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Motivational Interviewing as Evidence-Based Practice? An Example from Sexual Risk Reduction Interventions Targeting Adolescents and Young Adults

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Abstract
This paper critically examines sexual risk reduction interventions, more specifically how they are evaluated and the implications that this has for sexual health policy. The focus is on motivational interviewing (MI) interventions which aim to promote protective behaviors related to sexual risk on the part of young people. MI has become increasingly popular, largely due to it being a highly flexible counseling approach that may, with adequate staff training, and fidelity in implementation, be tailored to many different settings (e.g., health care, schools and in community work). Following a scoping review that comprised 34 papers, of which 29 were unique studies, the range and type of existing research were examined. The results show a wide range of study designs and evaluation procedures, MI conceptualizations, modes of MI delivery, and the particular sub-populations of youth and sexual risk behaviors targeted. While this makes it difficult to draw any generalized conclusions about "what works" in prevention, it provides important insights about the complexity of sexual risk behavior as well as complex behavioral treatment approaches like MI. We therefore problematize the political drive to implement evidence-based methods without adequate resource allocation and contextual adaptation.

Keywords Sexual health policy · Evidence-based practice · Motivational interviewing · Youth and young adults · SRHR · Scoping review

Introduction

Evidence-informed decision-making has become institutionalized as a way for governments and authorities to define social problems and develop policies that answer to them. Originating in medicine and allied fields, the discourse of evidence-based practice (EBP) has become increasingly accepted within the social and public health sector (Morago, 2006). In many contexts, EBP has been launched as a top–down project underpinned by a neoliberal ideology aiming for more effective public services. In this article, we report on a scoping review that investigated motivational interviewing (MI) interventions aiming to promote the choice of protective health behaviors and avoidance of sexual risk behaviors and related consequences on the part of young people (Folkhälsomyndigheten, 2018). The review was commissioned by the Public Health Agency of Sweden as part of their monitoring of the National Strategy Against HIV, AIDS and Certain other Infectious Diseases (SFS, 2005/06:60), and the National Action Plan on Chlamydia Prevention (Socialstyrelsen, 2009) .

The background to the prevention strategies is a trend of increasing risky sexual behavior among youth (Folkhälsomyndigheten, 2017; Stenhammar, Ehrsson, Åkerud, Larsson, & Tyden, 2015). The National Strategy included a statement on the need to "strengthen the knowledge base to ensure more qualified assessments and analyses to improve the opportunities to carry out knowledge-based prevention" (SFS, 2005/06:60, p. 108). MI, one of the methods proposed in the plan, was described as a "well-suited evidence-

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based method for this patient group" (Socialstyrelsen, 2009, pp. 30, 41)—albeit without providing references to support this claim.

In this paper, we present findings from the scoping review, which aimed to map and characterize MI interventions targeting young peoples' sexual risk-taking behaviors. Our results show considerable variety in MI conceptualization and delivery. While this makes it difficult to draw any generalized conclusions about "what works" in prevention, it also provides important insights about the complexity of sexual risk behaviors as well as about complex behavioral treatment approaches like MI. In turn, our results problematize the political drive to implement evidence-based methods without adequate resource allocation and contextual adaptation.

Sexual Risk Behavior and Prevention

A clear definition of sexual risk is lacking, but often, it refers to the risk of contracting STIs, inconsistent or improper use of barrier contraception, high number of lifetime sex partners, multiple sex partners, sexual intercourse under the influence of mind-altering substances, and sexual intercourse with a partner who has an STI or is at high risk for contracting an STI (O'Connor et al., 2014). In this study, sexual risk is defined as sexual behavior that increases the risk of STIs and unintended pregnancies. In terms of prevention, consistent condom use has been shown to be highly effective in preventing STIs (Niccolai, Rowhani-Rahbar, Jenkins, Green, & Dunne, 2005; Weller & Davis-Beaty, 2002), but how to effectively promote this is less clear.

A recent review indicated that only interventions combining multiple components such as education and contraception promotion managed to significantly reduce unintended pregnancy, although conclusions were limited due to inconsistent outcomes across trials, self-report bias, and methodological weakness (Oringanje et al., 2016). A more clear-cut example is the 10-Year Teenage Pregnancy Strategy for England. An evaluation showed that a long-term strategy combined with multiple interventions and arenas resulted in a 51% reduction in the under 18 conception rate from 1998 to 2014 (Hadley, Chandra-Mouli, & Ingham, 2016). Some of the key factors identified were the following: senior leadership and accountability, consistent Sexuality and Relationship Education (SRE), youth-friendly contraceptive/sexual health services, targeted prevention for young people at risk, support for parents to discuss relationships and sexual health, training for both health and non-health professionals, and continuous monitoring of progress.

In other words, due to the complex nature of sexual risk behaviors, sexual risk prevention is a multi-level operation. Reported barriers to condom use include embarrassment over purchasing condoms, insecurity about correct condom use, use of other contraception, getting "carried away" in a sexual moment, and co-occurring alcohol and other substance use (Bauman, Karasz, & Hamilton, 2016). Condom use also varies with regard to relationship type and sexual practice (Fridlund, Stenqvist, & Nordvik, 2014). Furthermore, sexual behavior is highly influenced by context, gender stereotypes, and social norms (Marston & King, 2006). Sex partners can be very influential in the decision-making process, for example, young people see risks with suggesting condom use as it may indicate a lack of trust in the relationship, or fear that it can be perceived to mean having an STI or having had many partners—which is regarded as especially non-desirable for girls (ibid.). These findings explain why many STI/HIV programs focusing on knowledge and beliefs about the threat of infection have failed to be effective, and underline the importance of a theory-based model that includes an understanding of the social context of the intervention (Sheeran, Orbell, & Abraham, 1999).

