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Motivational Interviewing Targeting Risk Reduction for People with HIV: A Systematic Review

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Abstract Due to the co-occurrence of sexual risk behaviors and substance use among HIV-positive individuals, there is often a need for HIV prevention efforts to target multiple behaviors. Motivational Interviewing (MI), a widely disseminated behavior change intervention, has demonstrated effectiveness in promoting behavior change among persons with HIV and has been utilized to target these co-occurring risk behaviors. To identify the efficacy of MI in relation to sexual risk and substance use, we conducted a systematic review of research literature published before May 2012, which focused on treatment fidelity, study design, and findings. Results suggest that MI has the potential to reduce sexual risk behavior, but the effects on reducing substance use were less consistent. We identify opportunities for future research with HIV-positive individuals, including the development of interventions assessing the effects of MI on illicit drug use, utilizing higher fidelity standards in intervention implementation and studies of transportability and cost-effectiveness.

Keywords Behavioral aspects of HIV management · Co-occurring risk behaviors · MI · Motivational interviewing · MSM · Risk reduction · HIV · Substance use · Sexual risk

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Introduction

In 2003, the Centers for Disease Control [1] announced the "Advancing HIV Prevention Initiative" and outlined new strategies for a changing epidemic. Central to this initiative was the idea of 'prevention with positives,' a focus on preventing new infections by working with people with HIV and their partners. HIV transmission behaviors include sexual risk and substance use, and recently there has been a focus on HIV treatment adherence as prevention [2]. Further, because of the co-occurrence of behaviors related to HIV risk among HIV-positive persons (e.g., substance use exacerbates sexual risk, alcohol use can decrease HIV treatment adherence), there is often a need for HIV prevention efforts to target multiple behavior changes.

A major evidence-based behavior change intervention, Motivational Interviewing (MI) [3], has been shown to be effective promoting behavior change across many problem behaviors in the general population [4, 5•, 6]. MI is a collaborative, goal-oriented method of communication to elicit and strengthen motivation for change [7]. MI is specified by its relational and technical components [8]. Relational components refer to the counselor's demonstration of empathy, collaboration, evocation and autonomy support, while technical components refer to specific techniques (e.g., specific open-ended questions, affirmations, reflections, summaries) to elicit and reinforce client verbalizations

of arguments for change ("change talk"). Because MI is a method of communication, it can be utilized in many formats (e.g., single session or multiple sessions), it may be used alone to increase motivation for change or in combination with skills-building treatments, and it may be delivered by many types of providers. While a recent review focused on MI and HIV treatment adherence [9•], the goal of this paper is to review the research literature on MI with HIV+ men and women targeting sexual risk and substance use. We include full-scale randomized clinical trials (RCTs), as well as randomized pilot studies, that were published before May 2012. We include studies that utilized MI alone or in combination with other intervention strategies such as cognitive-behavioral treatment (CBT).

In addition to reporting on design, intervention procedures, sample demographics, and findings, we also focus on treatment fidelity. As defined by the NIH Health Behavior Change Consortium [10], treatment fidelity denotes "the methodological strategies used to monitor and enhance the reliability and validity of behavioral interventions." While studies may report that the interventions were based on the "principles of MI", typically referring to the relational components, MI interventions must be delivered with competency to relational and technical components. Consistent with the consortium's guidelines [11], we review studies for their reporting of four components of fidelity of treatment delivery: use of a manual, initial training, ongoing supervision, and mechanism for assessing fidelity of recorded sessions. Although MI does not have a formal trainer certification process, the intervention developers have a Train the Trainer program and formal membership in the Motivational Interviewing Network of Trainers (MINT). The "gold standard" for assessing fidelity is the coding of recorded sessions with a standardized measure such as the Motivational Interviewing Treatment Integrity codes (MITI) [12]. MITI coding generates data on competency levels, ranging from below competency to beginner competency to expert. To evaluate acceptability and generalizability, studies are also reviewed for refusal rates, *study* retention and *intervention* retention.

