

An evaluation of training for lay providers in the use of motivational interviewing to promote academic achievement among urban youth

Patricia Simon* and Nadia L. Ward

Division of Prevention & Community Research, The Consultation Center, Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA

(Received 2 April 2014; accepted 23 July 2014)

This study examined training outcomes for lay service providers who participated in a motivational interviewing (MI) training program designed to help increase intrinsic motivation and academic achievement among urban, low-income minority youth. Seventeen lay academic advisors received 16 hours of workshop training in MI. Additionally, two 2-hour booster sessions and five 2-hour weekly group supervision sessions were conducted with lay advisors over a period of 7 months; 100% of lay advisors ($n = 17$) participated in the workshop training and booster sessions, and 71% of lay advisors ($n = 12$) completed all group supervision sessions and submitted tapes for review. MI training was associated with increased knowledge of MI principles among lay advisors, increased proficiency in responding to simulated clients in an MI consistent style, increased use of MI-adherent behaviors in sessions with real clients, and maintenance of high motivation to use MI from pretest to post-test. Although lay advisors increased their knowledge of MI, further training is required for advisors to increase competence in delivering MI. Overall, implications for using MI in the context of school-based settings are discussed.

Keywords: motivational interviewing; school-based mental health; academic achievement; urban youth; supervision

Introduction

School-based mental health experts have advocated for school-based motivational interviewing (SBMI) to promote students' academic achievement (Frey et al., 2011; Strait et al., 2012; Terry, Smith, Strait, & McQuillin, 2013). Motivational interviewing (MI) is a brief counseling style used to enhance an individual's intrinsic motivation to change (Miller & Rollnick, 1991). Typically, MI is viewed as a cost-effective intervention used in clinical settings to treat addictive behaviors (Burke, Arkowitz, & Menchola, 2003). As a result, the effectiveness and efficiency of MI to promote change in individuals with addiction have prompted researchers to study MI in a variety of other contexts such as schools.

Recently, there has been increased interest in adapting MI to school settings to promote academic achievement. Preliminary evidence suggests that it is possible to use MI to increase students' school performance (Strait et al., 2012; Terry et al., 2013). Originally developed in mental health settings to treat individuals diagnosed with substance use disorders, MI has also been used to motivate positive change in a number of behaviors, including dieting (Hollis, Williams, Collins, & Morgan, 2013), medication adherence (Lundahl et al., 2013), and safe sexual behavior (Lundahl, Kunz, Brownell, Tollefson, &

*Corresponding author. Email: p.simon@yale.edu

Burke, 2010; Lundahl et al., 2013). Far less is known about how to integrate the use of MI in the context of the school setting with fidelity. A key consideration for implementing MI in schools is identifying who might be ideally suited to deliver MI to students. Determining the most effective training method for lay service providers is another important consideration for successful implementation of MI in schools. In schools where there is a scarcity of resources, highly trained lay service providers can be an asset to school staff in addressing students' academic, social, and behavioral health issues.

A recent review of training in MI indicated that research on appropriate training methods is limited and has primarily been conducted on medical students, nurses, and mental health service providers (Madson, Loignon, & Lane, 2009). Only one study examined training methods in MI among school personnel, but this work focused on reducing substance use (Burke, Da Silva, Vaughan, & Knight, 2006). There has been no empirical investigation to date of how to train lay persons to use MI with urban youth to promote academic achievement. An examination of how to train lay practitioners to implement MI with fidelity would fill a gap in the literature.

The significant role of lay service providers

To promote academic achievement among youth, many under-resourced urban schools rely on lay persons in the community to provide academic enrichment and support to students (Michael, 1990). Positive youth–adult relationships have been associated with reduced disciplinary referrals, reduced out-of-school suspensions, increased decision-making ability, increased self-efficacy for goal-setting, higher academic grades, and increased orientation toward career aspirations (DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011). Overall, research suggests that lay service providers are a vital community resource (DuBois et al., 2011). Despite the potential for these relationships to foster positive developmental outcomes and psychological adjustment for youth (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), turnover among lay service providers can range from 10% to 75% (Renick Thomson & Zand, 2010). This highlights the pervasiveness of premature termination of positive youth–adult relationships, which is associated with diminished benefits for youth (Grossman, Chan, Schwartz, & Rhodes, 2012). Although the literature points to the advantages of mentoring for youth, most research studies on mentoring find inconsistent or small effect sizes (McQuillin, Terry, Strait, & Smith, 2013). Research has shown that training can significantly reduce rate of turnover among lay service providers (Jamison, 2003) and that more training is associated with higher quality of interactions with youth (Herrera, Sipe, & McClannah, 2000). However, there is a dearth of training programs for community members who provide services to urban youth in schools (Hager, 2004). High-quality professional training programs are sorely needed for lay service providers working in school settings.

Evidence-based training programs are also needed to help lay service providers meet the unique academic, social-emotional, and behavioral health needs of urban youth (DuBois et al., 2011). Urban youth residing in impoverished neighborhoods are more likely to be exposed to negative health risk behaviors often associated with living in poverty (e.g., drugs, alcohol, and violence) (De Wit et al., 2007; Zeldin, Larson, Camino, & O'Connor, 2005). The lack of structural supports at school (e.g., unclear academic and behavioral expectations), disproportionately high student-to-counselor ratios (e.g., 1:1000), and students' perceived lack of social support (e.g., caring teachers with high academic expectations) all exacerbate students' academic amotivation and disengagement from the schooling process (Gregory, Cornell, & Fan, 2011; Mickelson, 1990; Whitaker,

Graham, Severtson, Debra Furr-Holden, & Latimer, 2012). Consequently, academically disengaged students who lack the protective presence of a healthy school environment with supportive adults are at increased risk for academic failure and school dropout (Hawkins, Smith, & Catalano, 2004). Leveraging lay service providers skilled in MI can increase youth's motivation, engagement, and academic performance in school. Indeed, there has been some reference in the literature to lay service as ideal intermediaries between universal interventions and highly trained mental health staff (McQuillin et al., 2013).

