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HIV prevention among diverse young MSM: Research needs, priorities, and opportunities

Scott D. Rhodes, Ph.D., MPH and

Department of Social Sciences and Health Policy; Section of Infectious Diseases; The Maya Angelou Center for Health Equity; The Clinical and Translational Institute; Wake Forest School of Medicine, Winston-Salem, NC

Frank Y. Wong, Ph.D.

Department of Behavioral Sciences and Health Education, Rollins School of Public Health, Emory University, Atlanta, GA

Abstract

There remains a profound need for innovative and effective interventions designed for young men who have sex with men (YMSM) generally; and racial and ethnic minority YMSM, YMSM living in rural communities, and low-income YMSM, particularly, to prevent HIV and improve health outcomes in the United States. This introduction to this theme issue identifies some of the research needs, priorities, and opportunities that emerged during a seminal NIMHD-sponsored workshop on HIV prevention behavioral interventions for diverse YMSM. It provides researchers, practitioners, and federal partners guidance in next steps to reduce the impact of the HIV epidemic among YMSMS. The needs, priorities, and opportunities identified serve as a foundation to push both the science and the practice of HIV prevention forward. We recognize that considerably more research is needed, and this issue highlights intervention research – where we have been and where we should go. With the disparities faced by YMSM, we must act rapidly to do the work it will take to meet their prevention needs, reduce infections, and save lives.

Introduction

Men who have sex with men (MSM) bear a greater burden of HIV/AIDS than any other population group in the United States (US). They comprise 2–4% of the population (Purcell et al., 2012) and more than half of persons with HIV. The rate of new HIV diagnoses among MSM is 44 times that of other men and 40 times that of women (Johnson et al., 2013; Johnson et al., 2014).

If current HIV diagnosis rates persist, it is estimated that one in six MSM will be diagnosed with HIV in his lifetime (Centers for Disease Control and Prevention [CDC], 2016a). Among MSM, this burden is carried disproportionately by African American/black and Latino MSM, who account for 36% and 22% of new HIV infections, respectively (CDC, 2016b). Furthermore, data indicate that about one in two African American/black MSM and one in four Latino MSM in the US will be diagnosed with HIV during his lifetime, again, if current HIV diagnosis rates persist. Other MSM at particular risk for HIV include those from American Indian and Alaskan Native, Asian American, and Native Hawai'ian and

Other Pacific Islander communities; MSM living in rural communities; and low-income MSM.

Rates of HIV infection among MSM continue to increase despite the lowering infection rates among other populations. However, young MSM (YMSM) have had higher increases in infection rates than their older MSM peers. Between 2008 and 2010, for example, new infections among YMSM ages 13–24 increased by 22%, compared to 12% among MSM overall (Ayala, Bingham, Kim, Wheeler, & Millett, 2012).

Despite the profound HIV disparities experienced by YMSM, few efficacious behavioral interventions designed to reduce their sexual risk exist. Of the 93 evidence-based risk reduction interventions highlighted in the risk reduction chapter of the CDC *Compendium of Evidence-Based Interventions and Best Practices for HIV Prevention* (http://www.cdc.gov/hiv/research/interventionresearch/compendium/rr/index.html), only 15 included MSM as a target population and only two of these included YMSM under age 18, and none was designed specifically for YMSM ages 18 or younger. Thus, there remains a profound need for innovative and effective interventions designed for MSM and YMSM generally; and racial and ethnic minority YMSM, YMSM living in rural communities, and low-income YMSM, particularly, to prevent HIV and improve health outcomes in the US.

Given the disparities experienced by diverse YMSM, on February 13, 2015, the National Institute of Minority Health and Health Disparities (NIMHD) convened a workshop of researchers, practitioners, community members, and other federal partners from across the US to explore the state of the behavioral HIV prevention intervention science and practice among diverse YMSM in the US and identify research needs, priorities, and opportunities. In this introduction to this important theme issue on behavioral HIV prevention among YMSM, we summarize the research needs, priorities, and opportunities that emerged from our analysis of the presentations by researchers and practitioners and the group discussions that occurred during this NIMHD-sponsored workshop.

