstet* 2015 128(2): 169-73. Online at: <http://www.sciencedirect.com/science/article/pii/S002072921400527X>

OBJECTIVE: To explore experiences during childhood and adolescence that influenced reproductive and sexual health among women who had entered the sex industry in adolescence. METHODS: A qualitative study was conducted using information provided by 25 female sex workers (FSWs) from Tijuana, Mexico, who reported entering the sex industry when younger than 18 years. In-depth, semi-structured interviews were conducted with all participants between January 31, 2011, and July 8, 2011. RESULTS: Four interrelated themes that shaped health experiences—early sexual abuse, early illicit drug use, ongoing violence, and limited access to reproductive and sexual health care—were identified. Participants reporting these experiences were at risk of unintended teenaged pregnancy, spontaneous abortion or stillbirth, and untreated sexually transmitted infections. CONCLUSION: Programs and policies that address social, structural, and individual vulnerabilities during adolescence and adulthood are required to promote reproductive and sexual health among FSWs in Tijuana, Mexico.

14. **Physical and sexual violence, childhood sexual abuse and HIV/STI risk behaviour among alcohol-using women engaged in sex work in Mongolia.** Parcesepe, A. M., A. Toivgoon, et al. *Glob Public Health* 2015 10(1): 88-102. Online at: http://www.tandfonline.com/doi/abs/10.1080/17441692.2014.976240?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Although the prevalence of human immunodeficiency virus (HIV) in Mongolia is low, it could increase without strategic prevention strategies. Female sex workers (FSWs) often experience barriers to prevention, including interpersonal violence. This study investigated if childhood sexual abuse (CSA) or recent physical or sexual violence was associated with HIV sexual risk behaviours and if CSA modified associations between recent violence and HIV sexual risk behaviours. Two-hundred twenty-two women who (1) were at least 18 years old and clients at the National AIDS Foundation; (2) reported vaginal or anal sex in the past 90 days in exchange for money or goods and (3) met criteria for harmful alcohol use in the past year were enrolled. In-person interviews assessed sexual risk behaviours and violence in childhood and adulthood. Negative binomial regression, ordinary least squares regression and modified Poisson regression were performed. Sexual risk with paying partners was associated with penetrative CSA

and sexual violence by paying partners. CSA and recent violence were not associated with sexual risk behaviours with intimate partners. CSA modified the association between recent sexual violence and unprotected sex with intimate partners. Findings highlight the need for integrated violence and sexual risk reduction services to ensure safe and effective prevention for FSWs.

15. **Mobile phones and sex work in South India: the emerging role of mobile phones in condom use by female sex workers in two Indian states.** Navani-Vazirani, S., D. Solomon, et al. *Cult Health Sex* 2015 17(2): 252-65.

The aim of this study was to examine female sex workers' solicitation of clients using mobile phones and the association between this and condom use with clients. Cross-sectional data were utilised to address the study's aim, drawing on data collected from female sex workers in Calicut, Kerala, and Chirala, Andhra Pradesh. Use of mobile phone solicitation was reported by 46.3% (n = 255) of Kerala participants and 78.7% (n = 464) of those in Andhra Pradesh. Kerala participants reporting exclusive solicitation using mobile phones demonstrated 1.67 times higher odds (95% CI: 1.01-2.79) of inconsistent condom use than those reporting non-use of mobile phones for solicitation. However, those reporting exclusive solicitation through mobile phones in Andhra Pradesh reported lower odds of inconsistent condom use (OR: 0.03; 95% CI: 0.01-0.26) than those not using mobile phones for solicitation. Findings indicate that solicitation of clients using mobile phones facilitates or hampers consistency in condom use with clients depending on the context, and how mobile phones are incorporated into solicitation practices. Variations in sex work environments, including economic dependence on sex work or lack thereof may partially account for the different effects found.

16. **'If you have children, you have responsibilities': motherhood, sex work and HIV in southern Tanzania.** Beckham, S. W., C. R. Shembilu, et al. *Cult Health Sex* 2015 17(2): 165-79.
Online at: <http://www.tandfonline.com/doi/pdf/10.1080/13691058.2014.961034>

Many female sex workers begin sex work as mothers, or because they are mothers, and others seek childbearing. Motherhood may influence women's livelihoods as sex workers and their subsequent HIV risks. We used qualitative research methods (30 in-depth interviews and three focus group discussions) and employed Connell's theory of Gender and Power to explore the intersections between motherhood, sex work, and HIV-related risk. Participants were adult women who self-reported exchanging sex for money within the past month and worked in entertainment venues in southern Tanzania. Participants had two children on average, and two-thirds had children at home. Women situated their socially stigmatised work within their respectable identities as mothers caring for their children. Being mothers affected sex workers' negotiating power in complex manners, which led to both reported increases in HIV-related risk behaviours (accepting more clients, accepting more money for no condom, anal sex), and decreases in risk behaviours (using condoms, demanding condom use, testing for HIV). Sex workers/mothers were aware of risks at work, but with children to support, their choices were constrained. Future policies and programming should consider sex workers' financial and practical needs as mothers, including those related to their children such as school fees and childcare.

17. **Voice, boundary work, and visibility in research on sex work in Morocco.** Montgomery, A. *Med Anthropol* 2015 34(1): 24-38.
Online at: http://www.tandfonline.com/doi/abs/10.1080/01459740.2014.942812?url_ver=Z39.88-2003&rft_id=ori:rid:crossref.org&rft_dat=cr_pub%3dpubmed

How might the ethnographer conduct research on health and suffering among populations who would rather remain hidden? Drawing on my research with female sex workers in southern Morocco, I suggest and demonstrate an approach that allows interlocutors' discretionary practices to guide ethnographic inquiry. I show how boundary work--as a politics of visibility founded on practices of discretion, concealment, and distancing--emerged as central to my interlocutors' livelihood strategies and their efforts to enact moral personhood, integrate themselves into networks of solidarity, and articulate social

critiques. A methodological focus on discourses and practices of boundary drawing, I argue, was essential for conceptualizing and representing the suffering of the women with whom I worked. Using boundary work as a guide, the ethnographer does not give voice to suffering, but learns how suffering is already voiced as part of attempts to survive, aspire, and become.

18. **Vulnerabilities faced by the children of sex workers in two Mexico-US border cities: a retrospective study on sexual violence, substance use and HIV risk.** Servin, A. E., S. Strathdee, et al. *AIDS Care* 2015 27(1): 1-5. Online at: <http://www.tandfonline.com/doi/pdf/10.1080/09540121.2014.946384>

Most studies of female sex workers (FSWs) conducted in the Mexico-US border region have focused on individual HIV risk, centered on sexual behaviors and substance abuse patterns. Little attention has been drawn to the reality that sex workers are often parents whose children potentially face vulnerabilities unique to their family situation. The objective of the present study was to identify the vulnerabilities faced by the children of FSWs in two Mexican-US border cities. From 2008 to 2010, 628 FSW-injection drug users underwent interviewer-administered surveys and HIV/STI testing. Approximately one in five participants (20%) reported having a parent involved in sex work and majority referred it was their mother (88%). Close to one-third of participants (31%) reported first injecting drugs <18 years of age, and 33% reported they began working regularly as a prostitute <18 years of age. First drinking alcohol <18 years old (AOR = 1.87, 95%CI: 1.13-3.08), lifetime cocaine use (AOR = 1.76, 95%CI: 1.09-2.84), ever being forced or coerced into non-consensual sex as a minor (<18 years of age; AOR = 1.54, 95%CI: 1.01-2.35), and injecting drugs with used syringes in the prior month (AOR = 1.63, 95%CI: 1.07-2.49) were the factors associated with having had a parent involved in sex work. These findings begin to lay the groundwork for understanding the potential vulnerabilities faced by the children of sex workers. Understanding these potential needs is necessary for creating relevant, evidence-based interventions focused on supporting these women.

