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Developing an Online Health Intervention for Young Gay and Bisexual Men

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Abstract

Young gay and bisexual men who have sex with men continue to experience increases in HIV incidence in the U.S, highlighting a need for competent health services, while the prominence of the internet in their social and sexual lives call for novel preventive modalities. Towards this goal, we adapted an efficacious in-office HIV risk reduction intervention, for online delivery. This paper describes the development of the online intervention and highlights the results of interviews and focus groups with the original intervention participants regarding effective adaptation and online delivery recommendations. The final intervention incorporates strategies for overcoming barriers to online intervention with this population, capitalizing on the unique strengths of online intervention delivery. The systematic process described in this paper can be used as a template for other researchers to develop online risk reduction programs and fills an important gap in the field's ability to maximally reach a critical risk group.

Keywords

gay and bisexual men; HIV prevention intervention; internet; social networking

INTRODUCTION

Gay, bisexual, and other men who have sex with men represent the population most severely affected by HIV in the U.S. and one of the only risk groups in the U.S. for whom new HIV infections continue to rise (1, 2). Gay and bisexual men account for more than half of all new HIV infections; one in five men who have sex with men in major urban areas in the U.S. is infected with HIV (3). Gay and bisexual men in the U.S. are 44 to 86 times more likely to be diagnosed with HIV compared to heterosexual men (1), with most new infections occurring among young gay and bisexual men. As such, in 2009, 73% of new infections among 13-24 year-old males were attributed to male-to-male sexual transmission

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(4). Primary HIV risk factors for this population include unprotected anal sex and drug and alcohol use, especially before and during sexual intercourse (1), which can impair decision-making regarding sexual safety (5). Given the increased incidence of HIV infections among young men who have sex with men, developing highly accessible, cost-effective prevention methods for this group represents a key public health goal.

“Emerging adulthood” is a segment of the life course, between the ages of 18 and 29, during which individuals in the U.S. have attained adult status legally, physically, and physiologically, though they have not yet assumed the roles and responsibilities of full adulthood (6). This period of profound change encompasses decision-making about educational achievements, job and career choices, relationship and family formation, and future goals. Attitudes and behaviors surrounding sexual risk and substance use are still being crystallized, and their co-occurrence is highly normative during this period. Furthermore, sexual risk peaks during emerging adulthood, while youth initiate sex before they have enough motivation or skills to protect themselves (5, 7). Drug use and risky sex are commonly initiated during this stage and often become yoked to the process of self-discovery (8). As emerging adulthood presents a set of unique circumstances, devising HIV risk prevention interventions specifically tailored to emerging adult gay and bisexual men remains paramount.

For young gay and bisexual men in particular, HIV risk factors in addition to unprotected sex and substance use include low awareness of HIV status, complacency about infection, and stigma and homophobia. A CDC study found that more than half of HIV-positive young gay and bisexual men in 21 large U.S. cities were unaware of their HIV status, which may potentially be associated with HIV complacency, underestimates of personal risk, or recent infection (9). As young gay and bisexual men did not live through the early HIV epidemic in which severe physical symptoms and suffering were commonplace among the gay community, they may not have developed the sense of health threat or vulnerability to contracting HIV infection that may protect older cohorts of gay men (9). Additionally, as increasingly effective HIV treatments have existed across their sexual development, young gay and bisexual men may believe in the ability of effective medical treatments to offset negative consequences of infection through unprotected sex.

Stigma and homophobia also threaten the health of young gay and bisexual men, both directly, through structural barriers such as lack of sexual education relevant to sexual minorities in school settings (10, 11), and indirectly, through victimization and harassment or systems of legal or social inequality, whose messages can be internalized by gay and bisexual men leading to HIV risk behavior (12). These minority stressors have been shown to reduce the effectiveness of health interventions for sexual minority men (13), and to negatively impact the mental health of this population. These combined health-depleting forces form a key part of the syndemic condition threatening the health of this high-risk population. Under these conditions, the health of young gay and bisexual men is compromised from multiple, co-occurring health-depleting influences, such as the inability to enact risk-reduction behaviors because of mental health problems, such as depression and anxiety, which are ultimately rooted in pervasive experiences with minority stress across early development (14, 15).

Another factor related to HIV risk among young gay and bisexual men, and one that has clear implications for developing novel prevention methods, includes a growing reliance on electronic, specifically social networking, technology for initiating HIV risk behavior (e.g., meeting sex partners online; (16-18). For young gay and bisexual men, the internet represents a primary venue for meeting sex partners and learning about sex (19). In fact, it has been estimated that the gay and bisexual online community may be supplanting

traditional venues for socialization and sexual encounters, with the number of virtual participants surpassing the actual population of several large U.S. cities (20). The majority of the current cohort of young gay and bisexual men have had access to the internet and social networking technology across their social and sexual development. Therefore, online social networking technology represents a readily accessible venue for reaching the current “internet native” cohort of young gay and bisexual men (20).