The purpose of this study was to evaluate MI training for lay service providers who deliver academic enrichment and support services to urban youth. The training program consisted of 16 hours of training in MI followed by two booster sessions and five group supervision sessions on video-recorded adult and adolescent sessions. It was expected that participation in the MI training program would be associated with: (a) greater knowledge of MI principles, (b) increased proficiency in responding to simulated clients in an MI consistent style, as indicated by scores on the video assessment of simulated encounters-revised (VASE-R), (c) increased proficiency in delivering MI, as measured by scores on the motivational interviewing treatment integrity (MITI) code, and (d) increased motivation to use MI.

This study was embedded within a larger urban school reform initiative funded by the US Department of Education aimed at increasing academic performance and educational aspirations among low-income and minority youth (Gaining Early Awareness and Readiness for Undergraduate Programs, GEAR UP). To address students' low level of academic achievement and engagement in school, MI was integrated into the project's academic advising component. Formal training and supervision in MI techniques was provided to fully equip academic advisors with the skills needed to enhance their work with students. It is within this context that the current study is embedded.

Method

Academic enrichment and support programs are implemented in three comprehensive high schools with the support of three full-time site-based coordinators and 17 part-time (25 hours per week, \$17/hour) lay service providers who serve in the role of academic advisors. Advisors implement an array of academic enrichment and support programs that include tutoring, mentoring, college tours, educational excursions, after-school programs, Saturday Academy, and summer programs. The staff provide continuity of support to students as they follow the cohort through critical school transitions: middle-to-high school and high school-to-college. Academic advisors are recruited and hired from the community and reflect the racial and ethnic composition of students served by the district. Academic advisors serve as role models who by virtue of their own educational pursuits demonstrate by example that not only is college a viable option, but earning a graduate-level degree also lies within the realm of possibility for urban minority students.

Participants

Seventeen academic advisors (75% female) participated in the study. Academic advisors represented diverse racial and ethnic backgrounds: 53% Black/African-American, 41% White/European-American, and 6% Asian/Pacific Islander. Advisors ranged in age from 22 to 50 years, with a mean age of 27.67 years ($SD = 8.49$). Educational attainment levels among advisors varied; 41% of advisors had earned an undergraduate degree, 30% earned

Master's degrees, 17% did not report their level of education, and 12% reported having completed some graduate-level training.

Academic advisors' previous training

On average, the academic advisors had 5.54 years ($SD = 2.55$, range = 2–10) of experience working with children and adolescents; 41% were new academic advisors who had never provided academic advising with the program. The remaining academic advisors had been with the program at least 5 months and for a maximum of 4 years. All academic advisors had previous experience providing academic advising in other programs. Prior to the current training, 7% had attended an MI workshop, 7% had read a book about MI, and 33% had never heard of MI.

MI training program

Academic advisors participated in a training program that was based on recommendations of the motivational interviewing network of trainers (MINT) for training in MI and previous research on effective strategies for training in MI (Schumacher et al., 2012). Academic advisors participated in 16 hours of training, two 2-hour booster sessions and five 2-hour group supervision sessions (see Figure 1 for training schedule). The training was led by the first author, who holds a Ph.D. in clinical psychology and has been formally trained in MI.

The workshop covered the following topics: (a) understanding the spirit and principles of MI, (b) learning core MI skills (e.g., open-ended questions, affirmations, reflections, and summaries), (c) eliciting change talk, (d) learning MI techniques for meeting student resistance, (e) engaging students in change planning, and (f) integrating MI into academic advising sessions. The workshop consisted of didactic lectures, videos (Miller, Rollnick, & Moyers, 1998), and participants practising MI skills (with feedback from the trainer) during 'real play' sessions. For real play sessions, one participant identified a change he/she wanted to make and another participant used MI techniques to help that participant explore making the change. During booster sessions, training materials were reviewed, and during group supervision, the trainer provided feedback on previously video-recorded 'real plays' and academic advising sessions.

Academic advising sessions took place at respective school sites in designated program resource rooms. All advising session occurred during the school day for approximately 20 minutes. Advisors met students daily as they implemented the aforementioned enrichment and support services offered by the program. For the purposes of this study, advisors met students once over the course of the training period. Academic advising sessions proceeded in four stages where, consistent with MI style, the advisor (a) introduced the purpose of the session and set an agenda, (b) assessed student competencies in the academic, social, and career domains according to the American School Counselor Association (ASCA) framework, (c) shared information from program materials, and (d) developed a plan for meeting ASCA competencies.

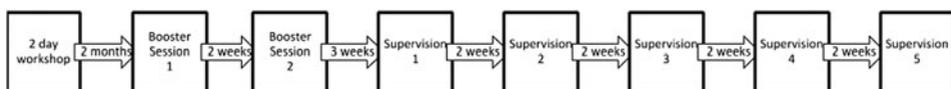


Figure 1. MI training schedule.

Over the course of training, academic advisors completed assessment measures before (Time 1) and after (Time 2) the workshop, after booster session 1 (Time 3), after booster session 2 (Time 4), and after supervision session 5 (Time 5). The assessment schedule is presented in Figure 2.