19. **An action agenda for HIV and sex workers.** Beyrer, C., A. L. Crago, et al. *Lancet* 2015 385(9964): 287-301.

The women, men, and transgender people who sell sex globally have disproportionate risks and burdens of HIV in countries of low, middle, and high income, and in concentrated and generalised epidemic contexts. The greatest HIV burdens continue to be in African female sex workers. Worldwide, sex workers still face reduced access to needed HIV prevention, treatment, and care services. Legal environments, policies, police practices, absence of funding for research and HIV programmes, human rights violations, and stigma and discrimination continue to challenge sex workers' abilities to protect themselves, their families, and their sexual partners from HIV. These realities must change to realise the benefits of advances in HIV prevention and treatment and to achieve global control of the HIV pandemic. Effective combination prevention and treatment approaches are feasible, can be tailored for cultural competence, can be cost-saving, and can help to address the unmet needs of sex workers and their communities in ways that uphold their human rights. To address HIV in sex workers will need sustained community engagement and empowerment, continued research, political will, structural and policy reform, and innovative programmes. But such actions can and must be achieved for sex worker communities everywhere.

20. **Global epidemiology of HIV among female sex workers: influence of structural determinants.** Shannon, K., S. A. Strathdee, et al. *Lancet* 2015 385(9962): 55-71.

Online at: http://ac.els-cdn.com/S0140673614609314/1-s2.0-S0140673614609314-main.pdf?_tid=5a226b5c-c114-11e4-95d1-00000aab0f02&acdnat=1425325568_725213649a3ee04adce3d464e3107ea9

Female sex workers (FSWs) bear a disproportionately large burden of HIV infection worldwide. Despite decades of research and programme activity, the epidemiology of HIV and the role that structural determinants have in mitigating or potentiating HIV epidemics and access to care for FSWs is poorly understood. We reviewed available published data for HIV prevalence and incidence, condom use, and

structural determinants among this group. Only 87 (43%) of 204 unique studies reviewed explicitly examined structural determinants of HIV. Most studies were from Asia, with few from areas with a heavy burden of HIV such as sub-Saharan Africa, Russia, and eastern Europe. To further explore the potential effect of structural determinants on the course of epidemics, we used a deterministic transmission model to simulate potential HIV infections averted through structural changes in regions with concentrated and generalised epidemics, and high HIV prevalence among FSWs. This modelling suggested that elimination of sexual violence alone could avert 17% of HIV infections in Kenya (95% uncertainty interval [UI] 1-31) and 20% in Canada (95% UI 3-39) through its immediate and sustained effect on non-condom use) among FSWs and their clients in the next decade. In Kenya, scaling up of access to antiretroviral therapy among FSWs and their clients to meet WHO eligibility of a CD4 cell count of less than 500 cells per µL could avert 34% (95% UI 25-42) of infections and even modest coverage of sex worker-led outreach could avert 20% (95% UI 8-36) of infections in the next decade. Decriminalisation of sex work would have the greatest effect on the course of HIV epidemics across all settings, averting 33-46% of HIV infections in the next decade. Multipronged structural and community-led interventions are crucial to increase access to prevention and treatment and to promote human rights for FSWs worldwide.

21. **Trafficking, sex work, and HIV: efforts to resolve conflicts.** Steen, R., S. Jana, et al. *Lancet* 2015 385(9963): 94-6.

Online at: http://ac.els-cdn.com/S0140673614609661/1-s2.0-S0140673614609661-main.pdf?_tid=613c6a32-c114-11e4-9aa1-00000aacb35e&acdnat=1425325580_36462ff863a1bcd01151d53c9b4d141a

22. **Human rights violations against sex workers: burden and effect on HIV.** Decker, M. R., A. L. Crago, et al. *Lancet* 2015 385(9963): 186-99.

Online at: http://ac.els-cdn.com/S014067361460800X/1-s2.0-S014067361460800X-main.pdf?_tid=4f794f4a-c114-11e4-909e-00000aab0f01&acdnat=1425325550_6393b34696682350b7a49ac7387aad2c

We reviewed evidence from more than 800 studies and reports on the burden and HIV implications of human rights violations against sex workers. Published research documents widespread abuses of human rights perpetrated by both state and non-state actors. Such violations directly and indirectly increase HIV susceptibility, and undermine effective HIV-prevention and intervention efforts. Violations include homicide; physical and sexual violence, from law enforcement, clients, and intimate partners; unlawful arrest and detention; discrimination in accessing health services; and forced HIV testing. Abuses occur across all policy regimes, although most profoundly where sex work is criminalised through punitive law. Protection of sex workers is essential to respect, protect, and meet their human rights, and to improve their health and wellbeing. Research findings affirm the value of rights-based HIV responses for sex workers, and underscore the obligation of states to uphold the rights of this marginalised population.

23. **Combination HIV prevention for female sex workers: what is the evidence?** Bekker, L. G., L. Johnson, et al. *Lancet* 2015 385(9962): 72-87.

Online at: http://ac.els-cdn.com/S0140673614609740/1-s2.0-S0140673614609740-main.pdf?_tid=4b9983fe-c114-11e4-8a1e-00000aacb35f&acdnat=1425325544_635fd35685a39af9741c2666381a6e5c

Sex work occurs in many forms and sex workers of all genders have been affected by HIV epidemics worldwide. The determinants of HIV risk associated with sex work occur at several levels, including individual biological and behavioural, dyadic and network, and community and social environmental levels. Evidence indicates that effective HIV prevention packages for sex workers should include combinations of biomedical, behavioural, and structural interventions tailored to local contexts, and be led and implemented by sex worker communities. A model simulation based on the South African heterosexual epidemic suggests that condom promotion and distribution programmes in South Africa have already reduced HIV incidence in sex workers and their clients by more than 70%. Under optimistic

model assumptions, oral pre-exposure prophylaxis together with test and treat programmes could further reduce HIV incidence in South African sex workers and their clients by up to 40% over a 10-year period. Combining these biomedical approaches with a prevention package, including behavioural and structural components as part of a community-driven approach, will help to reduce HIV infection in sex workers in different settings worldwide.

24. **HIV risk and preventive interventions in transgender women sex workers.** Poteat, T., A. L. Wirtz, et al. *Lancet* 2015 385(9964): 274-86.

Online at: http://ac.els-cdn.com/S0140673614608333/1-s2.0-S0140673614608333-main.pdf?_tid=56e6c834-c114-11e4-92ad-00000aab0f27&acdnat=1425325563_d70e4c14b1c73bc31e17ba1584bfe338

Worldwide, transgender women who engage in sex work have a disproportionate risk for HIV compared with natal male and female sex workers. We reviewed recent epidemiological research on HIV in transgender women and show that transgender women sex workers (TSW) face unique structural, interpersonal, and individual vulnerabilities that contribute to risk for HIV. Only six studies of evidence-based prevention interventions were identified, none of which focused exclusively on TSW. We developed a deterministic model based on findings related to HIV risks and interventions. The model examines HIV prevention approaches in TSW in two settings (Lima, Peru and San Francisco, CA, USA) to identify which interventions would probably achieve the UN goal of 50% reduction in HIV incidence in 10 years. A combination of interventions that achieves small changes in behaviour and low coverage of biomedical interventions was promising in both settings, suggesting that the expansion of prevention services in TSW would be highly effective. However, this expansion needs appropriate sustainable interventions to tackle the upstream drivers of HIV risk and successfully reach this population. Case studies of six countries show context-specific issues that should inform development and implementation of key interventions across heterogeneous settings. We summarise the evidence and knowledge gaps that affect the HIV epidemic in TSW, and propose a research agenda to improve HIV services and policies for this population.