Motivational Interviewing: the Development of a "Fluid" Intervention

The American psychologist William R. Miller first introduced the foundational ideas of MI in his 1983 article on a new perspective on therapeutic treatment of clients with substance abuse (Miller, 1983). It was a move from a traditionally paternalistic approach to one that saw therapy as an interpersonal process, whereby the counselor should engage more empathetically. By using motivational techniques, the client's own verbalized motivations for change should be elicited rather than imposed on them. In collaboration with the British psychologist Stephen Rollnick, Miller later developed the MI counseling style of open questions, reflective listening and affirmation (Miller & Rollnick, 1991). It was not a manual with a fixed set of steps or specific skills training requirements like many other treatment programs, but an encouragement to use MI creatively to fit the specific setting by following a set of phases and principles. They thereby "abandoned control over their innovation" and created what Björk (2013, p. 315) calls a "fluid" intervention, which has led to its increasing popularity and widespread dissemination in different treatment contexts around the world.

Over time, various adaptations of MI have developed. Miller and Rollnick (2009) grew concerned that their counseling style was not used in the intended way, prompting them to formulate "the spirit of MI." In the most recent edition of their book, they emphasize this "mind-set and heart-set" as a crucial element underlying MI practice (Miller & Rollnick, 2013, p. viii). The previous phases and principles were reformulated to make up a four-process overlapping "flow," including engaging (establishing the working relationship), focusing (developing a direction), evoking (activating the client's motivation), and planning (creating a change plan). The foundational

principles of the practice are still the same: a collaborative partnership based on a radical acceptance of each person's own choice for change to happen or not (ibid.).

While change is a central element of MI, the Transtheoretical Model (TTM) of Change, also known as the Stages of Change Model, is "not an essential part of MI," though they are "compatible and complementary" (ibid., 35). Similarly, a *decisional balance* technique for exploring the pros and cons of change, and the use of assessment feedback (as in motivational enhancement therapy, MET), are techniques and treatments in their own right rather than MI-specific essentials—and may even be inconsistent with true MI (Miller & Rollnick, 2014, p. 238).

Although MI "seems to blend well with other evidence-based clinical skills and approaches," it was never intended as a one-size fits all "school" of counseling, nor a comprehensive theory of change (Miller & Rollnick, 2013, p. 35). Nevertheless, many meta-analyses of MI interventions have since studied MI as a single object. With the growing importance of meta-analyses as highly valued standardized methods for effects evaluations (Bohlin, 2012), the fluidity of MI has been disregarded, obscuring its complexity and variability (Björk, 2013). While interventions often aim to change a specific behavior, MI's essential outcome is in fact "change talk": the person's self-motivational statements for change (Miller & Rollnick, 2013). In assessment systems, then, such statements are recorded, as are occurrences of "sustain talk": the person's arguments for *not* changing.

Since their initial publication, Miller and Rollnick have held informal workshops and training sessions, which soon grew to become a community of practitioners: the Motivational Interviewing Network of Trainers (MINT). A central tenet of MI training is that a couple of workshops are not enough for good practice, but "the beginning of learning a complex skill." The client–counselor relationship, and specifically "the therapeutic skill of empathetic understanding," is key (Miller & Rose, 2009). Continuous feedback, coaching, and fidelity assessment are necessary to achieve "any enduring effect on well-established practice habits" (Miller, 2013, p. 3). Therefore, assessing fidelity when evaluating MI interventions is essential. Miller and others later developed the MI Skill Code (MISC), followed by the simplified MI Treatment Integrity (MITI) code, for evaluating fidelity in counseling sessions.

However, systematic reviews have shown that many studies lack fidelity measures or are otherwise of low quality, making it difficult to assess MI efficacy in relation to specific mediators of change (Apodaca & Longabaugh, 2009; Copeland, McNamara, Kelson, & Simpson, 2015). Nevertheless, there is a tendency to linkages between specific MI practice behavior (including MI spirit), client change talk, and outcomes—which in turn is dependent on MI training as well as systemic changes in the treatment context (Miller & Moyers, 2015, 2016). Still, there is not enough evidence on the association between MITI assessment and MI outcomes (Moyers, Rowell, Manuel, Ernst, & Houck, 2016). In other words, learning, practicing, and evaluating MI are complex operations (Miller & Rollnick, 2014).

Method

This scoping review aimed to explore existing intervention studies using MI in the field of sexual and reproductive health and rights (SRHR) with young people up to 29 years old as the target population. Scoping studies are used to "map relevant literature in the field of interest" to "examine the extent, range and nature of research activity" (Arksey & O'Malley, 2005, pp. 20, 21). In other words, the aim is breadth rather than depth, and as such, scoping studies do not assess the quality of the mapped research studies (ibid.; Rumrill, Fitzgerald, & Merchant, 2010).