To identify candidate studies, an electronic literature search was conducted utilizing PubMed, PsycINFO, Google Scholar and a review of articles in press at major HIV-related journals. Keywords searched included terms related to HIV (*HIV*; *human immunodeficiency virus*; *AIDS*; *acquired immunodeficiency syndrome*), Motivational Interviewing (i.e., *motivational interviewing*; *motivational enhancement*; *motivational enhancement therapy*; *motivational interventions*), and either sexual risk (i.e., *safe sex*; *sexual risk-taking*) or substance use (i.e., *substance use*; *drug use*; *alcohol; drugs*). The search was open to various study designs including RCTs and rigorous non-RCTs. Study subjects were primarily HIV-positive persons, though studies that included both HIV-positive and HIV-negative persons were also considered. All resulting abstracts were screened.

Studies were retained for inclusion in the review if they met the following criteria: 1) explicitly utilized MI; 2) focused exclusively or primarily on an HIV+ sample; and 3) targeted sexual risk or substance use as one or the only behavior change focus. Twelve studies met full inclusion criteria. Six full-scale RCTs and one randomized pilot study tested MI to target sexual risk alone or in combination with substance use. Three full- scale RCTs targeted substance use alone or in combination with adherence, and all targeted alcohol. Two randomized pilot studies used MI to target substance use, one focusing on crack cocaine and one focusing on any illicit drug (see Table 1).

Studies Targeting Sexual Risk Alone or in Combination with Substance Use/Adherence

Full Scale Randomized Clinical Trials

Two full-scale RCTs tested MI for sexual risk behavior alone and did not include other risks. Golin et al. [13] randomized 490 sexually active adults with HIV from three sites to SafeTalk, four monthly 50-minute MI sessions targeting sexual risk reduction, or to a four session attention control addressing nutrition and physical activity. Participants had to have been sexually active in the last 12 months but did not have to have had unprotected sex. Of those approached for screening, 29 % refused. Of those screened and eligible, 20 % refused. Follow-up rates were 84 % at 4 months, 76 % at 8 months, and 63 % at 12 months. Mean age was 43, 71 % were African American, and 35 % were women. MI counselors were advanced degreed clinicians who received initial training from a MINT trainer. In terms of fidelity procedures (see Table 2), the intervention was manualized, and sessions were recorded and reviewed during ongoing supervision but not formally coded. The authors did not report dose of intervention received, though they noted that 64 participants elected to have some sessions by phone. At 8-month follow-up, participants in the intervention group significantly reduced unprotected intercourse with any partner and with partners who were HIV- or unknown status compared to control participants. In terms of longitudinal analysis over 12 months, intervention participants significantly reduced unprotected intercourse with negative/unknown partners.

Mausbach et al. [14] developed the EDGE intervention to address sexual risk in HIV+ men who have sex with men (MSM) who use methamphetamine but did not target substance use directly. The authors state that MI was used as an adjunct to an existing cognitive-behavioral skills building

Table 1 Summary of studies

Authors	Target behavior(s)	Sample	Outcome	Intervention and control
Aharonovich et al. [28]	Non-injection drug use	HIV+ men and women N=40	Pilot study: no significant differences but large effect size	Single session MI + phone-based self-monitoring and feedback vs. MI alone
Gilbert et al. [16]	Substance use and sexual risk	HIV+ men and women (N=476)	Decrease in unprotected sex acts and illicit drug use	Single session of computerized tailored, interactive MI video intervention vs. assessment only
Golin et al. [13]	Sexual risk	HIV+ men and women (N=490)	Decrease in unprotected sex acts	Multisession MI/CBT vs. health education matched for dose
Gwadz et al. [26]	Substance use	HIV+ and HIV- mothers (N=118)	Both groups reduced use, but those in the intervention group with greater initial use were more likely to maintain reductions in alcohol use	Multi-session MI/CBT vs. single session video
Hasin et al. [27]	Alcohol use	HIV+ men and women (N=254)	Reduced number of drinks per day	Single session MI + phone-based self-monitoring/feedback vs. MI alone
Holstad et al. [19]	Adherence and sexual risk	HIV+ women (N=203)	No differences, but intervention attendees were more likely to be abstinent or use protection 100 % of the time	Multi-session group MI vs. health education matched for dose
Ingersoll et al. [29] + A12	Adherence and substance use	HIV+ men and women (N=54)	Pilot Study: No differences; both groups improved	Multi-session MI/CBT vs. video education targeting same risks matched for dose
Lovejoy et al. [24]	Sexual Risk	HIV+ men and women (N=100)	Pilot Study: Decrease in unprotected sex in 4-session MI compared to 1-session MI and controls	4-session MI vs. 1-session MI vs. assessment only
Mausbach et al. [14]	Sexual risk	HIV+ MSM (N=341)	Increase in protected sex acts	Multi-session MI/CBT vs. health education matched for dose
Naar-King et al. [20]	Adherence, Sexual Risk and Substance Abuse	HIV+ Adolescents and Young Adults (N=186)	Decrease in viral load, decrease in unprotected sex acts and substance abuse in subpopulations based on baseline level of risk	Multi-session MI vs. referrals only
Parsons et al. [25]	Adherence and Alcohol Use	HIV+ men and women (N=143)	Decrease in viral load; no differences in alcohol use as both groups improved	Multi-session MI/CBT vs. video education targeting same risks matched for dose
Velasquez et al. [17] + A18	Alcohol use, sexual risk	HIV+ MSM (N=253)	Decrease in number of days where both drinking and risky sex occurred	Multi-session MI/CBT vs. handouts/referrals

