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The Future of Internet-based HIV Prevention: A Report on Key Findings from the Men's INternet (MINTS-I, II) Sex Studies

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“Until recently sexuality and technology have been seen in the social sciences as two distinct and unrelated realms. This has meant that the ways in which technology has produced or configured sexuality, how technology has become sexualized and how sexuality has in turn configured technology in society and history have, to date, largely remained unexplored.”

López & Cleminson, *Techno-Sexual Landscapes*[1], p. 11.

Introduction

The Internet and other new media have changed how men who have sex with men (MSM) find and interact with sexual partners. This social phenomenon, paired with growing evidence that use of the Internet increases MSM's risk for HIV infection, makes it crucial that innovative technology-based HIV prevention interventions are developed for this population. In this commentary we explain why technology-based HIV prevention interventions are urgently needed; we then highlight findings from some of the first Internet-based HIV prevention for MSM studies that show the potential for future interventions; we next discuss ways for interventionists to conceptualize new media as a tool for HIV prevention; and finally we discuss emerging trends for technology-based HIV-prevention research.

The Need for Technology-Based HIV Prevention Interventions

New media's influence on sexual behavior and identity among MSM

New media refers to a wide range of new and emerging technology, all of which can and do shape the sexual lives of many Americans, including MSM. In 2010, new media *is* how a majority of MSM express and experience their sexual lives. *Internet gay sex sites* are now the leading environment where men meet men for sex in the U.S. and similar countries [2]. *Internet porn sites* appear to be the most popular media for MSM to learn about gay sex [3]. *Gay virtual communities* are how many MSM socialize and experience gay tribe (access news, blogs, events), and for some men, appear to be replacing the physical infrastructures

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where previous generations interacted [2]. New social networking applications (“apps” such as Grindr, DList, and m2men) and forms of communication, including tweeting and texting, are replacing or augmenting older technologies (e.g., web 1.0) and communication methods (e.g., phone sex lines, print advertisements, email, and “gaydar”) in facilitating sex between men. While the technological devices and new media are in rapid evolution, we predict the influence of technology on MSM’s sexual behavior, interpersonal communication, and community identification is permanent.

The size of the virtual MSM population

An increasing number of men use the Internet (and other new media) to seek sex with men (MISM). The primary benefit of the Internet appears to be its superior ability to help people conveniently and quickly locate sex partners compared to offline methods [4,5]. Secondary benefits include anonymity (especially for closeted men and those who fear stigma), accessibility (to more potential partners), and affordability [6]. Around 2003, researchers began to document large groups of MSM reporting meeting their partners online [7]. In probability, venue-based surveys, up to 85% of MSM report some recent Internet use [8]. As many as 94% of MSM report ever having had sex with a partner met online, and up to 78% report sex with an online partner in the prior six months [7-12]. If we use a recent CDC estimate of the U.S. MSM population as 3-5% of the adult male population [13], it is possible to extrapolate that between 2000 and 2010, a virtual gay city of 3.6-6.0 million MISM was built. Industry estimates suggest this may be a gross underestimate. Clearly, the Internet represents an incredibly popular venue for MSM to meet men for sex, and likely dwarfs all other methods and venues combined [2].

The Internet and HIV/STI risk

Since the early 2000s, studies have identified MISM as disproportionately at risk for acquiring HIV and other sexually transmitted infections (STI) [14-17]. Some of the earliest studies looked at whether this was simply a correlation that could be explained by other factors, or whether the Internet had a direct role in increasing HIV/STI transmission risk. In 2000, Klausner et al.[17] traced a syphilis outbreak in San Francisco and found that the only risk factor this sexual network had in common was seeking partners online. Similarly, Tashima et al.[18] (2003) documented cases of HIV transmission occurring through online sexual liaisons. Nevertheless, it is still not clear whether the Internet and other new media actually increase risk behaviors. The main way the Internet may increase STI/HIV risk is likely to be through the efficiency of finding sexual partners, thereby increasing the number of sexual liaisons. Rosser et al. in our 2001 *Men’s INternet Study-I (MINTS-I)*[4] directly compared Latino MSM’s risk behavior in online and offline liaisons, using a within-subject comparison design. While most men reported not engaging in high-risk sex with online partners, those who did reported twice the number of male partners with whom they engaged in risk in online versus offline liaisons. However, they also reported twice the number of male partners in online to offline liaisons, meaning that the proportion of unsafe sex across online and offline liaisons was constant. So, while the probability of risk behavior was constant, the frequency of potential exposures was greater with online partners. These findings were repeated in a subsequent study (MINTS-II) of men of several different races/ethnicities [5].