As suggested in Arksey and O'Malley's (2005) framework, this review was conducted in the following steps: (1) identifying the research question; (2) identifying relevant studies; (3) study selection; (4) charting the data; (5) collating, summarizing, and reporting the results; and (6) consultation exercise. To answer the research question "What is known from the existing literature about the effectiveness of MI interventions targeting adolescents and young adults in the field of SRHR?", the agency gave the following criteria for defining the population, intervention, comparison condition, and outcome measures (PICO):

- Population: Young people up to 29 years
- Intervention: MI (any type)
- Control: Any type (including none)
- Outcome: SRHR-related measures (any type)

Search sources included electronic research databases, reference lists, existing networks, and relevant organizations. Papers in English and Swedish published up to 2016 were eligible. The multi-disciplinary nature of the research question led to the decision to search in a variety of databases, including Applied Social Sciences Index and Abstracts (ASSIA), Web of science, SwePub, CINAHL, Scopus, PsycINFO, ProQuest, PubMed, The Cochrane Library, and Google Scholar. The most relevant results were found in Web of Science, PsychInfo, and SwePub (see Box 1 for search terms). Additionally, key persons in the field of MI interventions in Sweden were asked for advice on further (unpublished) papers.

The first author was commissioned to conduct the study. An advisory board consisting of researchers and practitioners acted as consultants with regard to methodological questions such as search terms and strategy and relevance of articles.

The second author was invited to review a first draft of the report for a seminar and then remained on the advisory board.

A narrative review approach was used in the charting of data, which provided a broad and highly contextualized view of the studies. The following information was recorded and provided the basis for analysis: author(s), year of publication, study location, intervention type and study design, aims and study populations, important results, and comments (if any) (see Supplemental Table). The analytical framework consisted of a thematic collating of the results highlighting similarities and differences in how MI was used from different perspectives (see further below).

Box 1 Details of electronic database searches

Web of Science
1 March 2016: Topic=(motivational interview*) AND Topic=(sexual* OR SRHR) AND Topic=(student* OR youth* OR young* OR adolescent*), Article, Clinical trial, Review, English.
4 July 2016: ("motivational interviews" OR "motivational interviewing") AND ("youth" OR "young" OR "students" OR "adolescents") AND ("sexual health" OR "hiv" OR "STI" OR "STD" OR "abortion" OR "prevention" OR "pregnant" OR "pregnancy" OR "reproductive" OR "contraception" OR "contraceptive")
7 July 2017: (TS=("motivational interview*" AND (sexual* OR reproductive OR hiv OR STD OR STI OR abortion OR contracept* OR pregnan*) AND intervention AND (youth OR adolescent* OR young))) AND language: (English) AND document types: (Article)

PsychInfo
1 March 2016: ab(motivational interview*) AND ab((sexual* OR srhr)) AND ab((adolescent* OR youth*)) OR ab((young* OR student*)) Peer reviewed, Journal article, English.
4 July 2016: su(("motivational interviews" OR "motivational interviewing")) AND su(("youth" OR "young" OR "students" OR "adolescents")) AND su(("sexual health" OR "hiv" OR "STI" OR "STD" OR "abortion" OR "prevention" OR "pregnant" OR "pregnancy" OR "reproductive" OR "contraception" OR "contraceptive")) Peer reviewed, Journal article, English.

SwePub
23 Feb 2016: "motiverande samtal"
7 July 2017: "motiverande samtal", "motiverande intervju"

Findings

Four hundred and thirty-six articles were identified for inclusion in a dedicated Endnote library, of which 223 were included for reading abstracts. In this process, 161 articles were excluded on grounds of not meeting the PICO criteria. The 65 remaining articles were read full-text, of which 28 did not meet the criteria of being intervention studies or using MI adequately. The final selection included 34 papers, of which 29 were unique studies. Of these, 28 were from the USA, two from the UK, and one each from Thailand, Australia, and South Africa. The most central information from the 34 papers were collated in a table (see supplement) detailing study design, intervention content, theoretical underpinnings, components, context, practitioner educational background and MI training, MI fidelity assessment procedures, intervention aim and target population, outcome measures, main results, and our comments. In the following sections, we discuss the quantitative findings and highlight certain aspects of studies that show the scope and variety of interventions by detailing certain characteristics.

Intervention Types and Contexts

In their discussion of applications and adaptations of MI, Miller and Rollnick (2013, p. 341) assert that MI is well suited for integration with other clinical methods, since the underlying MI spirit "can be a firm foundation for good practice" in many settings. Thus, it is not surprising that our results demonstrate considerable variety in MI conceptualization and use. Some papers carefully describe the MI counseling style, referring to key literature by Miller and Rollnick, while others merely state that it is an MI intervention without further details. A majority of interventions ($n = 22$) were developed specifically for the particular setting, target group, and SRHR issue, and 12 are manual-based. Twenty-one studies use MI as a full therapy, while six comprise more of a "toolbox style" exercise by borrowing certain components or techniques. Descriptions of MI uses were ambiguous in three papers, making categorization difficult.

While not all interventions integrate other approaches with MI, 15 papers describe specific theoretical underpinnings or the use of MI in conjunction with other methods or techniques. The Transtheoretical Model of Change (TTM)/the Stages of Change Model is most commonly mentioned ($n = 7$), unsurprisingly considering the previously described relationship to MI. A frequently integrated component is Timeline Followback Interview (TLFB), a structured, calendar-aided assessment tool for alcohol use and sexual behavior. One paper specifically examined decisional balance (DB) as "a core component of MI" (LaBrie, Pedersen, Thompson, & Earleywine, 2008), although Miller and Rollnick (2013, p. 242) never intended to conceptualize DB as an essential part of MI, but rather as an alternative counseling strategy with certain clients.