intervention [15]. The intervention consisted of five weekly 90-minute individual counseling sessions followed by three monthly booster sessions also 90 minutes each. Advanced degreed therapists delivered sessions over a three-month period. The same therapists delivered the control condition matched for dose and focusing on nutrition and physical activity. Eligibility included unprotected sex with at least one negative/unknown partner in the last 4 months and having snorted or smoked methamphetamine at least twice in the past 2 months and at least once in the past 30 days. Refusal rates were not reported. Of the 340 enrolled MSM, 61 %, 57 %, and 53 % completed the 4-, 8-, and 12-month follow-ups. Participants had a mean age of 37 years (range= 20–61), and 57 % were Caucasian. Fidelity procedures (Table 2) included manualization, initial training and annual boosters, direct weekly observation for three weeks, and coding of audiotaped sessions. However, it is unclear if these procedures were specific to the skills building modules or to MI and the authors did not report whether the trainer was a MINT member or whether sessions were coded for MI fidelity using MI coding schemes. EDGE intervention participants attended an average of six sessions with 55 % (n=94) attending all sessions. There were no differences by condition in unprotected sex acts, but EDGE participants engaged in significantly more protected sex acts at the 8-month and 12-month follow-up. At 12 months the EDGE group had a greater percentage of sex acts that were protected compared to the control group. EDGE participants also had significantly higher self-efficacy for safer sex practices over the 12-month period.

Table 2 Fidelity components

Authors	MINT trainer	Manual	Post- training supervision	Fidelity rating
Aharonovich et al. [28]	Yes	NR	Yes	Yes
Gilbert et al. [16]	NA	NA	NA	NA
Golin et al. [13]	Yes	Yes	Yes	NR
Gwadz et al. [26]	NR	Yes	NR	NR
Hasin et al. [27]	Yes	Yes	Yes	Yes
Holstad et al. [19]	Yes	Yes	Yes	Yes
Ingersoll et al. [29]	Yes	Yes	Yes	NR
Lovejoy et al. [24]	NR	Yes	Yes	Yes
Mausbach et al. [14]	NR	Yes	Yes	NR
Naar-King et al. [20]	Yes	Yes	Yes	Yes
Parsons et al. [25]	Yes	Yes	Yes	Yes
Velasquez et al. [17]	Yes	Yes	Yes	No