25. **Male sex workers: practices, contexts, and vulnerabilities for HIV acquisition and transmission.** Baral, S. D., M. R. Friedman, et al. *Lancet* 2015 385(9964): 260-73.

Online at: http://ac.els-cdn.com/S0140673614608011/1-s2.0-S0140673614608011-main.pdf?_tid=4777db22-c114-11e4-8170-00000aab0f26&acdnat=1425325537_a02cc9b5819e6bfac4ff83e9b9a3b139

Male sex workers who sell or exchange sex for money or goods encompass a very diverse population across and within countries worldwide. Information characterising their practices, contexts where they live, and their needs is limited, because these individuals are generally included as a subset of larger studies focused on gay men and other men who have sex with men (MSM) or even female sex workers. Male sex workers, irrespective of their sexual orientation, mostly offer sex to men and rarely identify as sex workers, using local or international terms instead. Growing evidence indicates a sustained or increasing burden of HIV among some male sex workers within the context of the slowing global HIV pandemic. Several synergistic facilitators could be potentiating HIV acquisition and transmission among male sex workers, including biological, behavioural, and structural determinants. Criminalisation and intersectional stigmas of same-sex practices, commercial sex, and HIV all augment risk for HIV and sexually transmitted infections among male sex workers and reduce the likelihood of these people accessing essential services. These contexts, taken together with complex sexual networks among male sex workers, define this group as a key population underserved by current HIV prevention, treatment, and care services. Dedicated efforts are needed to make those services available for the sake of both public health and human rights. Evidence-based and human rights-affirming services dedicated specifically to male sex workers are needed to improve health outcomes for these men and the people within their sexual networks.

26. **A community empowerment approach to the HIV response among sex workers: effectiveness, challenges, and considerations for implementation and scale-up.** Kerrigan, D., C. E. Kennedy, et al. *Lancet* 2015 385(9963): 172-85.

Online at: http://ac.els-cdn.com/S0140673614609739/1-s2.0-S0140673614609739-main.pdf?_tid=5ded16ec-c114-11e4-b106-00000aab0f6c&acdnat=1425325574_46cc283886e1471bdc869387b0d6c440

A community empowerment-based response to HIV is a process by which sex workers take collective ownership of programmes to achieve the most effective HIV outcomes and address social and structural barriers to their overall health and human rights. Community empowerment has increasingly gained recognition as a key approach for addressing HIV in sex workers, with its focus on addressing the broad context within which the heightened risk for infection takes place in these individuals. However, large-scale implementation of community empowerment-based approaches has been scarce. We undertook a comprehensive review of community empowerment approaches for addressing HIV in sex workers. Within this effort, we did a systematic review and meta-analysis of the effectiveness of community empowerment in sex workers in low-income and middle-income countries. We found that community empowerment-based approaches to addressing HIV among sex workers were significantly associated with reductions in HIV and other sexually transmitted infections, and with increases in consistent condom use with all clients. Despite the promise of a community-empowerment approach, we identified formidable structural barriers to implementation and scale-up at various levels. These barriers include regressive international discourses and funding constraints; national laws criminalising sex work; and intersecting social stigmas, discrimination, and violence. The evidence base for community empowerment in sex workers needs to be strengthened and diversified, including its role in aiding access to, and uptake of, combination interventions for HIV prevention. Furthermore, social and political change are needed regarding the recognition of sex work as work, both globally and locally, to encourage increased support for community empowerment responses to HIV.

27. **Bambucha media: Using social media to build social capital and health seeking behaviour among key populations.** Kahema, C. M., J. Kashiha, et al. *Digital Culture & Education* 2014 Nov.

Online at: <http://www.digitalcultureandeducation.com/volume-6/kahema/>

Recent surveillance data by Tanzania AIDS Commission has shown HIV prevalence among Men who have Sex with Men (MSM), transgender persons (TG) and Sex workers (SWs) to be well above general population estimates. Vulnerability to HIV among the MSM, TG and SWs has been associated with lack of correct and comprehensive information, informed decision, social and internalized stigma, negative legal and policy environment and language barrier. This paper will describe how Information Communication Technologies – ICTs, used by Tanzania Sisi Kwa Sisi Foundation – TSSF, has supported communication and access to health services especially through outreach and referrals among MSM, TG, and SWs in Tanzania.

28. **Sex workers, unite! (Litigating for sex workers' freedom of association in Russia).** Arps, F. S. and M. Golichenko. *Health Hum Rights* 2014 16(2): E24-34.

The existing legal framework in Russia makes sex work and related activities punishable offenses, leaving sex workers stigmatized, vulnerable to violence, and disproportionately affected by HIV and other sexually transmitted infections. In 2013, the Ministry of Justice, supported by the courts, refused registration and official recognition to the first all-Russia association of sex workers, referring to the fact that sex work is under administrative and criminal punitive bans and therefore the right of association for sex workers is unjustified. In light of international human rights standards, in particular the jurisprudence of the European Court of Human Rights, we examine in this paper whether the overall punitive legal ban on sex work in Russia is discriminatory. The government's positive obligations concerning discrimination against sex workers whose activities are consensual and between adults, and whose working conditions leave them among society's most vulnerable, should outweigh their punitive laws and policies around sex work. The scope of legal criminalization is narrow: it should apply only in exceptional cases where it is justified.

29. **Reconceptualizing the HIV epidemiology and prevention needs of Female Sex Workers (FSW) in Swaziland.** Baral, S., S. Ketende, et al. *PLoS One* 2014 9(12): e115465.
Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4274078/pdf/pone.0115465.pdf>

BACKGROUND: HIV is hyperendemic in Swaziland with a prevalence of over 25% among those between the ages of 15 and 49 years old. The HIV response in Swaziland has traditionally focused on decreasing HIV acquisition and transmission risks in the general population through interventions such as male circumcision, increasing treatment uptake and adherence, and risk-reduction counseling. There is emerging data from Southern Africa that key populations such as female sex workers (FSW) carry a disproportionate burden of HIV even in generalized epidemics such as Swaziland. The burden of HIV and prevention needs among FSW remains unstudied in Swaziland. METHODS: A respondent-driven-sampling survey was completed between August-October, 2011 of 328 FSW in Swaziland. Each participant completed a structured survey instrument and biological HIV and syphilis testing according to Swazi Guidelines. RESULTS: Unadjusted HIV prevalence was 70.3% (n = 223/317) among a sample of women predominantly from Swaziland (95.2%, n = 300/316) with a mean age of 21 (median 25) which was significantly higher than the general population of women. Approximately one-half of the FSW (53.4%, n = 167/313) had received HIV prevention information related to sex work in the previous year, and about one-in-ten had been part of a previous research project (n = 38/313). Rape was common with nearly 40% (n = 123/314) reporting at least one rape; 17.4% (n = 23/314) reported being raped 6 or more times. Reporting blackmail (34.8%, n = 113/314) and torture (53.2%, n = 173/314) was prevalent. CONCLUSIONS: While Swaziland has a highly generalized HIV epidemic, reconceptualizing the needs of key populations such as FSW suggests that these women represent a distinct population with specific vulnerabilities and a high burden of HIV compared to other women. These women are understudied and underserved resulting in a limited characterization of their HIV prevention, treatment, and care needs and only sparse specific and competent programming. FSW are an important population for further investigation and rapid scale-up of combination HIV prevention including biomedical, behavioral, and structural interventions.