Other examples include interventions based in different schools of psychology, such as Narrative Therapy ($n = 1$), Cognitive Behavioral Therapy (CBT) ($n = 2$), and Social Learning Theory ($n = 1$). Another group of studies consists of models where MI was integrated with behavior change models such as The Health Belief Model (HBM) ($n = 1$), Theory of Planned Behavior ($n = 3$), Health Action Process Approach ($n = 1$), Social network counseling ($n = 1$), Information-Motivation-Behavioral skills (IMB) model of health behavior change ($n = 4$), and Decision Making Theory ($n = 1$).

The following box shows an example of how an intervention comprising several components is described:

Box 2 Intervention description: theoretical underpinnings and components

Intervention: Five 1-h individual sessions + technological aspects (e.g., Medication Event Monitoring System (MEMS), text message reminders), positive strategies to enhance problem solving (Positive STEPS), which was guided by the evidence-based adult HIV medication adherence intervention "Life-Steps" (based on CBT and MI). Manual-based. (Thurston et al., 2014)

While most other interventions are based on fewer components or combinations with other methods, it is not uncommon that "different behavioral treatment components are…blended to create a hybrid intervention" (Miller & Rollnick, 2014, p. 239).

Following such hybrid designs are variations in MI delivery. While in some cases delivery is not specified beyond adhering to MI principles ($n = 8$), most commonly, MI is delivered in conjunction with "standard care" or equivalent ($n = 15$), as the following excerpt from Yeagley et al. (2012) illustrates:

Box 3 Intervention description: MI design

Intervention: One MI-session á 30–40 min following usual clinic visit.
Context: An urban outpatient university-based clinic.
Aim: To increase positive attitudes towards this type of intervention, and towards medication adherence and HIV diagnosis disclosure.

As in this example, many studies evaluate both the intervention's feasibility and SRHR outcomes. Most interventions are also aimed at individuals, predominantly in health care settings such as youth clinics, hospitals, primary care clinics, and STI clinics.

Five studies comprise group sessions, often in other contexts than health care, namely detention centers (Schmiege, Broaddus, Levin, & Bryan, 2009), a homeless shelter (Wenzel, D'Amico, Barnes, & Gilbert, 2009), colleges for troubled youth (Lisha et al., 2012; Sussman, Sun, Rohrbach, & Spruijt-Metz, 2012), a work place (Bogart et al., 2013, described below), and an unspecified context (Morrison-Beedy, Crean, Passmore, & Carey, 2014). Two studies assess community-based MI delivery, with home visits (Barnet et al., 2009) and community outreach (Outlaw et al., 2010) respectively. Five interventions are completely (Kiene & Barta, 2006; Naar-King et al., 2013) or partially computerized (Barnet et al., 2009; Gold et al., 2016; Lelutiu-Weinberger et al., 2015). Finally, one intervention tested the feasibility of financial incentives along with MI sessions for HIV medication adherence (Foster, McDonald, Frize, Ayers, & Fidler, 2014).

Another variation concerns the educational background and training of practitioners, which of course depends largely on the setting. The most common group comprises therapist, psychologist, and doctoral or master's students in psychology ($n = 10$). The other main group includes professionals in health care settings, such as hospitals, general practices, youth clinics, and HIV clinics, where nurses, health educators, and paraprofessionals work ($n = 6$). Health educators are mentioned in several types of contexts ($n = 4$), while peer HIV educators, outreach workers, and peer outreach workers are described in one study each. Five articles lack description on the educational background of those carrying out interventions; these report on interventions in a detention center, a homeless shelter, and three HIV clinics.

The intervention setting determines many of the characteristics of how MI is delivered. A South African study (Bogart et al., 2013) stood out in its aims and design, also highlighting the contextual nature of interventions:

Box 4 Intervention description: aims and scope

Intervention: 2 groups á ~ 15 parents received "Let's Talk!," a worksite-based parenting program comprising 5 weekly 2-h group sessions.
Aim: To improve parent–child communication about HIV and sexual health, and parent condom use self-efficacy and behavior.
Population: Parents and their 11–15-year-old children.
Context: Large public worksite in Cape Town, South Africa.
Delivery: Peer HIV educators.

This intervention is the only one targeting parents, and also differs in context by being delivered in a workplace setting. It is explained as typical of the South African HIV prevention context, and the intervention was developed together with relevant community groups and institutions.

Most interventions aim to decrease sexual risk behavior among young people primarily by targeting contraceptive use ($n = 23$). Some interventions focus specifically on preventing unintended pregnancy ($n = 6$), enhancing SRHR knowledge ($n = 5$), and/or promoting clinic visit or STI testing ($n = 4$). HIV treatment or adherence is also a relatively common aim ($n = 7$). Self-efficacy is specifically targeted in five studies, while two studies aim to prevent exposure to sexual abuse (Clinton-Sherrod, Morgan-Lopez, Brown, McMillen, & Cowell, 2011; Wenzel, D'Amico, Barnes, & Gilbert, 2009). There are also examples of more specialized aims, such as preventing "rapid subsequent births" among adolescent mothers (Barnet et al., 2009), and empowering homeless young women transitioning to adulthood (Wenzel, D'Amico, Barnes, & Gilbert, 2009).

One of the most comprehensive study designs comprises 40 units with 132 clinics and 901 patients in total (Sanci et al., 2015):

Box 5 Intervention description: study design and aims

Intervention: 9-h training in health-risk screening and MI for primary clinicians. Training in engaging youth and reporting risk data for all practice staff.
Aim: Training clinicians in health risk screening and MI to motivate change in adolescent risk-taking behaviors.