The risks of HIV among racial and ethnic minority YMSM, YMSM living in rural communities, and low-income YMSM are not immutable. The HIV prevention needs, priorities, and opportunities identified during the workshop serve as a call to action to guide researchers, practitioners, community members, and federal partners to reduce the profound HIV disparities experienced by diverse YMSM. These needs, priorities, and opportunities serve as a foundation to push both the science and the practice of HIV prevention forward. With the disparities faced by YMSM, we must act rapidly to do the work it will take to meet their prevention needs, reduce infections, and save lives.

Research Needs, Priorities, and Opportunities to Reduce the Burden among HIV among YMSM

The 17 needs, priorities, opportunities that emerged are presented in Table 1. They are outlined and elaborated below.

1. Research is needed to better understand the development processes and trajectories among YMSM and how these processes and trajectories

change over time and affect risk. YMSM, in particular, face unique challenges to identity formation due to experiences of heterosexism, stigma, homophobia, prejudice, and in the case of racial and ethnic minority MSM, racism (Harper, Fernandez, Bruce, Hosek, & Jacobs, 2013). Thus, a better understanding of their development and trajectories is needed to provide the necessary supports to promote healthy adolescent development and reduce risk.

2. It was also acknowledged that more research must be conducted to better understand and appreciate how YMSM self-identify and how identities may change or evolve over time. For some, sexual behavior may be more fluid across the life course, and among young populations this may be particularly true. With the universe of gender and sexual identities expanding, a lesbian, gay, bisexual, and transgender (LGBT) youth culture emerging, acceptance of LGBT persons rising somewhat, and "label" loyalty falling, language has expanded with new words and blended phrases that delineate identities along a much broader spectrum than ever before. The dichotomies of female and male and the categories currently used to describe gender and orientation may not make sense for some YMSM who are determining who they are within their unique contexts (Nelson, 2014).

3. Ethics and policy research is needed to address how to increase enrollment of YMSM under 18 years of age into behavioral HIV prevention research. Some researchers are hesitant to conduct research with those under 18 because of the potential difficulties obtaining approvals from parents/guardians and Institutional Review Boards (IRBs). This hesitation may lead to some YMSM being excluded in behavioral HIV prevention research, and thus, result in the lack of the available prevention interventions for YMSM (Fisher & Mustanski, 2014). Furthermore, parents/guardians from different backgrounds may have distinct worries about research; ethnics and policy research must include populations that are not well represented in research overall (e.g, racial and ethnic minorities and rural and low-income populations) in order to ensure developed strategies are acceptable broadly and reduce rather than increase disparities.

4. At the same time, because some families may be increasingly more accepting of their LGBT children in part due the changing public attitudes towards same-sex attraction, orientation, and behavior, research should explore the role of parents/guardians in prevention research. Often parents/guardians are viewed as a barrier to sexual health promotion and disease prevention education; however, parents/guardians may be an asset in reducing HIV risk among YMSM (Garofalo, Mustanski, & Donenberg, 2008).

5. Research should also explore issues of sexual relationships and their meanings for YMSM and issues related to love, trust, and intimacy. Prevention research must explore the meaningfulness of relationships among YMSM, moving beyond the exclusive focus on combination prevention interventions, e.g., condom use and abstinence, HIV testing and counseling, biomedical innovations (e.g., pre-exposure prophylaxis [PrEP], post-exposure prophylaxis [PEP], and medical male circumcision), needle exchange, treatment of curable sexually transmitted diseases, use of systemic and topical antiretroviral medications by both uninfected and HIV-infected persons (e.g., treatment as prevention and microbicides), and substance abuse treatment. Instead, because sex is more than a physical act that YMSM need "protection" from, intervention research must explore age-appropriate developmental tasks of relationship building and trust, intimacy, and partnership. Prevention research has traditionally focused on maintaining consistent condom use, defined as each and every time, rather than messages that take into account the relationship statuses and goals of YMSM as they move from less serious to more serious relationships.

