

HIV Prevention Interventions for Adolescents and Young Adults: What About the Needs of Gay and Bisexual Males?

Gary W. Harper · Andrew J. Riplinger

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Abstract While rates of HIV infection among gay/bisexual male adolescents have been increasing in the U.S., there has not been a commensurate increase in the development of HIV prevention interventions targeted specifically for this population. This editorial review examines primary HIV prevention interventions published in peer-reviewed journals between 1991 and 2010 in order to explore the differential focus on heterosexual versus gay/bisexual male adolescents/young adults. Of the 92 articles reviewed, only 5 (5.44 %) included interventions that addressed gay/bisexual sexual orientation or same-gender sexual activity. HIV prevention interventions developed for adolescents/young adults in the U.S. are not targeting those at highest risk of infection. Recommendations for addressing this gap are discussed.

Resumen Aunque los índices de infección VIH entre adolescentes masculinos gay/bisexuales han estado aumentando en los E.E.U.U., no ha habido un aumento conmensurado en el desarrollo de intervenciones para la prevención del VIH enfocado específicamente para esta población. Esta revisión editorial examina intervenciones de la prevención del VIH desarrolladas para los adolescentes jóvenes publicadas en revistas científicas y profesionales entre 1991 y 2010 para explorar el enfoque diferenciado en jóvenes heterosexuales contra gay/bisexuales adolescentes masculinos. De los 92 artículos revisados,

solamente 5 (5.44 %) examinaron intervenciones enfocados en la población gay/bisexual. Las intervenciones de la prevención del VIH desarrolladas para los adolescentes jóvenes en los E.E.U.U. no están dirigidas a la demográfica con el riesgo más alto de infección. Las recomendaciones para tratar esta brecha son discutidas.

Keywords HIV · Prevention · Adolescents · Gay · Bisexual

Introduction

Epidemiological data from the Centers for Disease Control and Prevention (CDC) indicate higher estimates of people living with HIV and AIDS in the United States than previously estimated, with male-to-male sexual contact accounting for more than half of new infections in 2006 [1]. Also in 2006, males accounted for the largest number of new HIV infections (73 %) when compared with females, and persons aged 13–29 accounted for the largest number of HIV infections (34 %) when compared to all other age groups [2]. From 2002 to 2007 the number of adolescents with an AIDS diagnosis nearly doubled [3].

The vast majority of adolescents and young adults who are living with HIV in the United States are male. In 2008, males accounted for an estimated 71 % of adolescents aged 13–19 living with HIV, and 80 % of young adults between the ages of 20 and 24 living with HIV [4]. Among male youth, the vast majority of these infections are attributed to male-to-male sexual contact (89 % among 13–19 year olds; 87 % among 20–24 year olds) [4]. Unfortunately, rates of HIV infection among adolescent and young adult males who have sex with other males is increasing, with the estimated percentage of infections among this group

G. W. Harper
Department of Psychology, DePaul University,
2219 N. Kenmore Ave. Room 420, Chicago, IL 60614, USA

G. W. Harper (✉) · A. J. Riplinger
Master of Public Health Program, DePaul University,
2219 N. Kenmore Ave. Room 420, Chicago, IL 60614, USA
e-mail: gharper@depaul.edu

increasing from 57 % in 2005 to 68 % in 2008 [4]. Conversely, rates of HIV infection attributed to heterosexual contact for all adolescents and young adults decreased from 32 to 25 % during that same time period [4].

While the HIV pandemic has been spreading at alarming rates among youth, male adolescents and young adults of color are particularly at risk. In 2007, 72 % of new HIV infections among youth (ages 13–19) were among Black/African American youth, even though Blacks/African Americans make up only 17 % of the same population [4]. From 2001 to 2006, 13–24 year old males who had sexual contact with other males demonstrated statistically significant increases in HIV/AIDS diagnoses for nearly all ethnic/racial groups, with African American young men demonstrating the largest increase (93 %) [2]. In 2007, among 13–24 year old males who had sex with other males, those who were newly diagnosed with HIV/AIDS were most likely to be Black/African American (62 %), as opposed to White (19 %) or Latino (16 %).

Gay and Bisexual Male Adolescents and Young Adults

Few national studies have focused specifically on examining HIV seroprevalence and related factors among adolescent and young adult males who have sexual contact with other males. Exceptions are two multi-site studies funded by the CDC: (a) the *Community Intervention Trial for Youth* and (b) Phase I (ages 15–22) and Phase II (ages 23–29) of the *Young Men's Survey*. The vast majority (86–95 %) of males in these studies who reported sexual activity with other males identified as either gay or bisexual [5–8]. Though it is critical that HIV prevention interventions are developed to address the needs of all young males, regardless of sexual orientation identity, the need for interventions tailored to gay and bisexual male adolescents and young adults is clear. It is important to understand the cultural and contextual factors that influence sexual risk and protective behaviors among gay and bisexually-identified male youth and also to consider the unique needs of this population separate from those who engage in same-gender sexual behavior but identify as heterosexual [9].

The term “gay and bisexual” is used in this paper to define and label the group of adolescent and young adult males for whom HIV prevention research is needed. This grouping is done with the acknowledgement that those adolescents who identify as “bisexual” may have different lived experiences than those who identify as “gay,” and that their patterns of sexual and other health-related risk behaviors are different [10–13]. Despite their differences, both gay and bisexually identified adolescents and young adults typically report significantly higher frequencies of sexual risk behaviors and higher rates of HIV infection

than their heterosexual counterparts [10, 14–16]. Most likely due to the elevated rates of HIV infection among gay and bisexual adolescents and other young men who have sex with other males, these groups have traditionally been combined together in HIV prevention programs that address same-gender sexual orientation identity and behavior. Thus, we retain this grouping of “gay and bisexual” male adolescents/young adults together since the primary focus is on the investigation of HIV prevention programs for adolescents and young adults.