Measures

Previous training questionnaire

Previous training was assessed using a questionnaire designed for the study. Participants indicated the number of years they have spent working with children, the number of years they have spent working in the GEAR UP program, the number of years they had provided any type of academic advising, and whether they had attended workshops, read books, or heard about MI prior to the training. This questionnaire was completed at Time 1.

Motivational interviewing knowledge and attitudes test

The motivational interviewing knowledge and attitudes test (MIKAT; Leffingwell, 2006) was adapted for use with academic advisors. The MIKAT consisted of a 10-item, true-false quiz that includes myths about behavior change (e.g., ‘External pressure and consequences is the only way to make students change.’), as well as assumptions consistent with an MI approach (e.g., ‘The best way to motivate students is to help them resolve their ambivalence about change.’). The MIKAT was completed at Time 1, Time 2, and Time 3. Chronbach’s α ranged from 0.45 to 0.68. Test–retest reliability ranged from 0.07 to 0.29.

Video assessment of simulated encounters-revised

The VASE-R (Rosengren, Hartzler, Baer, Wells, & Dunn, 2008) assesses participants’ proficiency in the following MI skills: reflective listening, responding to resistance, summarizing, change talk, and developing discrepancy. Previous studies have shown that the scoring reliability ranges from adequate to excellent for internal reliability (Rosengren et al., 2008). Additionally, the total VASE-R score and its components are moderately correlated with other MI measures (e.g., MITI code). The VASE-R consists of three video-based vignettes with actors playing difficult clients. Participants respond to 18 timed prompts as they watch these vignettes. Each item response is rated using a 3-point scale (0 = MI-inconsistent to 2 = MI-consistent). There are five subscales: reflective listening (range of subscale score = 0–8), responding to resistance (range of subscale score = 0–10),

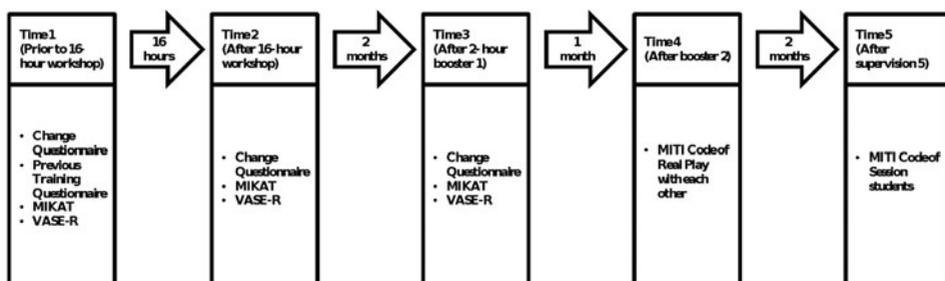


Figure 2. MI assessment schedule. Note: MIKAT, motivational interviewing knowledge and attitudes test; VASE-R, video assessment of simulated encounters; MITI, motivational interviewing treatment integrity.

summarizing (range of subscale score = 0–6), change talk (range of subscale score = 0–6), and developing discrepancy (range of subscale score = 0–6). Total VASE-R scores range from 0 to 36. Participants' total scores can be classified as: beginning proficiency (scores between 26 and 30) and advanced proficiency (scores at or above 31). The VASE-R was completed at Time 1, Time 2, and Time 3. The VASE-R was coded by the first author and two research assistants. The intra-class correlation coefficients (ICCs) for VASE-R are shown in Table 1. Two raters scored all the VASE-R responses. ICCs ranged from 0.59 to 0.98 for the VASE-R summary scores. Chronbach's α ranged from 0.81 to 0.92. Test–retest reliability ranged from 0.10 to 0.74.

MITI code

At Time 4 and Time 5, we used version 3.1 of the MITI coding system (Moyers, Martin, Manuel, Miller, & Ernst, 2010) to assess advisors' competence in using MI in real plays with each other and eventually with a student they chose to interview. Five global interviewer behaviors (i.e., evocation, collaboration, direction, autonomy/support, and empathy) are rated on a scale of 1 (low) to 5 (high). Additionally, behavior counts are rated to help establish the frequency at which giving information, MI-adherent behavior, MI-non-adherent behavior, closed-ended questions, open-ended questions, simple reflections, and complex reflections occur in the session. Competency is defined as an average of three global ratings (i.e., evocation, collaboration, autonomy/support) (Moyers et al., 2010), a 2:1 reflections to question ratio, 70% of questions begin open-ended questions, 50% of reflections being complex reflections and 100% of utterances being MI-adherent. Research has found that the MITI is a valid and reliable tool (Madson & Campbell, 2006; Moyers, Martin, Manuel, Hendrickson, & Miller, 2005). To increase reliability and decrease bias in session codes, sessions were coded by the first author and a research assistant. Additionally, the first author and the research assistant participated in meta-supervision with a MINT trainer. The sessions that were coded were approximately 10-minutes long and took place at the school. For the MITI, inter-rater reliability was based on review of 31% of the sessions submitted. ICCs for the MITI ranged from 0.63 to 0.76 (see Table 1). Thus, there was good inter-rater reliability for the MITI. Test–retest reliability ranged from 0.13 to 0.71 for the subscales measured.

Table 1. Inter-rater reliability as estimated by the ICC for MITI indicators of proficiency in MI.

MI skill acquisition	ICC
VASE-R	
Total	0.95
Reflections	0.95
Responding to resistance	0.92
Summarizing	0.59
Change talk	0.83
Developing discrepancy	0.98
MITI	
MI spirit (global score)	0.76
Reflection to question ratio	0.70
Percent open questions	0.66
Percent complex question	0.74
Percent MI-adherent behaviors	0.63

Note: VASE-R, video assessment of simulated encounters; MITI, motivational interviewing treatment integrity; ICC, intra-class correlation coefficient.