This stands out from most other studies among which many target one group of professionals and their specific clinical work.

A majority of interventions target both men and women ($n = 17$) (none include other gender identities), of which 11 focus on alcohol and/or drug users, seven on HIV-positive youth, and four on particularly vulnerable youth, such as those who are homeless or have been in social care. The second most common target group is women ($n = 13$), while interventions only targeting men are considerably fewer ($n = 5$). Most studies on women target heterosexual sub-populations deemed to be of especially high risk for unintended pregnancy (Bandura Cowley, Farley, & Beamis, 2002; Barnet et al., 2009; Shrier et al., 2001) or, even more specifically, alcohol-induced unintended pregnancy (Ceperich & Ingersoll, 2011; Clinton-Sherrod, Morgan-Lopez, Brown, McMillen, & Cowell, 2011; Whitaker et al., 2015).

Among the studies targeting men, it is more often men who have sex with men and HIV prevention that is in focus (Lelutiu-Weinberger et al., 2015; Outlaw et al., 2010; Rongkavilit et al., 2013). Some interventions target specific sub-groups, such as the Young Men's Health Project (Parsons, Lelutiu-Weinberger, Botsko, & Golub, 2014):

Box 6 Intervention description: target population

Aim: To reduce HIV risk and drug use.
Population: Gay and bisexual HIV-negative men who were 18–29 years. They had reported unprotected anal intercourse and recreational drug use and were non-treatment-seeking.

Several North American studies focus on ethnic/racial minorities, (e.g., Hispanic and African-American), while ethnicity/race is not specified in the studies from other countries, highlighting the importance of considering the country-specific socio-political and cultural context.

To summarize, this section shows the wide range of MI approaches and applications. The variety depends on the interventions' theoretical underpinnings, inclusion of component types, delivery mode and context, educational background of practitioners, target risk behavior, and target population. These differences inevitably lead to studies that use MI in unique ways. In the following section, we will see how these variations subsequently result in various outcome measures, i.e., ways that the intervention aims are assessed and controlled. Furthermore, it will become apparent that studies also differ regarding quality assurance procedures.

How Is MI Assessed?

Of primary interest are study types/research designs, which convey the underlying intervention aims and modes of measuring outcomes. Although here too the variety is wide, a majority comprises RCT designs ($n = 25$). Other designs include evaluations without control groups ($n = 6$), a study using a combination of evaluation survey and qualitative interviews, one case study, and one focus group study. Ten interventions (among all types) are described as pilot or feasibility studies with various designs. In studies that have control groups, a majority use "standard care" as comparison, while others compare different MI types, other counseling methods, differently trained counselors, or the use of MI on different target areas (e.g., sexual risk compared with nutritional health). The differences result in an additional layer of difficulty in comparing between interventions.

Further distinctions include the MI sessions' length, structures, and intervals (if several sessions are delivered), for instance, whether a session is coupled with additional components such as STI information, receiving contraceptives, or being visited by a case worker at home. The number and sequence of follow-ups also vary greatly, from those evaluated immediately post-intervention until up to 2 years post-intervention. The following examples show some of these variations:

Box 7 Intervention description: MI delivery and follow-up design

Shrier et al. (2001):
Intervention: 7-min video tape about STDs, self-assessment, condom use exercise, individualized discussion of relevant topics. Session at 1, 3, and 6 months + receipt of condoms and information materials. Sessions at 1, 3, 6, and 12 months.
Follow up: Questionnaire at 1, 3, 6, and 12 months.

Whitaker et al. (2015):
Intervention: One 30-min MI-session post-abortal contraception counseling, integrated into the clinical setting.
Follow-up: Following intervention + at 1 month (telephone + contraception counseling).

Lelutiu-Weinberger et al. (2015):
Intervention: "MiCHAT," 8 MI sessions via Facebook chat.
Follow-up: 3 months (survey) + evaluation interview (phone).

Sussman, Sun, Rohrbach, and Spruijt-Metz (2012):
Intervention 1: 12 classroom sessions á 45 min during 4 weeks.
Intervention 2: Intervention 1 + three 20-min MI-session via telephone 1 month post-intervention.
Follow-up: Survey directly after intervention.

Evidently, "MI session" can mean many things, which reflects the conceptual and contextual differences discussed in the previous section. Moreover, study design varieties result in follow-up type and sequence variations.

Looking at outcome measures, then, results in yet another dimension that varies. These measures are inherently closely related to intervention context and aim(s). For example, a study aiming to decrease HIV viral load will have viral load as an outcome measure. In some cases, this is the only measure, while other times, it is the primary one and a secondary measure might be a return clinic visit. Measures are often categorized within the themes of knowledge (e.g., STI, HIV, contraception, sexual risk), attitudes/intentions/motivation (e.g., self-efficacy, attitudes towards contraception, intention to practice safe sex), and behavior (e.g., condom use, sexual risk, substance use). Although Miller and Rollnick (2013, pp. 384–385) suggest that the end point outcome should be in focus rather than those along the way (e.g., improved health rather than attitudes), such designs are in fact uncommon. The following examples exhibit varieties in outcome measures:

Box 8 Intervention description: outcome measures

Ingersoll et al. (2005):

Primary outcome: Alcohol-exposed pregnancy (AEP) risk

Secondary outcomes:
- Use of effective contraception
- Drinks per week, Binges in the past month