The term “gay and bisexual” is also used with an acknowledgement that sexual orientation can be expressed through various forms of same-gender romantic/sexual attraction, sexual behavior, and sexual orientation identity; and that not all youth exhibiting same-gender sexual attractions and behaviors self identify as gay or bisexual [17–19]. In addition, programs that are developed using this more focused approach to intervention development also may be appropriate for some male adolescents and young adults who engage in same-gender sexual activity but do not currently identify as gay or bisexual, given the potential for shared experiences related to sexual risk and protective behaviors with other males [9].

HIV Prevention Interventions for Adolescent and Young Adults

While rates of HIV and AIDS among gay and bisexual male adolescents and young adults have been steadily increasing for more than a decade, there has not been an increase in research on the development, implementation, and evaluation of HIV prevention programs that target these youth [9]. Ever since 1996, several systematic reviews of HIV prevention programs for adolescents have been published in peer-reviewed journals. Although the population of focus for these reviews has been on “adolescent” or “youth” populations, they have primarily only explored interventions for heterosexual youth without mention of same-gender sexual behavior, gay/bisexual sexual orientation, or specific interventions for gay/bisexual youth and other male youth who have sex with other males [20–27]. The most recent review is a 2011 comprehensive meta-analysis of studies that evaluated interventions to reduce sexual risk for HIV among adolescents between 1985 and 2008 [26]. The authors reviewed 98 interventions derived from 67 studies. Despite one of the foci of the meta-analysis being on the association between participant characteristics and intervention efficacy, the authors did not include sexual orientation or participation in same-gender sexual behavior as one of the participant characteristics reported. They did, however, include other participant characteristics such as gender and race/ethnicity. In addition, the authors highlight the lack of studies

focused on adolescents who trade sex, are incarcerated, have mental illness, or are living with HIV in their discussion, but make no mention of gay and bisexual male adolescents in the article.

A recent review by Mustanski [28] is perhaps the first comprehensive literature review which has attempted to review and synthesize existing literature on HIV epidemiology, correlates of HIV risk, and existing interventions among young men who have sex with men [28]. The authors conducted a broad-based literature review without limits on publication dates, and although the focus was on young men who have sex with men in the United States, they did include studies published outside of the United States as well as those published with adults. The bulk of this paper presents an impressive review of research on correlates of HIV risk among young men who have sex with men, utilizing Bronfenbrenner's ecological systems theory as an organizing framework [29]. The authors then use this ecological framework to summarize and synthesize information from these articles into a table which presents the primary correlates of sexual risk among young men who have sex with men, including: structural factors, societal factors, family factors, intimate partner dyads, peer influences, individual characteristics, connectedness to the gay community, sensation-seeking, impulsivity and impulsive decision making, compulsive sexual behavior, self-efficacy, depression, anxiety, psychological distress, state affect, sexual abuse, and internalized homophobia [28]. The authors suggest that these factors serve as the foundation for the creation of a testable model of HIV risk among young men who have sex with men which could serve as a framework for the development of future HIV prevention interventions if it is validated [28].

The review of existing interventions presented by Mustanski et al. [28] includes primary and secondary interventions, and both behavioral and biomedical approaches to prevention for young men who have sex with men. In this section of the paper the authors acknowledge the paucity of interventions developed specifically for this population, and take a less systematic approach to their review of the literature than they do when examining predictors of HIV risk. The authors offer details related to some existing interventions for young men who have sex with men and state that "There are a few notable YMSM-specific HIV prevention projects and interventions worthy of mention" [28]. They also emphasize that of the 26 currently CDC-endorsed HIV prevention interventions included in the Diffusion of Effective Behavioral Interventions (DEBI) compendium, *MPOWERment* is the only one targeting gay/bisexual male young adults [28].

In order to address increasing rates of HIV infection among gay/bisexual male adolescents and young adults there needs to be an increase in the development,

implementation and evaluation of primary HIV prevention programs specifically for these youth. Since several empirical literature reviews and theoretical articles have supported the notion that adolescent sexual risk and protective behaviors are impacted by intersecting ecological systems of influence [9, 28, 30–33], it is important that these HIV prevention programs address both *cultural and contextual* factors that are specific to the lives of gay and bisexual male adolescents. *Cultural factors* include the various cultural systems within which gay and bisexual male adolescent and young adult behaviors occur (including sexual risk and protective behaviors), such as ethnic/racial, gay, and youth culture [9, 34, 35]. These cultures influence how gay and bisexual male adolescents conceptualize and understand their sexuality, as well as the decisions they make about risk and protective behaviors. *Contextual* factors represent influences within the various environments and settings where adolescents develop and interact with others. These contextual influences may impact gay and bisexual adolescents and young adults at multiple systemic levels, ranging from the individual level (e.g., identity development, substance use, psychological distress), to the dyadic level (e.g., family norms, peer pressure, intimate partners' desires), to the societal level (e.g., heterosexism, racism, masculinity ideology) [9, 28]. Therefore, primary HIV prevention interventions for gay and bisexual male youth cannot simply be adaptations of programs developed for heterosexual youth since gay/bisexual youth are impacted by a host of oppressive forces at multiple systemic levels that may impact their HIV risk and protective behaviors [9, 36].