Motivation to use MI

The Change Questionnaire Version 1.2 (Miller, Moyers, & Amrhein, 2005) was used to assess participants' thoughts and feelings about using MI in their sessions. The questionnaire consists of 12 items rated on an 11-point scale (0 = *definitely not* to 10 = *definitely*). Sample items include 'I want to make this change' and 'it is important for me to make this change.' This questionnaire was completed at Time 1, Time 2, and Time 3. Chronbach's α ranged from 0.95 to 0.99 for this measure. Test-retest reliability ranged from -0.04 to 0.40 .

Data analysis

After testing the relevant statistical assumptions, paired sample *t*-tests were used to examine whether participation in the MI workshops, booster sessions, and group supervision sessions was associated with increased MI knowledge, MI proficiency, and motivation to use MI. ICCs provided a measure of inter-rater reliability for the VASE-R and MITI. ICC scores between 0.60 and 0.64 are considered good, and ICC scores between 0.75 and 1.00 are considered excellent (Cicchetti, 1994). Adaptation of Cohen's *d* for within subjects effects (Cohen & Cohen, 1975; Morris & DeShon, 2002) was used to calculate an estimate of small ($d = 0.2$), medium ($d = 0.5$), and large effect sizes ($d = 0.8$). We also calculated Reliable Change Index (RCI) to assess the clinical significance of change at the individual level (Iverson, 2011; Jacobson & Truax, 1991). RCI equal to 1.96 was considered clinically significant. For analyses involving the 17 academic advisors who participated in the workshop, post hoc power analyses using GPower (Faul & Erdfelder, 1992) showed that power to detect large effects was 0.87 and power to detect medium effects was 0.49 at the 0.05 significance level for two-tailed tests. Five academic advisors did not submit a second tape for MITI coding. Therefore, in the analyses involving the remaining 12 participants, power to detect large effects was 0.71 and power to detect medium effects was 0.47 at the 0.05 significance level for two-tailed tests.

Results

MI workshop + booster sessions outcomes

Preliminary data screening of all measures found that the data met distributional assumptions and homogeneity of variance before using *t*-tests (Tabachnick & Fidell, 2010). Academic advisors' scores on the MIKAT showed that they increased their knowledge of MI ($t = -2.69$, $df = 14$, $p = 0.02$, $d = 1.10$) from Time 1 ($M = 0.72$, $SD = 0.10$) to Time 2 ($M = 0.80$, $SD = 0.08$) and that they maintained these gains ($t = 0.59$, $df = 12$, $p = 0.57$, $d = -0.18$) at Time 3 ($M = 0.78$, $SD = 0.14$).

Table 2 shows mean scores, *t*-test results, and proportion of academic advisors reaching proficiency according to the VASE-R. Consistent with MIKAT scores, from Time 1 to Time 2, *t*-tests showed significant increases in academic advisors' scores on responses to simulated clients as measured by the total VASE-R score. Academic advisors' improvements on the total VASE-R score were driven by three VASE-R subscales: reflections, responding to resistance, and summarizing. The effect sizes for the observed increases were all large and ranged from 0.89 to 1.82. Table 3 shows the percentage of academic advisors with significant RCI scores. Consistent with *t*-test results, 41.2% of participants improved their total VASE-R score from Time 1 to Time 2. Table 2 shows that the proportion of academic advisors who reached beginning or advanced proficiency increased from Time 1 to Time 2 on these scales. There was no significant

Table 2. Academic advisor scores on the VASE-R.

VASE-R MI skill acquisition indicator (<i>n</i> = 17)	Beginning proficiency thresholds (BP)	Advanced proficiency threshold (AP)	Mean (SD)		Mean (SD) after workshop - Time 2	Mean (SD) after booster session 1 - Time 3	<i>t</i> Time 1 vs Time 2 (<i>df</i> = 16)		Cohen's <i>d</i>	<i>t</i> Time 2 vs Time 3 (<i>df</i> = 16)		Cohen's <i>d</i>	Percentage of BP Time		Percentage of AP Time	
			workshop prior to - Time 1	workshop after - Time 2			Time 1	Time 2		Time 1	Time 2		Time 1	Time 2	Time 1	Time 2
Total	26	31	14.47 (8.30)	25.65 (7.64)	21.12 (10.61)		-7.76*	-1.38	1.68	0.48	12	0	41	29	24	18
VASE-R score																
Reflections	6	7	4.12 (2.64)	6.71 (1.80)	5.94 (2.63)		-5.70*	-1.15	1.05	0.34	12	24	24	65	12	59
Responding to resistance	8	9	3.18 (2.35)	8.12 (3.04)	6.12 (3.14)		-7.60*	-1.82	2.14*	0.65	6	0	6	65	6	30
Summarizing	3	5	1.53 (1.81)	3.06 (1.64)	2.35 (2.06)		-3.79*	-0.89	1.30	0.38	24	6	53	18	24	24
Change talk	4	5	2.35 (2.00)	3.41 (1.58)	3.29 (2.08)		-1.70	-0.59	0.22	0.06	12	24	24	24	18	35
Developing discrepancy	4	5	3.29 (2.09)	4.35 (1.58)	3.41 (2.15)		-1.99	-0.57	1.65	0.50	24	29	29	47	29	29

Notes: VASE-R, video assessment of simulated encounters-revised. **p* < 0.05.

Table 3. Percentage of academic advisors with significant reliable change index scores on the VASE-R.