In addition to increasing the number of high-risk sexual encounters, the Internet may modify an individual’s risk through: increased access to a diverse pool of men; increased ability to ask for, negotiate, and receive what one is looking for in sex; changes in sexual negotiation and HIV disclosure (e.g., through online profiles); and self-selected changes in sexual mixing and networks (e.g., self-identification in profiles as into only safer sex sites versus membership in bareback.com).

Given the high usage of new media by MSM for sexual, social and community connections, and the increased risk for HIV associated with using the Internet for seeking sexual partners, the need to take advantage of new media technology as an intervention for HIV prevention in MSM is evident and critical. Fortunately, the global reach and multidimensionality of new media makes it ideal as a medium for effective interventions that can reach unprecedented numbers of people. So far, studies assessing the desire for, feasibility and acceptance of such interventions highlight the possibilities and potential challenges inherent in program development while also uncovering the methodological challenges of the technology-based research itself. The next section of this article provides insight into the strengths and challenges of online methodologies in formative research as well as in intervention efforts.

The Potential of New Media for HIV Prevention

Advances and challenges in technology-based research methods

A key development in behavioral research has been the identification of computer-assisted survey interviews (CASI) as a gold standard method [19]. It has been found that participants typically report higher rates of sexual and other socially proscribed behavior in computer-delivered surveys than in pen-and-paper or interview formats [19], an important finding for MSM. Recruitment has also been improved by technology; namely, the Internet has earned an unparalleled reputation for recruitment of unprecedented numbers of MSM (including high-risk MSM) into online studies [14,20,21]. This in turn has enabled researchers to conduct the first national studies of MSM, to study health risks of MSM using large samples [22], to study Internet-specific risks [23], and to propose novel research designs which were unfeasible even ten years ago [24].

However, issues such as human subjects protections, data security [25-28], and retention of participants concern researchers using newer technologies. To advance methods, our team, among others, has published a number of protocols addressing these threats to study validity and human subject protection [14,26-35]. While Internet studies are easy to conduct, they remain challenging to conduct rigorously and well. A key challenge for the next decade of research is to study and identify methods for improving and ensuring the representativeness of MSM samples. As we learn more about Internet samples and their demographic characteristics, it should be possible to approximate more closely a truly representative sample of MSM.

Another concern has been that new technology perpetuates a digital divide between those with access to (or who regularly use) computers, the Internet, or other media and those who do not. However, in a Puerto Rico-New York distance study among low income Latinas, Carballo-Diéguez et al.[36] demonstrated the acceptability of using Skype for distance face-to-face interviewing, automated phone programs for sexual diaries, and computer assisted interviews (CASI) for surveys.

As with quantitative methods, qualitative research methods have the potential to be enhanced by new technology. For example, focus groups that are conducted using a chat board format can potentially increase participants' willingness to discuss highly sensitive topics. We recently recruited 79 MSM into synchronous focus groups with asynchronous bulletin board follow-up to discuss participants' gay cyber-pornography use and its potential relationship to HIV risk. Our experience was positive and the data yield, rich. While the written texts might be shorter than a transcript of offline groups, they were direct and focused. Participants created their own chat names, which increased confidentiality by allowing participants to remain anonymous to each other. This may have enhanced participants' willingness to discuss highly sensitive and personal topics. At the same time, this online method of focus group lacks some of the strengths that in-person focus groups

provide, such as the data produced by group interactions and non-verbal communication. Figure 1 lists the strengths and weaknesses of conducting online synchronous and asynchronous focus groups that we found from our work on three online focus group studies.