In-office health interventions, while generally effective for those who receive them (21), may not sufficiently target the most at-risk individuals who are often not linked to services (22-24). Gay and bisexual men are significantly more likely to delay or avoid seeking health services compared to heterosexual men due to perceived provider bias and a relative lack of visibility of competent services for this population (25). Thus, the limitations of in-office health promotion interventions may be particularly pronounced among young gay and bisexual men who seem to primarily receive health information online and for whom the internet represents a primary source of socialization, communication, and learning (19).

Not surprisingly, gay and bisexual men report strong willingness to receive health promotion intervention services online (23) with a large majority reporting already receiving sexual health information through online searches and websites. These men also indicate significant openness to engaging in health-related online communication with knowledgeable providers about mental, sexual, and relationship health, in addition to discussing substance use, HIV risk reduction, and developmental influences on both (23). Young gay and bisexual men, in particular, have been shown to be helped by online interventions, with one recent study showing that simply writing about minority stressors online significantly improved psychosocial functioning and was particularly helpful for those young gay men with relatively few social outlets (26).

In our own prevention intervention research, we were intrigued that one-quarter of the young gay and bisexual men recruited for an in-office motivational interviewing intervention to reduce HIV risk and related substance use behavior refused to participate in the intervention component, but agreed to be followed for assessment visits across the 12-month study. Our team initially interviewed 14 participants enrolled in this study--the Young Men’s Health Project--to determine factors that led to their intervention non-participation or drop out, despite their retention for follow-up assessment visits. Results of these interviews uncovered numerous reasons for their lack of full engagement, including the perceived lack of convenience and accessibility of an in-office intervention. Additionally, those interviewed expressed enthusiasm for the possible development of a modified version of the study to be delivered online, capable of overcoming barriers to convenience and accessibility as well as promoting greater comfort to participants who may be reluctant to discuss sensitive health issues in person. Participants in these preliminary interviews also alerted us to potential concerns that young gay and bisexual men might have about a social networking health intervention, including uncertain privacy and a possible lack of genuine connection between counselor and participant in the virtual terrain.

The in-office Young Men’s Health Project (7, 27-29) delivered motivational interviewing across four one-hour sessions to reduce substance use and sexual risk-taking behavior among 204 young (ages 18-29) gay and bisexual men. A full description of the intervention is available elsewhere (30). Because its core principles rely on therapeutic, change-oriented communication readily transmitted across any communication platform, motivational interviewing has demonstrated robust effects across various delivery modalities, including telephone and internet (31-33).

The vast majority of participants in the original, in-office intervention (95%) indicated using the internet and social networking platforms such as Facebook. Across the U.S., 72% of emerging adults use social networking websites (compared to only 39% of adults over 30), with the majority of those using Facebook daily for sending instant messages to friends, posting bulletins, and engaging in group discussions (34). Given the role of the internet on their health-risk behavior of young gay and bisexual men; compelling evidence that gay and bisexual men rely heavily on the internet for seeking health services; and the suitability of motivational interviewing for delivery via novel modalities, we were encouraged that social networking websites, and Facebook in particular, could be put to service as a particularly promising health promotion modality for at-risk young gay and bisexual men, who are especially difficult to reach by traditional methods.

The present study describes the adaptation of the Young Men's Health Project, an in-office health promotion intervention, for online delivery via social networking technology. The adaptation was conducted using the results of three stages of focus groups and interviews with gay and bisexual men that built on each other to successively refine the resulting intervention. With the intention of providing the research and practice communities with guidelines on how to modify existing interventions to better meet the needs of intended recipients, we present here both the development process and resulting content of the adapted intervention. We also draw attention to the integral role that members of the target population can have in developing programs intended to improve their own health and well-being.

METHODS

Participants

The Young Men's Health Project (YMHP)—Participants in the current project were drawn from the original YMHP study so that they could inform the modification of the in-office intervention based on their experiences with the project and perspectives as young gay and bisexual men. YMHP was a randomized controlled trial (RCT) focused on reducing illicit substance use and sexual risk behavior (7, 27-29) in young gay and bisexual men. Between September 2007–2010, 315 participants in the New York City (NYC) metropolitan area participated in the study. Eligible participants were male and at least 18 years of age; reported a negative or unknown HIV status; had used drugs – including cocaine, methamphetamine, gamma hydroxybutyrate (GHB), ecstasy, Ketamine, or amyl nitrate – on at least 5 of the 90 days prior to baseline assessment; and had at least one incident of unsafe anal sex with a high risk partner (HIV+ or unknown-status main or casual partner) in the last 90 days. Participants were recruited through an active and passive multi-method approach implemented in diverse geographic areas of NYC using techniques previously shown to be effective in the recruitment and enrollment of ethnically and racially diverse sexual minority men (35-37). Upon completion of a two-hour baseline assessment, participants were randomized to either four one-hour sessions of motivational interviewing therapy focused on sexual risk and substance use, or four one-hour content-matched education sessions. Participants were then followed-up at 3, 6, 9 and 12 months post-baseline to measure possible changes in sex and drug use risk behavior and other self-reported psychosocial aspects, including attitudes towards HIV risk, overall mental health, substance/alcohol related problems, and minority stressors. All procedures were approved by the Institutional Review Board of the investigators' institution.