6. Although strides have been made in terms of the use of the internet and mobile technology to reach populations to reduce HIV risk, further research is clearly warranted. Technology-based interventions (including those administered via computer programs, the internet, social media and social networking sites, and text messaging) can be used effectively to increase knowledge of sexual health, including HIV prevention, promote HIV testing, and reduce sexual and substance use risk (Bachmann et al., 2013; Mikolajczak, Kok, & Hospers, 2008; Rhodes, McCoy, et al., 2016; Rhodes et al., 2011; Schnall, Travers, Rojas, & Carballo-Dieguez, 2014; Sullivan, Grey, & Simon Rosser, 2013). However, rapidly evolving technological advances and the way in which technology is used by MSM suggest that we must continue to explore the best ways to harness the power of technology. For example, the efficacy of harnessing established and popular applications (i.e., dating and "hook-up" apps such as A4A/Radar, Grindr, Jack'd, and SCRUFF) for HIV prevention seems logical, remains unknown, and warrants research given that they are widely used by some YMSM (Rhodes, McCoy, et al., 2016; Sun, Stowers, Miller, Bachmann, & Rhodes, 2015).

7. Interventions must be developed to increase access to HIV testing, pre-exposure prophylaxis (PrEP), and post-exposure prophylaxis (PEP). At the end of 2012, 44% of those ages 18 to 24 with HIV did not know they had HIV. Many YMSM have multiple barriers to medical care, and these barriers must be reduced. Interventions need to provide skills building and increase self-efficacy to overcome the barriers such as a security guard at the front door of a health department or clinic; communicating with a provider around sexual behavior and risk, including with a school health

nurse; talking with parents; and negotiating with partners to ensure one's health and well-being.

At the same time, policy and system interventions need to be developed and tested to increase access to sexual health resources among YMSM. Although PrEP is viewed as a promising biomedical prevention strategy, interventions need to be developed to ensure providers and third party payers understand PrEP and to increase access to PrEP among those who are uninsured. Although the Patient Protection and Affordable Care Act provides coverage for US citizens, US nationals, and lawfully present immigrants, it bars undocumented or recent legal immigrants from receiving financial assistance for health insurance (Stone, Steimel, Vasquez-Guzman, & Kaufman, 2014). Thus, given an estimated 11.3 million undocumented immigrants in the US (Krogstad & Passel, 2015), many vulnerable MSM and other at-risk populations will continue to remain uninsured. We know that currently Latino MSM of all ages tend to have very limited access to PrEP, for example (Martinez et al., 2016).

8. Interventions must be tailored to the heterogeneity of MSM and subpopulations and personalized to the unique circumstances of individual MSM. Although there has been some, albeit insufficient, focus on tailoring interventions to subpopulations of MSM (e.g., house and ball communities, transgender communities, and African American/black MSM), we also know that individuals within subpopulations have needs that must be better understood and targeted more specifically (see: paper by Tanner and colleagues in this issue).

Precision medicine is an emerging approach for disease prevention and treatment that takes into account individual variability in genes, environment, and lifestyle for each person. This approach has not been as developed within behavioral science, but a better understanding and characterization of the behavioral, social, and environmental influences on health over time makes sense. Being able to target as "precisely" as possible the influences on YMSM and their behaviors may make the most profound impact on HIV.

9. Social norms and expectations must be further understood and approaches developed to successfully intervene upon them as well. Norms and expectations are defined and reinforced through families, media, houses of worship, etc., and many YMSM must balance norms and expectations around what it means to be a man, for example, with how they feel. YMSM are inundated with messages about who and how they are supposed to be and act, and many have not developed the skills to cope healthfully with these norms and expectations or put them into context.

10. There remains a profound need to develop evidence-based interventions to educate and train both frontline staff and providers at clinics and public health departments. Often, the first interaction with medical care that a

YMSM has is with someone who may not be respectful of their race/ethnicity or sexuality. Studies have shown that clinic staff attitudes often communicate larger social values of homophobia and HIV-related stigma (Kempf et al., 2010; Lichtenstein, 2003; Lichtenstein & Bachmann, 2005). Furthermore, the best intentions of providers may be undermined by frontline staff who are not well trained.

11. Access to and retention in HIV testing, treatment, and care may be challenging as clinics are places that require "adult" skills. YMSM may lack the skills necessary to negotiate clinical policies and procedures (e.g., payment, insurance, and residency documentation). Thus, innovative interventions must be developed to improve the ease of accessing health and medical care services for YMSM (Tanner et al., In press).