Kiene and Barta (2006):
- Behaviors:
  - Frequency of condom use and keeping condoms easily available
  - Persuade partner to use condom
- Condom knowledge
- Motivations:
  - Motivation to practice condom use preparatory behaviors
  - Condom use behavioral skills
  - Condom use stage of change (SOC)

Furthermore, in pilot studies, the primary outcome measures are related to intervention feasibility, by either practitioners' self-assessment or client reports on satisfaction. Others have measures on MI fidelity and intervention efficiency. An aspect of fidelity includes practitioners' training. Some papers describe shorter MI training, others do not mention training at all, while a few describe it in great detail, including the intervention manual. The type of MI training differs as well, where the more comprehensive ones explain that the training was delivered by members of MINT, that there was continuous supervision and that the sessions had been recorded and evaluated using the MITI coding system.

A group of studies by Naar-King and colleagues (with some overlap in samples) provide among the most comprehensive descriptions (Chen, Murphy, Naar-King, & Parsons, 2011; Naar-King, Outlaw, Green-Jones, Wright, & Parsons, 2009; Naar-King et al., 2009; Naar-King et al., 2010; Parsons, Lelutiu-Weinberger, Botsko, & Golub, 2014; Rongkavilit et al., 2013; Rongkavilit et al., 2015). For a number of years, this research group conducted several studies with variations of MI interventions targeting HIV risk behaviors. In one of the most recent studies (Parsons, Lelutiu-Weinberger, Botsko, & Golub, 2014), the training and quality assurance (QA) were described in the following ways:

Box 10 Intervention description: MI training and quality assurance

Different staff members were used for initial assessment (research staff) and delivery of MI or education sessions (master's- and PhD-level therapists). In both conditions as well as in assessment, rigorous training and fidelity control was conducted.

Training: Therapists participated in a 3-day MI training by the principal investigator (MINT member). Weekly individual and group supervision sessions.

QA: All MI sessions were video recorded (of the therapist). Therapists met biweekly in supervision to view videotapes and discuss implementation issues. 80% of sessions were reviewed by a licensed clinical psychologist with expertise in MI. Fidelity was addressed throughout the trial through the use of MITI.

Among the included studies, 15 gave detailed accounts of both MI training and fidelity assurance procedures, while in seven studies, the descriptions are moderate, i.e., partial or only comprise either training or QA procedures. Five studies have vague or partial descriptions of both, while seven articles do not include any information whatsoever. It is noteworthy that only the above detailed study and another one from the same research group measured fidelity in control condition (Rongkavilit et al., 2013; Rongkavilit et al., 2015).

MI Interventions: What About Results?

Few studies report significant effects on primary outcomes. More importantly, many papers lack adequate description of design, outcome measures, or otherwise exhibit low study quality. Since our analysis comprises a scoping review of narrative rather than evaluative character, we will focus on examples where the interventions have both been detailed sufficiently and demonstrated some effects.

The *Power of YOU* program was developed in collaboration with homeless young women and service providers and targeted commonly associated problems such as alcohol and drug use, risky sexual activity, and increased risk of intimate partner violence (Wenzel, D'Amico, Barnes, & Gilbert, 2009). By letting the women inform the program, their specific needs and ideas for how to change their situation could be better met. Through focus group methodology, the young women's satisfaction and experiences of the intervention were evaluated. They were positive towards the information and skills training, such as practical

condom use and developing ways to plan for high-risk situations. They also appreciated the non-judgmental MI approach. Scores ranged between 3.9 and 5 on a 1–5 scale.

Similarly, *Positive STEPS* was based on qualitative interviews with young people to explore barriers to HIV medication adherence, targeting lesbian, gay, and bisexual youth (Thurston et al., 2014). The researchers were particularly mindful of addressing adherence challenges differently based on gender, sexual orientation, or mode of infection. The article details the intervention manual's MI style approach and how the sessions incorporated core MI principles. Through two case studies, the article demonstrates how individual needs were met by tailored responses, for example, text message reminders for a young man who often forgot to take his HIV medication on time, while a woman who struggled with depression in relation to her HIV status was offered therapy. The male participant's on-time adherence showed marked improvement which was maintained through follow-up, and the young woman showed improvement in depressive and anxious symptoms.

Let's Talk!, the worksite-based parenting program detailed earlier (Bogart et al., 2013), was appreciated by the parents (91% rated it highly) and resulted in increased comfort with talking to their offspring about sex, as well as the number of HIV-related topics discussed. Although self-efficacy for condom use increased, actual condom use did not. This may be a case of over-crowding in outcome measures, whereas a more focused intervention targeting parent–child SRHR talk may have been enough.

Two studies took a broader approach than the otherwise common single-clinic, single professional-focused intervention. Sanci et al. (2015) trained clinicians in health risk screening and MI in order to motivate change in adolescent risk-taking behaviors. The intervention used a stratified cluster design and comprised 40 units with 132 clinics and 901 patients in total. It was a comprehensive study and therefore likely more effective in impacting surrounding organizational and attitudinal aspects for intervention delivery. However, effects were small and since there was no detail on MI training or fidelity measures, it cannot be confirmed whether MI was the effective component or not.

Similarly, Dale, Watson, Adair, and Humphris (2016) implemented a health behavior change intervention targeting different risk behaviors among looked-after young people associated with a municipality's broader service, by training staff in MI and other behavior change models. Although intention to use condoms and pregnancy contraception increased, outcome measures were not controlled for MI use, making it difficult to know whether effects were due to MI. Furthermore, MI techniques were not among the most frequently used.