MiCHAT (Communication about Health, Attitudes, and Thoughts)—The primary goal of the present study, as presented to participants, was to learn from participants' experience of being involved in YMHP, including their attitudes towards the intervention,

their perceptions of its benefit, and suggestions for improvement. We also indicated that we were interested in learning their attitudes and perceptions regarding an online counseling program to reduce sexual risk and substance use. We explicitly stated that we intended to use the information they provided to help us re-design the current YMHP intervention into a counseling program delivered over the internet, specifically using the unique features of Facebook.

Participants in the current project represented a subset of YMHP study participants who exhibited varying degrees of intervention engagement and behavior change. That is, five of the present study's participants declined to participate in YMHP, whereas seven completed three or four sessions, while one participated in only one session. A total of 63 former YMHP participants were contacted for the current study. By including participants who exhibited various degrees of intervention engagement and behavior change, we expected to receive a wide range of feedback regarding the creation of an effective, engaging online version of YMHP. In revising YMHP for online delivery, we deemed it important to consider the views of those who may not readily enroll in prevention interventions, which could reveal perceived barriers and potential solutions to any intervention's appeal and effectiveness, in addition to perceived needs or concerns that may not be adequately addressed by existing prevention paradigms. We also believed that our intervention modification could be optimally informed both by individuals who experienced the original intervention's intended behavioral effects and by those who were seemingly unaffected by them. Frequent Facebook use was the other requirement for selection. The demographic information of the 13 participants who took part in the MiCHAT development process is reported in Table 1 according to YMHP completion status.

Procedures and Data Analysis

The goal for the first phase of MiCHAT development was to conduct focus groups with 13 former YMHP participants to solicit their views of HIV prevention; experiences with YMHP; and attitudes towards online HIV prevention programs, specifically a program to be delivered via the instant messaging (IM) feature of Facebook, currently the most popular social networking site in the U.S. The team ran queries and analyses in the YMHP databases to identify individuals who met the aforementioned selection criteria and who had also indicated interest in future study participation. Research assistants contacted these former YMHP participants and invited them to participate in a two-hour focus group. Participants whose schedules could not accommodate the focus group calendar, or who were not comfortable sharing their views in a focus group format, were given the opportunity to have a personal interview with the study's two co-investigators, who conducted all focus groups and interviews. One of the co-investigators is a clinical psychologist who had provided training and supervision to the counselors who delivered the original YMHP intervention, while the second co-investigator is a social psychologist who had served as project director on the YMHP study; both have expertise in intervention development. During the audio-recorded focus groups and interviews, the co-facilitators followed the open-ended interview guide (see Appendix for sample guide) designed to gather appealing and effective strategies for adapting the in-office YMHP intervention for online delivery. The facilitators took notes of all conversations that occurred during the focus groups and interviews. In addition to expressing their views in response to the co-facilitators' questions, participants helped generate an outline of the proposed intervention, including session sequence and content. Participants were paid \$30 for their participation in this phase.

Once the first round of focus groups and interviews were completed, the study's co-investigators reviewed their notes and listened to the audio-recordings when necessary in order to isolate themes generated by these discussions and identify portions of the original intervention that needed modifications and elements that were novel and whose addition

could benefit the online intervention. These modification targets were then integrated into the original YMHP treatment manual. A second round of focus groups and interviews was then conducted with the same participants who provided feedback in the first round in order to present them with the proposed modified intervention and gather their input a second time before launching the online intervention. Lastly, input into the intervention's structure and content was sought from the counselors who were ultimately trained to deliver the resulting intervention.

Qualitative Focus Group and Interview Guides

We developed printed guides to provide a framework for conducting the focus groups and interviews. We created three slightly different versions of these guides, tailored according to whether the respondents had enrolled in the intervention and the number of sessions they had attended. We expected that there would be a qualitative difference between these groups of former YMHP participants; therefore, we intended to ascertain the specific reasons that some participants chose not to enroll in the intervention, or attend only one or two sessions. Aside from these group-specific inquiries, the remainder of the questions were common across all participants in the development phase of this project.

The qualitative guides included specific questions seeking to ascertain participants' suggestions for maximizing the appeal and effectiveness of a motivational interviewing program intended to help young gay and bisexual men consider their options to reduce their drug- and sex-risk behavior (e.g., "What would you expect to see in a study intended to help people consider their options to change their drug and/or sex behavior?"). We also asked participants to share their thoughts regarding perceived differences between face-to-face and online chat discussions, including any perceived benefits and drawbacks of this novel intervention delivery format, and possible ways to remove barriers to effective online counseling (e.g., "What would be some benefits of participating in such a study online?"). Our questions asked participants to reflect on how the relationship with a counselor would be affected by the loss of direct visual and auditory communication given the online format, and how this would impact participants' ability to relate to their counselor and exchange information effectively. We also asked participants to share their concerns regarding privacy and confidentiality, and to indicate their preferences for session frequency and duration. Examples of these questions for participants who completed three or more YMHP sessions are presented in the Appendix.