	Time 1 to Time 2			Time 2 to Time 3		
	Worsened	No change	Improved	Worsened	No change	Improved
Total VASE-R score	0.0	58.8	41.2	10.0	90.0	0.0
Reflections	0.0	70.6	29.4	11.8	88.2	0.0
Responding to resistance	0.0	58.8	41.2	11.8	88.2	0.0
Summarizing	0.0	82.4	17.6	0.0	100.0	0.0
Change talk	0.0	94.1	5.9	0.0	94.1	5.9
Developing discrepancy	0.0	88.2	11.8	11.8	88.2	0.0

Note: VASE-R, video assessment of simulated encounters.

difference detected for the scores on change talk and developing discrepancy subscales. Despite the lack of a significant result, it should be noted that from Time 1 to Time 2, the proportion of academic advisors who reached proficiency increased for the change talk and developing discrepancy subscales; that these increases reflected medium-sized effects; and that 5.9% and 11.8% of participants showed improvement according to the RCI.

From Time 2 to Time 3, *t*-tests suggested there was no significant change in academic advisors' performance on all VASE-R scales except responding to resistance. RCI scores suggested that 2 months after the MI workshop, 10–11.8% of participants' scores worsened on the VASE-R scales (except summarizing and change talk). The effect size for these declines was medium to large.

Academic advisors maintained high levels of motivation to use MI ($t = 0.618$, $df = 14$, $p = 0.55$, $d = -0.20$) from Time 1 ($M = 8.57$, $SD = 1.30$) to Time 2 ($M = 8.17$, $SD = 2.50$). These high levels of motivation to use MI were also maintained ($t = 0.359$, $df = 12$, $p = 0.73$, $d = -0.14$) from Time 2 ($M = 7.94$, $SD = 2.62$) to Time 3 ($M = 7.62$, $SD = 1.77$).

Group supervision outcomes

Table 4 shows mean scores, *t*-test results and proficiency ratings for the MITI at Time 4 and Time 5 assessments. *T*-tests suggest that academic advisors' use of MI-adherent behaviors significantly increased from Time 4 to Time 5. Cohen's *d* for within group designs suggests that this was a large effect. Consistent with the lack of significant *t*-tests, 91.7–100% of participants showed no change according to the RCI (see Table 5). However, based on qualitative classification (e.g., beginning proficiency), participants' scores academic advisors' proficiency ratings increased. In particular, at Time 4, only 17% of academic advisors had MI spirit scores that were at beginning proficiency, with no academic advisors scoring at competency. By Time 5, 42% of academic advisors were at beginning proficiency and 8% had reached competency on the MI spirit score. Similarly, for percent complex reflections, at Time 4, 50% of academic advisors were at beginning proficiency and none had reached competency. By Time 5, 67% had reached competency. Although academic advisors scores on the reflection to question ratio appeared to decline from Time 4 to Time 5, this effect was small, not statistically significant, and RCI scores showed that no participants experienced clinically significant declines. Similarly, Percent Open Questions appeared to decline from Time 4 to Time 5, and these effects were small and not statistically significant. However, 8.3% of participants experienced a decline in performance on that scale.

Table 4. Academic advisor scores on the MITI code.

MITI MI skill acquisition indicator	Beginning proficiency thresholds	Competency thresholds	Mean (SD) after booster 2 – Time 4 (<i>n</i> = 12)	Mean (SD) after supervision 2 – Time 5 (<i>n</i> = 12)	<i>t</i> Time 4 vs Time 5 (df = 11)	Cohen's <i>d</i>	Beginning proficiency (%) – Time 4	Competency (%) – Time 4	Beginning proficiency (%) – Time 5	Competency (%) – Time 5
MI spirit (global score)	3.5	4	3.03 (0.46)	3.39 (0.42)	-1.76	-0.64	17	0	42	8
Reflection to question ratio	1	2	0.73 (0.28)	0.69 (0.37)	0.27	0.12	16	0	8	0
Percent open questions	50	70	48.00 (21.95)	43.75 (12.63)	0.69	0.24	33	17	42	0
Percent complex reflections	40	50	46.59 (18.11)	56.40 (21.67)	-2.18	-0.49	50	0	8.3	67
Percent MI-adherent behaviors	90	100	30.87 (39.24)	64.38 (28.60)	-3.58*	-0.98	0	8.3	0	25

Notes: MITI, motivational interviewing treatment integrity. **p* < 0.05.

Table 5. Percentage of academic advisors with significant reliable change index scores on the MITI-code from Time 3 to Time 4.

	Worsened	No change	Improved
MI spirit (global score)	0.0	91.7	8.3
Reflection to question ratio	0.0	100.0	0.0
Percent open questions	8.3	91.7	0.0
Percent complex reflections	0.0	91.7	8.3
Percent MI-adherent behaviors	0.0	91.7	8.3

Note: MITI, motivational interviewing treatment integrity.

Discussion

This study evaluated training outcomes of an MI training program designed for lay counselors and adapted for school-based problems. The study hypotheses were partially supported. Participation in the MI training program was associated with increased MI knowledge, increased MI proficiency when responding to simulated clients, and increased proficiency on one indicator of MI skill (use of MI-adherent behaviors) when responding to actual students and maintained motivation to learn MI.

This study provides preliminary support for training lay counselors to deliver MI for academic concerns and preliminary support for the tested training curriculum. Participation in a workshop was sufficient to help 70% of the academic advisors develop at least beginning proficiency in responding to simulated clients. Moreover, with only five supervision sessions, 50% of the academic advisors obtained scores of at least beginning proficiency on the MI Spirit score when they met with actual high school students. These findings are promising given academic advisors had minimal prior exposure to MI. Similar training with mental health professionals yielded medium to large effects, which is comparable with our findings (Moyers et al., 2008). We expect that with additional supervision, the academic advisors are likely to reach competency in MI by the end of the school year.