In other words, while these two interventions hold promise in broader implementation strategies, they do not sufficiently control for MI use and fidelity.

Discussion

Although previous research on sexual risk prevention among youth points to the need to carefully consider social influences such as gender and peer attitudes, few papers in our review take such issues into account either in implementation or in results analysis. Similarly, while sexual risk reduction has been shown to require a multi-level approach, including different social arenas, institutions, and actors, our data comprises mostly single-site, individualized approaches. The many feasibility studies and a large heterogeneity in intervention types suggest that using MI in interventions is still under development in the field of sexual risk prevention aimed at youth populations.

Furthermore, the varying aims, target populations, and outcome measures indicate that sexual risk behaviors are complex and interpreted in different ways (for example by different professionals), resulting in diverse intervention foci. Other variations include practitioners' educational background and the ways in which they deliver MI. In other words, the 29 studies in our material can be said to represent 29 different MI conceptualizations and modes of delivery. Since relatively few papers provide adequate detail on MI training and fidelity assurance procedures, interventions are difficult to compare.

These aspects raise many questions with regard to implementation as well as evaluation of MI interventions. Our discussion will focus on issues around context, MI skill and fidelity measures, and challenges to MI clinical trials.

Context Matters

While many papers clearly describe the particular population and sexual risk behavior under study, there is often little discussion about the fact that the "the convergence of client, clinician, and context shapes the process of the conversation" (Miller & Rollnick, 2013, p. 389). Some papers do provide such insight, for example, about the *Healthy Choices* intervention that was developed in the USA (Naar-King et al., 2009; Naar-King et al., 2010). Through an adaptation process that included focus group discussions with both patients and health care providers, the intervention was implemented in Thailand (Rongkavilit et al., 2013; Rongkavilit et al., 2015). The previously discussed qualitative interventions (Bogart et al., 2013; Thurston et al., 2014; Wenzel, D'Amico, Barnes, & Gilbert, 2009) emphasize such issues as well, in relation to specific needs of both the target population (homeless women, LGBT youth) and the cultural context (worksite-based peer-led group sessions in South Africa).

Although earlier meta-analyses indicated that MI may be especially suitable for minority populations (Hettema, Steele, & Miller, 2005; Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010), theory-based cultural adaptations have not been

sufficiently studied, for instance, regarding "tensions that emerge from using an individualistic approach to help a person change within a collectivistic cultural frame of reference" (Oh & Lee, 2016, p. 1916). There may also be contextual factors in clients' life circumstances that cannot always be attended to by MI counseling, such as cultural attitudes and traditions (ibid.), homelessness, poverty, intimate partners violence, and lack of health insurance (Wenzel, D'Amico, Barnes, & Gilbert, 2009; Barnet et al., 2009)—all of which can also pose challenges to intervention delivery.

Further, while demographic data is often detailed, differences within target populations are seldom attended to in the intervention delivery. As discussed in the introduction, research shows that the complexity of sexual risk behavior among youth needs to be considered, including gender and other social influences. Previous research indicates that self-efficacy and acceptability of the treatment may in fact be influenced by such factors (Berg, Ross, & Tikkanen, 2011).

A related issue concerns the transferability of MI from addiction treatment and other problematic lifestyle and health issues to sexual risk prevention. Unlike long-term alcohol use or smoking, with their detrimental effects on health, well-being, and social relations, there are considerably more positive outcomes of sexual well-being—even if it involves many partners (unless used as self-harm). Therefore, unless clients experience their situation as problematic, motivation for change may be hard to elicit. For example, vulnerable youth may see the chance to meet someone and experience tenderness and affirmation as worth the possible negative effect of sexual risk-taking (Lindroth, 2013).

Another aspect that the papers seldom discuss concerns the ideological, political, and financial context of interventions and implementation processes. For instance, the implementation of MI in social services can be motivated by an administrative logic within a societal discourse of New Public Management (NPM) where managers "use [MI] as a symbol of the agency's work with EBP" (Björk, 2016, p. 65). They also used the coding system to monitor the professionals' activities. Professionals in turn reported adjusting their MI use to fit with organizational goals rather than following true MI style counseling, for example, regarding treatment choices, among which the cheaper ones were more often favored. Lack of time, support, and supervision for practitioners can also be influential (Söderlund, Nilsen, & Kristensson, 2008).

These different ideological, political, and financial issues may further influence fidelity of the MI approach related to time, training, resources, budget, hiring adequate trained staff, and other relevant business aspects. Analyses of such issues would be helpful to include when evaluating interventions, as lack of effects may not be due to MI as such, but rather surrounding factors.

Measuring MI Skills and Fidelity

Miller and Rollnick (2013) emphasize the importance of empathizing with the client, rather than of a practitioner's specific educational background. Indeed, as one of our reviewed studies showed, peer outreach workers can be trained to deliver MI with high fidelity, in some instances even higher than staff with a university education (Naar-King, Outlaw, Green-Jones, Wright, & Parsons, 2009). The peer position may in fact be a more important factor in their success than having received training. In any case, it is likely that different professions have different approaches that are more or less similar to the MI counseling style and therefore more or less easy to learn—and more importantly, letting go of non-MI approaches (Hall, Staiger, Simpson, Best, & Lubman, 2016). For example, a study of nurses' MI use showed that they had difficulties following the MI approach because they had been taught to direct the patient and give advice, rather than to listen and let the patient influence treatment decisions (Söderlund, Nilsen, & Kristensson, 2008).