RESULTS

Participants' suggestions for modifying the original in-office motivational interviewing intervention for online delivery can be categorized and described in relation to 1) the *process* of intervention transformation; 2) the addition of new *content*; and 3) participant *concerns and* respective *solutions*. The following sections describe these categories of MiCHAT development as informed by focus group and interview participants, who were chosen to represent the population for whom the intervention is intended.

Process of Intervention Transformation

Participants were intrigued about the prospect of contributing to the modification of the familiar in-office intervention, and underwent a gradual process of increasingly contributing towards the configuration of the new 'program,' as they preferred to label it, rather than an 'intervention.' Overall, the first round of focus groups and interviews resembled a standard qualitative inquiry during which the study's co-investigators posed questions and participants provided answers. During the second round of qualitative inquiries, participants were presented with the ideas they had generated during the first meetings, after those had

been integrated in the design of the new program by the co-investigators. Recognizing their suggestions as important components of the new program presented in this second round, the participants demonstrated a heightened level of engagement with the content and structure of the intervention and continued to brainstorm means of finalizing the sessions and optimizing the communication between counselors and prospective study participants. The second round of focus groups and interviews was characterized by a notable change in group dynamics, including increased collaboration among participants and researchers to ensure the program's success, and especially among participants themselves who worked together to identify potential barriers to receiving this online intervention and to generate optimal strategies to address them.

New Intervention Content

The most salient additional suggestions to emerge from the focus groups and interviews highlighted new intervention content, including (1) the counselor's thorough introduction of themselves and the program, as well as the facilitation of safe, open participant introductions and resolution of participation concerns; (2) skills-building to help participants achieve their goals regarding sexual risk and substance use; (3) counselor support and communication between sessions; (4) sharing of informational resources; and (5) personal, social, and other contextual issues related to sexual risk and substance use. Whereas YMHP was delivered across four weekly sessions, participants expressed their preference for receiving a longer course of intervention sessions and suggested that eight weekly sessions would maximize the intervention's helpfulness and appeal.

Introduction of program and counselor—Participants devoted considerable attention to the fact that meeting one's counselor online potentially denies prospective participants the opportunity to immediately experience the counselor's personal character and style, thus negatively impacting their perceived ability to comfortably establish an alliance with their counselor. Participants suggested that their comfort with engaging in the study and discussing sensitive topics such as sexual risk and substance use with someone they have not met in person could be increased if the counselor could dedicate the entire first session to describing the program and themselves. Further, participants suggested offering prospective program recipients the opportunity to learn about their counselor ahead of time through open access to the counselor's Facebook profile created specifically for this study, which participants preferred would contain professional pictures, as well as the counselor's professional qualifications and personal reasons for engaging in health prevention services with sexual minority men. To further facilitate the introductions, participants suggested offering prospective participants the option to email a brief description of themselves to their counselor prior to the first session. Discussions of this description would then be used in the first session as an "ice-breaker." Participants suggested a preference for counselors to describe the program purposes early in the first session, including its non-judgmental and participant-centered approach, and its aim to help the gay community by facilitating self-awareness regarding HIV risk prevention and maintaining healthy life styles.

Participants also noted a preference for being approached in a peer-like, rather than clinical, manner. Participants indicated that framing the research project as an "intervention" was not desirable, as it would deter prospective participants. Across the interviews and focus groups, the term "program" emerged as preferred terminology for presenting the study to prospective participants in advertising, consent, assessments, and sessions. These suggestions are, in fact, congruent with the principles of motivational interviewing, which allow for a client-centered approach to change, and therefore framing 1) the 'interventionist' as more of a 'peer' who assesses the participants' needs and helps them define their own

goals towards change, and 2) the ‘intervention’ as a ‘program’ that provides an opportunity for self-examination of HIV risk instead of an imposition intended to enforce change.

