Training Young Adult MSM in a Mobile Motivational Interviewing-Based Peer Mentoring Approach to Upstream HIV Prevention

Erin E. Bonar[1,2,3], James R. Wolfe[4], Ryan Drab[4], Rob Stephenson[3,5], Patrick S. Sullivan[6], Tanaka Chavanduka[3,4], Benyam Hailu[7], Jodie L. Guest[6], & José Bauermeister[4]

[1] Addiction Center, Department of Psychiatry, School of Medicine, University of Michigan

[2] Injury Prevention Center, University of Michigan

[3] Center for Sexuality and Health Disparities, University of Michigan

[4] School of Nursing, University of Pennsylvania

[5] School of Nursing, University of Michigan

[6] Rollins School of Public Health, Emory University

[7] Division of Clinical & Health Services Research, National Institute on Minority Health and Health Disparities, National Institutes of Health

Article type   : Original Article (AJCP)

Corresponding author mail-id: erinbona@med.umich.edu

Training Young Adult MSM in a Mobile Motivational Interviewing-Based Peer Mentoring Approach to Upstream HIV Prevention

[author information removed for blind review]

Abstract

Mentoring relationships are characterized by a sustained, high quality, and skill-building relationship between a protégé and mentor (DuBois & Karcher, 2014). Within prevention science, youth mentoring programs emphasize creating a specific context that benefits a young person. Program-sponsored relationships between youth and adults allows for creating a mentor-mentee partnership, but does not require the establishment of a strong bond in order to deliver prevention-focused activities and experiences (DuBois & Karcher, 2014). Motivational Interviewing (MI) is a counseling style used widely to promote health behavior change and in prevention interventions. As part of an upstream approach to HIV prevention, we combined mentoring and MI by training peer mentors to use MI skills in their interactions as part of a large

RCT of a mobile life skills intervention for adolescent men who have sex with men (AMSM). Our training model developed for training peer mentors in MI skills resulted in peers reaching and exceeding established MI fidelity thresholds (e.g., mean percentage of complex reflections = 80%, mean reflection to question ratio = 2.2:1). We offer reflections on lessons learned and future directions for those researchers and practitioners who may benefit from adapting this blended approach for mentoring AMSM.

Key words: motivational interviewing, peer mentoring, adolescent men who have sex with men, HIV prevention

Introduction

Mentoring programs for youth promote positive youth development (DuBois & Karcher, 2014), with the mobile health arena opening new avenues for such programs. Although a universal definition for mentoring is lacking, Stewart and Openshaw (2014) suggest that mentoring relationships feature several characteristics that support the creation of a partnership. Features include the uniqueness of the individuals and contexts in which the relationship is created, a focus on the acquisition of knowledge (whether specific to a particular topic or more generally focused on life experiences) or skills, and the provision of support from the mentor to the mentee. A meta-analysis concluded that although effect sizes are relatively small, mentoring programs have a positive impact on youth development, particularly for youth of disadvantaged or at-risk backgrounds (DuBois & Karcher, 2014), such as adolescent men who have sex with men (or who experience same-sex attraction or behaviors; onward referred to as AMSM).

Role of mentoring programs for HIV prevention among AMSM

AMSM are disproportionately impacted by HIV and other sexually transmitted infections [STIs; (Johnson et al., 2014)] as well as dating violence (Kann et al., 2011), mental health problems (Cochran & Mays, 2008; Meyer, 2003; Remafedi, 2008), and substance use problems (Bruce et al., 2015; Ostrow, 2000; Ostrow & Stall, 2008). Further, disparities in HIV/STIs may be more pronounced for racial minority AMSM, and those of lower socio-economic status (Ayala, Bingham, Kim, Wheeler, & Millett, 2012; Millett et al., 2012; Moctezuma & Guan, 2019; Oster et al., 2011). Adolescent development and the transition to young adulthood marks a period of potential psychosocial stress, combined with biological changes, that can impact one's future life course (Chassin, 1997; Millstein, Nightingale, Petersen, Mortimer, & Hamburg, 1993). In this period, AMSM explore their same-sex attractions, behaviors, and identities while navigating internal and external stressors and encountering developmental milestones (e.g., role transitions, biological changes). During these explorations, they are more vulnerable to participating in HIV/STI risk behaviors due to inexperience, lack of comprehensive sexuality education, and/or maladaptive coping behaviors.

Prevention interventions that create and connect youth to spaces (i.e., in person or through online platforms) that nurture positive development and self-efficacy may bolster AMSM's resiliency via addressing upstream factors such as future orientation, goal-setting, and skill-building (Harper, Jamil, & Johnson, 2012; Maggs, Schulenberg, & Hurrelmann, 1997) thereby curtailing HIV risk. For example, AMSM have previously described characteristics of effective spaces for HIV prevention to take place, including: a safe space (i.e., welcoming environment, other youth with similar attitudes), non-judgmental staff who are knowledgeable of resources (i.e., informal mentoring, boost AMSM's confidence, open), and community-building [belonging to, participating in a community; (Easton et al., 2007)]. This prior work underscores the potential power of mentoring within a safe space for AMSM in order to prevent HIV and promote resiliency. Further, widespread adoption of mobile technology creates a venue for HIV prevention and youth mentoring unconstrained by geography that is accessible to AMSM who may not otherwise have local access (due to limited access to healthcare and experiences of stigma) to resources or peer mentoring during this critical period of development.

Although there is a dearth of literature focused on peer mentoring for upstream HIV prevention with AMSM to date (and particularly with regard to utilizing mobile health), prior

research supports the potential benefits of mentoring for AMSM as well as the acceptability and utility of such an approach. For example, national data indicate that LGB (lesbian, gay and bisexual) individuals who reported having a natural mentor (who may or may not have also been a LGB individual) were more likely to graduate high school than those who did not have a mentor (Drevon, Almazan, Jacob, & Rhymer, 2016). Qualitative work also suggested that gay, bisexual, and questioning adolescent and young adult men report benefits from receiving individualized support from natural mentors, including social, informational, and self-appraisal guidance (Torres, Harper, Sánchez, & Fernández, 2012). Others have supported the acceptability of training for young Black MSM (ages 16-30) to become peer mentors to friends, family, or in their communities in support of home-based HIV testing (Tobin et al., 2018).