The purpose of this editorial review is to examine primary HIV prevention interventions published in peer-reviewed journals between 1991 and 2010 (20 years) in order to examine the frequency with which these studies have acknowledged and addressed same-gender sexual behavior or gay/bisexual sexual orientation through (a) the inclusion of gay/bisexual and other male youth who have sexual activity with other males in the studies, (b) the inclusion of activities that focused on same-gender sexual behavior or gay/bisexual identity in the interventions that were evaluated, or (c) the development of specific interventions for gay/bisexual male adolescents and young adults, and other young males who have sex with males. This exploration and critical analysis of HIV prevention interventions for youth also sought to identify other gaps in prevention efforts for gay and bisexual male adolescents and young adults.

Methods

A total of 92 studies were selected for this editorial review based on four inclusion/exclusion criteria regarding the

demographic information of study participants and characteristics of the intervention. In order to be included, the study must have: (1) been published between 1991 and 2010 (inclusive), (2) been focused on reporting the findings of a primary prevention intervention (where youth are not already living with HIV), (3) utilized a quasi-experimental, experimental, or single-group research or evaluation design, and (4) included a sample of U.S. adolescents between the ages of 13 and 24 years (inclusive). Some studies included in the sample had participants younger than 13 or older than 24 years, in which case the study was retained if the mean age for participants fell between the ages of 13 and 24. The age range of 13–24 was selected since this is the age range categorized as “adolescents and young adults” by the CDC for HIV surveillance purposes [4].

The literature review was conducted through a series of searches using the online databases PubMed and PsycINFO. Various combinations of the following Keywords were used to search through abstracts on both databases to find articles that fit the above criteria: “HIV,” “AIDS,” “Prevention,” “Intervention,” “Youth,” “Adolescent,” “Program,” and “Evaluation.” The reference sections in each of the articles found were then examined to see if additional studies would meet the literature review criteria. If so, these articles were also included. This series of searches was first conducted by the authors, and then was independently replicated by two graduate-level research assistants. Additional articles from both series of searches were combined in order to create the final database of 92 articles.

A coding sheet was then created to examine the characteristics of the target population (e.g., age, race/ethnicity, gender, sexual orientation). One of two graduate research assistants coded each article and 15 % of the articles were coded by both to check for reliability. There was a 93.2 % agreement for all articles coded by both research assistants, and all coding disagreements were resolved through discussion and consensus. These data were then entered into an SPSS database for analysis.

Results

Of the 92 articles identified in the current literature search, only 17 (18.48 %) had a sample that included participants who reported any same-gender sexual activity or gay/bisexual sexual orientation (See Table 1) [37–54]. Twelve of these 17 articles identified the sexual orientation of the participants using one or more of the following terms: “gay”, “bisexual”, “homosexual”, “heterosexual”, or “non-heterosexual”. The remaining five that did not report sexual orientation did identify that participants had engaged in same-gender sexual activity using one of the following terms: “men who have sex with men,”

“same-gender activity,” “adolescent boys reported anal sex with men,” or males “having sexual relationships with males exclusively.” It is also important to note that none of the 92 interventions included any transgender participants.

Of the 17 articles that included a sample whose participants reported engaging in same-gender sexual activity or identified with a gay/bisexual sexual orientation, only 5 articles indicated that issues related to gay/bisexual sexual orientation or same-gender sexual activity were integrated into the content of their HIV prevention interventions [50–54]. One of the interventions was not exclusively for gay/bisexual male youth but did address same-gender partnerships in the intervention, and included a study sample that was 42 % heterosexual and 17.6 % female [54]. Thus, of the 92 articles that reported findings from evaluations of primary HIV prevention interventions for adolescents/young adults, only 4 (4.35 %) of the articles focused on interventions designed exclusively for gay/bisexual male adolescents and young adults, and other males who have sex with males. Since two of these articles focused on the same intervention (i.e., *Mpowerment*) [50, 51], these articles only represent 3 unique interventions specifically tailored to the needs of gay/bisexual male adolescents and young adults, and other males who have sex with males.

These three interventions addressed gay/bisexual issues in the following ways: (a) conducted outreach in gay neighborhoods, establishments, and areas; (b) implemented the intervention in small groups led by gay/bisexual peers; (c) included gay/bisexual-focused media campaigns; and/or (d) focused on communication and condom negotiation skills within same-gender romantic/sexual relationships. These interventions also took into account the complex social issues that confront those in the gay/bisexual community such as heterosexism and homophobia. Remafedi [52] and Rotheram-Borus et al. [53] established social support groups for gay/bisexual youth led by peer educators. Rotheram-Borus et al. [53] also examined youths’ needs for comprehensive healthcare. In Kegeles and colleagues’ [50, 51] community mobilization approach to HIV prevention, they addressed issues of social isolation and homophobia through the creation of a young gay/bisexual men’s center and the implementation of a gay-affirming social marketing campaign.

There were several notable differences between the 5 gay/bisexual-focused intervention articles and the 87 heterosexually-focused intervention articles. First, the gay/bisexual-focused interventions included lower numbers of ethnic minority participants (specifically African Americans) as compared to the heterosexually-focused interventions. Second, the gay/bisexual-focused interventions did not explicitly report inclusion of participants from lower socio-economic status (SES) groups, while many of the heterosexually-focused interventions did report inclusion of

Table 1 HIV prevention programs for youth that include participants who reported same-gender sexual activity or gay/bisexual sexual orientation: 1991–2010

