

Training Primary Care Providers in Motivational Interviewing and Alliance During Treatment of
Depression: A Randomized Trial

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Abstract

This study sought to determine whether training primary care providers (PCPs) in Motivational Interviewing (MI) would improve patient-provider alliance during treatment for depression, therefore helping to inform primary care practices. The data used in this study came from a cluster randomized controlled trial (RCT) of PCPs trained in MI ($n=10$) and not trained ($n=15$) to treat depression at 7 clinics (randomized to 3 MI, 4 control) in an urban setting (Keeley et al., 2014). The National Institute of Mental Health and the National Institutes of Health/National Center for Advancing Translational Sciences Colorado provided funding for the primary study (Keeley et al., 2014). All patients (MI $N = 86$, control $N = 80$) were recruited after being diagnosed with major depression (Keeley et al., 2014). PCPs in the intervention group were trained in MI during at least one 8-hour session, with further training available (Keeley et al., 2014). Patient treatment conditions were determined by clinic assignments, to which they were blinded. Contrary to hypotheses, patient-provider alliance was not significantly higher among patients of MI trained PCPs at any point in time; however, there was evidence of a significant difference in change over time between conditions. There was a decrease in patient-provider alliance for patients who received depression treatment from PCPs who were not trained in MI; in contrast, patients of MI trained PCPs maintained patient-provider alliance over the course of 12 weeks of treatment. The findings presented in this study are discussed with respect to limitations and suggestions for further research.

Keywords: depression, motivational interviewing, primary care, alliance

Training Primary Care Providers in Motivational Interviewing and Alliance During Treatment of Depression: A Randomized Trial

Depression is a prevalent and impairing disorder (CDC, 2010), and the majority of depressed patients are treated in non-specialty settings, such as primary care (Keeley et al., 2014; Kessler et al., 2003; Robinson, Geske, Prest, & Barnacle, 2005). Unfortunately, treatment outcomes in primary care are often poor (Kessler et al., 2003; Vergouwen, Bakker, Burger, Verheij, & Koerselman, 2005). Although multiple factors may contribute to such poor outcomes, including low patient adherence to antidepressant medication and primary care providers (PCPs) failing to follow current treatment guidelines (Vergouwen et al., 2005), the alliance between the PCP and patient is one potential factor that has been underemphasized in the primary care literature. It is possible that the PCP and patient alliance may be more strained in the context of treating long-lasting illness (May et al., 2004), such as depression. Moreover, research suggests that alliance is significantly associated with depression treatment outcomes in psychotherapy, pharmacotherapy, and placebo conditions (Krupnick et al., 1996). Research also has determined that alliance is positively associated with patient satisfaction and adherence to treatment, factors which are arguably more important for treatment of chronic illnesses (Fuertes et al., 2006) and which have been hypothesized to be key contributors to poor outcomes among depressed patients treated in primary care (Katon et al., 1996; Vergouwen et al., 2005). MI is an empirically supported intervention focused on communication between patients and providers that encourages patients to proactively change negative behaviors contributing to their condition or illness (Magill et al., 2014); the focus in MI on relational aspects of treatment may be beneficial for patient-provider alliance during treatment for depression in the primary care setting. This study examines the extent to which training PCPs in motivational interviewing (MI) improves

patients' perceptions of the patient-provider alliance during primary care treatment of depression relative to care as usual.

MI theory includes both technical aspects of communication and relational aspects between the healthcare provider and the patient (Borsari et al., 2014; Keeley et al., 2014; Magill et al., 2014). Communication techniques include reflective listening and asking open questions, aimed at increasing the amount that patients use change talk (Borsari et al., 2014). Change talk is defined as using language that argues for a change in personal behaviors (Borsari et al., 2014), and change talk resulting from the use of MI in treatment is correlated with better treatment outcomes in marijuana use (Barnett et al., 2014). Initially, MI was used primarily as a treatment for substance disorders, but its use has spread, and effectiveness been proven, for treatment of other illnesses and disorders with behavioral underpinnings, such as tobacco use and risky sexual behaviors leading to HIV infection (Magill et al., 2014). In a study of brief motivational interventions with mandated college students for alcohol-related behavior, results indicated that MI relational variables, including overall ratings of therapist acceptance and empathy, were most strongly associated with positive change in client behavior with respect to decreased alcohol consumption (Borsari et al., 2014).