Characteristics of a mentoring relationship relevant to AMSM

While mentoring may involve general social support, etc., the heart of the purpose of the mentor-mentee relationship involves facilitating positive development and capacity for resilience. Thus, encouraging engagement in behaviors that promote physical, mental, and emotional health is a central task for the mentor. In addition, the mentor may be tasked with helping the youth navigate challenging situations that may or may not have a "right answer," for example, among AMSM, how and when to "come out" to parents or family. Thus mentorship could be enhanced by a skillset that both promotes engagement in healthy activities, but also balances moments where the mentor should remain relatively neutral and avoid guiding the youth in a specific direction, supporting the youth's expertise on what is best for their situation.

Integrating Motivational Interviewing skills for peer mentoring with AMSM

Motivational Interviewing [MI; (Miller & Rollnick, 2013)] is a conversational counseling style that involves skills that may be particularly suited to such a mentoring relationship. Although MI was initially developed as a counseling method for substance abuse, considerable empirical evidence exists documenting the efficacy of MI as an intervention approach to promote behavior change across a range of health behaviors (Hettema, Steele, & Miller, 2005; Martins & McNeil, 2009), thus making it potentially well-suited for the mentoring relationship wherein a number of different behaviors could potentially be addressed over time. MI generally focuses on a style of listening and engaging individuals in conversations that promote change or well-being

in an atmosphere that is non-judgmental, accepting, and collaborative, consistent with the characteristics of "space" set forth by Easton and colleagues (2007) above. Although specific clinician skills are typically used to draw out "change talk" (i.e., language that promotes change or commitment to making a healthy change), MI also recognizes the need to leave some decisions to individuals either for ethical or practical reasons, and encourages practitioners in these instances to exercise equipoise, or to refrain from exerting influence (Miller & Rollnick, 2013, p. 233; emphasis in the original). This, too, makes MI well suited for mentoring relationships addressing situations like those mentioned above where there may be no "right answer."

Given its wide application, it is perhaps not surprising that MI-based interventions have been delivered by trained interventionists/counselors in a variety of fields and disciplines, such as psychologists, social workers, nurses, nutritionists, dentists, physicians and medical trainees, educators, and those in the criminal justice field (Cook et al., 2017; Faustino-Silva, Meyer, Hugo, & Hilgert, 2019; Lane, Hood, & Rollnick, 2008; Pennell et al., 2018; Simper, Breckon, & Kilner, 2017; Victor, El-Behadli, McDonald, Pratt, & Faith, 2019). Although we know of no research documenting the use of MI in youth mentoring relationships targeting a potentially broad range of behaviors, prior work has employed MI for peer-based interventions (e.g. Mastroleo, Magill, Barnett, & Borsari, 2014) that involved a structured brief intervention focused on a specific target behavior (e.g., alcohol use). Most related to the current study, Naar-King and colleagues (2009) compared trained peer outreach workers to master's level staff in delivery of a 2-session MI-based intervention to promote HIV care adherence among young people. They found that the peers (ages 20-25, high school graduates) had higher scores on two of five MI fidelity scales and larger effects on adherence to HIV care and number of intervention sessions completed relative to the master's level staff. This seminal study suggests that peers may provide MI interventions with similar or better fidelity as master's-level trained staff, and therefore may exert a benefit in terms of cost-effectiveness. Despite the promise of this prior study, we know of no study that has attempted to blend MI with mentoring for prosocial development, and upstream prevention for youth, that broadly targets positive youth development, particularly in the context of HIV prevention. However, MI is considered a particularly engaging approach to working with adolescents and young adults given the

egalitarian approach that mitigates power differentials, emphasis on autonomy, and non-judgmental spirit (Naar-King, 2011; Naar-King & Suarez, 2011).

Therefore, as part of a randomized controlled trial (RCT) of an HIV prevention intervention [reference removed for blinding], we recruited and trained young adult peer mentors for delivery of MI-infused peer mentoring sessions for AMSM via a mobile-friendly WebApp. The peer mentoring sessions were one part of a larger mHealth intervention that aimed to promote life skills development through providing developmentally tailored content, encouraging goal-setting, and creating opportunities for youth to create telehealth appointments to discuss on-going challenges and opportunities in their lives. Although the RCT is ongoing (see [reference removed for blinding] for detailed description of intervention and trial methods), the purpose of the present paper is to detail our training process that combined both MI skills and a focus on peer mentoring for this vulnerable population. Further, although basic MI training was considered a cornerstone, we anticipated that peer mentors would need additional trainings based on unanticipated needs arising throughout the course of supervision and study sessions. Therefore, a major goal of this paper is to share our initial training model, characteristics of peer mentors and retention, markers of fidelity, and identification of booster trainings developed to meet unanticipated needs, in hopes of informing future work with peer mentor training, particularly as it pertains to training mentors to address a broad range of behaviors or issues that could come up with AMSM. Further, in the discussion, we also share reflections on lessons learned and future directions for work in this area.

Initial Training of Peers in MI-Based Mentoring

Study Context

Details regarding study design are available in a previously published protocol paper [reference removed for blinding] and the study was IRB-approved. Briefly, in the current study, we are recruiting 600 AMSM ages 13-18 online as part of a randomized controlled trial to test an online life skills intervention (intervention name removed) versus an information-only control (a web-based national and local resource locator). [Intervention name removed] is a mobile-friendly WebApp intervention that was developed to address the growing need for HIV prevention interventions for racially, ethnically, and geographically diverse AMSM. The app provides

educational content and local resources on topics ranging from stigma and discrimination to sexual health tailored to 13 to 18 year-old same-sex-attracted young men. It aims to empower users to lower their vulnerability to HIV infection by providing life skills educational modules tailored on their unique needs and characteristics, allowing them to set and track personal goals, encouraging users to use relevant, locally available services to help achieve those goals, providing information about how to access LGBTQ-welcoming sexual health and general support resources in their local area. In addition, [Intervention name removed] embeds a peer mentoring feature, addressing known barriers of physical and social isolation and stigma (both actual and perceived) by allowing users to access peer mentoring sessions via video or text-based chat. The [Intervention name removed] app also includes a forum, or message board, where participants are encouraged to post and interact with one another around the life skills and goal setting content. Peer mentors are also trained to moderate and respond to these posts in a manner consistent with MI and principles of mentoring. The overall goal of peer mentoring in [Intervention name removed] is to help AMSM obtain peer-to-peer support and to enhance the life skills lessons contained in the WebApp via support, problem-solving, or goal-setting.