Article	Total <i>N</i> Age range Mean age	Gender	Same-gender sexual activity or gay/bi sexual orientation	Are gay/bi issues addressed?	Ethnicity of sample	SES of sample
Rotheram-Borus et al. [47]	<i>N</i> = 145 Age: 11–18 <i>m</i> = 15.5	M = 36 % F = 64 %	Participants “primarily labeled themselves as heterosexual (males, 93 %; females, 99 %)” and “sexual risk behaviors with same-sex partners were <i>not</i> included”	No	AA = 63 % White = 8 % Latino = 22 % API = 0 % Other = 7 %	Low
Jemmott et al. [42]	<i>N</i> = 157 Age: – <i>m</i> = 14.64	M = 100 % F = 0 %	“Few participants... reported ever having receptive anal intercourse (2.3 %), or having sexual relationships with males exclusively (1.6 %) or with both males and females (0.8 %).”	No	AA = 100 % White = 0 % Latino = 0 % API = 0 % Other = 0 %	–
Kipke et al. [49]	<i>N</i> = 87 Age: 12–16 <i>m</i> = 13.8	M = 45 % F = 55 %	2 % reported “having had same-sex intercourse”	No	AA = 41 % White = 0 % Latino = 59 % API = 0 % Other = 0 %	–
Remafedi [52]	<i>N</i> = 139 Age: 13–21 <i>m</i> = 19.25	M = 100 % F = 0 %	91 % “gay” 9 % “bisexual”	Yes—entire program designed for gay/bi males	AA = 14 % White = 75 % Latino = 2 % API = 3 % Other = 4 %	–
Rotheram-Borus et al. [53]	<i>N</i> = 136 Age 14–19 <i>m</i> = 16.8	M = 100 % F = 0 %	3 % “heterosexual” 66 % “gay” 25 % “bisexual” 6 % “refused to identify”	Yes—entire program designed for gay/bi males	AA = 30.6 % White = 11.9 % Latino = 50.7 % API = 0 % Other = 6.7 %	–
Kegeles et al. [50]	<i>N</i> = 300 Age: 18–29 <i>m</i> = 23.4	M = 100 % F = 0 %	86 % “gay” 14 % “bisexual”	Yes—entire program designed for gay/bi males	AA = 4 % White = 81 % Latino = 6 % API = 7 % Other = 2 %	–
Boyer et al. [37]	<i>N</i> = 513 Age: 13–17 <i>m</i> = 14.4	M = 41 % F = 59 %	3 % “MSM activity”	No	AA = 12 % White = 10 % Latino = 20 % API = 42 % Other = 12 %	–
Rotheram-Borus et al. [46]	<i>N</i> = 151 Age: 13–24 <i>m</i> = 18.1	M = 48 % F = 52 %	93 % “heterosexual” 7 % “non-heterosexual”	No	AA = 53 % White = 0 % Latino = 39 % API = 0 % Other = 8 %	Low
Rotheram-Borus et al. [54]	<i>N</i> = 153 Age: 13–24 <i>m</i> = 20.4	M = 82.4 % F = 17.6 %	42 % “heterosexual” 25 % “bisexual” 33 % “homosexual”	Yes—“same-gender partnerships” were addressed	AA = 25.9 % White = 40.2 % Latino = 24.5 % API = 0 % Other = 9.4 %	–

Table 1 continued

Article	Total <i>N</i> Age range Mean age	Gender	Same-gender sexual activity or gay/bi sexual orientation	Are gay/bi issues addressed?	Ethnicity of sample	SES of sample
Kegeles et al. [51]	<i>N</i> = 247 Age: 18–27 <i>m</i> = 23.2	M = 100 % F = 0 %	86 % “gay” 14 % “bisexual”	Yes—entire program designed for gay/bi males	AA = 0 % White = 80 % Latino = 0 % API = 0 % Other = 20 %	–
Chernoff and Davisonet [39]	<i>N</i> = 155 Age: 17–37 <i>m</i> = 20.7	M = 50 % F = 50 %	96.1 % “heterosexual” sample	No	AA = 5.2 % White = 46.5 % Latino = 13.5 % API = 14.8 % Other = 20 %	Med/ High
Jemmott et al. [41]	<i>N</i> = 682 Age: 12–19 <i>m</i> = 15.5	M = 0 % F = 100 %	4 % “same-gender activity”	No	AA = 67.89 % White = 0 % Latino = 32.11 % API = 0 % Other = 0 %	Low
Kiene and Barta [44]	<i>N</i> = 157 Age: – <i>m</i> = 18.86	M = 29 % F = 71 %	98 % “heterosexual”	No	AA = 4.5 % White = 81 % Latino = 6.4 % API = 4.5 % Other = 5 %	–
Stevens et al. [48]	<i>N</i> = 74 Age: 12–15 <i>m</i> = 13.6	M = 55 % F = 45 %	“over three-quarters (81 % ...) claimed their sexual orientation to be heterosexual”	No	AA = 20 % White = 8 % Latino = 66 % API = 3 % Other = 3 %	Low
Ito et al. [40]	<i>N</i> = 47 Age: 15–19 <i>m</i> = 16	M = 0 % F = 100 %	96 % “Heterosexual”	No	AA = 55 % White = 19 % Latino = 17 % API = 0 % Other = 9 %	Low
Bryan et al. [38]	<i>N</i> = 484 Age: – <i>m</i> = 15.8	M = 82.7 % F = 17.3 %	“91.38 % of participants identified exclusively as heterosexual, 2.87 % identified exclusively as homosexual, and 5.75 % identified as bisexual”	No	AA = 12.9 % White = 36.6 % Latino = 28.5 % API = 3.5 % Other = 19.5 %	–
Romer et al. [45]	<i>N</i> = 1657 Age: 14–17 <i>m</i> = 15	M = 40 % F = 60 %	“6 adolescent boys reported anal sex with men”	No	AA = 100 % White = 0 % Latino = 0 % API = 0 % Other = 0 %	Low

A total sample of 92 articles examining HIV prevention interventions for adolescents were included in this literature review—only the 17 articles listed in this table had a sample that included participants who reported any same-gender sexual activity or a gay/bisexual sexual orientation
Key: *N*, Total participants; *m*, Mean age; M, Male; F, Female; AA, African America; API, Asian/Pacific Islander; –, Not given

lower SES participants. Third, the gay/bisexually-focused intervention samples included participants whose average age range was higher than the heterosexually-focused

interventions. Last, none of the gay/bisexually-focused interventions took place in schools (they were all conducted in community-based organizations and other community

settings), while many of the heterosexually-focused interventions were school-based.