30. **Risk and vulnerability of key populations to HIV infection in Iran; knowledge, attitude and practises of female sex workers, prison inmates and people who inject drugs.** Khajehkazemi, R., A. Haghdoost, et al. *Sex Health* 2014 11(6): 568-74.
Online at: http://www.publish.csiro.au/?act=view_file&file_id=SH14165.pdf

BACKGROUND: In this study data of three national surveys conducted among female sex workers (FSW), prison inmates and people who inject drugs (PWID) were presented and compared in relation to knowledge, attitude, and practises. METHODS: The surveys were conducted in 2009 and 2010 and included 2546 PWID, 872 FSW and 5530 prison inmates. Knowledge, attitude and practises towards HIV were measured through similar questions for each category. RESULTS: Over 90% of all participants had ever heard of HIV/AIDS, although only approximately half of them perceived themselves at risk of contracting HIV. More than 80% were able to correctly identify the ways of preventing the sexual transmission of HIV; while more than two-thirds did not use condom in their last sexual contact. Approximately 20% of prisoners and FSW had a history of injecting drugs. Among all participants who have injected drugs, prisoners had the highest unsafe injecting behaviour at the last injection (61%), followed by FSW (11%) and PWID (3%). CONCLUSIONS: Despite major efforts to control the HIV epidemic in Iran, the level of risk and vulnerability among prisoners, FSW and PWID is still high. The level of comprehensive knowledge about HIV/AIDS is relatively good; however, their risk perception of contracting HIV is low and high-risk behaviours are prevalent. Therefore, HIV prevention programs should be redesigned in a more comprehensive way to identify the best venues to reach the largest number of people at a higher risk of contracting HIV and decrease their risk overlaps and vulnerability factors.

31. **The price of sex: condom use and the determinants of the price of sex among female sex workers in eastern Zimbabwe.** Elmes, J., K. Nhongo, et al. *J Infect Dis* 2014 210 Suppl 2: S569-78. Online at: http://jid.oxfordjournals.org/content/210/suppl_2/S569.full.pdf

BACKGROUND: Higher prices for unprotected sex threaten the high levels of condom use that contributed to the decline in Zimbabwe's human immunodeficiency virus (HIV) epidemic. To improve understanding of financial pressures competing against safer sex, we explore factors associated with the price of commercial sex in rural eastern Zimbabwe. METHODS: We collected and analyzed cross-sectional data on 311 women, recruited during October-December 2010, who reported that they received payment for their most-recent or second-most-recent sex acts in the past year. Zero-inflated negative binomial models with robust standard errors clustered on female sex worker (FSW) were used to explore social and behavioral determinants of price. RESULTS: The median price of sex was \$10 (interquartile range [IQR], \$5-\$20) per night and \$10 (IQR, \$5-\$15) per act. Amounts paid in cash and commodities did not differ significantly. At the most-recent sex act, more-educated FSWs received 30%-74% higher payments. Client requests for condom use significantly predicted protected sex ($P < .01$), but clients paid on average 42.9% more for unprotected sex. CONCLUSIONS: Within a work environment where clients' preferences determine condom use, FSWs effectively use their individual capital to negotiate the terms of condom use. Strengthening FSWs' preferences for protected sex could help maintain high levels of condom use.

32. **A randomized controlled trial of a brief intervention to reduce alcohol use among female sex workers in Mombasa, Kenya.** L'Engle, K. L., P. Mwarogo, et al. *J Acquir Immune Defic Syndr* 2014 67(4): 446-53. Online at: <http://graphics.tx.ovid.com/ovftpdfs/FPDDNMCNAPMCN00/fs046/ovft/live/gv023/00126334/00126334-201412010-00015.pdf>

OBJECTIVE: We assessed whether a brief alcohol intervention would lead to reduced alcohol use and sexually transmitted infection (STI)/HIV incidence and related sexual risk behaviors among moderate drinking female sex workers. METHODS: A randomized controlled intervention trial was conducted with 818 female sex workers affiliated with the AIDS, Population, Health, and Integrated Assistance II project in Mombasa, Kenya. Eligible women were hazardous or harmful drinkers who scored between 7 and 19 (full range, 1-40) on the Alcohol Use Disorders Identification Test. Intervention participants received 6 counseling sessions approximately monthly. The equal-attention control group received 6 nutrition sessions. Participants were followed for 6 and 12 months after the intervention, with at least 86% retention at both time points. We used general linear models in intention-to-treat analyses, adjusting for recruitment setting and HIV status at enrollment. RESULTS: There was a statistically significant reduction in alcohol use and binge drinking at 6 and 12 months, with intervention participants reporting less than one third of the odds of higher levels of drinking than the control group. The intervention did not impact laboratory-confirmed STI/HIV incidence, self-reported condom use, or sexual violence from nonpaying partners. However, the odds of reporting sexual violence from clients was significantly lower among intervention than control participants at both 6 and 12 months. CONCLUSIONS: We found that a brief alcohol intervention can reduce self-reported alcohol consumption among a nondependent and non-treatment-seeking population most at risk for HIV. More attention is needed to understand the pathway from drinking to sexual behavior and STI/HIV acquisition.

33. **Performance and comparison of self-reported STI symptoms among high-risk populations - MSM, sex workers, persons living with HIV/AIDS - in El Salvador.** Shah, N. S., E. Kim, et al. *Int J STD AIDS* 2014 25(14): 984-91. Online at: <http://std.sagepub.com/content/25/14/984.full.pdf>

Resource-limited countries have limited laboratory capability and rely on syndromic management to diagnose sexually transmitted infections (STIs). We aimed to estimate the sensitivity, specificity and positive predictive value (PPV) of STI syndromic management when used as a screening method within a study setting. Men who have sex with men (MSM), female sex workers (FSWs) and people living with HIV/AIDS (PLWHA) participated in a behavioural surveillance study. Data were obtained on demographics,

sexual behaviours, STI history and service utilisation. Biological specimens were tested for genital inflammatory infections (*Neisseria gonorrhoeae* [GC], *Chlamydia trachomatis* [CT], *Mycoplasma genitalium* [MG], *Trichomonas vaginalis* [TV]) and genital ulcerative infection (syphilis and Herpes simplex virus-2). There was a high prevalence of Herpes simplex virus-2 (MSM 48.1%, FSW 82.0% and PLWHA 84.4%). Most participants reported no ulcerative symptoms and the majority of men reported no inflammatory symptoms. Sensitivity and PPV were poor for inflammatory infections among PLWHA and MSM. Sensitivity in FSWs for inflammatory infections was 75%. For ulcerative infections, sensitivity was poor, but specificity and PPV were high. Reliance on self-reported symptoms may not be an effective screening strategy for these populations. STI prevention studies should focus on symptom recognition and consider routine screening and referral for high-risk populations.

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Transgender Persons

1. **HIV Prevalence and Awareness of Positive Serostatus Among Men Who Have Sex With Men and Transgender Women in Bogota, Colombia.** Zea, M. C., C. A. Reisen, et al. *Am J Public Health* 2015: e1-e8.