This study also provided preliminary data about how lay counselors progress with MI skill acquisition. Miller and Moyers (2006) proposed that learning of MI would proceed in the following stages: (a) understanding the MI spirit, (b) developing client-centered skills, (c) identifying change and sustain talk, (d) eliciting/strengthening change talk, (e) rolling with resistance, (f) creating a change plan, (g) solidifying commitment to change, and (h) incorporating MI with other interventions. Consistent with the stages proposed by Miller and Moyers (2006), a significant and large effect was observed for use of MI-adherent behaviors on the MITI. Additionally, on the VASE-R, significant and large increases were observed for the use of client-centered skills (reflections subscale and summarizing subscale) after a 16-hour workshop and relatively smaller effect sizes were observed for change talk and developing discrepancy. Inconsistent with the proposed stages of learning MI, the lay providers increased competency in the responding to resistance subscale to a greater extent relative to change talk and developing discrepancy. It is unclear why this pattern emerged. Further research is needed to determine whether our findings are related to the curriculum content or reflective of universal stages of development of MI skills for lay counselors. It is also possible that due to the small sample size, these findings should be tempered.

Although it is not possible to make conclusive statements about measures that yielded small and medium effect sizes because our study only had sufficient power to detect large effects, the effect sizes observed on the VASE-R at Time 3 and MITI may point to targets

for further training. By Time 3, academic advisors appeared to experience small- to medium-sized declines in proficiency when responding to simulated clients. These declines were further supported by RCI scores. These observations suggest that the time lapse between the workshop and booster sessions may have been too long or that the booster sessions may need to provide more comprehensive review of the workshop material. Furthermore, in contrast to the medium to large effects (and 8.3% of participants showing clinically significant improvement) on the MI spirit, percent MI-adherent statements, and percent complex reflection scores, it appears that advisors did not make significant gains on the reflection-to-question ratio and percent open questions scores. One explanation may be that students were less verbose relative to the adult clients in academic advisors' real play sessions. As a result, the counselors may have opted to rely more heavily on questions (closed-ended questions in particular) to facilitate dialogue with students. Further training may be needed to help academic advisors use questions strategically in their work with students.

The benefit of trained MI lay practitioners in schools

Comprehensive training programs for lay service providers provide skills they need to address the severity of issues and challenges students bring to school. Lay service providers offer essential support to school counseling departments in urban districts where the student-counselor ratio is often 1:1000. Given high demands on counselor time, school-based mental health services are often overwhelmed by student's need. This lack of continuity in care leaves many students with unmet behavioral health needs, exacerbating problems in other facets of their schooling experience (e.g., academic, social, and college/career). Counselors in urban districts have very limited time to address issues related to motivation and engagement that are critical to students' success in school. Comprehensive training of lay service providers equips school counseling teams with tools to identify student needs and serve as a link between students and services offered by the school.

This study presents a unique training model for lay service providers who provide services in urban contexts. This model includes 2 hours of weekly supervision that are built into our program. This allotted time allows all academic advisors to participate in high-quality professional development activities to enhance their work with youth. Also, the academic advising sessions with students are videotaped. Because we are working with persons who have minimal counseling experience, videotaped sessions allow for constructive feedback. In addition, supervision occurs in a group setting with opportunity for individual feedback as needed. In an effort to facilitate the internalization of MI skills, feedback is presented in writing, followed by group presentation of videotapes.

This study provides preliminary support for the feasibility of implementing such an intensive training program in a mid-size urban public school system. When implementing school-based interventions, researchers and practitioners often encounter a number of barriers to implementation. Administrators and teachers may be reluctant to release students from core academic classes (Jaycox et al., 2006). Difficulties arise when attempting to secure meeting space and fluctuations in school schedules and calendars further complicate opportunities to connect with students (Jaycox et al., 2006). Furthermore, such an intensive training program may be viewed as time taken away from working with students. In this study, academic advisors were able to navigate constraints of the school day and meet with students for MI sessions. Advisors also secured space in the library, resource room, classrooms or the guidance suite to conduct MI sessions. It should be noted that successful implementation of this MI curriculum relied heavily on

active coordination with the school's key stakeholders to secure access to resources. As a result of successfully navigating implementation barriers, academic advisors could practice their MI skills within the school context and increase their MI proficiency.

Limitations and future studies

One limitation of this study is that it did not employ a control group. As a result, we cannot rule out the possibility that academic advisors increased proficiency on measures of MI simply by engaging in their work with students or working in the schools. We consider this study to be a pilot or proof of concept and as such we did not include a control group. Moreover, providing two distinct training programs for the advisors (e.g., MI intervention vs business as usual conditions) was not feasible. Given the severity of need for students served by the project, the authors deemed it important to train all academic advisors in preparation for their work with students. Given our preliminary findings, future studies would ideally include a control group. Another limitation of the study is that participants were relatively motivated to learn MI before receiving MI training; this may not generalize to unmotivated trainees. Additionally, this study only had sufficient power to detect large effects. Although we may use small and medium effect sizes to generate hypotheses about how to enhance components of the MI training curriculum, we are limited in the conclusions that can be drawn from the study. Future studies should therefore use a larger sample size. In addition, because this study focused on the development of appropriate MI training for academic advisors, assessment of students' academic outcomes was beyond the scope of this study. Future research would therefore examine how academic advisors' skill in MI relates to students' academic outcomes.