The evolution of Internet-based HIV prevention interventions

To date, we have observed at least four generations of Internet-based HIV prevention interventions for MSM [26] (see Figure 2). Much of the earliest efforts attempted to translate offline HIV prevention programs into online formats. For example, peer education outreach in bars and bathhouses was re-conceptualized to become online peer education in chat rooms. The main strength of this approach is that it ensures there is an HIV prevention presence online. Indeed, online counselors confirm that some individuals have reported benefit from talking to an online doctor or outreach worker about safer sex (although no rigorous evaluations of this approach exist). However, the main weakness of this intervention is that it is very (human) staff intensive and therefore difficult to standardize and scale-up; in other words, it is not built to the strengths of the Internet and is unlikely to be sustainable as a long-term solution.

The next generations of Internet-based HIV prevention efforts continued to adapt off-line interventions, but took more advantage of the technology available. These suffered from limitations similar to those of earlier generations. Eventually, interventionists developed innovative ways to use the Internet, forgoing any vestiges of offline interventions. At least three of these interventions have been rigorously evaluated with MSM. Here, the primary challenge has been to retain sufficient participants to have meaningful results. In Amsterdam, Davidovich, de Wit and Strobe [37] tested the effects of using tailored messaging emails to counsel MSM entering relationships through online hook-ups. Also in the Netherlands, Kok et al.[38] created a SecondLife like cruise where “gay” avatars oriented men to the ship and the cruise while providing HIV prevention and counseling information. In Wyoming, Bowen et al.[39] used visual stories (text bubbles with interactive graphics) to promote HIV testing and to reduce unsafe sex. All three trials showed the potential of the Internet to advance HIV prevention using innovative methods and curricula. However, two of the trials [37,38] experienced attrition rates of 70-80% over 3 months, preventing meaningful interpretation of results, while the third [39] utilized a one-week follow-up period and therefore did not attempt to measure behavior change. Thus, retaining participants in online interventions and demonstrating behavioral effectiveness have emerged as dual challenges for Internet-based HIV prevention [20].

The 2004 *Men’s INternet Sex II (MINTS-II)* study had an intervention component in which the investigators (the authors of this article) developed and pilot-tested a theoretically-sound, Internet-based HIV prevention intervention for MSM. The resulting product, *Sexpulse*, is based on two models of behavior change, the Sexual Health Model [40, 41], a comprehensive sexual health approach to human sexuality which we had applied previously (offline) to HIV prevention [42,32], and principles of persuasive computing [44], a technology-based approach to modifying human behavior. It is comprised of 14 modules of highly-interactive games and activities (lasting 3-4 Internet hours). Testing of the intervention included alpha, beta and gold tests performed in a usability laboratory, followed by online multiplatform pilot testing. Ultimately, we tested the efficacy of the new intervention in an online randomized controlled trial over 12 months ($N=650$ MSM) [45].

The results (reported elsewhere [12]) confirm that Internet-based HIV prevention interventions hold promise as an effective new approach to HIV prevention for MSM, at least in the short-term [45]. In this intervention, level of critical reflection appeared to assist MSM to label their own behavior as risky, which in turn may have been key to their

committing to change and enacting risk reduction [46]. Further, through using a strong retention protocol, this study demonstrated acceptable retention (76-89%) over twelve months [45]. Given the potential of this intervention, the new challenge for online HIV prevention appears to be demonstrating long-term risk reduction, then conducting dissemination trials, and hopefully adapting the intervention for other risk populations.

Conceptualizing New Media as a Tool for HIV Prevention Intervention

Designing technology-based interventions

In designing new media interventions, it is critical to design to the strengths of the medium or technology. A common beginning mistake is to conceptualize the Internet or other new media as serving only one purpose, for example as a tool for recruitment, a risk factor for HIV, or a vehicle for delivering an intervention. As shown in Figure 3, building to the strengths of the new media implies appreciating the Internet as simultaneously a tool (method or technology), an environment (or structure), and a virtual community (with its own culture, styles of communication, etc.) [26]. Our experience suggests that the Internet is a revolutionary technology that has changed what we do (tool), how we relate (our environment), and who we are (community). Thus, in designing an effective response, it is important to build to the multidimensionality offered by the Internet. As discussed above, this has not always been the case. Current health websites appear as libraries of information about HIV prevention rather than true educational experiences for MSM. As web 2.0 technology becomes more common, opportunities exist to transform these sites from static sources of information to components of prevention programs.