The relational aspects of MI, such as compassion and partnership (Borsari et al., 2014) aim to increase the quality of the relationship between the patient and the provider. This relationship, which is often referred to as the “therapeutic alliance,” “therapeutic bond,” or “working alliance” has been extensively studied in psychotherapy literature and found to be correlated with favorable therapeutic outcomes across therapies for depression and personality disorders (Martin, Garske, & Davis, 2000; Strunk, Brotman, & DeRubeis, 2010; Webb et al., 2011). Definitions of alliance vary across studies, yet cooperation, partnership, a connection

formed based upon feelings and attitudes, and concurrence between the patient and therapist about the goals of treatment are factors most often included in the definition as fundamental features (Martin et al., 2000). In a previous study exploring certain aspects of the therapeutic alliance with depressive symptom change during cognitive therapy, it was found that better agreement between the patient and the therapist about the goals and tasks of therapy was related to early depressive symptom change (Webb et al., 2011). In a meta-analysis, Martin et al., (2000), found that the positive association between alliance and outcome was moderate, but it was also consistent and unaffected by moderators such as alliance measures and type of treatment.

The importance of an effective and healthy relationship between physicians and patients in a medical setting has become the topic of recent research (Bieber et al., 2010), particularly in regard to the effect the relationship has on clinical practices and treatment outcomes for prevalent illnesses, such as hypertension (Fuentes, Boylan, & Fontanella, 2009). The physician's role is moving away from one of authoritative power and more towards one of support that seeks to negotiate with the patient to reach the best course of action (May et al., 2004). In the therapeutic setting, certain provider characteristics and techniques, such as truthfulness, sincerity, and acknowledging treatment accomplishments have been found to be positively associated with alliance (Ackerman & Hilsenroth, 2003) Although the patient-provider alliance in primary care has been studied in the treatment of some disorders, including diabetes (Epstein et al., 2005), alcohol dependence (Dundon et al., 2008), and asthma (Gavin, Wamboldt, Sorokin, Levy, & Wamboldt, 1999), there is a paucity of research on the importance of the patient-provider alliance in the medical setting in comparison with the therapeutic setting (Fuentes et al., 2007), and few studies have examined methods, such as MI, to improve the patient-provider alliance in the treatment of depression in primary care (Unützer et al., 2002).

Using MI in the primary care setting may facilitate a better relationship between the patient and provider. This examination is important as a first step toward the ultimate goal of determining factors that may lead to better treatment outcomes in primary care. Using data from a randomized controlled trial (RCT) of training in MI (Keeley et al., 2014), this thesis aims to examine whether training PCPs in MI improves patient-provider alliance, as reported by patients, during treatment for depression. We predicted that patients treated by PCPs trained in MI would report significantly higher patient provider-alliance at the beginning and end of acute treatment as compared to patients who received treatment from PCPs who were not trained in MI. In addition, we also predicted that alliance among patients treated by PCPs trained in MI would increase significantly during acute treatment as compared to patients who received treatment from PCPs who were not trained in MI. We also explored, descriptively, the course of change during acute treatment with a supplemental measure of alliance.

Method

The cluster RCT, investigating depression treatment outcomes in patients receiving care from either PCPs trained in MI and PCPs not trained in MI, was conducted between April 2010 and December 2012 in primary care clinics that were part of a federally qualified healthcare system in Denver, Colorado (Keeley et al., 2014). All study procedures were approved by the Colorado Multiple Institutional Review Board (COMIRB no. 08-1282) and registered at clinicaltrials.gov (NCT01114334) (Keeley et al., 2014). All study procedures are reported in detail in the primary publication to date (Keeley et al., 2014) and are repeated as relevant to our hypotheses here.

Participants

Patients

Patients scheduled for primary care visits were contacted over the phone and recruited for possible participation between April 2010 and March 2012. All patients spoke English and were 18 years of age or older. Patients were excluded if they were undergoing treatment for depression within the last 90 days, exhibiting severe depressive symptoms associated with suicide, pregnant or breastfeeding, or diagnosed with terminal illness, psychosis or bipolar disorder. Patients who were not initially excluded were asked to complete a preliminary agreement of consent and a 2-item Patient Health Questionnaire as part of stage-I depression screening. Patients whose stage-I depression screening came back positive were then invited to the clinic to fill out a more formal, written waiver of consent along with a 9-item Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer, & Williams, 2001). Only patients who scored 10 or higher on the PHQ-9 were asked to participate in the study because they were likely suffering from major depression (Kroenke et al., 2001). Both patients and providers were informed of the patient's depression score before the first treatment session. Patients who completed the baseline survey were given a \$20 gift card. No further incentives were given throughout the study.

Providers

Providers were contacted by email, between May and June 2009, and asked if they would like to join in a study that would train them in a “new counseling method for treating depression” (Keeley et al., 2014, p. 623). They were also told they would be randomly assigned to the control or trained groups. PCPs were eligible to participate in the study if they worked at one of the primary care clinics included in the study, spent 30% of their time treating patients in an outpatient clinical setting, and were available to attend at least one 8-hour day of training in July 2009 (Keeley et al., 2014). Participating PCPs consented to the study in writing and were compensated \$65/hour for their time spent in training (Keeley et al., 2014).