OBJECTIVES: We estimated HIV prevalence among men who have sex with men (MSM) and transgender women in Bogota, Colombia, and explored differences between HIV-positive individuals who are aware and unaware of their serostatus. **METHODS:** In this cross-sectional 2011 study, we used respondent-driven sampling (RDS) to recruit 1000 MSM and transgender women, who completed a computerized questionnaire and received an HIV test. **RESULTS:** The RDS-adjusted prevalence was 12.1% (95% confidence interval [CI] = 8.7, 15.8), comparable to a previous RDS-derived estimate. Among HIV-positive participants, 39.7% (95% CI = 25.0, 54.8) were aware of their serostatus and 60.3% (95% CI = 45.2, 75.5) were unaware before this study. HIV-positive-unaware individuals were more likely to report inadequate insurance coverage, exchange sex (i.e., sexual intercourse in exchange for money, goods, or services), and substance use than other participants. HIV-positive-aware participants were least likely to have had condomless anal intercourse in the previous 3 months. Regardless of awareness, HIV-positive participants reported more violence and forced relocation experiences than HIV-negative participants. **CONCLUSIONS:** There is an urgent need to increase HIV detection among MSM and transgender women in Bogota. HIV-positive-unaware group characteristics suggest an important role for structural, social, and individual interventions. (*Am J Public Health*. Published online ahead of print January 20, 2015: e1-e8. doi:10.2105/AJPH.2014.302307).

2. **Binge Drinking among Men Who Have Sex with Men and Transgender Women in San Salvador: Correlates and Sexual Health Implications.** Peacock, E., K. Andrinopoulos, et al. *J Urban Health* 2015. Online at: <http://link.springer.com/article/10.1007%2Fs11524-014-9930-3>

High rates of heavy alcohol use among men who have sex with men (MSM) and transgender women (TW) have been linked to increased vulnerability for HIV and poor mental health. While theories explaining elevated drinking levels among sexual minorities have been forwarded, few investigations have assessed the potential pathways using empirical data, particularly with an explicit focus on self-stigma and among MSM and TW in low- and middle-income countries. This study examined the relationship between stigma-related stress (specifically, self-stigma and concealment of one's sexual orientation) and binge drinking in a sample of MSM and TW (n = 670) in San Salvador, El Salvador, recruited using respondent-driven sampling. Levels of alcohol consumption among participants were high: only 39 % of the sample did not drink alcohol or did not binge drink, while 34 % engaged in binge drinking at least weekly. Among MSM, high self-stigma was associated with binge drinking at least weekly (adjusted relative risk ratio (aRRR) = 2.1, p < 0.05). No such relationship was found with less than weekly binge drinking. Among both MSM and TW, having a female partner was associated with binge drinking less than weekly (aRRR = 3.3, p < 0.05)

and binge drinking at least weekly (aRRR = 3.4, $p < 0.05$), while disclosure of sexual orientation to multiple types of people was associated with binge drinking less than weekly (aRRR = 2.9 for disclosure to one-two types of people, $p < 0.01$; aRRR = 4.0 for disclosure to three-nine types of people, $p < 0.01$). No such relationship was found with at least weekly binge drinking. Binge drinking at least weekly was marginally associated with a number of sexual health outcomes, including high number of lifetime partners (adjusted odds ratio (aOR) = 1.7, $p < 0.10$), inconsistent condom use with a non-regular partner (aOR = 0.5, $p < 0.10$), and decreased intention to test for HIV in the next 12 months (aOR = 0.6, $p < 0.10$). With the exception of inconsistent condom use with a non-regular partner (aOR = 0.4, $p < 0.05$), binge drinking less than weekly was not associated with increased sexual risk behavior and was actually associated with increased intention to test for HIV in the next 12 months (aOR = 2.8, $p < 0.01$). These findings support multiple pathways linking stigma-related stress to alcohol use. Specifically, those with high self-stigma and identity concealment may be using alcohol as a maladaptive coping and emotion regulation strategy, while those who have disclosed their sexual orientation to multiple types of people may be more engaged with the sexual minority community, likely in bars and other venues where permissive norms for alcohol use prevail. That this frequency of binge drinking does not appear to be associated with increased sexual risk behavior (and may even be associated with increased intention to test for HIV in the next 12 months) lends further support to the suggestion that these individuals with healthy concepts of the self (as indicated by high levels of disclosure and low levels of risky sexual behavior) may engage in binge drinking because of the influence of the social environment. Further research is needed to establish the pathways linking stigma-related stress to heavy alcohol use so that points of intervention can be identified.

3. **Cross-sex hormone use, functional health and mental well-being among transgender men (Toms) and Transgender Women (Kathoeys) in Thailand.** Gooren, L. J., T. Sungkaew, et al. *Cult Health Sex* 2015 17(1): 92-103. Online at: <http://www.tandfonline.com/doi/pdf/10.1080/13691058.2014.950982>

There exists limited understanding of cross-sex hormone use and mental well-being among transgender women and, particularly, among transgender men. Moreover, most studies of transgender people have taken place in the Global North and often in the context of HIV. This exploratory study compared 60 transgender men (toms) with 60 transgender women (kathoeys) regarding their use of cross-sex hormones, mental well-being and acceptance by their family. Participants also completed a dispositional optimism scale (the Life Orientation Test Revised), the Social Functioning Questionnaire and the Short Form Health Survey 36 assessing their profile of functional health and mental well-being. Cross-sex hormones were used by 35% of toms and 73% of kathoeys and were largely unsupervised by health-related personnel. There were no differences in functional health and mental well-being among toms and kathoeys. However, toms currently using cross-sex hormones scored on average poorer on bodily pain and mental health, compared to non-users. Furthermore, compared to non-users, cross-sex hormone users were about eight times and five times more likely to be associated with poor parental acceptance among toms and kathoeys, respectively. This study was the first to compare cross-sex hormone use, functional health and mental well-being among transgender women and transgender men in Southeast Asia.

4. **Population-Based HIV Prevalence and Associated Factors in Male-to-Female Transsexuals from Southern Brazil.** Costa, A. B., A. M. Fontanari, et al. *Arch Sex Behav* 2015 44(2): 521-4. Online at: <http://link.springer.com/article/10.1007%2Fs10508-014-0386-z>

This study assessed HIV prevalence and associated factors in 284 male-to-female transsexuals from southern Brazil. Seroprevalence was 25 %. Seroprevalence was higher and associated with older age, residence in the metropolitan area, history of diagnosis of other STDs, and reported history of sex work. The year of diagnosis showed no significant relationship with the prevalence of HIV nor the fact of being in a stable relationship, a history of drug use, years of education, and race/ethnicity. The odds of HIV infection compared with the general Brazilian population was 55.55 (95 % CI 38.39-80.39). Changes in the views of the vulnerable groups to HIV/AIDS in Brazil and efforts in the construction of strategies of prevention and in the guarantee of human rights are required.

5. **HIV risk and preventive interventions in transgender women sex workers.** Poteat, T., A. L. Wirtz, et al. *Lancet* 2015 385(9964): 274-86.
Online at: http://ac.els-cdn.com/S0140673614608333/1-s2.0-S0140673614608333-main.pdf?tid=56e6c834-c114-11e4-92ad-00000aab0f27&acdnat=1425325563_d70e4c14b1c73bc31e17ba1584bfe338

Worldwide, transgender women who engage in sex work have a disproportionate risk for HIV compared with natal male and female sex workers. We reviewed recent epidemiological research on HIV in transgender women and show that transgender women sex workers (TSW) face unique structural, interpersonal, and individual vulnerabilities that contribute to risk for HIV. Only six studies of evidence-based prevention interventions were identified, none of which focused exclusively on TSW. We developed a deterministic model based on findings related to HIV risks and interventions. The model examines HIV prevention approaches in TSW in two settings (Lima, Peru and San Francisco, CA, USA) to identify which interventions would probably achieve the UN goal of 50% reduction in HIV incidence in 10 years. A combination of interventions that achieves small changes in behaviour and low coverage of biomedical interventions was promising in both settings, suggesting that the expansion of prevention services in TSW would be highly effective. However, this expansion needs appropriate sustainable interventions to tackle the upstream drivers of HIV risk and successfully reach this population. Case studies of six countries show context-specific issues that should inform development and implementation of key interventions across heterogeneous settings. We summarise the evidence and knowledge gaps that affect the HIV epidemic in TSW, and propose a research agenda to improve HIV services and policies for this population.