12. Furthermore, given the vulnerabilities facing racially and ethnicity diverse YMSM, rural YMSM, and low-income YMSM in a society that looks upon some youth with suspicion, particularly those who are non-white, and stigmatizes same-sex behavior, research is needed to better understand the intersections of trauma, the experiences of violence, substance use, and mental health. The widely acknowledged lack of sufficient resources in rural communities warrants new strategies to deliver effective services, including mental health services, as an example.

13. Outside-expert approaches to HIV prevention research often result in insufficient understanding of the factors key to sexual health promotion and HIV prevention and ineffective interventions and programs. Research aimed at eliminating HIV disparities requires unique partnerships to blend the lived experiences of community members, the experiences of representatives from service-and practice-based organizations, and sound science to develop deeper and more informed understandings of health-related phenomena and produce more relevant and more likely successful and sustainable interventions to reduce health disparities (Rhodes, Leichliter, Sun, & Bloom, 2016; Wallerstein & Duran, 2006). Thus, to ensure the highest innovation and likelihood of effectiveness and sustainability, intervention studies, at the individual, community, system, or policy levels, should be co-developed by community members, community-based service providers, and researchers. Community engagement and partnership and community-based participatory research (CBPR) recognize that a so-called outsider (e.g., academic researchers), can work best with community members, who themselves are experts. To date, however, the authentic use of community engagement and CBPR remain uncommon within HIV prevention, care, and treatment (Rhodes et al., 2014).

Nowhere is the inclusion of community members more vitally important than when working with diverse YMSM. Despite best intentions, there is no way for researchers, practitioners, and federal partners to fully

understand and represent the real-world and lived experiences of YMSM; researchers, practitioners, and federal partners are clearly not members of the community of diverse YMSM. Inclusion of diverse YMSM must be authentic; YMSM must have equal voice and shared power within the research process, and they must be more involved and engaged than merely as members of a community advisory board.

14. The best way to blend prevention messaging and other relevant LGBT content should explored. Rather than prevention messaging being separate from issues relevant to their experiences as YMSM, including familial, religious, and societal expectations; dating and sexual scripts; the expressions and meanings of love and intimacy; power dynamics within "hook-ups" and ongoing relationships; and intragroup discrimination, prevention messages should be embedded in a variety of relevant LGBT-focused content.

15. Development, implementation, and evaluation of multilevel HIV interventions are needed. Multilevel interventions increasingly are advocated for; however, they are rarely implemented. They tend to be highly complicated and more expensive, and it can be difficult to determine how intervention components contribute to outcomes. Studies need to be developed and conducted that allow assessment the impact of interventions as well as untangle the independent and synergistic effects of different intervention components.

16. Further research should explore the links between changes in laws, such as marriage equality and antidiscrimination laws, and their influence on HIV. Marriage equality, as an example, may reduce stigma that often prevent MSM of all ages from seeking needed services for their health and well-being. It also may affect how YMSM perceive their futures and what is capable. Antidiscrimination laws and the ongoing debates surrounding them serve as natural experiments related to risk that can provide far-reaching policy guidance.

17. Finally, there remains a profound need for HIV prevention research in regions that are experiencing disproportionate HIV infections rates. The southern US is experiencing disproportionate HIV infection rates compared to other regions of the country (CDC, 2014) and has been referred to as the "new" and "latest" US HIV epicenter (Carpenter, 2013); 21 of the 25 US cities and major metropolitan areas with the highest rates of new infections per capita are in the South and the majority of all new US AIDS diagnoses occur in this region (CDC, 2014). Because it is well established that the South is different from other parts of the US (e.g., more religious, more socially conservative, and less well resourced) (Mann et al., In press; Rhodes et al., 2015; Saad, 2009; The Pew Research Center For The People & The Press, 2005), research conducted in early

HIV epicenters may not be generalizable to the unique context of the southern US.

Alignment with the Priorities of the Office of AIDS Research, The National Institutes of Health

In August 2015, the National Institutes of Health, Office on AIDS Research (OAR), issued a notice (https://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-137.html) "to inform the scientific community of the overarching HIV/AIDS research priorities and the guidelines NIH will use for determining AIDS funding beginning in fiscal year 2016 for the next three to five years." We briefly link the needs, priorities, and opportunities that emerged from the NIMHD-sponsored workshop to the OAR's identified priorities.