Skills-building exercises—Throughout the focus group and interview discussions, participants suggested the need to learn skills tailored to achieving and maintaining a healthy lifestyle, including reducing sexual risk and substance use. While skills-building is often a natural outcome of motivational interviewing, especially for individuals who attain a high degree of motivation for change (38), the Young Men’s Health Project was constrained by its four-session format leaving participants and counselors with little time to teach effective skills once sufficient motivation was built. Participants suggested that a larger number of sessions in the proposed online intervention would allow more time for this essential component of health-promotion. Participants also suggested that counselors be trained and ready to deliver certain skills that they and their participants collaboratively deemed were essential to health promotion for those prospective participants who indicate a willingness to learn them. Specifically, participants suggested employing skills-training for participants who might wish to 1) strengthen their communication skills (e.g., negotiate condoms, HIV sero-status disclosure); 2) track their sex and drug use behavior on a regular basis to raise self-awareness of fluctuations in and associated contexts of risk behavior; 3) include adaptive pleasurable events, activities, and sources of support as part of their change plan; 4) improve their self-esteem; and 5) initiate and build sober friendships and romantic relationships in order to limit engagement in situations conducive to risk behavior. The researchers shared that these skills overlap with existing evidence-based skills grounded in cognitive-behavioral principles, namely effective communication, self-monitoring, positive events scheduling and behavioral activation, cognitive restructuring, and exercises for strengthening and accessing social support as an effective coping strategy, respectively.

Given the potential challenge of adapting traditionally face-to-face evidence-based skills (e.g., effective communication) for effective online delivery, the researchers asked participants to brainstorm ways to deliver these skills in an online format. Participants and researchers collaboratively suggested innovative ways to overcome associated challenges, including: the use of existing online or smart phone calendars onto which risk behavior can be discretely coded and tracked; electronic cognitive restructuring worksheets (e.g., five-column worksheets) where participants could record their thoughts, cognitive disputations, and associated affective reactions, for subsequent review in session; and visual summaries of risk behavior in the form of weekly or monthly electronic graphs and charts. Incidentally in these discussions, the co-investigators realized that interactive technology could be similarly harnessed to present the values card-sort--a helpful supplemental component of motivational interviewing--online, by developing a program allowing participants to visually sort and, if necessary, re-sort, their values into piles representing essential and non-essential personal priorities.

Participants suggested, consistent with motivational interviewing principles, that skills-training be offered only once a strong therapeutic alliance had been formed and once prospective program recipients expressed sufficient motivation to change, maybe halfway through the program. Also consistent with motivational interviewing principles, participants suggested that prospective program recipients be permitted to choose from a menu of skills with the option to not engage in any skills-building until sufficient motivation was attained. Thus, these five skills were included in the ultimate MiCHAT manual as options for counselors to present to sufficiently motivated participants in the context of a coherent functional analysis that collaboratively identifies the form and function of each participant’s health-risk behavior and the health benefit expected to accrue to that participant from learning and practicing each skill.

Between-session support—Another aspect that emerged in focus groups and interviews was the possibility of maintaining open lines of communication with counselors between sessions, as needed. In congruence with participants' general suggestion that MiCHAT be a participant-driven program rather than a counselor-imposed intervention, participants specifically suggested that prospective MiCHAT participants have the option of emailing their counselors between sessions if they were experiencing difficulties in implementing, or had questions regarding, their change plans. With the understanding that the program could not function as a hotline, although such resources would be made available to participants in the form of automatic replies and referrals listed on counselors' Facebook pages, participants believed that this type of continued support would buttress program participants' achievement of established goals and strengthen their alliance with their counselors, which in turn could lead to participants' full engagement in implementing their change plan.

Informational resources—Participants suggested that an online program such as the proposed MiCHAT intervention could effectively capitalize on existing online informational resources related to sexual health and substance use. Participants specifically suggested that counselors could share links to interesting, interactive, and engaging web resources for interested participants to become fully informed about current trends in HIV prevention (e.g., biomedical interventions such as pre-exposure prophylaxis), health risks, and protective mechanisms. Participants also noted that such resources could educate MiCHAT recipients about the various effects of substance use, including their effects on health-risk behaviors in the context of sexual behavior. Thus, the MiCHAT manual specifies the inclusion of these resources on counselors study Facebook pages and that these resources be shared as needed with participants across sessions.

Personal, social, and other contextual factors surrounding risk behavior—

Participants described early sexual and substance use experiences as potentially critical influences on subsequent risk behavior patterns. They suggested that the new program inquire about these events and the people involved in order to help prospective participants gain insight into the development of their risk behavior patterns and surrounding contextual influences. Doing so, participants suggested, would help prospective MiCHAT recipients effectively recognize and change the impact of those factors on health. Similarly, participants identified macro-social factors that impact the health-risk behavior of young sexual minority men, such as mainstream and gay-specific media messages stereotyping gay men as sexually promiscuous, general societal stigma toward sexual minority men, and sexual minority men's own internalized stigma. Participants suggested that discussions of these broad influences could help prospective participants understand the impact of these influences on health while simultaneously building motivation to challenge health-depleting social contexts.

Participants next suggested certain personal contexts that can influence the risk behavior of young sexual minority men, such as romantic relationships, mental health issues, spirituality, self-worth, involvement with the gay community, and financial concerns. Participants and researchers expressed enthusiasm for the possibility of writing about these topics in a free-form, expressive way to promote insight and motivation to change risk behavior. Thus, the resulting MiCHAT manual specifies a writing exercise between the third and fourth session in which participants select the more personally relevant of these topics to write about and send to their counselor for discussion in the subsequent session.