6. **Evidence of the Negative Effect of Sexual Minority Stigma on HIV Testing Among MSM and Transgender Women in San Salvador, El Salvador.** Andrinopoulos, K., J. Hembling, et al. *AIDS Behav* 2015 19(1): 60-71.
Online at: http://download.springer.com/static/pdf/355/art%253A10.1007%252Fs10461-014-0813-0.pdf?auth66=1425324931_d609275cbc4cfadcfded3ab208c97f3b&ext=.pdf

A cross sectional survey was administered to 670 men who have sex with men (MSM) and transgender women (TW) in San Salvador through respondent driven sampling to identify determinants of ever testing for HIV using a minority stress framework. A positive association was found between ever testing and older age [adjusted odds ratio (aOR) 2.10], past experience of sexual assault (aOR 2.92), perceiving that most social acquaintances had tested (aOR 1.81), and knowing a PLHIV (aOR 1.94). A negative association was found between homelessness and ever testing (aOR 0.43). Among the MSM sub-sample (n = 506), similar results were found for older age (aOR 2.63), and past experience of sexual assault (aOR 2.56). Internalized homonegativity was negatively associated with ever testing for HIV among MSM (aOR 0.46), and HIV testing stigma and experienced provider discrimination further strengthened this relationship. It is important to mitigate sexual minority stigma in order to increase HIV testing among MSM. Future research should explore this construct among TW.

7. **Innovative programmatic approaches to HIV prevention and care services for gay men, other men who have sex with men (MSM) and transgender persons using information and communication technology (ICT).** Adams, D., K. Klindera, et al. *Digital Culture & Education* 2014 Nov.
Online at: http://www.digitalcultureandeducation.com/uncategorized/v6_i3_editorial_html/

This Special Issue of Digital Culture & Education (DCE) provides innovative programmatic approaches to HIV prevention and care services for gay men, other men that have sex with men (MSM) and transgender persons using information and communication technology (ICT) at a time when these same populations are experiencing an alarming upward trend of new HIV infections. During a successful participatory consultation in Washington D.C. in May 2013 hosted by the U.S. Agency for International Development (USAID) and co-supported by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), amfAR, the Foundation for AIDS Research, and the National Institutes of Mental Health (NIMH), representatives from Africa, Asia, the Caribbean, Latin America, Europe, Australia and the United States shared innovative uses of communication technology across HIV research, programs, outreach, advocacy and public-private

partnerships. Believing it crucial to share their innovations more widely—through open-access channels—led us to working in partnership with these frontline workers, activists, researchers and educators to further document and share their technological innovations in different global contexts. Importantly, we prioritised working with frontline workers and activists by providing cyclical and targeted writing mentoring to assist them in writing about their successful digital interventions. Disseminating this timely work through open-access channels, like Digital Culture & Education (DCE) means that researchers in less resourced institutions, practitioners and activists in the field and the general public can better understand how ICT, particularly mobile technologies, provides unprecedented opportunities to more effectively reach and engage gay men, other MSM and transgender populations across the HIV prevention, testing, treatment and care cascade.

8. **TLBz Sexperts! Using information and technology to get to zero HIV infections among Thai transgender people.** Chaipayit, N. Digital Culture & Education 2014 Nov.

Online at: http://www.digitalcultureandeducation.com/uncategorized/chaipayiy_html/

Currently, access to sexual health information that serves the needs of transgender individuals is non-existent or severely limited. With “Getting to Zero” as the official UNAIDS campaign to achieve zero new HIV infections, zero discrimination and zero AIDS-related deaths, this lack of access to information coupled with immense stigma and discrimination among transgender individuals will not allow UNAIDS nor the world to achieve such impressive goals. This paper identifies gaps and challenges in HIV services for transgender individuals living in Thailand. Among other recommendations, the paper recognises the need for the ‘de-coupling’ of transgender services from those serving men who have sex with men. The paper describes an innovative communication technology project, the Thailadyboyz (TLBz) Sexperts! Program, a low-cost, transgender-led, community project offering accurate online transgender-specific sexual health information, social support and legal advice. The paper describes how the TLBz Sexperts! Program exemplifies the power of online communities and social networking platforms in reaching transgender individuals, especially when transgender community members lead in the design, development and implementation of such resources.

9. **Bambucha media: Using social media to build social capital and health Seeking behaviour among key populations.** Kahema, C. M., J. Kashiha, et al. Digital Culture & Education 2014 Nov.

Online at: <http://www.digitalcultureandeducation.com/volume-6/kahema/>

Recent surveillance data by Tanzania AIDS Commission has shown HIV prevalence among Men who have Sex with Men (MSM), transgender persons (TG) and Sex workers (SWs) to be well above general population estimates. Vulnerability to HIV among the MSM, TG and SWs has been associated with lack of correct and comprehensive information, informed decision, social and internalized stigma, negative legal and policy environment and language barrier. This paper will describe how Information Communication Technologies – ICTs, used by Tanzania Sisi Kwa Sisi Foundation – TSSF, has supported communication and access to the health services especially through outreach and referrals among the MSM, TG, and SWs in Tanzania.

10. **Preparatory behaviours and condom use during receptive and insertive anal sex among male-to-female transgenders (waria) in Jakarta, Indonesia.** Prabawanti, C., A. Dijkstra, et al. J Int AIDS Soc 2014 17: 19343. Online at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4273177/pdf/JIAS-17-19343.pdf>

INTRODUCTION: The male-to-female transgender (waria) is part of a key population at higher risk for HIV. This study aims to test whether psychosocial determinants as defined by the theory of planned behaviour (TPB) can explain behaviours related to condom use among waria. Three preparatory behaviours (getting, carrying, and offering a condom) and two condom use behaviours (during receptive and insertive anal sex) were assessed. METHODS: The study involved 209 waria, recruited from five districts in Jakarta and interviewed by using structured questionnaires. Specific measures were developed to study attitudes, subjective norms and perceived behavioural control (PBC) in order to predict intentions and behaviours.

RESULTS: The explained variance between intentions with regard to three preparatory behaviours and two condom uses ranged between 30 and 57%, and the variance between the actual preparatory behaviours of three preparatory and two condom uses ranged between 21 and 42%. In our study, as with several previous studies of the TPB on HIV protection behaviours, the TPB variables differed in their predictive power. With regard to intention, attitude and PBC were consistently significant predictors; attitude was the strongest predictor of intention for all three preparatory behaviours, and PBC was the strongest predictor of intention for condom use, both during receptive and insertive anal sex. TPB variables were also significantly related to the second parameter of future behaviour: actual (past) behaviour. TPB variables were differentially related to the five behaviours. Attitude was predictive in three behaviours, PBC in three behaviours and subjective norms in two behaviours. CONCLUSIONS: Our results have implications for the development of interventions to target preparatory behaviours and condom use behaviours. Five behaviours and three psychological factors as defined in the TPB are to be targeted.