Selection of Peer Mentors

Although peer mentoring sessions are delivered via WebApp to youth from four geographic regions in the United States, peer mentors are located in a single location at the University of [blinded]. Thus, peer mentors were recruited from the Greater [blinded city] area using a combination of Facebook ads and distribution of job announcements through area university student employment boards, university bulletin boards, local LGBT+-serving community organizations, and LGBT-focused community events. Ads emphasized interest in LGBT health, peer mentoring, and learning skills in "health promotion, education, and leadership." Applicants were selected for interviews based on previous education and/or experience with mentoring, mental health, LGBT advocacy, or HIV prevention and care.

[Intervention name removed] We interviewed 12 applicants for peer mentoring positions. Individuals selected for interviews had prior experience in mentoring/peer support (e.g. mentoring of peer and younger students in academic and community-based settings, involvement in residential life and/or college student support programs, club officer of high school's Students

Against Destructive Decisions chapter; intern/peer educator at an LGBT youth center) and/or experience in a clinical setting with adolescent populations (e.g. social work intern at elementary school and adolescent rehabilitation program). Interviewees were evaluated for their ability to discuss topics like sexual health and discrimination, exhibit LGBT cultural competence, and articulate MI-consistent values (e.g. empathy, respect for autonomy). Ten individuals were offered positions and 8 accepted and began training. Seven interventionists completed the training, with one leaving the team prior to completion of training and fidelity testing. Although we never asked specific questions of applicants or employees given human resources guidelines, we can provide descriptive information about the 8 mentors obtained from working closely with them and from their application materials. At hiring, mentors identified as male and ranged in age from 18 to 27 years. Most mentors were current students (undergraduate or graduate); their highest level of education ranged from having some community college to being enrolled in a master's program. They embodied geographic diversity having haled from regions spanning the east to west coast and outside of the United States (U.S.). The mentors were diverse with regards to race and ethnicity; about half self-identified in their applications as a person of color or racial or ethnic minority. Nearly all self-disclosed in their application materials that they identified as a sexual minority.

Foundational Training

Beyond study-specific protocol trainings (e.g., crisis procedures, documentation, mandated reporting, etc.), the core of mentor training focused on the application of Motivational Interviewing skills to peer mentoring sessions (see Table 1). We emphasized Motivational Interviewing skills and spirit with initial training consisting of two days of training in MI skills and spirit (i.e., acceptance, partnership, compassion, evocation), including the four processes (i.e., engagement, focusing, evoking, planning) and OARS skills (i.e., open-ended questions, affirmations, reflections, summaries). An additional day of training was provided on change and sustain talk. These trainings were developed and led by a licensed clinical psychologist who had completed training of new trainers from the Motivational Interviewing Network of Trainers, along with two masters-level research staff (project manager and research coordinator) with backgrounds in mental health counseling, youth development, and public health. Prior to this training, mentors engaged in brief skill-focused activities as an introduction to the core skill of

reflections led by project manager and research coordinator. As displayed in Table 1, foundational trainings employed a variety of teaching modalities and exercises ranging from didactics and discussion to demonstrations and practice (see Appendix for example activities).

The foundational trainings were supplemented by 11 weekly team meetings involving skill-focused workshops and group discussions, as well as practice assignments and individual supervision, each focusing on a specific skill or process (e.g., reflections, open questions, etc.), prior to study launch. Practice assignments varied by week, but typically involved pairing two mentors together to role play a scenario with an emphasis on practicing the weekly skill. Recordings were reviewed and feedback was given in individual supervision with peer mentors. We found it necessary to provide these supplemental trainings given that prior research has found combinations of coaching and feedback are associated with increased MI proficiency (Miller, Yahne, Moyers, Martinez, & Pirritano, 2004) and because a noted limitation of MI trainings is a lack of focus on constructs that tend to concern the latter MI processes beyond engagement (e.g., planning; Madson, Loignon, & Lane, 2009).

Initial Supervision and Fidelity

After completion of foundational trainings and prior to study launch, peers were required to demonstrate fidelity to MI using the MITI 4.2.1 coding scheme (Moyers, Manuel, & Ernst, 2015) based on recorded practice video sessions where individuals familiar with the study population role played a participant based on a vignette description (analogous to a standardized patient). Performance feedback based on MITI coding was given to each mentor after each practice session. The MITI 4.2.1 provides threshold scores and because mentors are not trained clinicians, they were required to meet the "Fair" score thresholds prior to beginning sessions with real participants in the study. Therefore, mentors had to achieve a score of at least 3.5 on the Relational global score, a score of at least 3.0 on the Technical global score (if a clear change target was identified), have at least 40% of reflections qualify as complex reflections, and they must have achieved a question to reflection ratio of at least 1:1. The MITI does not provide a threshold for MI-adherent behaviors (MIA) or MI-non-adherent behaviors (MINA), though these were coded as well and used to provide feedback. A randomly selected 10-minute excerpt of each session was independently coded by two trained MITI 4.2.1 coders; a practice session was

considered to meet fidelity criteria if the fidelity thresholds were met in the coding conducted by both coders.

Mentors were required to meet all fidelity thresholds in two practice sessions prior to study launch. Four mentors met the thresholds after submitting two role play sessions for review, two mentors met the thresholds after submitting three role play sessions, and one mentor met the thresholds after submitting four role play sessions. Descriptively, considering coding data from both coders for all passing sessions ($N = 14$) fidelity was rather strong: M(SD) for the Relational Global Score = 4.1 (0.4), for the Technical Global Score = 3.8 (0.4), for percentage of complex reflections = 80.0% (15.9), and for the Reflection to Question Ratio = 2.2 (1.2). The means (SDs) for MIA and MINA were 1.5 (1.0) and 0.04 (0.19), respectively.

After the launch of the study, mentors continued to receive biweekly supervision focused on review of a recording or transcript. Feedback addressed delivery of MI, developing mentors' self-awareness and clinically-relevant decision-making, and case-specific needs.