Typologies of men who use the Internet to seek sex with men

The developers of HIV prevention interventions for the Internet and other new media must recognize that not all MSM approach technology in the same way. To help study MSM's new media use, and to better understand how to develop effective HIV prevention programs using new media, we propose two typologies. The first typology adapts the Diffusion of Innovations theory [47] to MSM. "Early adopters" of new media include those who report using the Internet for sex since the early 1990s, and who established the norms for online sex, dating, and porn sharing. They also formed the first new media social-sexual cultures, and they represent many of the informal and formal leaders of the gay virtual community. We speculate that this group may disproportionately include those attracted to innovation, including entrepreneurs and risk-takers (probably both personally and professionally). "Mainstream adopters" are those who began using the Internet for sex between the mid-1990s and mid-2000s, and represent the majority of MSM. Rather than being lured by the novelty of Internet technology, mainstream adopters began using the Internet for sex-seeking due to its size, affordability, anonymity, and overall greater choice and promise. Mainstream adopters likely represent the largest, most diverse, and therefore most representative group of MSM. Finally, "late adopters" include older, more closeted men who may be attracted to the Internet because of the greater anonymity, and MSM who have only recently begun to use the Internet. This group also includes the youngest men, who may prefer other new media but use the Internet as a secondary method for meeting men.

A second typology, adapted from educational theory, divides users into two groups: a "digital (or Internet) natives," defined as those for whom digital technologies already existed when they were born, and hence who have grown up with digital technology such as computers, the Internet, mobile phones and MP3s; and "digital immigrants," who grew up without digital technology and adopted it later [48]. Applied to MSM, "Internet sex natives" can be defined as those who across their sexual lives have always had access to Internet porn and sex sites, and "Internet sex immigrants," which includes those men who

accessed the Internet after experiencing gay life first offline (e.g., in bars, bathhouses, and bookstores, and through gay videos and magazines).

In both typologies, each cohort likely differs on several variables: in their relationships to new media, their experiences of being gay, their exposure to HIV prevention, and their risk tolerance and behavior. Hence, each cohort has different needs in online HIV prevention. Ultimately, HIV prevention messages must be transferable to numerous technologies, and accessible to both Internet “natives” and “immigrants”. If a program is to remain relevant to MISM, interventionists must be both proactive and reactive, developing programs that capitalize on emerging trends while maintaining existing programs.

What do MISM want from online interventions?

The design of Internet HIV prevention programs also requires an understanding of how MISM seek information on their sexual health and what kinds of information and advice they might want from interventions. The survey portion of the *Men's INternet Study-II (MINTS-II)* queried 2716 MISM about their methods and means of sexual health information-seeking, as well as their opinions on what types of content would be interesting and acceptable in an online sexual health promotion campaign/intervention. Table 1 shows which methods participants used to get information about MSM, HIV, STD and sexual health. From this table, three data are important to note. First, most MISM reported using online methods to seek information. Second, the most common online health-seeking involves MISM entering key terms into a search engine. Third, only a small minority (29%) report using government health websites including cdc.gov, which many health professionals consider the “gold standard” for health information in the US [49].

HIV-negative and untested MISM appear to engage in four distinct patterns of sexual health-seeking [49], which likely determine what kind of information they receive and the quality of that information. A high health-seeking group appear to engage in extensive methods of health-seeking, both online and offline. A second group reports only using online methods. A third group predominantly uses offline methods (e.g., seeing a physician or visiting an STI clinic) supplemented by search-engine searches, while a fourth group report not engaging in sexual health-seeking behavior [49].

In 2004, the MINTS-II team also conducted one of the largest assessments of what MISM want in online interventions [50]. As shown in Table 2, participants reported high interest in a broad range of sexual health topics as part of potential HIV interventions. Notably, interest in “traditional” HIV prevention topics, such as learning how to talk about safer sex, and learning to use a condom correctly, ranked 20 and 21 out of 24 topics. This data suggests that future HIV prevention interventions need to adopt a comprehensive sexual health approach integrating HIV prevention materials as appropriate into the range of sexual health topics.