11. **Patterns and correlates of PrEP drug detection among MSM and transgender women in the Global iPrEx Study.** Liu, A., D. V. Glidden, et al. *J Acquir Immune Defic Syndr* 2014 67(5): 528-37.

Online at:

<http://graphics.tx.ovid.com/ovftpdfs/FPDDNCMCNAPMCN00/fs046/ovft/live/gv023/00126334/00126334-201412150-00011.pdf>

BACKGROUND: Adherence to pre-exposure prophylaxis (PrEP) is critical for efficacy. Antiretroviral concentrations are an objective measure of PrEP use and correlate with efficacy. Understanding patterns and correlates of drug detection can identify populations at risk for nonadherence and inform design of PrEP adherence interventions. METHODS: Blood antiretroviral concentrations were assessed among active arm participants in iPrEx, a randomized placebo-controlled trial of emtricitabine/tenofovir in men who have sex with men and transgender women in 6 countries. We evaluated rates and correlates of drug detection among a random sample of 470 participants at week 8 and a longitudinal cohort of 303 participants through 72 weeks of follow-up. RESULTS: Overall, 55% of participants (95% confidence interval: 49 to 60) tested at week 8 had drug detected. Drug detection was associated with older age and varied by study site. In longitudinal analysis, 31% never had drug detected, 30% always had drug detected, and 39% had an inconsistent pattern. Overall detection rates declined over time. Drug detection at some or all visits was associated with older age, indices of sexual risk, including condomless receptive anal sex, and responding "don't know" to a question about belief of PrEP efficacy (0-10 scale). CONCLUSIONS: Distinct patterns of study product use were identified, with a significant proportion demonstrating no drug detection at any visit. Research literacy may explain greater drug detection among populations having greater research experience, such as older men who have sex with men in the United States. Greater drug detection among those reporting highest risk sexual practices is expected to increase the impact and cost-effectiveness of PrEP.

12. **Sampling methodologies for epidemiologic surveillance of men who have sex with men and transgender women in Latin America: an empiric comparison of convenience sampling, time space sampling, and respondent driven sampling.** Clark, J. L., K. A. Konda, et al. *AIDS Behav* 2014 18(12): 2338-48. Online at: http://download.springer.com/static/pdf/854/art%253A10.1007%252Fs10461-013-0680-0.pdf?auth66=1425324964_117097383f67d501eceda5eeefca1339&ext=.pdf

Alternatives to convenience sampling (CS) are needed for HIV/STI surveillance of most-at-risk populations in Latin America. We compared CS, time space sampling (TSS), and respondent driven sampling (RDS) for recruitment of men who have sex with men (MSM) and transgender women (TW) in Lima, Peru. During concurrent 60-day periods from June-August, 2011, we recruited MSM/TW for epidemiologic surveillance using CS, TSS, and RDS. A total of 748 participants were recruited through CS, 233 through TSS, and 127 through RDS. The TSS sample included the largest proportion of TW (30.7 %) and the lowest percentage of subjects who had previously participated in HIV/STI research (14.9 %). The prevalence of newly diagnosed HIV infection, according to participants' self-reported previous HIV diagnosis, was highest among TSS

recruits (17.9 %) compared with RDS (12.6 %) and CS (10.2 %). TSS identified diverse populations of MSM/TW with higher prevalences of HIV/STIs not accessed by other methods.

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Young Key Populations

1. **Providing comprehensive health services for young key populations: needs, barriers and gaps.** Delany-Moretlwe, S., F. M. Cowan, et al. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19833.
Online at: <http://www.jiasociety.org/index.php/jias/article/view/19833>

INTRODUCTION: Adolescence is a time of physical, emotional and social transitions that have implications for health. In addition to being at high risk for HIV, young key populations (YKP) may experience other health problems attributable to high-risk behaviour or their developmental stage, or a combination of both. **METHODS:** We reviewed the needs, barriers and gaps for other non-HIV health services for YKP. We searched PubMed and Google Scholar for articles that provided specific age-related data on sexual and reproductive health; mental health; violence; and substance use problems for adolescent, youth or young sex workers, men who have sex with men, transgender people, and people who inject drugs. **RESULTS:** YKP experience more unprotected sex, sexually transmitted infections including HIV, unintended pregnancy, violence, mental health disorders and substance use compared to older members of key populations and youth among the general population. YKP experience significant barriers to accessing care; coverage of services is low, largely because of stigma and discrimination experienced at both the health system and policy levels. **DISCUSSION:** YKP require comprehensive, integrated services that respond to their specific developmental needs, including health, educational and social services within the context of a human rights-based approach. The recent WHO Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations are an important first step for a more comprehensive approach to HIV programming for YKP, but there are limited data on the effective delivery of combined interventions for YKP. Significant investments in research and implementation will be required to ensure adequate provision and coverage of services for YKP. In addition, greater commitments to harm reduction and rights-based approaches are needed to address structural barriers to access to care.

2. **Young key populations and HIV: a special emphasis and consideration in the new WHO Consolidated Guidelines on HIV Prevention, Diagnosis, Treatment and Care for Key Populations.** Baggaley, R., A. Armstrong, et al. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19438.
Online at: <http://www.jiasociety.org/index.php/jias/article/view/19438>
3. **Tailored combination prevention packages and PrEP for young key populations.** Pettifor, A., N. L. Nguyen, et al. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19434.
Online at: <http://www.jiasociety.org/index.php/jias/article/view/19434>

INTRODUCTION: Young key populations, defined in this article as men who have sex with men, transgender persons, people who sell sex and people who inject drugs, are at particularly high risk for HIV. Due to the often marginalized and sometimes criminalized status of young people who identify as members of key populations, there is a need for HIV prevention packages that account for the unique and challenging circumstances they face. Pre-exposure prophylaxis (PrEP) is likely to become an important element of combination prevention for many young key populations. **Objective:** In this paper, we discuss important challenges to HIV prevention among young key populations, identify key components of a tailored combination prevention package for this population and examine the role of PrEP in these prevention packages. **Methods:** We conducted a comprehensive review of the evidence to date on prevention strategies, challenges to prevention and combination prevention packages for young key populations. We focused specifically on the role of PrEP in these prevention packages and on young

people under the age of 24, and 18 in particular. Results and discussion: Combination prevention packages that include effective, acceptable and scalable behavioural, structural and biologic interventions are needed for all key populations to prevent new HIV infections. Interventions in these packages should meaningfully involve beneficiaries in the design and implementation of the intervention, and take into account the context in which the intervention is being delivered to thoughtfully address issues of stigma and discrimination. These interventions will likely be most effective if implemented in conjunction with strategies to facilitate an enabling environment, including increasing access to HIV testing and health services for PrEP and other prevention strategies, decriminalizing key populations' practices, increasing access to prevention and care, reducing stigma and discrimination, and fostering community empowerment. PrEP could offer a highly effective, time-limited primary prevention for young key populations if it is implemented in combination with other programs to increase access to health services and encourage the reliable use of PrEP while at risk of HIV exposure. Conclusions: Reductions in HIV incidence will only be achieved through the implementation of combinations of interventions that include biomedical and behavioural interventions, as well as components that address social, economic and other structural factors that influence HIV prevention and transmission.