NR=not reported; NA=not applicable

Four RCTs tested MI interventions targeting sexual risk in combination with substance use and/or adherence. Gilbert et al.'s [16] Positive Choice intervention was a single-session technology-delivered MI intervention targeting sexual risk and substance use. Eligibility included at least one risk behavior: alcohol use, illicit drug use or sexual risk. Drug risk was defined as 1) any use of the following: crack or powder cocaine; methamphetamine or heroin; or 2) 3 or more days of use of barbiturates, non-prescribed opiates, inhalants, hallucinogens, or ecstasy. Marijuana use was not included because of medicinal marijuana practices. Risky alcohol use was defined as exceeding the US National Institute on Alcoholism and Alcohol Abuse's recommended number of drinks per week (14 or fewer for men; 7 or fewer for women) and/or 3 or more binge drinking episodes (5 or more drinks on 1 occasion for men; 4 or more drinks on 1 occasion for women) within the previous 3 months. Sexual risk was defined as anal or vaginal intercourse without a condom. Adults from 5 HIV clinics in San Francisco (N= 476) were randomized to receive tailored risk-reduction MI-consistent messages from a "Video Doctor" via laptop computer and a printed educational worksheet or an assessment-only control condition. In addition, a summary of the patient's risk profile and readiness to change and suggested risk-reduction counseling statements were placed in the participants' medical record to cue medical providers. The counseling session for participants averaged 24 minutes in length. A booster session with the same components was provided at 3 months. Refusal rate was 4 % and study retention was over 80 % at 6 months. The sample was 79 % male and 50 % African American with a mean age of 44. Intervention occurred with data collection with 75 % receiving both sessions. Seventy-four percent of baseline Cueing Sheets and 72 % of 3-month follow-up Cueing Sheets were checked or signed by providers, indicating they were used in the medical appointment. Compared with controls, intervention participants reduced illicit drug use and unprotected intercourse over 6 months of follow-up, but there were no changes in alcohol use. Fidelity procedures were not applicable.

Velasquez et al. [17] tested Positive Choices, a multicomponent intervention targeting alcohol use and risky sex in a randomized trial with 253 HIV+ MSM. The intervention consisted of four individual 50-minute MI sessions with trained advanced degreed therapists to reduce alcohol use, four peer-led two-hour group sessions combining MI and CBT to promote safer sex practices. The 3-month long intervention was "sandwiched" such that the initial two individual MI sessions were followed by four group sessions, and then finishing with two more individual MI sessions. The control condition provided educational materials and referrals only. MSM were eligible if they had any oral or anal intercourse with another man in the last 3 months and problem level alcohol use defined as a score of 8 or above on the Alcohol Use Disorders Identification Test (AUDIT; [18]). Of those who phoned for screening, 24 % either refused participation or failed to show for their baseline assessment. The authors report that 85 % received the intervention, but dose of intervention received was not reported. In terms of fidelity (Table 2), the intervention was manualized, and MI therapists were trained and received ongoing supervision by a MINT trainer. Sessions were videotaped and watched by a MINT trained therapist who also provided regular supervision to therapists, but there was no formal fidelity coding protocol. The peer group counselors attended an initial MI workshop and ongoing supervision but no session recording or coding. Of the 253 enrolled men, 80 %, 77 %, 71 %, and 70 % completed 3-, 6-, 9- and 12-month follow-ups. A main effect for treatment was found on reported number of drinks and heavy drinking days per 30-day period over 12 months of follow-up. There was no treatment effect on days of unprotected sex, but

those in the treatment group were significantly more likely to reduce the number of days in which both heavy drinking and unprotected sex occurred compared to controls.

Holstad et al. [19] tested Kharma, an eight-session nurse-led group-based MI/CBT intervention targeting sexual risk and adherence in HIV+ females, only half of whom were sexually active at baseline. The control condition was eight sessions of health education. The sessions in both conditions lasted between 90 and 120 minutes. Participants were mostly African American (95 %) with a mean age of 45. Refusal rates were not reported, but of 249 screened, 207 were randomized. Retention over 9 months of follow-up was greater than 85 %. The percentage attending each MI session was over 75 %, but the authors do not report how many received a full dose. Fidelity procedures (Table 2) included manualization, training by a MINT trainer, recording and coding of videorecorded sessions, and ongoing supervision. However, the type of coding system used was not reported. Results suggested no treatment by time interactions. In subgroup analysis with those in treatment and controls who attended at least seven sessions (58 %), women in Kharma were more likely to be sexually abstinent at follow-up.