Given the ready availability of highly sexually explicit websites, MINTS-II also investigated the acceptability of sexually explicit media in HIV prevention efforts (see Table 3). With the possible exception of images of male-female sex, which were only endorsed by 75% of participants, almost all MISM reported highly sexually explicit images as acceptable. This was further confirmed in usability experiments where MISM participants repeatedly searched for sexually explicit media in our beta tests, commenting that they expected online HIV prevention interventions for MISM to be highly and constantly sexually explicit. As one respondent opined, “I expect to see an image of a naked man or men having sex on every page, else I won't stay [on the site].” With retention an important concern, the level of sexual explicitness needed to hold and retain MISM's interest in online HIV prevention

appears to be far more explicit and frequent than either is currently practiced in offline interventions or available in most prevention programs.

Challenges and Future Directions in Developing Internet Interventions

One of the biggest challenges to Internet-based HIV prevention is that it tries to integrate two research cultures: public health and Internet software development. The American approach to public health research is focused around randomized controlled trials, which lock down and test specific interventions. In contrast, software, and particularly Internet software, is typically developed and tested using iterative methods in which each bit of feedback or experience leads to an improved version of the software. While each approach has its advantages, merging the two can be a challenge. Similarly, by the time some interventions have been tested and are ready for market, the technology has changed enough to, at times, require a retooling so that members of the targeted demographic perceive the intervention as current and relevant. A third limitation relates to funding. The costs inherent in developing online trials are significant and usually beyond the current levels of small/pilot grants from the NIH. Hence, levels of funding in the US appear to be an impediment to developing science in this area.

Furthermore, in the US, interventionists still treat the Internet as a local tool, ignoring the enormous potential of the World Wide Web. To advance Internet-based HIV prevention, we urgently need to test methods that can be used in multinational investigations. Three kinds of studies are warranted: studies focused on countries with high Internet penetration to demonstrate how multinational studies can be undertaken efficiently and simultaneously; pilot studies in low- and medium-penetration countries to identify how Internet studies can be conducted in digitally-constrained environments; and studies across countries with differing Internet penetration to identify how intervention programs may be adapted and synergized in order to conduct global surveillance and trials.

Based on studies of technology usage in countries with high-Internet penetration, the Internet and, by extension, iPhones[®], iPads[®], Android[®] and other devices with visual capacity, appear the most promising technologies for HIV prevention. In 2009, 74% of American adults, and about 23% globally, used the Internet and 83% had cell phones or smartphones [51,52]. In countries with low Internet penetration, cell phone usage is almost universal, creating exciting opportunities for reaching MSM with technology-based HIV/STI prevention interventions even in resource-limited settings [53].

Conclusion

The first decade of Internet-based HIV prevention research has been productive. Studies that test new technology interventions represent an exciting approach to HIV prevention, but in our experience need to be truly multidisciplinary and are quite difficult to do well. In particular, while recruitment is much easier, retention appears a critical challenge. Computer-mediated surveys have emerged, at least domestically, as the new gold standard for collecting socially sensitive information, while qualitative online studies are yielding rich data using multiple formats and platforms. One of the most important principles in developing new media studies is to build “to the strengths of the new technology” as this opens up new research methods, designs, and interventions. The ultimate goal of highly effective HIV prevention online interventions has not been reached yet, but appears realistic and achievable.

As we commence the second decade of new technology HIV prevention research, we encourage researchers to take on the challenge of new media research, because of the new

opportunities it offers, and because the emerging science of e-Public Health holds such potential to significantly impact the spread of HIV locally and globally.

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*Conducting online synchronous and asynchronous focus groups***Strengths:**

- The use of the Internet removes geographic barriers to participation, allowing MSM across disperse regions to participate
- When participants are allowed to choose their own screen name, online focus groups can provide superior confidentiality -- including anonymity to other participants —which may yield more honest, less censored answers
- All participant comments are date and time stamped allowing for easier linkage of attributes to participant comments when using qualitative data analysis software, (e.g., NVivo)
- Content from the synchronous chat can be saved as a word processing document. Thus, transcripts are immediately available, decreasing the lag time between data collection and analysis and enhancing the use of the constant-comparative method
- If participants are familiar with a chat environment, conversations between participants are easy to facilitate
- Because participants provide shorter, more direct responses to questions, more questions can be asked of participants than in an offline focus group, allowing the exploration of more topics in the same amount of time
- The online environment allows the facilitator to easily poll participants about a topic, share poll results, and engage participants in a conversation about their responses
- The online environment allows for the easy incorporation of media, including pictures, videos, and website links, into the focus group
- Follow-up questions can be asked using asynchronous message boards. Most participants appear willing to participate in the asynchronous message board discussions
- Potentially, online focus groups are cheaper. Though they require a larger staffing and recruitment budget (because of online advertisement), transcription costs are eliminated