Although we observed significant increases in proficiency scores on the VASE-R, about one-third of study participants did not reach beginning proficiency. Additional research is needed to enhance the training curriculum. Over the course of the training program, none of the academic advisors reached proficiency on all MITI indicators. Additional supervision sessions are required to increase academic advisors' MITI scores. Future research should therefore consider how additional supervision sessions can improve academic advisors' scores. In this study, academic advisors received feedback on two sessions. Thus, in addition to increasing the number of supervision sessions, increasing the number of opportunities advisors have to receive weekly feedback on specific tapes is recommended to increase proficiency scores. For example, in our study, we noted non-significant results for two MI skills – change talk and developing discrepancy. These advanced skills require curriculum modifications that emphasize identifying and responding to client change talk and developing discrepancy. Previous research has shown that on average 10 sessions (with feedback) are needed to reach proficiency (Schumacher, Williams, Burke, Epler, & Simon, 2013). In addition, training and future studies should include an assessment of advisors' sense of self-efficacy in mastering MI techniques. Additionally, the training and evaluation materials were drawn from the substance use literature. Future studies may consider developing training and evaluation materials that are specific to school-based problems (e.g., school-based VASE-R).

Conclusions

This study provides preliminary evidence to suggest that an MI training program can be implemented for lay service providers in urban schools. Participation in MI training was associated with increases in MI proficiency. This study suggests that modification the

training curriculum is needed to help academic advisors in how to identify change talk, develop discrepancy, and ask open-ended questions. In addition, more intensive training and supervision sessions may be needed to help academic advisors build these skills. Overall, we found that rigorous training and supervision of academic advisors has the potential to improve academic advisors' proficiency in using skills that are associated with positive behavior change.

Funding

This work was supported by the Department of Education [grant numbers P334A080071 and P334A110229] and the National Institute on Drug Abuse [grant number T32DA019426]. The content of this research is solely the responsibility of the authors and does not necessarily represent the official views of the funding agencies.

Disclosure statement

The authors have no conflicts of interest to disclose.

References

- American School Counselor Association. (2004). *ASCA national standards for students*. Alexandria, VA: Author.
- Burke, B., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology, 71*, 843–861.
- Burke, P. J., Da Silva, J. D., Vaughan, B. L., & Knight, J. (2006). Training high school counselors on the use of motivational interviewing to screen for substance abuse. *Substance Abuse, 26*, 31–34.
- Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*, 284–290.
- Cohen, J., & Cohen, P. (1975). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- De Wit, D. J., Lipman, E., Manzano-Munguia, M., Bisanz, J., Graham, K., Offord, D. R., . . . Shaver, K. (2007). Feasibility of a randomized controlled trial for evaluating the effectiveness of the Big Brothers Big Sisters community match program at the national level. *Children and Youth Services Review, 29*, 383–404. Retrieved from <http://dx.doi.org/10.1016/j.childyouth.2006.09.003>
- DuBois, D. L., Portillo, N., Rhodes, J. E., Silverthorn, N., & Valentine, J. C. (2011). How effective are mentoring programs for youth? A systematic assessment of the evidence. *Psychological Science in the Public Interest, 12*, 57–91.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432. doi:10.1111/j.1467-8624.2010.01564.x
- Faul, F., & Erdfelder, E. (1992). GPOWER: A priori, post-hoc, and compromise power analyses for MS-DOS [Computer program]. Bonn: Bonn University, Department of Psychology.
- Frey, A. J., Cloud, R. N., Lee, J., Small, J. W., Seeley, J. R., Feil, E. G., . . . Golly, A. (2011). The promise of motivational interviewing in school mental health. *School Mental Health, 3*, 1–12. doi:10.1007/s12310-010-9048-z
- Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for Black and White high school students. *American Educational Research Journal*. doi:10.3102/0002831211398531
- Grossman, J., Chan, C., Schwartz, S. O., & Rhodes, J. (2012). The test of time in school-based mentoring: The role of relationship duration and re-matching on academic outcomes. *American Journal of Community Psychology, 49*, 43–54. doi:10.1007/s10464-011-9435-0
- Hager, M. (2004). *Volunteer management capacity in America's charities and congregations: A briefing report*. Washington, DC: Urban Institute.
- Hawkins, J. D., Smith, B. H., & Catalano, R. F. (2004). Social development and social and emotional learning. In *Building academic success on social and emotional learning: What does the research say* (pp. 135–150). New York: Teachers College Press.