Discussion

Despite increasing rates of HIV infection among gay/bisexual male adolescents and young adults in the United States there has not been a commensurate increase in HIV prevention programs designed specifically for this population. The current study examined primary HIV prevention interventions published in peer-reviewed journals between 1991 and 2010 (20 years) in order to examine the extent to which these interventions and articles were addressing the needs of gay/bisexual male adolescents and young adults, as well as other male youth who have sex with males. Of the 92 articles which detailed evaluations of HIV prevention interventions, only 17 indicated that they had samples of male youth who reported same-gender sexual activity or a gay/bisexual sexual orientation. Only four articles examined interventions developed exclusively for gay/bisexual male youth and other males who have sex with males, and since two of these articles were on the same intervention (i.e., *Mpowerment*) [50, 51], only three unique interventions for gay/bisexual male adolescents and young adults were revealed.

All of the articles that directly addressed sexual orientation or same-gender sexual activity in their HIV prevention intervention appeared in peer-reviewed journals between the years of 1994 and 1999. While there have not been any articles reporting findings from HIV prevention interventions for gay/bisexual male adolescents and young adults during the subsequent 11 years (2000–2010), there were 60 articles published during this same time frame on primary HIV prevention interventions specifically for heterosexual adolescents and young adults (see Fig. 1). This disproportionately higher number of interventions focused on heterosexual youth and lack of attention to the needs of gay/bisexual male youth has been occurring during a time period when rates of HIV infection among gay/bisexual male adolescents and young adults are increasing and rates among heterosexual adolescents and young adults are decreasing [4].

Data from the CDC demonstrate that not only was male-to-male sexual contact the largest HIV transmission category in the United States from 2001 through 2006, but also it is the only group in which the number of new HIV/AIDS cases has been steadily rising since the early 1990s [2]. Since the scope of this review began with studies published as early as 1991, the time frame covers the period during which cases of HIV/AIDS were increasing among both gay/bisexual male adolescents and adults. Despite such drastic and steady increases, public health interventions

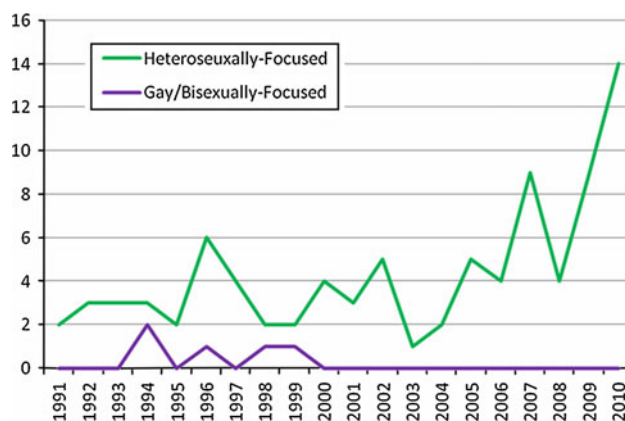


Fig. 1 HIV prevention intervention articles focused on heterosexual adolescents and young adults versus gay/bisexual male adolescents and young adults (1991–2010)

have failed to meet the needs of gay/bisexual young men. This lack of HIV prevention resources for gay/bisexual male youth is echoed in findings from a recent study of 526 gay/bisexual young men (ages 18–24) which found that most participants did not learn about same-gender sexual activity from family, friends, or school (the typical sources for heterosexual youth), and instead learned about it from internet websites (usually pornography) or from their first sexual experience with a man [55]. Unfortunately, many of the youth did not have accurate information on same-gender sexual activity and HIV risk behaviors when they first had sex with another male, which led them to engage in physically and psychologically painful high-risk sexual activity and restricted them from being able to advocate for their own sexual health [55]. The reliance on internet pornography as a primary form of sexuality education for gay/bisexual male youth is especially troubling with regard to HIV transmission given recent increases in “raw” and “bareback” gay pornography which features and eroticizes unprotected anal sex.

When examining the content of the gay/bisexually-focused interventions, some encouraging findings were revealed. In addition to including HIV risk reduction skills-building activities such as communication and condom negotiation skills within same-gender romantic/sexual relationships, these interventions included various components that addressed the complex social issues that confront those in the gay/bisexual community such as heterosexism and homophobia. Given the potentially negative role of social isolation that may result from societal discrimination, most interventions created different types of social support mechanisms such as support groups and the creation of a gay/bisexual men’s community support center. In order to address larger numbers of youth, some of the programs included gay/bisexual-focused media campaigns and social marketing.

Focus on Younger Adolescents

There is a need to initiate HIV prevention interventions early in adolescence for gay/bisexual male youth, especially since studies of developmental trajectories for males who experience same-gender sexual attraction and sexual activity report first having sexual contact with another male between the ages of 13 and 14 [56–59]. Data from the current review revealed that only one of the five intervention articles that directly addressed male-to-male sexual contact or gay/bisexual sexual orientation in their intervention included samples whose mean age was below the age of 18 years (mean 16.8 years) [53]. In addition, only three of the five articles included a lower age limit that was below the age of 18 years (lower age limit 13, 13, 14 years) [52–54], while two articles included upper age limits that were above the age of 24 years (upper age limit 29, 27 years) [50, 51].