Research that the OAR identified as being high priority included (a) "developing, testing, and implementing strategies to improve HIV testing and entry into prevention services" (Table 1, Numbers 7 and 13); (b) "implementation research to ensure initiation of treatment as soon as diagnosis has been made, retention, and engagement in these services, and achievement and maintenance of optimal prevention and treatment responses" (Table 1, Numbers 8, 11, 13, and 15); (c) "research to reduce health disparities in the incidence of new HIV infections or in treatment outcomes of those living with HIV/AIDS" (Table 1, Numbers 3, 4, 6, 7, 13, and 17); (d) "research training of the workforce required to conduct high priority HIV/AIDS or HIV/AIDS-related research (Table 1, Numbers 10 and 13).

Medium research priorities included (a) "health and social issues that are clearly linked with HIV (e.g., transmission/acquisition, pathogenesis, morbidity and mortality, and stigma) and examines them in the context of HIV (i.e., in populations or settings with high HIV prevalence or incidence), such as other infectious pathogens and diseases, non-infectious pathogens and diseases, substance use/addiction, and mental health disorders" (Table 1, Numbers 4, 5, 9, 12, 13, and 14); and (b) "the results of the project will advance HIV treatment or prevention and/or provide tools/techniques and/or capacity beneficial to HIV research (including training and infrastructure development; Table 1, Numbers 6 and 13).

This mapping exercise is by no means based on a comprehensive scientific process. Rather, it designed to integrate multiple sources of data for a framework to identify needs, priorities, and opportunities in the fast changing HIV prevention research landscape. Research must be conducted to reduce the disparities experienced by some populations in the US, including MSM generally and YMSM, particularly. It is clear that there are needs, priorities, and opportunities that align across perspectives. This alignment should help us effectively and efficiently reduce HIV.

Conclusions

It is well documented that YMSM at high risk for HIV infection. Yet few efficacious interventions to reduce their risk are available, leaving community-based organizations, schools, and others concerned about these populations without evidence-based strategies to meet prevention, care, and treatment needs. Our summary of the research needs, priorities,

and opportunities that emerged from the presentations by researchers and practitioners and the group discussions that occurred during the seminal NIMHD-sponsored workshop on HIV prevention behavioral interventions among diverse YMSM provides researchers, practitioners, and federal partners guidance in next steps to reduce the impact of the epidemic among this vulnerable population. The needs, priorities, and opportunities identified serve as a foundation to push both the science and the practice of HIV prevention forward. We recognize that considerably more research is needed, and this issue highlights intervention research – where we have been and where we should go. With the disparities faced by YMSM, we must act rapidly to do the work it will take to meet their prevention needs, reduce infections, and save lives.

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Table 1

Research needs, priorities, and opportunities to reduce the impact of HIV among diverse YMSM

1.	Research is needed to better understand the impact of developmental processes and changes on risk.
2.	Further understanding and appreciation of how YMSM self-identify and how that identity may change over time are needed.
3.	Ethics and policy research is needed to address challenges associated with enrollment of YMSM.
4.	Interventions that include parents/guardians should be explored.
5.	More attention must be placed on exploring sexual relationships and their meanings, and how issues of love, trust, and intimacy can be incorporated into interventions.
6.	Research on use of rapidly evolving technology for HIV prevention is needed.
7.	Interventions must focus on HIV testing and access to PrEP and PEP.
8.	Interventions must be tailored to the heterogeneity of MSM and subpopulations and personalized to the unique circumstances of individual MSM.
9.	Social norms and expectations must be explored and considered.
10.	Frontline staff and health care providers must be trained to respectfully communicate and interact with young MSM, understand their vulnerabilities, and reduce stigma that YMSM face.
11.	Innovative interventions must be developed to improve the ease of accessing health and medical care services.
12.	Research is needed at the intersection of trauma, the experiences of violence, substance use, and mental health.
13.	To ensure the highest likelihood of effectiveness and sustainability, interventions must be developed in partnership with YMSM representing the target community.
14.	Prevention messaging should be embedded within relevant LGBT content.
15.	Multilevel interventions need to be developed, implemented, and evaluated.
16.	Research needs to explore what roles changes in laws (e.g., marriage equality and antidiscrimination) have in terms of HIV risk.
17.	Research must be expanded in regions of the US that are experiencing disproportionate HIV infections