Training

Control Training

Training PCPs in the control group for depression treatment included giving PCPs the American Psychiatric Association's *Practice Guideline for the Treatment of Major Depressive Disorder*, which detailed procedures for treating depression with antidepressant medication and scheduled visits (Gelenberg et al., 2010). During the first 12 weeks of treatment (acute phase), at least three visits after the initial visit were recommended; after this point, the guideline suggested visits determined by individual patient needs for the next 24 weeks. The guideline also suggested that patients receive antidepressant medication for the duration of 36 weeks of treatment. The PCPs also were given a summary presentation on depression treatments including antidepressants and psychotherapy, and physical exercise was advised as a secondary treatment that could be prescribed to patients (Keeley et al., 2014). There was no monetary compensation given for the control training (Keeley et al., 2014).

Motivational Interviewing Training

MI training followed the same depression treatment guidelines for visit frequency and antidepressant medication prescription as the control group. MI techniques were taught to PCPs based upon how MI has been used in substance abuse treatment (Keeley et al., 2014). The two fundamental aspects of MI include technical skills, such as communicating with the patient using affirmations, summary statements, and open questions (Keeley et al., 2014; Magill et al., 2014), and relational factors, such as the provider's empathetic disposition (Keeley et al., 2014; Magill et al., 2014). The technical skills of MI aim to facilitate the PCP in structuring treatment discussion so that patients begin to express personal motivation to change their negative behaviors (Keeley et al., 2014; Magill et al., 2014). The relational aspect seeks to increase patient

provider alliance, which also relies on successful use of the technical skills (Keeley et al., 2014). PCPs were trained in MI during a required 8-hour session on July 25, 2009, during which they learned MI technical skills including how to communicate with patients using “open ended questions, affirmations, reflective statements, and summaries to elicit change talk, to implement the elicit–provide–elicit technique, and to craft action plans” (Keeley et al., 2014, p. 624). PCPs also were given a guideline for an episode of treatment utilizing MI, which included four visits (Keeley et al., 2014). Additional MI training was offered in four-hour sessions on November 22, 2009, and July 11, 2010 (Keeley et al., 2014). These four-hour sessions included a review of communication techniques such as “open-ended questions, affirmations, reflective statements, and summaries...and the PCPs practiced the elicit-provide-elicit technique” (Keeley et al., 2014, p. 624). PCPs also practiced identifying change talk in provided conversations and were taught use the ‘EARS’ technique (elaborate, affirm, reflect, and summarize) as the appropriate response to patient change talk (Keeley et al., 2014, p. 624). PCPs trained in MI received individual feedback on conversations recorded with patients by the primary investigator, Dr. Robert D. Keeley, and PCPs were encouraged to use the feedback to advance their MI skills (Keeley et al., 2014). All PCPs completed the baseline training session, 2 PCPs completed one of the additional MI trainings, and 6 PCPs completed both additional MI trainings.

Group Assignment

Randomization was conducted at the level of the clinics in which PCPs practiced and was stratified based on ethnicity/race status of clinic patients (i.e., Hispanic (>70%), non-Hispanic black (>70%), or non-Hispanic white (>50%)). Seven clinics were randomized to MI training or control. PCPs adhered to the assignment given to the clinic in which they practiced. Patients

were not notified of the condition their clinic received. An independent staff member performed the random assignment of clinics.

Measures

Demographic Variables. Demographic variables for the patients include age, race/ethnicity, insurance, employment, household income, education, marital status, and total number of visits made to the PCPs throughout treatment. Demographic variables for the PCPs include age, race/ethnicity, gender, and years in practice.

The Helping Alliance Questionnaire-II (HAQ-II; Luborsky et al., 1996). The HAQ-II is a 19-item questionnaire designed to determine the patient's assessment of the quality of the relationship between the patient and the health care provider. The HAQ-II is a valid and reliable measure of the patient's perception of the alliance (Luborsky et al., 1996) and was used as the primary measure of alliance in the study. The HAQ-II was modified to say "doctor" rather than "therapist" in this study. Some examples of items are, "I feel that my doctor understands me" and "I feel that I can depend upon my doctor." Each item in the questionnaire is rated on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). Negatively worded items (4, 8, 11, 16, and 19) such as, "At times I distrust my doctor's judgment," were reverse coded. The mean of the items was used to provide an assessment of patient-provider alliance, with higher scores indicating better alliance. Patients completed the full HAQ-II at the end of week 0 treatment (48 hours) and week 12. The full HAQ-II demonstrated good internal consistency at week 0 $\alpha = 0.93$ and week 12 $\alpha = 0.95$.