Identified Needs and Booster Trainings

Areas for Additional MI Training

Throughout the first year of participant recruitment, mentors received booster trainings every 2-3 months, focusing on additional needs that were identified on a rolling basis through ongoing supervision. Table 2 reflects the training topics covered across these different training modalities with trainings involving a variety of activities as well as group discussion. As our initial plan for training included an emphasis on practicing and improving MI skills in the context of peer mentoring sessions, we also considered that as we learned more about peers' skills and began to have sessions with participants, we would identify unanticipated training needs. As study supervisors worked with mentors weekly, and then met to discuss mentors' activities, review supervision sessions, and plan future trainings, key themes emerged and we designed booster trainings to address each theme or need. We prioritized identifying and practicing specific skills in each booster training in order to provide peer mentors with tangible tools to enhance their practice.

MI Booster Session #1. We noticed that mentors appeared to encounter difficulty employing the MI concept of "guiding" a conversation and tended to use a following style in

their interactions, waiting for the youth participant to drive the session. While MI honors autonomy of participants and we trained mentors to elicit important topics for the participant to discuss, it is the role of the mentor to shape the conversation in a productive manner based on the participants' needs. Therefore, we crafted Booster Session #1 to focus on strategies to guide the peer mentoring session, including a review of OARS skills and change talk and coding practice.

MI Booster Session #2. We noticed via session recordings and supervision that some peer mentors appeared nervous when delivering sessions, which can be disruptive to engagement in MI, shifting focus away from the participant. Working with mentors outside of sessions, we knew them each to have unique personalities and conversational styles that seemed to drift to the background when putting on the "mentoring" hat. We surmised that mentors' goals of assuming a helping role and remaining MI-consistent coupled with their concerns about being supervised in these activities (e.g., reviewing session recordings), led to this outcome. We also wondered whether "Imposter Syndrome" may have also contributed to visible nervousness, as despite being trained, mentors may have felt inadequate in their roles. In reflecting on tangible skills that help peer mentors feel more present in the current moment with their participants, we identified that practicing mindfulness could be helpful. Therefore, for Booster Session #2 we asked a licensed clinical psychologist trained in mindfulness-based approaches to provide training on skills to increase mindful awareness and practice related skills to be more present in the sessions, despite nervousness. This included an interactive discussion of Imposter Syndrome, stress that may arise during mentoring sessions, mindfulness, and a guided mindfulness exercise.

MI Booster Session #3. Throughout supervision we also noticed that peers relied heavily on basic open-ended question and reflection skills from MI, with few attempts to use more advanced skills such as other MI adherent behaviors. These basic skills are essential to engaging participants and are client-centered; however, we felt there were missed opportunities to affirm, collaborate, and emphasize participant autonomy. Therefore, Booster Session #3 focused on reviewing and practicing these behaviors, including a transcript coding exercise and practice generating alternative MI responses involving affirmations, seeking collaborations, and emphasizing autonomy.

MI Booster Session #4. Next, while peer mentoring sessions were occurring, a participant elected to have a text-based chat mentoring session with a peer mentor for the first time and other participants' posted in the forum seeking support. As forum posts did not require

immediate response, mentors worked with supervisors to craft responses to posts that were consistent with MI and provided mentoring support. However, we had not fully considered how peer mentors might translate their MI mentoring skills for a written chat-based mentoring session that would require responding without visual or auditory cues in real time. Given the lack of social cues involved in text-based communication, we found it important to work with mentors on how to interact via text with participants in an MI-consistent style. Therefore, we devised Booster Session #4 to highlight strategies for translating MI principles and skills into written form in order to enhance skills for responding to forum posts and in live chat-based mentoring sessions. This training included a group activity where mentors had to respond to written messages from a mock participant in real-time using typed responses as well as practicing messaging with a partner.

Needs for Booster Training in Mentoring

Although principles of mentoring were implicit in our trainings, it became evident that, as para-professionals, mentors did not have a well-formed conceptualization of the helping process that is usually developed through training and practice specific to helping professions. The focus on tangible skills related to MI may have led mentors to emphasize skills application without developing the clinical judgement that practitioners rely on to inform skill application. As we considered ways to help mentors revisit this central tenet, we consulted resources from the helping professions literature and identified a helping road map model (Young, 2013) that was complementary to the four MI processes. Therefore, we developed a series of booster sessions to enhance the spirit of mentorship, described below, which involves a series of topics, activities, and group discussion.

Mentoring Booster Session #1. Our first booster session involved orienting mentors to the mentoring roadmap, which has five major aspects (i.e., relationship building, assessing needs and goals, choosing a focus, evoking ideas and planning, and evaluating the plan and identifying next steps). In this training, we provided a rationale for expanding our training to include the mentoring roadmap that emphasized the overlapping, familiar processes of MI while also indicating the need for increased focus on relationship building and a more holistic mentorship experience. The training also included an overview of the five major aspects described above.

Mentoring Booster Session #2. This session focused on the mentoring process of "Relationship Building." This training built on concepts from the MI engaging process, while also supporting a more fundamental understanding of rapport. Mentors participated in exercises to increase their awareness of their professional presentation (e.g. tone, facial expression, body language), to monitor its effect on the mentoring relationship, and to adapt their demeanor to increase rapport.

Mentoring Booster Session #3. This session presented a concept we referred to as "Assessing Needs and Goals." We identified assessment as a part of the helping process which is explicit in helping literature, but which is more implicit in MI through the process of engaging and focusing. As such, formal assessment was not emphasized in our initial training model. In the helping literature, assessment includes a range of formal assessment tools and informal observational tools. In this booster session, we focused exclusively on informal assessments including careful listening and observations of body language and demeanor to identify psychological and process-level barriers to the mentoring process (e.g., the need for additional rapport building, the need for validation, the need for more or less structure to the mentoring process). We also introduced process-level components of helping: using observational assessment and "professional" judgment to inform actions as a mentor. Mentors were presented with a model for 1) identifying participant-stated goals and needs, 2) incorporating their own observations and judgements about participant goals and needs, and 3) formulating concrete actions they could take to individualize the mentoring process based on their assessments.