Healthy Choices consisted of four 60-minute clinic-based MI sessions targeting sexual risk behavior, substance use and adherence, and Naar-King et al. [20] tested the intervention in 205 adolescents and young adults with HIV (ages 16-24) from five cities. Only 3 % refused screening [21], and 7 % of eligible youth refused to enroll. Mean age was 21, and the sample was mostly African American and half male. Youth had problem-level substance abuse (elevated scores on CRAFFT (elevated scores on CRAFFT; [22]), sexual risk (unprotected intercourse in last 3 months) or adherence (self-report <90 % adherence) at study entry. Study retention was greater than 80 % across 15 months of follow-up. The control group was multidisciplinary standard care, which included mental health services, risk reduction and adherence counseling. The intervention was manualized. Advanced degreed therapists were trained by a MINT trainer and received ongoing supervision, and coding of audiotaped sessions with the MITI (Table 2). Youth received a $10 gift card for session attendance. While 84 % of the intervention group attended at least one intervention session, only 49 % attended all four sessions. Intent to treat analysis showed that that the Healthy Choices intervention was associated with significant decline in viral load at 6-month follow-up but not at 9 months [20]. Developmental trajectory analyses over 15 months also suggested that while the effect of Healthy Choices was relatively smaller among the high risk groups, the intervention resulted in reductions in self-reported alcohol use and in reductions in self-reported marijuana use for moderate and infrequent users [23]. For those with no sexual risk at baseline, Healthy Choices participants were more likely to maintain low levels of sexual risk behaviors compared to controls who increased sexual risk over time. For those with high levels of sexual risk behavior at baseline, Healthy Choices participants had fewer unprotected sex acts than controls over time, but still had high levels of sexual risk behavior.

Pilot Studies

Lovejoy et al. [24] focused on sexual risk alone in an older sample (N=100) of adults with HIV in pilot RCT comparing a four-session telephone delivered MI intervention, a one-session telephone MI intervention, and a no-treatment control. Eligible participants reported engaging in at least one occasion of unprotected anal and/or vaginal intercourse in the 3 months prior to study enrollment. Of 307 mailed screeners, 88 % were returned. Of 107 eligible, only 5 % refused. Study retention was 92 % at 3 months and 95 % at 6 months. The sample was 51 % male, 62 % African American with a mean age of 54. Advanced degreed therapists received initial training (did not specify MINT trainer) including manual review, weekly supervision, and coding of audiotaped sessions with the MITI (Table 2). The one-session telephone MI intervention averaged 48.39 minutes long, while the four-session MI had a combined average duration of 163.13 minutes. Most (75 %) of the more intensive intervention participants received all four sessions. Those receiving four sessions had the lowest rates of unprotected sex acts compared to the single session and control participants who did not differ from each other. Interestingly, MI fidelity based on MITI coding was significantly associated with lower levels of unprotected sex at 3-month follow-up across both intervention groups.

Summary of MI Targeting Sexual Risk Behaviors in Persons with HIV

All six full-scale clinical trials showed significant effects on components of sexual risk behavior regardless of using MI alone or MI in combination with CBT and despite variability in demographics and substance use status. However, the group-based intervention only found effects within the subsample of session attendees. With regard to baseline sexual risk, two studies included only participants who had current unprotected intercourse, two included participants with sexual risk or substance use, and one included any sexually active adult regardless of risk. Half the clinical trials had attention controls. Most studies (86 %) had adequate recruitment and retention. All face-to-face interventions were manualized and provided by advanced degreed clinicians. Three of the four face-to-face studies utilized MINT trainers, but only one full-scale RCT used coding specifically designed to assess fidelity of delivery of MI (using the MITI). One

limitation is that all studies relied on self-report of sexual risk behavior and none assessed rates of STIs. Of those studies reporting dose, intervention retention seems to decline when more than two office-based sessions were provided.