Concerns and Solutions

A significant amount of focus group and interview discussion was spent reviewing anticipated concerns regarding the proposed online delivery of MiCHAT. This overarching theme could be further distilled into the following concerns: 1) *privacy and confidentiality*; 2) counselor *delivery style* and potential difficulties posed by using text-based, rather than verbal, communication; 3) participants' level of commitment and engagement given the potential for ambient or purposeful distractions and diminished perceptions of accountability imposed by online communication.

Privacy and confidentiality—The online aspect of this program raised concerns regarding the research team's ability to maintain participant privacy and confidentiality. Participants first suggested that study-specific accounts should be built anew for each participant without reference to any personal information or connection to other personal websites, such as existing Facebook pages. Participants suggested that usernames specify aliases or identification numbers, rather than actual names, and that study materials be sent to a study-specific Gmail account created for each participant. Second, participants suggested that prospective MiCHAT participants be advised to not change the security settings on these study accounts in order to maintain the highest security settings implemented by the research team at the time the account was created. Third, participants suggested that prospective participants be encouraged not to post any personal information on their own study profiles or those of their counselors. Fourth, participants suggested that prospective MiCHAT participants be encouraged to utilize the "clear history" feature after every chat session in order to erase personal or identifying information as soon as possible. For research and supervision purposes, however, participants suggested that counselors could copy and paste this text and remove all personally identifying information before submitting it to the co-investigators for review.

Text-based program delivery—In order to suggest ways of building meaningful connections between prospective MiCHAT recipients and counselors and avoiding miscommunication that could potentially occur during instant messaging, participants carefully addressed counselor delivery style. They suggested that counselors use language that clearly and directly communicates accurate feelings, mirrors word choices preferred by participants (e.g., "gay" instead of "MSM"), avoids a tone that could be received as punitive or evaluative, conveys a realistic attitude about the difficulties of behavior change, and gradually builds-up to asking sensitive questions about sexual behavior and substance use. Participants suggested that counselors' use of emoticons (e.g., smiley faces) to express emotion was not recommended as it could come across as cloying or assume an unjustified level of familiarity and closeness with participants. Still, participants suggested that counselor language should generally favor colloquialism rather than clinical jargon. Participants also suggested that they would be most comfortable communicating via online text if counselors allayed any concerns about spelling, grammar, and punctuation upfront. Closely following these suggestions, the resulting MiCHAT manual contains extensive guidance on text-based communication.

Distractions and perceived accountability—Given the privacy afforded by online counseling, participants expressed concerns about the potential distractions posed by ambient conditions and the appeal of engaging in other online activities such as web-surfing and instant messaging with others during program sessions. In order to minimize such distractions, it was suggested that the beginning of each session be dedicated to encouraging participants to indicate that they are in a private, secure setting and to turn off any music, television, and other chat sessions and web programs. Participants also suggested that counselors ask prospective MiCHAT recipients who exhibit an inordinate delay in

responding if they are capable of fully engaging in the session at that time or if they would prefer to reschedule their session. These suggestions also appear in the final MiCHAT manual.

DISCUSSION

An online health intervention presents great promise for reaching a large number of gay and bisexual young men in a highly accessible, cost-effective fashion. Many of these young men may be isolated and unable to access supportive resources. Therefore the use of social networking technology, such as Facebook, poses particular potential to improve the health of this population given its widespread use and the fact that young gay and bisexual men are increasingly initiating social and sexual relationships online without a commensurate reach of online health promotion interventions (18). In this paper, we presented the process of adapting an in-office motivational interviewing intervention for online delivery by including multiple perspectives to obtain a comprehensive prevention model for young men. Our interviews with members of the target population were particularly important for uncovering novel strategies for capitalizing on the unique features of social networking platforms, capturing numerous therapeutic possibilities for addressing the syndemic factors confronting gay and bisexual emerging adult men, and offering strategies for overcoming the potential barriers of online delivery, such as privacy concerns and doubts about genuine communication.

Participants' suggestions for improving and delivering an enhanced, online motivational interviewing intervention overlapped with recognized principles of therapeutic change (39), evidence-based cognitive-behavioral skills training and strategies for their generalization across contexts (40, 41), and the recent identification of therapeutic targets for alleviating the health-impairing impact of minority stress on sexual minority men (42-44). Numerous participant suggestions directly addressed the impact of the online context on the therapeutic relationship and the intervention content exchanged between prospective program recipients and counselors. While some participants seem to have been particularly concerned about therapeutic alliance factors given the prospect of an impersonal online relationship potentially lacking the nuance or intimacy of face-to-face therapy, others openly expressed that they would in fact feel more comfortable communicating about sensitive topics behind the shield of a computer screen. Despite these differing perceptions of the quality of the online counselor-participant relationship, participants unequivocally suggested that this relationship and its concomitant online challenges would need to be specifically addressed upfront to ensure the ultimate success of the proposed intervention, through participant pre-therapy writing exercises and access to detailed counselor Facebook profile pages. The suggestion to reframe the "intervention" as a less clinical, more peer-like "program" also aimed to enhance prospective participants' comfort engaging in the sensitive online health-promotion sessions. Technique-based intervention approaches, such as motivational interviewing and cognitive-behavioral skills training, rely on a solid alliance as a substrate for instilling trust and subsequent motivation for change (45, 46) and participants' suggestions served to enhance the resulting intervention's ability to build such a bond.