Early prevention efforts are also necessary for gay/bisexual male youth in order to influence sexual behavior prior to the development of established patterns of sexual risk. In order to target these youth early in their sexual lives, it is important to conduct formative research and develop primary prevention interventions that are appropriate for youth during their early sexually formative years, such as between the ages of 13 and 17. One potential barrier to the conduct of such studies is the inability of some investigators to receive a waiver of parental consent for gay/bisexual research participants under the age of 18 years [60]. While a level of discomfort with sexuality research among adolescents in general exists, this may be compounded when addressing research related to same-gender sexual activity and/or lesbian, gay, or bisexual sexual orientation. Unfortunately, IRB members' naiveté regarding human sexuality research with gay/bisexual adolescents or personal heterosexist viewpoints, as well as institutionalized heterosexism within some academic institutions, may block researchers from obtaining appropriate waivers. Such waivers of parental consent for studies that do not involve greater than minimal risk is done to avoid the selection biases that would be present if only those youth whose parents are both aware of and comfortable with their sexual orientation were recruited.

Miller et al. [61] describe the challenges encountered when attempting to obtain a waiver of parental consent for Black gay/non-gay identifying male youth under the age of 18, and the ways in which the denial of such approval adversely impacted their study [61]. Similarly, a case study by Mustanski [60] detailed how the IRB approval process significantly hindered a research study for lesbian, gay, bisexual, and transgender (LGBT) youth. The study was funded to take place over 2 years, but the total IRB process took 10 months, or almost half of the overall time allotted

to recruit participants, conduct the qualitative and quantitative assessments, and analyze/disseminate the data [60]. Mustanski [60] also provides empirical evidence that requiring parental consent for LGBT youth under the age of 18 can change study results. He compared patterns of responses on health, social and demographic variables from LGBT youth who said they were likely to obtain parental consent versus those not likely to obtain parental consent. Based on these comparisons, requiring parental consent would have underrepresented the following groups of youth: those who have not made a suicide attempt, have less family support, binge drink less, are racial/ethnic minorities, and self-identify as bisexual. As Mustanski [60] points out, these are many of the youth who would stand to benefit from this kind of research.

Requesting a waiver of parental consent is supported by Section 46.408(c) of the Code of Federal Regulations, Title 45, (Part 46—Protection of Human Subjects) which states “if the IRB determines that a research protocol is designed for conditions or for a subject population for which parental or guardian permission is not a reasonable requirement to protect the subjects (for example, neglected or abused children), it may waive the consent requirements in Subpart A of this part and paragraph (b) of this section.” Oftentimes gay/bisexual youth have explored their sexual orientation without their parents' knowledge as they struggle with issues of disclosure and its consequences within the social, religious, and economic context of their families. There is a realistic concern that the requirement of parental consent will put some gay/bisexual male adolescents at risk regarding disclosure of their sexual orientation or same-gender sexual behavior to their parents, as such disclosure may result in parental harassment, abuse or expulsion from the parental home [61–66].

Focus on Ethnic Minority Adolescents and Young Adults

This review also revealed that the intervention studies that directly addressed same-gender sexual behavior or gay/bisexual sexual orientation included lower numbers of ethnic minority participants than heterosexually-focused intervention studies. Only one of the 5 gay/bisexually-focused studies included a sample in which African American or Latino young men constituted the majority of the sample (50.7 % Latino) [53], and none of the studies included exclusive samples of African American or Latino youth. The lack of concentrated focus on adolescent interventions specifically for African American and Latino gay/bisexual male adolescents and young adults represents more missed opportunities for public health intervention for a group of young men who experience multiple layers of oppression and marginalization, which are likely

associated with their disproportionately higher rates of HIV infection [9, 36, 67]. This is particularly true for African American male youth, among whom in some cities we see the highest rates of HIV infection the United States has ever documented [2].

Primary HIV prevention interventions for gay and bisexual youth from different ethnic/racial groups will be more effective if they are culturally tailored, as prior theoretical and empirical literature supports the general importance of culturally-grounded HIV prevention interventions [35, 68–70]. In order to develop such programs, future research is needed to better understand the unique life circumstances of African American and Latino gay/bisexual male adolescents and young adults, and the ways in which race/ethnicity and sexual orientation intersect. Such studies should explore the influence, significance, and relevance of ethnic/racial identities in the lives of gay/bisexual male adolescents [34, 35] and how these various factors may influence HIV sexual risk and protective behaviors. In addition, it will be beneficial to further explore other socio-demographic factors among ethnic minority gay/bisexual youth since the interplay between oppressed and privileged statuses related to gender, race/ethnicity, social class, and sexual orientation has been shown to have differential effects on an individual depending on the composition and visibility of their oppressed and privileged statuses [71, 72]. Since adolescent sexuality is impacted by intersecting ecological systems of influence [9, 28, 30–33], it will also be important to explore not only the cultural and contextual factors that are specific to the lives of gay and bisexual male adolescents, but also more distal factors that may impact all youth of color regardless of sexual orientation such as racism and classism.