But even in instances where nurses reported using an MI style approach, not everyone had MI training or scored high enough in MITI evaluation (Östlund, Kristofferzon, Häggström, & Wadensten, 2015). Professionals may also use MI differently depending on their organizational position or use only certain MI techniques and not necessarily in the spirit of MI, due to their perception that it does not fit with the organization's routines and practices (Björk, 2016). Miller and Rollnick (2014) suggest that interventions should comprise proficiency thresholds prior to treating patients, ongoing feedback, and coaching, as well as fidelity levels which need to be obtained throughout delivery. To achieve this, sessions need to be recorded and assessed with a replicable coding system by trained coders.

As we have shown in our results, many papers lack adequate detail on the particular MI protocol that was used and/or how practitioners were trained and their fidelity to the protocol assured. This is the case even for interventions where the training of clinicians in MI was a central aim of the intervention (Dale, Watson, Adair, & Humphris, 2016; Sanci et al., 2015). It is not surprising, then, that even fewer studies report on the specific MI elements that the interventions aim to assess the efficacy of. Miller and Rollnick (2014) propose that any MI intervention should include components that reflect the central processes of engaging, focusing and evoking. But these aspects cannot be captured by the most commonly used MITI system, which only records therapist speech. Therefore, it only provides a partial picture, whereby assessment of the linkage of therapist and client process measures with clinical outcomes is not possible (ibid., see also Hall, Staiger, Simpson, Best, & Lubman, 2016). Despite comprehensive MI training and continuous coaching and quality assessment, practitioners' individual therapeutic skills or patient characteristics may anyway result in differential outcomes (Forsberg, Forsberg, Lindqvist, & Helgason, 2010).

Another relevant consideration is why outcome measures are so seldom tied to "mechanisms of change," which reflect the engaging, focusing, and evoking processes of MI (Miller & Rollnick, 2014, p. 237). Miller and Rollnick's recommendations for future treatment process research therefore include more thorough identification of the client's change goals, the evocation of change talk, and proficiency in the MI spirit. It would then be possible to assess whether MI actually helps the target population move from one stage to another.

Challenges to MI Clinical Trials

Miller and Rollnick (2014) have highlighted certain challenges with complex behavioral interventions like MI in relation to clinical trial methodology. They assert that in contrast to medical trials, a double-blind design is not possible, since both MI practitioners and patients need to be aware of what treatment is being delivered. As discussed above, the MI content and delivery style is essential knowledge for evaluation. However, it is much more difficult to describe how a psychosocial intervention was delivered and which components were effective, compared to a pharmaceutical treatment. Several studies in our review have developed intervention manuals in an attempt to secure transparent and controlled MI delivery. But Miller and Rollnick (2009, pp. 135, 132) argue that manuals in fact inhibit the central components of flexibility and adaptability, which allow the counselor to respond to "moment-to-moment changes in what the client says," rather than prescribing "a particular sequence of technique" (see also Miller & Rollnick, 2014, p. 238).

Another challenge concerns blinding and treatment bias in relation to the need for MI training, continuous supervision, and quality assurance. A suggestion from Miller and Rollnick (2013) is therefore to evaluate fidelity in control conditions as well, which was rare in our review. Looking at studies, where no effects were found but where the same MI trained staff delivered both intervention and control condition, suggests that the control condition may in fact have been delivered MI style (Palm et al., 2016). In many social work as well as health care education programs, MI is taught to different degrees, meaning that professionals may already use MI approaches (Simper, Breckon, & Kilner, 2017).

Similar bias issues may arise for patients since both intervention and control condition participants receive initial assessments, which can be quite extensive, as shown in some of the reviewed studies. Presumably, then, at an early stage of the intervention, both groups start to reflect on their sexual behaviors, which may impact on the results—a probable reason for many studies losing intervention effects over time and/or that control condition participants show equal improvements in outcome measures. Miller and Rollnick (2013, p. 388) therefore suggest that MI may benefit from "a contrast effect," rather than comparing with treatments that are already "more humane."

Conclusion

Our review found many feasibility studies and a large heterogeneity in intervention types, suggesting that using MI in interventions is still under development in the field of sexual risk prevention among youth. However, as shown in our data as well as in Miller and Rollnick's studies (2014, p. 235), "methods unrelated or even antithetical to [the] original [MI] approach," and which do not contain core elements, are common. We also found quality lacking in many studies, especially regarding treatment component description, MI training, and fidelity measures—if included at all. Furthermore, sexual risk behavior is a broad subject and many actors are involved with preventive work, resulting in varying aims, target populations, outcome measures, and practitioners' educational background.

These factors make it difficult to compare interventions and evaluate their effects adequately. Future MI interventions targeting youth sexual risk would benefit from more comprehensive preparatory work to learn about the target group's specific needs and social circumstances, as well as more rigorous evaluation designs, whereby MI components can be tested to outcome measures. Finally, organizations and state institutions wanting to secure evidence-based programs need to be aware of the resources needed to properly implement a new intervention, which may require several years—and which, even if successful, may not be enough for solving such complex social problems as sexual risk behaviors.

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Compliance with Ethical Standards

This article does not contain any studies with human participants performed by any of the authors.

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Disclaimer The conclusions are the authors' own.

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