In aiming to develop optimal communication in an online therapeutic relationship, participants suggested several novel ways in which this context can be harnessed to maximize the generalization of new behavior learned in the program. While the maintenance of new behavior, including health-related behavior, is more assured with exercises to encourage generalization across contexts (47), effective strategies to implement such generalization can be difficult to implement without therapist involvement between sessions (41). In line with these principles, participants suggested adding the opportunity for prospective recipients to email their counselor with follow-up questions and concerns

regarding material discussed in previous sessions, to peruse links to online health resources between sessions, and to share their reactions with their counselor via email. These forms of between-session support can serve to capitalize on the unique online context of a health promotion intervention to ensure the generalization of treatment gains. Therefore, these supports are included in the MiCHAT manual along with instructions to counselors to clearly communicate that they will not be able to reply immediately in many instances of between-session contact.

Participants also suggested that the resulting program ought to add health-promoting skills to the existing program's motivational interviewing core to maximally help young men achieve and maintain their health goals. The skills that participants suggested include those that happen to form a core part of existing evidence-based treatment packages (40, 41, 48-50), namely effective communication, self-monitoring of behavior patterns, positive events scheduling and behavioral activation, cognitive restructuring, and accessing positive social support. Although we did not initially expect to include set skills-training modules as part of the intervention package, after 1) recognizing that a frequent natural outcome of motivational interviewing is the pursuit of concrete steps or exercises to help participants achieve their health goals and 2) listening to participants' stated preference for specific skills deemed particularly useful for this at-risk group of men, we incorporated these five skills into the resulting intervention. In consultation with participants, we decided to include these cognitive-behavioral skills in the MiCHAT manual to be delivered in the second-half of the eight session intervention or once participants express stable motivation for changing their behavior through extended change talk. While delivering these skills via the internet initially represented a formidable challenge, participants together with co-investigators generated technologically savvy ways in which the skills could be delivered in an engaging, helpful format using interactive tools (e.g., using smart phones and interactive online calendars).

The contextual influences on health-risk behavior that participants suggested including as standard content for prospective MiCHAT sessions complement those that researchers interested in the social determinants of health have recently uncovered as explaining sexual orientation disparities in health-risk behavior (e.g., Hatzenbuehler and colleagues (51-54). Both relatively distal (e.g., media influences, community attitudes toward sexual minority individuals) and proximal (e.g., internalized stigma, compromised self-worth) factors have been shown to influence the health of sexual minority individuals and were mentioned as topics to include in a between-session expressive writing exercise to facilitate awareness of these potentially covert influences on health. Given the existing empirical evidence regarding expressive writing for promoting other types of health behaviors across various populations (55), including young gay and bisexual men (26), we readily saw promise for adding this suggestion to the proposed intervention manual. Like the skills training and between-session contact suggestions, participants' idea to encourage writing about these contextual influences represents another way in which participants unwittingly suggested that the inclusion of basic research findings (e.g., regarding social determinants of health) make their way into the proposed health-promotion intervention.

The resulting intervention, MiCHAT, draws on the extensive feedback of members of the target population chosen to represent varying degrees of previous intervention engagement and motivation. Rather than simply translating our in-office motivational interviewing intervention to an online format solely based on our research and practice perspectives, we sought a collaborative approach to generate novel ideas for including additional content and circumventing potential roadblocks before testing MiCHAT's efficacy in a randomized controlled trial. We believe that the intensive, iterative process of consultation with the target population was essential for maximizing the resulting intervention's capacity to engage young gay and bisexual men and help at-risk members of this group ultimately enact

health-behavior change. In fact, our careful development process is consistent with recent recommendations for maximizing the spread of evidence-based psychotherapeutic interventions to primary stakeholders (56). Future research ought to ensure adequate representation across all demographic groups to be included in the ultimate intervention, as some racial and ethnic groups (e.g., Asian, Hispanic, Native American) were underrepresented in the present study.