It will also be important to explore culturally-grounded messages about masculinity and sexuality among gay and bisexual male adolescents, and how these vary across ethnic groups. Ethnic-specific differences in how gender/masculinity and ethnicity intersect have been illustrated by possessive: Wilson et al. [73] qualitative exploration of strategies used by gay/bisexual/questioning (GBQ) male adolescents to negotiate dominant masculinity ideologies. Among their findings was an identification of two distinct and ethnic-specific ways in which ethnicity and gender interacted and influenced how young GBQ men experienced messages about masculinity. Their overall masculinity-related findings are discussed with regard to how they can serve as a basis for culturally and developmentally specific HIV prevention programs [73]. Although the extant literature has demonstrated that the development of gender ideologies can influence a host of both health promoting and health risk behaviors, and can play a central role in the development of sexual beliefs and behaviors for

adolescents from various ethnic/racial backgrounds [74–77], the vast majority of this research has been conducted with heterosexual adolescents. Thus, future research regarding the intersectionality of gender/masculinity and sexuality for gay and bisexual male adolescents and young adults is needed.

Focus on School-Based Interventions

None of the interventions that included attention to gay/bisexual or same-gender sexuality issues were conducted in schools, whereas several of the heterosexually-focused interventions took place in schools. A potential reason for this disparity may be widespread heterosexism and homophobic victimization in schools which may create unsafe environments for open discussion of same-gender sexuality. In addition, when youth experience homophobic violence in schools they are more likely to develop negative health outcomes such as depression, suicidal feelings, substance use, and truancy [78, 79]—all factors that may be associated with increased risk of participation in HIV sexual risk behaviors.

The Gay, Lesbian, and Straight Education Network (GLSEN)'s 2009 National School Climate Survey [80] provides empirical evidence from over 7,261 LGBT students (ages 13–21) regarding the prominence of heterosexism and homophobic victimization in schools in the U.S. They found that anti-LGBT language, bullying, and harassment based on sexual orientation or gender identity/expression was common, with 84.6 % of LGBT students reporting being verbally harassed, 40.1 % reporting being physically harassed, and 18.8 % reporting being physically assaulted at school in the previous year. Most LGBT youth (72.4 %) reported hearing homophobic remarks “frequently” or “often” at school. Given these experiences, 61.1 % of students reported feeling unsafe at school. The GLSEN report [80] also documented the failure of school personnel to create a safe environment for LGBT youth, with 62.4 % of students who experienced harassment or assault refusing to report the incident because they believed that little or no action would be taken or that the situation could become worse if reported. Unfortunately, of the students that did report an incident, 33.8 % said there was no response from school staff.

This is yet another missed opportunity for primary prevention of HIV among gay/bisexual male youth and other males who have sex with males since schools are venues that have the potential to reach large numbers of youth. Mandating the inclusion of comprehensive sexuality education programs that address same-gender sexuality in the school curriculum is a structural-level intervention with potential for far reaching effects [28]. Including same-gender sexual desire and activity as part of normative

sexual expression in comprehensive sexuality education programs could also create opportunities for discussions regarding sexual diversity that may impact the way heterosexual youth view their same-gender attracted peers, thus increasing the likelihood of acceptance. Teachers will need to work to create more accepting classroom environments prior to such discussions [81–83] in order to ensure the safety of LGB students and to avoid the occurrence of iatrogenic effects. School-based interventions would also provide an opportunity to address gay/bisexual youth either prior to their sexual debut or early in their sexual lives, the benefits of which have previously been discussed.

Intervention and Policy Recommendations

This review demonstrated that primary HIV prevention interventions for youth in the United States have ignored the sexual health needs of gay/bisexual male adolescents and young adults. They have failed to address the complex issues facing gay/bisexual male youth and other males who have sex with males, and will thus be ineffective as primary prevention interventions for the populations most at risk for contracting HIV. Programs marketed specifically for gay/bisexual male adolescents and young adults cannot simply be adaptations of programs developed for heterosexual youth. Both community-based and school-based HIV prevention interventions should address the range of cultural and contextual factors that influence sexual risk and protective behaviors of gay/bisexual adolescents and young adults. These programs need to be developed so that they are culturally and developmentally appropriate, implemented in a community sensitive manner, and rigorously evaluated. Development of these interventions should be done in collaboration with young gay/bisexual men who will be the focus of these interventions, as well as the community-based organizations that will eventually be responsible for delivering these interventions [84].

For gay/bisexual male adolescents, the developmental challenges of adolescence that may increase their risk for HIV infection may be exacerbated by social isolation, stigma, and oppression associated with their sexual orientation [85–87]. Further, repeated experiences of discrimination and heterosexism may negatively influence the depth, breadth, and quality of coping and social support resources that are typically available to other adolescents [87, 88]. Heterosexual youth are likely to have more social institutions and structures that provide support and guidance for their healthy development than gay/bisexual youth. In addition, gay/bisexual youth often find that their family, peers, and teachers do not accept, support, and/or nurture them as they develop their sexual orientation identity [55] and may actually perpetrate harmful verbal

and physical acts of violence against them [89–92]. Therefore, when developing HIV prevention interventions it is important to understand the life experiences of gay/bisexual male adolescents and young adults, and their unique stressors and coping resources.

In July 2010 the Obama Administration officially announced its new “National HIV/AIDS Strategy” which is a comprehensive policy framework for addressing the HIV/AIDS epidemic in the United States. The first goal in this new strategy is to reduce the number of new HIV infections by 25 % by the year 2015, and in order to achieve this goal it states that the government must “intensify HIV prevention efforts in the communities where HIV is most heavily concentrated” and then “expand targeted efforts to prevent HIV infection using a combination of effective, evidence-based approaches” [91]. In addition, the strategy emphasizes that educating young people about HIV before they engage in behaviors that place them at risk for infection should be a priority [91]. Therefore, in light of the literature review findings presented in this article, it is clear that there must be a dramatic increase in the funding for HIV prevention program development and implementation specifically targeting gay/bisexual male adolescents and young adults, and that some of these programs should target these youth prior to their sexual debut. If three-fourths of HIV/AIDS cases in the United States are among men and boys, the majority of whom are gay/bisexual, then at least three-fourths of the HIV prevention funding should target that population.