Weaknesses:

- Because of a higher no-show rate, more potential participants must be recruited for each focus group
- Participants less familiar with a chat environment might have difficulty following the conversation since multiple persons simultaneously post comments
- Because multiple participants can post a comment simultaneously, the pace of data collection is quick. As a result, interview guides should be more structured, listing potential probes. Probes are more effective when asked to the group rather than an individual
- Online focus groups require participants to have Internet access. Thus, the method is not recommended if the demographic of interest is persons with limited access to the technology
- Because participant responses are shorter, they are less likely to use stories to illustrate a point. However, some individual stories can be captured using asynchronous message boards as a follow-up to the synchronous focus group
- Lack of in-person participation may result in less sense of intimacy
- Potentially, participants can have multiple windows open during an online focus group, diverting their attention from the discussion. The facilitator would have no knowledge of this and would therefore be unable to redirect participants' attention
- In general, participant comments posted on the asynchronous message boards appear to respond to the facilitator's questions without considering the responses of other participants
- Conducting a synchronous focus group requires more staff than might be necessary in an offline environment. Staff must facilitate, provide technical support, and backup data while it is being collected to ensure data is not lost in the event of a technological malfunction

Figure 1. Strengths and weaknesses of conducting online synchronous and asynchronous focus groups.

Generation	Descriptions	Advantages	Disadvantages
1 st	Translations	Previously demonstrated effective	Text heavy, boring, Unlikely to be effective online
2 nd	Translations with bells and whistles	More user friendly	Still has first generation limitations
3 rd	Hybrids	Components of the original can be retained	Online/offline features rarely equivalent
4 th	Online	Built on strength of the internet	Expense and expertise needed