4. **Mental health and support among young key populations: an ecological approach to understanding and intervention.** Mutumba, M. and G. W. Harper. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19429. Online at: <http://www.jiasociety.org/index.php/jias/article/view/19429>

INTRODUCTION: The patterning of the HIV epidemic within young key populations (YKPs) highlights disproportionate burden by mental disorders in these populations. The mental wellbeing of YKPs is closely associated with biological predispositions and psychosocial factors related to YKPs' sexual and gender identities and socio-economic status. The purpose of this paper is to highlight sources of risk and resilience, as well as identify treatment and supports for mental health disorders (MHDs) among YKPs. **Discussion:** This paper utilizes Bronfenbrenner's Bioecological Systems Theory and the Social Stress Model to explore the risk and protective factors for MHDs across YKPs' ecological systems, and identify current gaps in treatment and support for MHDs among these youth. We emphasize the fluidity and intersections across these categorizations which reinforce the vulnerability of these populations, the lack of concrete data to inform mental health interventions among YKPs, and the need to ground YKP interventions and programmes with human rights principles stipulated in the convention on the rights of a child. **Conclusions:** We put forth recommendations for future research and strategies to address the mental wellbeing of YKPs, including the need for integrated interventions that address the multiplicity of risk factors inherent in the multiple group membership, rather than single-focus interventions whilst addressing the unique needs or challenges of YKPs.

5. **Adolescent girls and young women: key populations for HIV epidemic control.** Dellar, R. C., S. Dlamini, et al. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19408. Online at: <http://www.jiasociety.org/index.php/jias/article/view/19408>

INTRODUCTION: At the epicentre of the HIV epidemic in southern Africa, adolescent girls and young women aged 15-24 contribute a disproportionate ~30% of all new infections and seroconvert 5-7 years earlier than their male peers. This age-sex disparity in HIV acquisition continues to sustain unprecedentedly high incidence rates, and preventing HIV infection in this age group is a pre-requisite for achieving an AIDS-free generation and attaining epidemic control. **Discussion:** Adolescent girls and young women in southern Africa are uniquely vulnerable to HIV and have up to eight times more infection than their male peers. While the cause of this vulnerability has not been fully elucidated, it is compounded by structural, social and biological factors. These factors include but are not limited to: engagement in age-disparate and/or transactional relationships, few years of schooling, experience of food insecurity, experience of gender-based violence, increased genital inflammation, and amplification of effects of transmission co-factors. Despite the large and immediate HIV prevention need of adolescent girls and young women, there is a dearth of evidence-based interventions to reduce their risk. The exclusion of adolescents in biomedical research is a huge barrier. School and community-based education

programmes are commonplace in many settings, yet few have been evaluated and none have demonstrated efficacy in preventing HIV infection. Promising data are emerging on prophylactic use of anti-retrovirals and conditional cash transfers for HIV prevention in these populations. Conclusions: There is an urgent need to meet the HIV prevention needs of adolescent girls and young women, particularly those who are unable to negotiate monogamy, condom use and/or male circumcision. Concerted efforts to expand the prevention options available to these young women in terms of the development of novel HIV-specific biomedical, structural and behavioural interventions are urgently needed for epidemic control. In the interim, a pragmatic approach of integrating existing HIV prevention efforts into broader sexual reproductive health services is a public health imperative.

6. **Review: An urgent need for research on factors impacting adherence to and retention in care among HIV-positive youth and adolescents from key populations.** Lall, P., S. H. Lim, et al. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19393.

Online at: <http://www.jiasociety.org/index.php/jias/article/view/19393>

INTRODUCTION: The 50% increase in HIV-related deaths in youth and adolescents (aged 10-24) from 2005 to 2012 highlights the need to improve HIV treatment and care in this population, including treatment adherence and retention. Youth and adolescents from key populations or young key populations (YKP) in particular are highly stigmatized and may face additional barrier(s) in adhering to HIV treatment and services. We reviewed the current knowledge on treatment adherence and retention in HIV care among YKP to identify gaps in the literature and suggest future directions to improve HIV care for YKP. **Methods:** We conducted a comprehensive literature search for YKP and their adherence to antiretroviral therapy (ART) and retention in HIV care on PsycInfo (Ovid), PubMed and Google Scholar using combinations of the keywords HIV/AIDS, ART, adolescents, young adults, adherence (or compliance), retention, men who have sex with men, transgender, injection drug users, people who inject drugs and prisoners. We included empirical studies on key populations defined by WHO; included the terms youth and adolescents and/or aged between 10 and 24; examined adherence to or retention in HIV care; and published in English-language journals. All articles were coded using NVivo. **Results and discussion:** The systematic search yielded 10 articles on YKP and 16 articles on behaviourally infected youth and adolescents from 1999 to 2014. We found no studies reporting on youth and adolescents identified as sex workers, transgender people and prisoners. From existing literature, adherence to ART was reported to be influenced by age, access to healthcare, the burden of multiple vulnerabilities, policy involving risk behaviours and mental health. A combination of two or more of these factors negatively impacted adherence to ART among YKP. Collectively, these studies demonstrated that future programmes need to be tailored specifically to YKP to ensure adherence. **Conclusions:** There is an urgent need for more systematic research in YKP. Current limited evidence suggests that healthcare delivery should be tailored to the unique needs of YKP. Thus, research on YKP could be used to inform future interventions to improve access to treatment and management of co-morbidities related to HIV, to ease the transition from paediatric to adult care and to increase uptake of secondary prevention methods.

7. **"First, do no harm": legal guidelines for health programmes affecting adolescents aged 10-17 who sell sex or inject drugs.** Conner, B. *J Int AIDS Soc* 2015 18(2(Suppl 1)): 19437.

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INTRODUCTION: There is a strong evidence base that the stigma, discrimination and criminalization affecting adolescent key populations (KPs) aged 10-17 is intensified due to domestic and international legal constructs that rely on law-enforcement-based interventions dependent upon arrest, pre-trial detention, incarceration and compulsory "rehabilitation" in institutional placement. While there exists evidence and rights-based technical guidelines for interventions among older cohorts, these guidelines have not yet been embraced by international public health actors for fear that international law applies different standards to adolescents aged 10-17 who engage in behaviours such as selling sex or injecting drugs. **Discussion:** As a matter of international human rights, health, juvenile justice and child protection law, interventions among adolescent KPs aged 10-17 must not involve arrest, prosecution or detention of

any kind. It is imperative that interventions not rely on law enforcement, but instead low-threshold, voluntary services, shelter and support, utilizing peer-based outreach as much as possible. These services must be mobile and accessible, and permit alternatives to parental consent for the provision of life-saving support, including HIV testing, treatment and care, needle and syringe programmes, opioid substitution therapy, safe abortions, antiretroviral therapy and gender-affirming care and hormone treatment for transgender adolescents. To ensure enrolment in services, international guidance indicates that informed consent and confidentiality must be ensured, including by waiver of parental consent requirements. To remove the disincentive to health practitioners and researchers to engaging with adolescent KPs aged 10-17 government agencies and ethical review boards are advised to exempt or grant waivers for mandatory reporting. In the event that, in violation of international law and guidance, authorities seek to involuntarily place adolescent KPs in institutions, they are entitled to judicial process. Legal guidelines also provide that these adolescents have influence over their placement, access to legal counsel to challenge the conditions of their detention and regular visitation from peers, friends and family, and that all facilities be subject to frequent and periodic review by independent agencies, including community-based groups led by KPs. Conclusions: Controlling international law specifies that protective interventions among KPs aged 10-17 must not only include low-threshold, voluntary services but also "protect" adolescent KPs from the harms attendant to law-enforcement-based interventions. Going forward, health practitioners must honour the right to health by adjusting programmes according to principles of minimum intervention, due process and proportionality, and duly limit juvenile justice and child protection involvement as a measure of last resort, if any.

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