Mentoring Booster Session #4. This session addressed the mentoring roadmap concept of "Finding a Focus," mirroring the MI process of Focusing. Mentors were presented with an exercise on developing a menu of options or listening for and identifying multiple potential foci for a session and presenting those options to participants. Building on the previous training in Assessing, mentors were encouraged to conceptualize and present potential foci in multiple domains: behavioral goals (taking an action), cognitive goals (coming to a decision or making a plan), and emotional goals (finding support or validation).

Mentoring Booster Session #5. This session addressed the mentoring roadmap concept of "Evoking Ideas and Planning," using the MI skill of "Elicit-Provide-Elicit" as a model for guiding participants through change planning (when relevant) from a mentoring perspective. At this point in their training, mentors had received multiple trainings on specific plans they might

need to make with participants, including providing referrals to mental health resources, assessing knowledge and providing information about HIV prevention and care, and supporting participants in identifying and connecting with resources in their own community. Each of these specific trainings instructed mentors to follow the Elicit-Provide-Elicit progression of inviting participant ideas about planning first, proving resources, information, and advice if appropriate, and then re-inviting the participant to identify what to do next. In this booster session, mentors reviewed the ways they had already learned to guide individuals through a planning process, coalescing the specific examples into a meta-process of eliciting participant ideas and collaboratively planning.

Mentoring Booster Session #6. The final session in the mentoring roadmap series presented the concept of "Evaluating the Plan and Identifying Next Steps." This training focused on the process of reviewing potential behavior changes discussed in the session and supporting participants in strengthening commitment to changes they choose to make. Mentors were presented with a model for summarizing potential strategies from the planning phase and using a key question to prompt participants which strategies they want to enact.

Discussion

The goal of this paper was to present a comprehensive framework for training young adults in peer mentoring using MI skills to enhance HIV prevention for AMSM via a mobile WebApp. Our comprehensive training model included a number of modalities of instruction and practice, and took place in settings ranging from weekly staff meetings to longer workshops and multiple, targeted booster sessions. These varied interactions also allowed us to observe mentors practicing in different formats, informing our selection of additional training activities, responsive to mentors' needs and consistent with the MI literature demonstrating that training is best when supplemented over time with feedback and coaching (Miller et al., 2004).

Underscoring the strength of our approach, note that our foundational training resulted in peer mentors reaching established fidelity thresholds for MI and supports the use of similar training models for peer mentors and interventionists. Specifically, on average, mentors passed all of the "fair" indicators of MI fidelity from the MITI manual, and passed all but one of the "good" indicators as well (falling just below the threshold for the technical global score). It is important to note that, unlike other clinical trials that focus on fidelity for brief MI interventions that target a specific behavioral outcome (e.g., alcohol use), our mentors are expected to apply

MI skills to mentoring across a potentially infinite array of behaviors and issues. As such, we are encouraged by the fidelity coding results of peer mentors who were initially inexperienced in any type of counseling style and had to master skills to address a range of behaviors. It is important, however, to note that our fidelity markers pertain to a small group of mentors, perhaps reflecting another unique aspect of our training, that we could capitalize on small group discussions and individual supervision and feedback when training.

Once fidelity was met, rather than a one-size-fits-all approach, we invoked a responsive model for peer training that is adaptable to the skill sets and performance of peers, which can be influenced by their prior work life or volunteer experiences, as well as prior education or training. We found it important to use basic trainings as a jumping off point for establishing a core skillset followed by tailoring additional trainings based on needs identified through weekly supervision and practice. Specifically, as mentors' skills developed over time, we discovered new areas for growth and responded to these via targeted booster sessions. Further, for future work that involves training peers for delivery of MI-based mentoring to AMSM, the identified training needs in our study may reflect concepts that could be incorporated into initial trainings, allowing for additional topics to be covered in booster sessions.

In developing the responsive trainings, we identified several key points that we discuss in order to inform future work in this area and considerations when training peers. First, there is the issue of selection and longevity of mentors. In our study focused on a marginalized population of AMSM, we found it important to select peers who would be relatable to the study population, and who would have empathy for our participants. This was accomplished by selecting mentors based on prior mentoring experiences, as well as their articulation of MI-consistent values (e.g. empathy, respect for autonomy) during interviews. In addition, given the national reach of our study enrollment, we believe it was essential to hire mentors of diverse backgrounds. Further, a challenge in training peers is that given their life circumstances (e.g., many were in college), some have since transitioned away from the mentoring position given new opportunities (e.g., internships pertaining to their major or graduate school plans) or breaks in classes (e.g., moving home and away from campus for the summer; graduation). Ideally, selected candidates would be willing and able to make a long-term commitment to the mentoring position in order to capitalize on training resources. A common characteristic of mentoring programs is matching mentors with participants based on a range of characteristics (e.g.,

interests; proximity; availability; age; gender; race; personality; goals; previous experiences). While matching has its strengths, challenges may arise when attempting to deploy peer mentoring on a large scale; however, these challenges may be reduced given the client-focused underpinnings of MI which facilitate connection.

Second, there is the issue of balancing the need for developing micro-skills with the need to also approach mentoring holistically. As is traditional in MI training, we began our training model by focusing on key skills (e.g., OARS) and meeting fidelity markers. While skills are critical elements when delivering research and clinical interventions, it is possible that our early intensive focus on skill development resulted in missing the holistic components of mentoring (i.e., inability to see the forest due to focusing on the trees) that underscore the application of skills. This, in particular, may apply to the need to focus on building relationships with the mentee and connecting interpersonally. We attempted to address this by incorporating more training related to MI spirit as well as on the more advanced MI skills (i.e., seeking collaboration, autonomy support) that support spirit.

Third, it is important to recognize the developmental process and learning needs of peer mentors. Our initial model left out training on the key foundations of helping relationships which was needed by most who had not received formal instruction or training in the helping professions. We corrected course later by providing training in the mentoring road map. When working with young adult peer mentors, it is also important to keep in mind they are also navigating a period of development (e.g., transition to adulthood and independence) and may only be a year or two ahead of their mentees in this path. This is a strength in terms of being able to relate to mentees, yet can be a challenge in terms of helping mentors identify the ways in which they are also different from their mentees (e.g., living away from parents, expendable income) and how they would handle a situation in the current lives may not comport with the mentee's current life situation. This was a topic that we addressed in supervisions and through team discussions, with an emphasis on both perspective-taking and collaboration. Specifically, we emphasized the use of MI skills to elicit from participants' more about their own worlds and what would potentially make sense for them, rather than peer mentors jumping to problem-solving based on their own perspectives and experiences.