Studies Targeting Substance Use Alone or in Combination with Adherence

Full Scale Randomized Clinical Trials

Three full-scale RCTs tested MI to reduce substance use in persons with HIV and all targeted alcohol. Parsons et al. [25] tested Project PLUS, a 3-month, eight-session MI/CBT intervention to reduce alcohol consumption and improve medication adherence in 143 men and women with HIV who met criteria for hazardous drinking (score of 8 or greater on AUDIT and >16 standard drinks per week for men or >12 standard drinks per week for women). The attention control condition consisted of eight sessions of structured discussions with a health educator about videos related to HIV, adherence and alcohol. Each session in both conditions was designed to be 60 minutes in length. Of those screened eligible, 27 % did not participate. Mean age was 44, 66 % were African American, and 80 % were men. Study retention was 91 % at 3 months and 90 % at 6 months. The PLUS intervention was manualized, advance degreed therapists received training and ongoing supervision from a MINT trainer, and 10 % of all audiorecorded sessions were coded with the MITI in order to maintain fidelity (Table 2). Intervention participants attended an average of seven sessions with 62 % attending all eight sessions. Compared to controls, intervention participants had significant decreases in viral load and increases in CD4 cell count at the 3-month follow-up but not at the 6-month follow-up. There were no significant intervention effects for alcohol use as both groups decreased in reported use.

Gwadz et al. [26] randomized HIV+ (N=65) and HIV-negative (N=53) mothers with problem level drinking (score of 6 or greater on AUDIT and no injection drug use) to a 14-session MI/CBT intervention or a single session video intervention. Seven intervention sessions focused on alcohol and seven on parenting. Each intervention session lasted one and a half hours, while the single session intervention lasted two hours. Refusal rate was 6 %. Retention rates were over 90 % for all 3-, 6-, 12- and 18-month follow-ups. Average intervention session attendance was 12, 86 % completed the seven substance use sessions, and 79 % completed both modules. The intervention was manualized but no information regarding additional fidelity procedures was reported. Both intervention arms yielded reductions in alcohol and drug use frequency, alcohol quantity, and alcohol/drug problems, with moderate effect sizes. Those with greater initial substance use maintained reductions in alcohol use over a longer period of time in response to the intervention. Treatment efficacy did not vary by HIV status, but it is unclear if there was sufficient power to test this effect.

Hasin et al. [27] tested a very brief (20 minute) MI session followed by HealthCall, a 60-day brief (1-3 minute) daily telephone Interactive Voice Response (IVR) platform to facilitate ongoing self-monitoring, awareness of drinking, and self-efficacy regarding drinking reduction. HealthCall data were compiled into a database used to provide personalized feedback to patients via a computer-generated graph. At 30 and 60 days, counselor and patient met for 10-15 minutes to review progress and goal-setting. Adults (N=258) with HIV and problem level drinking (≥4 standard drinks of alcohol at least once in the prior 30 days) were randomized to MI+HealthCall, MI alone (initial, and 30 and 60 day sessions), and an educational control condition matched for dose. The sample was 49 % African American, and 45 % Hispanic. Mean age was 46 years, and 78 % were men. Refusal rates were not reported. Study retention at 30 *or* 60 days was 87 %, and retention for face-to-face sessions was not reported. Participants in the HealthCall group completed a median of 63 % of calls. Counselors were both advanced degree and paraprofessionals. In terms of fidelity procedures (Table 2), they received training from a MINT trainer, weekly supervision, and MITI coding of audiotaped sessions. There was no report of a manual. Follow-up period was short with the last follow-up immediately post-intervention (60 days). While all groups decreased their mean drinks/drinking day over the 60 days, the MI+HealthCall group was the only arm whose mean drinks per drinking day was lower than the ≤4 drinks eligibility criterion for the study. Participants in the MI+HealthCall group had significantly fewer drinks/drinking day than those in the MI-only group and the control group at 30 and 60 days, with no differences between MI-only and controls.

Pilot Studies

In a randomized pilot trial, Aharonovich et al. [28] tested the above MI+HealthCall intervention compared to MI alone targeting non-injecting illicit drug use in 40 adults with HIV who reported more than 4 days of use in the last month. Seven were excluded for medical marijuana use. The most commonly used drug was crack/cocaine followed by non-injected heroin and methamphetamine. Of 43 screened, only one refused. Mean age was 45, 76 % were male, and 64 % were African American. Retention rates were 85 % at 30 days 79 % at 60 days. Intervention retention was the

same since the intervention was offered at data collection points. Intervention and fidelity procedures were identical to the trial above. At 60 days, the MI+HealthCall group had lower levels of drug use compared to controls at the trend level with a large effect size.