Given the myriad suggestions emerging from these intervention development focus groups and interviews, we fully expect that the lessons learned and suggestions gained here will not cease as we embark on the remaining stages of the MiCHAT development and testing process, including a preliminary feasibility trial currently underway. As some of the most formidable challenges (e.g., the need to deliver sophisticated cognitive-behavioral skills online) presented some of the most novel solutions (e.g., use of smart phone features, interactive online programs) across our interviews and focus groups, we similarly expect that consultation with the target population will continue to produce innovations in these next phases. For example, a remaining question includes whether multiple venues (e.g., telephone, text messaging, videoconferencing, in-office) will need to be flexibly combined to satisfy the communication preferences of potential participants, or be utilized for different portions of the intervention (e.g., initial phone or video contact, followed by instant messaging). Given our experience with stakeholder consultation described here, we appended a final qualitative interview to MiCHAT to evaluate participants' experience with the project and elicit their suggestions for further intervention modifications. The development process described here also reinforces intervention developers' need for simultaneous attention to both research findings and practical lessons.

Participants' suggestions in this early phase of MiCHAT development consistently validated empirical research findings regarding clinical practice and the social context of sexual minority young men's lives. In this way, we expect that the resulting intervention can innovatively extend those findings to the unique context of contemporary young gay and bisexual men's health and, given its roots in the feedback of primary stakeholders, we hope that the resulting intervention can bridge the sometimes wide divide between research and practice.

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Appendix

Focus Group Questions for Participants Who Completed Three or More YMHP Sessions

1. Overall YMHP Study Participation:
 - a. What is your understanding of the research that we do here?
 - b. Why did you choose to participate in our study?
 - c. What worked for you in this study?
 - d. What, if anything, did not work for you?

- e. The intervention was effective for some participants, meaning they showed reductions in their substance use and sexual risk. How do you think the intervention made that happen, and why do you think it worked for some people and not for others?
 - f. What would you expect to see in a study intended to help people consider their options to change their drug and/or sex behavior?
 - g. What would you hope it would do or touch upon?
 - h. What would you hope it would not do?
2. General online/Facebook Intervention Questions (before presenting the plan for an online intervention):
- a. How would you feel about receiving counseling to help you consider your options to reduce substance use and high risk sexual behavior on Facebook?
 - b. Would those conversations go differently on Facebook than they went here in our office? If so, how?
 - c. What would you like to discuss during such a study on Facebook?
 - d. How would you advise us to deliver it?
 - e. How appealing would that be compared to meeting with someone in person? Why? Why not?
 - f. What would be some benefits of participating in such a study online?
 - g. What would be some barriers to participating in such a study online?
 - h. For how long would you be willing to be involved in such a study (how many weeks)?
 - i. How long of a session would you feel comfortable with?
 - j. How much time would you have to devote to a study on a weekly basis?
3. Questions about the modified YMHP intervention for Facebook delivery:
- a. As we mentioned, we would like to offer counseling sessions over Facebook. We changed the counseling sessions we provided in YMHP to make them Facebook-friendly and we'd like you to take a look at the outline and tell us what you think of it. Please keep in mind that the counseling sessions will take place in written exchanges between a participant and a counselor. These 'chat' sessions will take place over a private and secure Facebook window chat. (Each participant will receive a document outlining the preliminary configuration of the new sessions, their frequency and duration, as well as an explanation of what the entire study would entail. Participants will be given time to read over it and take notes, if desired).
 - b. What are your thoughts on our proposed sessions?
 - c. Is a session of thirty minutes too long, too short or just right? What would your preference be?
 - d. Is talking to a counselor twice a week reasonable? What would your preference be?

- e. How do you feel about receiving online counseling from someone you have not met?
- f. What would make it comfortable for you?
- g. What do you suggest we do to make this a comfortable experience for participants?
- h. Would you have a preference as to who the counselor would be and if so, tell us about what type of counselor you'd prefer to interact with? [their gender, age, race/ethnicity, sexual orientation, etc]
- i. What is appealing about receiving this type of counseling?
- j. What, if anything, is not appealing about receiving this type of counseling?
- k. Anything else that you'd like to say about our study or the idea of receiving counseling over the internet?

4. Reminder about the second focus group

Our research team will next analyze the information you provided today and modify the current YMHP study based on your feedback in order to deliver the study online. Once we have modified the intervention, we will contact you again to invite you back for a second focus group. During that discussion, we will present you with the modified intervention and ask for your feedback once more. We will benefit greatly from hearing your opinions on how well you think the intervention would work online, including identifying potential roadblocks we could address ahead of time. Thank you very much for sharing your opinions and helping us improve the study and prepare it for online delivery!

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Table 1

Former YMHP participant demographic and behavioral characteristics.

	<u>Intervention Decliners N=5</u>	<u>Completed 3 or 4 Sessions N=7</u>	<u>Completed 1 or 2 Sessions N=1</u>
Mean Age	28.6	30.7	21
Race/Ethnicity			
Black	1	3	0
Hispanic	0	1	0
White	3	1	0
Multiracial	1	2	1
Sexual Behavior			
Mean number of unprotected anal sex acts in the past month at baseline	4	5.3	2
Mean number of unprotected anal sex acts in the past month at 6-month follow-up	2.6	1.6	9
Substance Use			
Mean number of drug days in the past month at baseline	4.8	5.3	19
Mean number of drug days in the past month at 6-month follow-up	2.8	1.9	14