Finally, our mentoring sessions were designed for remote delivery via our app (e.g., video chat, texting). It will be important for future training models to address the unique settings

and modalities where the mentoring will take place. We used video-recorded role plays and video conferencing software throughout training to increase mentors' familiarity and comfort with this. Once in the field with participants on different networks, we encountered more technical difficulties (e.g., connection issues, freezes during video chat) and situations that we had not anticipated (e.g., participant driving in a car during session). We also found that at times social cues can be disrupted in technologically-based delivery compared to face-to-face sessions. Given delays in video conferencing, rapport may be also hindered as mentors can accidentally talk over the participant or they may not see each other's body language and facial reactions as well. In the occasional text-based session, mentors were tasked with conveying tone and openness and engaging with participants in the absence of any visible cues. These are important considerations for future technology-based mentoring programs utilizing mobile health approaches, particularly as telehealth is poised to become a new norm in a post COVID-19 society (Nagata, 2020), extending potential reach of interventions. For example, rural settings still suffer from the digital divide (Perrin, 2019), thus reaching AMSM for mentoring in these areas can pose additional challenges.

Although our responsive training model's key strength is the ability to address ongoing and new training needs, there are some limitations to consider. Importantly, in the context of a large federal grant, we had the staffing and expertise available to conduct a series of trainings. This resource is not always available in community settings. Similarly, we had the resources to provide ongoing supervision, on a weekly to biweekly basis, where training needs could be identified, and importantly, mentors could receive guidance. The trial also relies heavily on technology for delivery of MI-based mentoring, and, during training, mentors had access to state-of-the-art technology of practicing remote mentoring. Under-resourced community settings may struggle to capitalize on technological supports in training peers and delivering mentoring. Nonetheless, if available, the option for youth in under-resourced communities to access peer mentoring through technology may act as a critical pathway to intrapersonal and cognitive psychological empowerment in the absence of in-person resources (Christens, 2012). Finally, our group of peer mentors was small, and as such results pertaining to fidelity may not fully generalize to different groups of individuals trained.

Despite these considerations, we believe this work can be of value to the field by informing future methods for integrating MI skills and spirit with peer mentoring, specifically

with regard to HIV prevention in AMSM in the mobile health space. Notably, although we had only 8 mentors, initial training showed that the mentors could master fidelity to MI based on established competency scores. Future training models could integrate selected booster training topics earlier in training or select training components based on characteristics of peer mentors and their work. We recommend that training models for future peer mentoring interventions could be adapted from the one presented here. While remaining theoretically grounded, the specific ingredients of training should be tailored based on purpose, setting, skillset of mentors, and target behaviors or outcomes.

Table 1.

Foundational trainings and MI skills trainings for peer mentors conducted prior to study launch and fidelity assessment

Training Title	Type (Length)	Key Activities
• **Key Topics**		
Introduction to Reflective Listening	MI Skill-Focused Activity (.5h)	Group skill practice activity
• Empathetic Listening and Simple Reflections		
Practicing Reflective Listening	MI Skill-Focused Activity (.5h)	Group skill practice activity
• Empathetic Listening and Simple Reflections, *Cont'd*		
Introductory MI Training, Part 1	Introductory MI Training (14h)	Didactic presentation
• MI Definitions		Live demonstration
• MI Spirit		Skill practice worksheets
• MI Processes		Group activities
• Righting Reflex		Paired practice
• OARS Skills		
Complex Reflections	MI Skill-Focused Workshop (1h)	Video demonstration
• Distinguishing Simple vs. Complex Reflections		Skill practice worksheet
Open Ended Questions (OEQs)	MI Skill-Focused Workshop (1h)	Video demonstration
• Forming OEQs		Skill practice worksheet

Introductory MI Training, Part 2	Introductory MI Training (7h)	Didactic presentation.
• Change/Sustain Talk		Live demonstrations
• Eliciting		Video demonstration
• Readiness Rulers		Skill practice worksheets
		Group activities
		Paired practice
Affirmations	MI Skill-Focused Workshop (1h)	Video demonstration
• Forming Affirmations		Skill practice worksheet
MITI Fidelity Criteria	MI Skill-Focused Workshop (1h)	Video demonstration
• Question/Reflection Ratio		Skill practice worksheet
• Partnership Global Score		
Engaging in Equipoise Scenarios	MI Skill-Focused Workshop (1h)	Didactic presentation
• Understanding Equipoise		
• Skills for Engaging		
Transitioning from Focusing to Evoking	MI Skill-Focused Workshop (1h)	Video demonstration
• Focusing Skills		Skill practice worksheet
• Evoking Change Talk		
Transitioning from Evoking to Planning	MI Skill-Focused Workshop (1h)	Video demonstration
• Collaboration in Planning		Group discussion
Elicit Provide Elicit (EPE)	MI Skill-Focused Workshop (1h)	Video demonstration
• Use of EPE to Plan		Group discussion
Readiness Rulers	MI Skill-Focused Workshop (1h)	Video demonstration

• Using Rulers to Evoke Change Talk		Group discussion

Table 2.