Figure 2.
The development of online intervention research

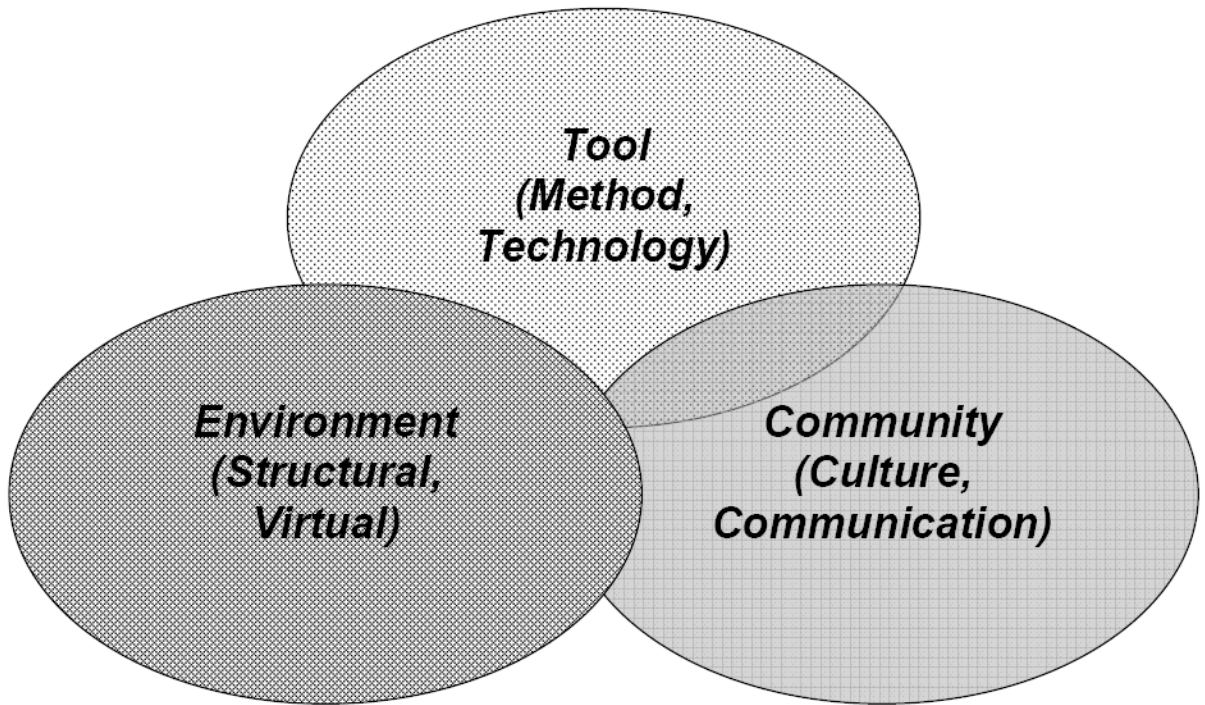


Figure 3.
A conceptualization of the Internet as a multidimensional medium for HIV prevention

Table 1
Where and how MSM get information on sexual health

Data from the *Men's INternet Study-II (MINTS-II)*, 2005. (N=2,716)

In the last 12 months, which of the following have you used to get information about MSM, HIV, STD & sexual health?

	<i>N</i>	%
a. Internet search engines	2,193	76
b. Gay web sites	1,926	67
c. Internet health sites	1,604	56
d. Bulletin boards/blogs	867	30
e. Government sites (CDC)	830	29
f. Media sites (NY Times)	610	21
g. Health insurance	380	13
h. Email health provider	275	10

From: Wilkerson et al. (2008) [49]. Reprinted with permission.

Table 2
Interest in sexual health topics for an online intervention

Data from the *Men's INternet Study-II (MINTS-II)*, 2005 [50]. (N=2,716)

	Highly/Somewhat Interested (%)	Somewhat/Not at all Interested (%)
<i>Interest in Specific Content for an Online Sexual Health Intervention</i>		
How to be a better lover	86	5
Men's physical sexual health (e.g., testicular cancer and prostate health)	86	6
Building a healthy relationship	85	6
Keeping a long term relationship	85	6
Understanding my sexual history and how it affects me	83	6
Developing an intimate relationship	83	7
Ways to improve how I feel about my body	77	8
Aging as a gay man	76	11
Ways to feel better about myself	76	10
How to have anal sex without pain	74	11
How to date men offline (i.e., in real life)	72	11
Dating men online	70	12
Developing a long-term plan to minimize getting HIV and STDs (or giving it to others)	69	13
Ways to improve how I feel about my genitals (i.e., penis and testicles) and ass	66	13
Negotiating safer sex online	66	13
Ways of coping with depression	66	15
How to talk about sex	65	13
Ways of coping with anxiety	64	16
Exploring the relationship between my sexuality and my spirituality	63	20
How to talk about condoms and safer sex	62	14
Watching how to put on a condom, correctly	52	20
Help with coming out (e.g. to family)	48	28
How to evaluate my alcohol and drug use	41	33
Ways of coping with sexual abuse	32	38

Table 3
Acceptability of sexually explicit media for online HIV interventions

Data from the *Men's INternet Study-II (MINTS-II), 2005*[50]. (N=2,716)

	Totally or Somewhat Acceptable (%)	Totally or Somewhat Unacceptable (%)
<i>Acceptability of Sexually Explicit Media</i>		
Images of men fully nude	95	2
Pictures of two men kissing	94	2
Seeing sexually explicit images	93	2
Use of formal sex terms (e.g., anal sex, masturbation)	93	2
Explicit demonstration of how to put a condom on	92	2
Images of men masturbating	92	3
Polite/indirect language describing sex (e.g., make love)	92	3
Reading sexually explicit text (e.g. stories about sex)	92	3
Images of men engaged in oral sex	92	3
Images of men engaged in anal sex	91	3
Pictures of penises	91	3
Street language (e.g., sucking, fucking, jerking off)	90	5
Hear sexually explicit audio (e.g., men taking sexually)	88	3
Images of men engaged in group sex	87	7
Animations (e.g., cartoons) of sexual activity	84	6
Images of male-female sex	74	13