Ingersoll et al. [29] randomized 54 HIV+ crack cocaine users (any use in last 30 days) with <90 % medication adherence to a six-session MI/CBT intervention delivered over 8 weeks or a video plus debriefing condition matched for dose. Of 201 screened, none refused. The sample was 82 % African American, 51 % women with a mean age of 45. Most participants were African-American (82 %) heterosexual (59 %), and crack cocaine dependent (92 %). Retention rates were 80 % at 3 months and 75 % at 6 months. The manualized interventions were delivered by advanced degreed therapists who received training and supervision from a MINT trainer. Each session for both conditions lasted 45-60 minutes. Sessions were recorded and reviewed but not formally coded (Table 2). Most participants (74 %) completed all six sessions. Results suggested significant improvement in self-reported adherence and self-reported substance use in both groups with no differences between conditions.

Summary of MI Targeting Sexual Risk Behaviors in Persons with HIV

Unlike studies of sexual risk, the MI studies (most including CBT) targeting substance use did not seem to show added benefit compared to strong attention controls. However, brief MI with automated self-monitoring and feedback reduced alcohol compared to a brief attention control though participants were only followed for two months. Study recruitment and retention were generally adequate, and intervention retention was somewhat stronger than in studies of sexual risk. Study samples were mostly men with the exception of one study targeting mothers. All studies relied on self-report of substance use, and there were more studies targeting alcohol than other substances. All studies utilized advanced degreed counselors (though HealthCall used both advanced degreed and paraprofessionals) with strong fidelity procedures (two of the three full-scale trials used MITI coding).

Conclusions

Risk reduction interventions for persons living with HIV are critically needed to curb the epidemic. MI is a widely disseminated behavior change intervention with multiple metanalyses demonstrating its effects on various areas of behavior change in persons with negative or unknown status (e.g., [4, 5•, 30, 31•]). A systematic review [9•] suggested that MI was effective in promoting treatment adherence in persons with HIV. The current systematic review of MI targeting sexual risk and/or substance use in persons living with HIV identified nine clinical trials and three randomized pilot studies. Almost all studies targeted adults and more studies focused on men. Results suggested the potential of MI to reduce sexual risk behavior, but many studies did not use strong attention controls. Thus, future research is necessary to determine if MI is effective in reducing sexual risk beyond traditional educational approaches.

The effects of MI to reduce substance use were less consistent than sexual risk. More intensive interventions to reduce substance use were not successful compared to strong attention controls. These studies combined MI with CBT, thus the effects of MI alone were not known. Two studies with the strongest effects on substance use utilized brief MI with a technology component compared to a brief control. A quasi-experimental study showed that a computer- based MI intervention was associated with risk reduction in a large sample of adults from six medical clinics [32]. Thus, it is possible that MI may be most effective for this population in brief formats, particularly taking advantage of technology delivery formats, and that more research is needed to determine what intensive treatment components are most effective for long-term change in persons with HIV, particular in the area of substance use. Future studies are needed to assess the effects of MI on illicit drug use as full-scale trials only targeted alcohol.

Most interventions reported some of the best fidelity practices including manualization, training by a MINT trainer, and ongoing supervision, but only a few studies utilized a "gold standard" of coding session recordings. Many of the studies were conducted before the MITI was published. Thus, future studies are encouraged not only to consider coding sessions but also to report average competency scores and procedures to intervene if coding scores are low. No studies utilized objective outcome measures such as STIs or biological indicators of alcohol or drug use. There were no studies in resource-poor settings, though a Healthy Choices adapted for Thai youth has been shown to be feasible and a pilot randomized trial is underway [33]. Most studies used advanced degreed therapists, but there is data to suggest that paraprofessionals may be successful in the HIV continuum of care when strong fidelity monitoring procedures are in place [34, 35]. Utilizing paraprofessionals indigenous to HIV service agencies such as outreach workers and those providing HIV testing may enhance the transportability of successful MI interventions. Future directions necessary for the dissemination of potentially successful interventions include studies of MI implementation and cost-effectiveness.

Disclosure No potential conflicts of interest relevant to this article were reported.

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