Booster trainings to address needs identified and mentoring roadmap

Training Title	Type (Length)	Key Activities
• **Key Topics**		
Advanced OARS Skills to Enhance Motivation	MI Skill Booster Training (4h)	Didactic presentation
• Change Talk, OARS Skills		Video demonstration
		Skill practice worksheets
		Paired practice
MI-ndfulness	MI Skill Booster Training (1.5h)	Didactic presentation
• MI Spirit		Mindfulness practice
• Mindfulness		
• Imposter Syndrome		
Affirm/Seek/Emphasize	MI Skill Booster Training (2h)	Didactic presentation
• Affirmations		Live demonstration
• Seek Collaboration		Skill practice worksheets
• Emphasize Autonomy		
Written MI	MI Skill Booster Training (2h)	Didactic presentation

• MI Spirit		Live demonstration
• OARS Skills		Skill practice worksheet
		Group activity
		Paired practice
Mentoring Roadmap Overview	Mentoring Roadmap Training	Didactic presentation
• Correspondence with Four MI Processes	(1h)	
Mentoring Roadmap: Relationship Building	Mentoring Roadmap Training	Didactic presentation
• Engaging	(2h)	Skill practice group activity
		Paired practice
Mentoring Roadmap: Assessment	Mentoring Roadmap Training	Didactic presentation
• Focusing	(1h)	Skill practice worksheet
Mentoring Roadmap: Focusing	Mentoring Roadmap Training	Skill practice worksheet
• Focusing	(.5h)	
• Seeking Collaboration		
Mentoring Roadmap: Making a Plan	Mentoring Roadmap Training	Group discussion
• Planning	(.5h)	

[author reference removed for blind review]

Ayala, G., Bingham, T., Kim, J., Wheeler, D. P., & Millett, G. A. (2012). Modeling the impact of social discrimination and financial hardship on the sexual risk of HIV among Latino and Black men who have sex with men. American Journal of Public Health, 102 Suppl 2, S242-249. https://doi.org/10.2105/AJPH.2011.300641

Bruce, D., Kahana, S. Y., Bauermeister, J. A., Nichols, S. L., Hightow-Weidman, L. B., Heinze, J. E., … Fernández, M. I. (2015). Neighborhood-level and individual-level correlates of cannabis use among young persons living with HIV/AIDS. Drug and Alcohol Dependence, 151, 173–180. https://doi.org/10.1016/j.drugalcdep.2015.03.017

Chassin, L. (1997). Foreward. In J. E. Schulenberg, J. Maggs, & K. Hurrelmann (Eds.), Health risks and developmental transitions during adolescence (pp. xiii–xvi). Cambridge ; New York: Cambridge University Press.

Christens, B. D. (2012). Toward Relational Empowerment. American Journal of Community Psychology, 50(1), 114–128. https://doi.org/10.1007/s10464-011-9483-5

Cochran, S. D., & Mays, V. M. (2008). Prevalence of primary mental health morbidity and suicide symptoms among gay and bisexual men. In R. J. Wolitski, R. Stall, & R. O. Valdiserri (Eds.), Unequal opportunity: Health disparities affecting gay and bisexual men in the United States (pp. 97–120). New York: Oxford University Press.

Cook, P. F., Manzouri, S., Aagaard, L., O'Connell, L., Corwin, M., & Gance-Cleveland, B. (2017). Results From 10 Years of Interprofessional Training on Motivational Interviewing. Evaluation & the Health Professions, 40(2), 159–179. https://doi.org/10.1177/0163278716656229

Drevon, D. D., Almazan, E. P., Jacob, S., & Rhymer, K. N. (2016). Impact of Mentors During Adolescence on Outcomes Among Gay Young Adults. Journal of Homosexuality, 63(6), 821–837. https://doi.org/10.1080/00918369.2015.1112583

DuBois, D. L., & Karcher, M. J. (2014). Handbook of youth mentoring. Los Angeles: SAGE.

Easton, D., Iverson, E., Cribbin, M., Wilson, E., Weiss, G., & Community Intervention Trial for Yo. (2007). Space: The New Frontier in HIV Prevention For Young Men Who Have Sex With Men. AIDS Education and Prevention, 19(6), 465–478. https://doi.org/10.1521/aeap.2007.19.6.465

Faustino-Silva, D. D., Meyer, E., Hugo, F. N., & Hilgert, J. B. (2019). Effectiveness of Motivational Interviewing Training for Primary Care Dentists and Dental Health Technicians: Results from a Community Clinical Trial. Journal of Dental Education, 83(5), 585–594. https://doi.org/10.21815/JDE.019.063

Harper, G. W., Jamil, O., & Johnson, A. (2012, October). Resilience among Black gay/bisexual male adolescents: Implications for health promotion intervention. Presented at the American Public Health Association Conference, San Francisco, CA, USA.

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational Interviewing. Annual Review of Clinical Psychology, 1(1), 91–111. https://doi.org/10.1146/annurev.clinpsy.1.102803.143833

Johnson, A. S., Hall, H. I., Hu, X., Lansky, A., Holtgrave, D. R., & Mermin, J. (2014). Trends in Diagnoses of HIV Infection in the United States, 2002-2011. JAMA, 312(4), 432. https://doi.org/10.1001/jama.2014.8534

Kann, L., Olsen, E. O., McManus, T., Kinchen, S., Chyen, D., Harris, W. A., & Wechsler, H. (2011). Sexual Identity, Sex of Sexual Contacts, and Health-Risk Behaviors Among Students in Grades 9-12—Youth Risk Behavior Surveillance, Selected Sites, United States, 2001-2009. Morbidity and Mortality Weekly Report: Surveillance Summaries, 60(7), 1–133. Retrieved from JSTOR.

Lane, C., Hood, K., & Rollnick, S. (2008). Teaching motivational interviewing: Using role play is as effective as using simulated patients: Teaching motivational interviewing. Medical Education, 42(6), 637–644. https://doi.org/10.1111/j.1365-2923.2007.02990.x

Madson, M. B., Loignon, A. C., & Lane, C. (2009). Training in motivational interviewing: A systematic review. Journal of Substance Abuse Treatment, 36(1), 101–109. https://doi.org/10.1016/j.jsat.2008.05.005

Maggs, J. L., Schulenberg, J. E., & Hurrelmann, K. (1997). Developmental transitions during adolescence: Health promotion implications. In J. E. Schulenberg, J. Maggs, & K. Hurrelmann (Eds.), Health risks and developmental transitions during adolescence (pp. 522–546). Cambridge ; New York: Cambridge University Press.