- Herrerra, C., Sipe, C. L., & McClannan, W. S. (2000). *Mentoring school age children: Relationship development in community-based and school-based programs*. Philadelphia, PA: Public/Private Ventures.
- Hollis, J. L., Williams, L. T., Collins, C. E., & Morgan, P. J. (2013). Effectiveness of interventions using motivational interviewing for dietary and physical activity modification in adults: A systematic review. *The JBI Database of Systematic Reviews and Implementation Reports*, *11*, 1–27.
- Iverson, G. L. (2011). Reliable change index. In *Encyclopedia of clinical neuropsychology* (pp. 2150–2153). New York, NY: Springer.
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*, 12–19. Retrieved from <http://dx.doi.org/10.1037/0022-006X.59.1.12>
- Jamison, I. B. (2003). Turnover and retention among volunteers in human service agencies. *Review of Public Personnel Administration*, *23*, 114–132. doi:10.1177/0734371x03023002003
- Jaycox, L. H., McCaffrey, D. F., Ocampo, B. W., Shelley, G. A., Blake, S. M., Peterson, D. J., . . . Kub, J. E. (2006). Challenges in the evaluation and implementation of school-based prevention and intervention programs on sensitive topics. *American Journal of Evaluation*, *27*, 320–336.
- Leffingwell, T. R. (2006). Motivational Interviewing Knowledge and Attitudes Test (MIKAT) for evaluation of training outcomes. *MINUET*, *13*, 10–11.
- Lundahl, B. W., Kunz, C., Brownell, C., Tollefson, D., & Burke, B. L. (2010). A meta-analysis of motivational interviewing: Twenty-five years of empirical studies. *Research on Social Work Practice*, *20*, 137–160.
- Lundahl, B. W., Moleni, T., Burke, B. L., Butters, R., Tollefson, D., Butler, C., & Rollnick, S. (2013). Motivational interviewing in medical care settings: A systematic review and meta-analysis of randomized controlled trials. *Patient Education and Counseling*, *93*, 157–168.
- Madson, M., & Campbell, T. C. (2006). Measures of fidelity in motivational enhancement: A systematic review. *Journal of Substance Abuse Treatment*, *31*, 67–73.
- Madson, M., Loignon, A., & Lane, C. (2009). Training in motivational interviewing: A systematic review. *Journal of Substance Abuse Treatment*, *36*, 101–109.
- McQuillin, S., Terry, J., Strait, G., & Smith, B. (2013). Innovation in school-based mentoring: Matching the context, structure and goals of mentoring with evidence-based practices. *Advances in School Mental Health Promotion*, *6*, 280–294.
- Michael, B. (1990). *Volunteers in public schools*. Washington, DC: National Academies Press.
- Mickelson, R. A. (1990). The attitude-achievement paradox among Black adolescents. *Sociology of Education*, *63*, 44–61. doi:10.2307/2112896
- Miller, W. R., & Moyers, T. B. (2006). Eight stages in learning motivational interviewing. *Journal of Teaching in the Addictions*, *5*, 3–17.
- Miller, W. R., Moyers, T. B., & Amrhein, P. (2005). *Change Questionnaire Version 1.2*. Unpublished measure, Department of Psychology, University of New Mexico.
- Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York, NY: Guilford Press.
- Miller, W. R., Rollnick, S., & Moyers, T. B. (1998). *Motivational interviewing: Professional training videotape series*. Center on Alcoholism, Substance Abuse, & Addictions, University of New Mexico.
- Morris, S. B., & DeShon, R. P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods*, *7*, 105–125.
- Moyers, T. B., Manuel, J. K., Wilson, P. G., Hendrickson, S. M. L., Talcott, W., & Durand, P. (2008). A randomized trial investigating training in motivational interviewing for behavioral health providers. *Behavioral and Cognitive Psychotherapy*, *36*, 149–162.
- Moyers, T. B., Martin, T., Manuel, J. K., Hendrickson, S. M., & Miller, W. R. (2005). Assessing competence in the use of motivational interviewing. *Journal of Substance Abuse Treatment*, *28*, 19–26.
- Moyers, T. B., Martin, T., Manuel, J. K., Miller, W., & Ernst, D. (2010). *Revised global scales: Motivational interviewing treatment integrity 3.1. 1 (MITI 3.1. 1)*. Unpublished manuscript, Center on Alcoholism, Substance Abuse and Addictions, University of New Mexico, Albuquerque.

- Renick Thomson, N., & Zand, D. H. (2010). Mentees' perceptions of their interpersonal relationships: The role of the mentor – youth bond. *Youth & Society, 41*, 434–445. doi:[10.1177/0044118x09334806](https://doi.org/10.1177/0044118x09334806)
- Rosengren, D. B., Hartzler, B., Baer, J. S., Wells, E. A., & Dunn, C. W. (2008). The video assessment of simulated encounters-revised (VASE-R): Reliability and validity of a revised measure of motivational interviewing skills. *Drug and Alcohol Dependence, 97*, 130–138.
- Schumacher, J. A., Coffey, S. F., Walitzer, K. S., Burke, R. S., Williams, D. C., Norquist, G., & Elkin, T. D. (2012). Guidance for new motivational interviewing trainers when training addiction professionals: Findings from a survey of experienced trainers. *Motivational Interviewing: Training, Research, Implementation, Practice, 1*(1), 7–15.
- Schumacher, J. A., Williams, D. C., Burke, R. S., Epler, A. J., & Simon, P. (2013). *Competency-based supervision in motivational interviewing for psychology pre-doctoral interns and postdoctoral fellows*. Unpublished manuscript.
- Strait, G. G., Smith, B. H., McQuillin, S., Terry, J., Swan, S., & Malone, P. S. (2012). A randomized trial of motivational interviewing to improve middle school students' academic performance. *Journal of Community Psychology, 40*, 1032–1039. doi:[10.1002/jcop.21511](https://doi.org/10.1002/jcop.21511)
- Tabachnick, B. G., & Fidell, L. S. (2001). *Multivariate statistics*. Needham Heights, MA: Allyn & Bacon.
- Terry, J., Smith, B., Strait, G., & McQuillin, S. (2013). Motivational interviewing to improve middle school students' academic performance: A replication study. *Journal of Community Psychology, 41*, 902–909. doi:[10.1002/jcop.21574](https://doi.org/10.1002/jcop.21574)
- Whitaker, D., Graham, C., Severtson, S. G., Debra Furr-Holden, C. D., & Latimer, W. (2012). Neighborhood and family effects on learning motivation among urban African American middle school youth. *Journal of Child and Family Studies, 21*, 131–138.
- Zeldin, S., Larson, R., Camino, L., & O'Connor, C. (2005). Intergenerational relationships and partnerships in community programs: Purpose, practice, and directions for research. *Journal of Community Psychology, 33*, 1–10. doi:[10.1002/jcop.20042](https://doi.org/10.1002/jcop.20042)