Also, in order to ensure a “combination of effective, evidence-based approaches” to HIV prevention, comprehensive sexuality education programs for youth both in schools and communities need to be evidence-based, effective, and include explorations of same-gender sexuality. This would require policy-makers to restrict funding allocations for abstinence-only and abstinence-only-until-marriage programs which grew exponentially with the enactment of Title V, Section 510 of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 in the United States (Title V, Section 510 was refunded through the year 2014 with the Affordable Care Act). Such programs typically prohibit any discussion and exploration of same-gender sexual expression since gay and lesbian individuals do not have the legal right to marry in the vast majority of states in the United States, and thus must always remain abstinent. Restriction of same-gender sexual activity discussions in such programs may also be driven by religious perspectives that provide the basis for the material covered within some of these interventions. In addition, federally funded abstinence programs are guided by an 8-point definition of “abstinence education” where 5 of the 8 points specifically mention “marriage” or “out-of-wedlock” (Title V, Section 510 (b)(2)(A-H) of the Social

Security Act [P.L. 104-193]). Therefore “abstinence-only-until-marriage” programs become “abstinence-for-life” programs for gay/bisexual youth, and preclude the delivery of interventions that will lower rates of HIV infection among this population. The effectiveness of abstinence-only-until-marriage approaches for heterosexual youth has been debated and their impact on gay/bisexual youth has not been systematically explored, particularly the potentially negative effect of being engaged in a program that denies and denigrates one’s sexuality and sense of self [92].

The gay/bisexual-focused interventions in this review were either delivered through community-based organizations serving LGBT youth, or accessed youth in venues where gay/bisexual youth socialize. When focusing on the HIV prevention needs of gay/bisexual male adolescents and young adults, researchers need to focus on younger adolescents that may not have access to more traditional LGBT establishments, and explore the development of school-based interventions where larger numbers of youth can be reached. HIV prevention programs for gay/bisexual male adolescents and young adults should also focus on the development of programs for ethnic minority youth, as well as youth living in lower socioeconomic environments. Both of these groups of youth may face additional challenges and HIV prevention interventions must address these in order to effectively battle the HIV epidemic. Family-based interventions should also be explored, especially given the strong role of parental rejection in increasing HIV risk among gay and bisexual youth [93]. Structural-level interventions are also needed especially those that attempt to address changes in community-based programs, policies and practices that may impact the transmission of HIV [94].

Although there have been some advances in LGBT health research, there are still many areas of neglect. The recent Institute of Medicine’s report from the Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities states “Although a modest body of knowledge on LGBT health has been developed, these populations, stigmatized as sexual and gender minorities, have been the subject of relatively little health research” [95]. This is also supported by extensive literature reviews spanning 57 years of medical research publications (1950–2007) and 20 years of public health research publications (1980–1999), both of which revealed that LGBT issues have been neglected by medical and public health researchers, and that the current extant literature is not representative of the health-related needs of LGBT people in the U.S. [96, 97]. The data presented in the current literature review provide further evidence of limited health research focused on LGBT populations—more specifically HIV prevention intervention development research for gay and bisexual male youth. In addition

to this paucity of LGBT health research, recent studies also have documented that LGBT-specific health issues are not adequately addressed in both public health and medical training programs [98, 99]. For example, in U.S. and Canadian medical schools, there was only a median reported time dedicated to LGBT content of 5 h across the curriculum [99].

One reason for this lack of LGBT-focused research may be individual and institutional homophobia and heterosexism, particularly in academic institutions [100]. These discriminatory forces may negatively impact the execution of LGBT research by influencing policies and attitudes that marginalize such research by segregating it from “mainstream” research, and promoting the view that LGBT issues are not of concern to the general population [100, 101]. Some researchers also may fear institutional discrimination for conducting LGBT research, especially when issues of tenure and promotion are involved [84]. This may particularly impact early career researchers who are fearful that conducting LGBT-focused research will prohibit them from obtaining and maintaining a successful academic career. In order to ensure that research is conducted on the development and evaluation of effective HIV prevention interventions for gay and bisexual male youth, the social climate of institutions and organizations that are not supportive of LGBT research needs to shift.

Researchers’ lack of focus on the development and evaluation of new and innovative HIV prevention interventions for gay and bisexual male youth ultimately impacts the delivery of critically-needed services through community-based service providers. Since direct federal and federal flow-through funds administered by city and county health departments often require the use of DEBI interventions, the fact that there is only one intervention for gay/bisexual young adults, and none for younger gay/bisexual youth, limits the range of primary prevention services that these agencies can offer. Even if DEBIs are not required and funders request the use of other evidence-based interventions, there is still a paucity of HIV primary prevention interventions for gay/bisexual male adolescents and young adults that have been empirically tested. Although some agencies have been serving this population with “home grown” interventions based on community knowledge and experience, continual increases in HIV incidence among gay/bisexual male youth have created a situation where increasingly more community agencies who have not typically served gay/bisexual youth are now receiving funds to provide primary prevention services to these youth. Given the diversity of life experiences and risk/resiliency factors among various groups of gay/bisexual male youth, these agencies will best be served if they have a “menu” of various prevention interventions from which they can choose. Without a more extensive array of

prevention interventions, the effectiveness of their approaches may be limited and not make an impact on lowering rates of HIV among gay and bisexual male adolescents and young adults.

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