Martins, R. K., & McNeil, D. W. (2009). Review of Motivational Interviewing in promoting health behaviors. Clinical Psychology Review, 29(4), 283–293. https://doi.org/10.1016/j.cpr.2009.02.001

Mastroleo, N. R., Magill, M., Barnett, N. P., & Borsari, B. (2014). A Pilot Study of Two Supervision Approaches for Peer-Led Alcohol Interventions With Mandated College Students. Journal of Studies on Alcohol and Drugs, 75(3), 458–466. https://doi.org/10.15288/jsad.2014.75.458

Meyer, I. H. (2003). Minority Stress and the Mental Health in Gay Men. In L. Garnets & D. C. Kimmel (Eds.), Psychological perspectives on lesbian, gay, and bisexual experiences (pp. 699–732). Retrieved from http://site.ebrary.com/id/10183386

Miller, W. R., & Rollnick, S. (2013). Motivational interviewing: Helping people change. Retrieved from http://dundee.eblib.com/patron/FullRecord.aspx?p=1034770

Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A Randomized Trial of Methods to Help Clinicians Learn Motivational Interviewing. Journal of Consulting and Clinical Psychology, 72(6), 1050–1062. https://doi.org/10.1037/0022-006X.72.6.1050

Millett, G. A., Peterson, J. L., Flores, S. A., Hart, T. A., Jeffries, W. L., Wilson, P. A., … Remis, R. S. (2012). Comparisons of disparities and risks of HIV infection in black and other men who have sex with men in Canada, UK, and USA: A meta-analysis. Lancet (London, England), 380(9839), 341–348. https://doi.org/10.1016/S0140-6736(12)60899-X

Millstein, S. G., Nightingale, E. O., Petersen, A. C., Mortimer, A. M., & Hamburg, D. A. (1993). Promoting the Healthy Development of Adolescents. JAMA, 269(11), 1413–1415. https://doi.org/10.1001/jama.1993.03500110081040

Moctezuma, G., & Guan, S. (2019). Socioeconomic disparities associated with awareness, access, and usage of Pre-Exposure Prophylaxis among Latino MSM ages 21-30 in San Antonio, TX. Journal of HIV/AIDS & Social Services, 18(2), 206–211. https://doi.org/10.1080/15381501.2019.1607795

Moyers, T. B., Manuel, J. K., & Ernst, D. (2015, June). Motivational Interviewing Treatment Integrity Coding Manual 4.2.1. Unpublished manual. Retrieved from https://casaa.unm.edu/download/MITI4_2.pdf

Naar-King, S. (2011). Motivational Interviewing in Adolescent Treatment. The Canadian Journal of Psychiatry, 56(11), 651–657. https://doi.org/10.1177/070674371105601103

Naar-King, S., Outlaw, A., Green-Jones, M., Wright, K., & Parsons, J. T. (2009). Motivational interviewing by peer outreach workers: A pilot randomized clinical trial to retain

adolescents and young adults in HIV care. AIDS Care, 21(7), 868–873. https://doi.org/10.1080/09540120802612824

Naar-King, S., & Suarez, M. (2011). Motivational interviewing with adolescents and young adults. New York: Guilford Press.

Nagata, J. M. (2020). Rapid Scale-Up of Telehealth During the COVID-19 Pandemic and Implications for Subspecialty Care in Rural Areas. The Journal of Rural Health, jrh.12433. https://doi.org/10.1111/jrh.12433

Oster, A. M., Wiegand, R. E., Sionean, C., Miles, I. J., Thomas, P. E., Melendez-Morales, L., … Millett, G. A. (2011). Understanding disparities in HIV infection between black and white MSM in the United States. AIDS (London, England), 25(8), 1103–1112. https://doi.org/10.1097/QAD.0b013e3283471efa

Ostrow, D. G. (2000). The Role of Drugs in the Sexual Lives of Men Who Have Sex with Men: Continuing Barriers to Researching This Question. AIDS and Behavior, 4(2), 205–219. https://doi.org/10.1023/A:1009520809581

Ostrow, D. G., & Stall, R. (2008). Alcohol, tobacco, and drug use among gay and bisexual men. In R. J. Wolitski, R. Stall, & R. O. Valdiserri (Eds.), Unequal opportunity: Health disparities affecting gay and bisexual men in the United States (pp. 121–158). New York: Oxford University Press.

Pennell, D., Campbell, M., Tangen, D., Runions, K., Brooks, J., & Cross, D. (2018). Facilitators and barriers to the implementation of motivational interviewing for bullying perpetration in school settings. Scandinavian Journal of Psychology, 61(1), 143–150. https://doi.org/10.1111/sjop.12502

Perrin, A. (2019, May 31). Digital gap between rural and nonrural America persists. Retrieved July 7, 2020, from Pew Research Center website: https://www.pewresearch.org/fact-tank/2019/05/31/digital-gap-between-rural-and-nonrural-america-persists/

Remafedi, G. (2008). Health disparities for homosexual youth: The children left behind. In R. J. Wolitski, R. Stall, & R. O. Valdiserri (Eds.), Unequal opportunity: Health disparities affecting gay and bisexual men in the United States (pp. 121–158). New York: Oxford University Press.

Simper, T. N., Breckon, J. D., & Kilner, K. (2017). Effectiveness of training final-year undergraduate nutritionists in motivational interviewing. Patient Education and Counseling, 100(10), 1898–1902. https://doi.org/10.1016/j.pec.2017.05.016

Stewart, C., & Openshaw, L. (2014). Youth Mentoring: What Is It and What Do We Know? Journal of Evidence-Based Social Work, 11(4), 328–336. https://doi.org/10.1080/10911359.2014.897102

Tobin, K., Edwards, C., Flath, N., Lee, A., Tormohlen, K., & Gaydos, C. A. (2018). Acceptability and feasibility of a Peer Mentor program to train young Black men who have sex with men to promote HIV and STI home-testing to their social network members. AIDS Care, 30(7), 896–902. https://doi.org/10.1080/09540121.2018.1442553

Torres, R. S., Harper, G. W., Sánchez, B., & Fernández, M. I. (2012). Examining Natural Mentoring Relationships (NMRs) among Self-Identified Gay, Bisexual, and Questioning (GBQ) Male Youth. Children and Youth Services Review, 34(1), 8–14. https://doi.org/10.1016/j.childyouth.2010.12.018

Victor, E. C., El-Behadli, A. F., McDonald, W. C., Pratt, C. D., & Faith, M. A. (2019). Motivational Interviewing Training Outcomes Among Providers in a Children's Hospital. Journal of Clinical Psychology in Medical Settings, 26(3), 364–371. https://doi.org/10.1007/s10880-018-9589-0

Young, M. E. (2013). Learning the art of helping: Building blocks and techniques (5th ed). Upper Saddle River, N.J: Prentice Hall.