As a supplemental measure of alliance, a short version of the HAQ-II was administered at weeks 2 and 4. The short version included items 3, 5, 10, and 18 from the long, 19-item HAQ-II. Specifically, these items were: "I feel that my doctor wants me to achieve my goals," "I feel I

am working together with my doctor in a group effort,” “At most visits, my doctor and I find a way to work on my problems together,” and “I believe my doctor likes me as a person.” Short HAq-II items were averaged, with higher scores corresponding to better patient-provider alliance. The short form of the questionnaire was also found to have good internal consistency for week 2 $\alpha = 0.87$ and week 4 $\alpha = 0.81$. Short HAq-II scores were calculated from items in the long HAq-II form for week 0 and week 12 as well.

Statistics

All analyses were completed in Excel 2007 using the Data Analysis Toolpak, and Real Statistics Resource Pack. Independent sample t-tests were completed to determine significant differences in HAq-II scores between the MI and control conditions at week 0 and week 12. An independent sample t-test was used to examine the difference between conditions in HAq-II score change within subjects from week 0 to week 12 and paired t-tests were used to examine change within each condition between week 0 and 12. Chi squared tests of independence and t-tests were conducted to examine differences in participant demographics between treatment conditions. Descriptively, we also examined the course of change over acute treatment using the short form of the HAq-II.

Results

Baseline Characteristics. Patient and provider demographic characteristics are presented in Table 1. There were no significant differences in patient or provider baseline characteristics between conditions. Results also indicate there was no significant relationship between patients' average number of visits to their PCPs, control ($M = 11.13$ $SD = 6.71$) and MI ($M = 10.14$, $SD = 7.92$), and their treatment conditions $t(164) = 1.97$, $p = .38$. 81.4% of the MI trained PCP patients

and 70% of the control patients provided alliance ratings at the final assessment point, $\chi^2(1, N = 168) = 0.40, p = .52$.

Patient-Provider Alliance. Contrary to our hypothesis, we did not find evidence that the patients of MI-trained PCPs endorsed significantly higher ratings patient-provider alliance than patients of control PCPs at the beginning or end of acute treatment. Table 2 displays means, standard deviations, p values (t tests), effect sizes, and 95% confidence intervals for the alliance ratings on the HAq-II by condition. Using independent samples t-test, we found a significant difference in change during treatment between the control ($M = -.25, SD = .65$) and MI ($M = .11, SD = 1.02$) conditions, $t(123) = 1.98, p = .04, 95\% CI [-0.04, 0.68]$ (Figure 1). Exploration of change in alliance over time within groups indicated that patient-provider alliance significantly decreased for patients in the control condition between week 0 ($M = 5.16, SD = .74$) and week 12 ($M = 4.91, SD = 1.03$), $t(55) = 2.00, p = .005, 95\% CI [-0.65, 0.01]$. In contrast, within the MI condition, there was no evidence of significant change over time from week 0 ($M = 5.14, SD = .56$) and week 12 ($M = 5.09, SD = .54$), $t(67) = 1.90, p = 0.36, 95\% CI [-0.25, 0.43]$. Finally, we descriptively examined the course of change over time using the supplemental short form (Figure 2).

Discussion

The current study did not demonstrate that patients treated by MI trained PCPs report higher ratings of alliance when asked during the beginning or end of acute phase treatment; moreover, the hypothesized increase in patient-provider alliance as a result of training PCPs in MI for treatment of depression. However, the change in alliance ratings between conditions was significantly different, with evidence that over the acute treatment phase in the control condition, there was a statistically significant decrease in patient-provider alliance. In contrast, patients of

the MI trained PCPs did not report significantly lower alliance scores at the end of the acute treatment as compared to their early reports. Given the mixed findings and small effects, the results of this study do not provide strong support for the use of MI training to enhance the alliance of PCPs and patients in the treatment of depression.

It is important to consider the limitations of this study. Initial HAQ-II scores at week 0 were uniformly high, indicating there may have been a ceiling effect occurring with patient-provider alliance baseline scores. This likely occurred because many of the patients had already established relationships with the PCPs in this study as their primary healthcare providers prior to the PCP and patient enrollment in the study. This aspect of the design may have created social desirability pressures for patients such that their ratings of the PCP were biased in the positive direction. In future studies, it may be helpful to examine the effects of training on new PCP-patient dyads rather than existing ones. In addition, the type of PCP involved in research aimed at improving patient-provider alliance likely has stronger relationships with patients to begin with, indicating the need for a larger sample of PCPs. This would enable further inquiry as to differences between PCPs and whether or not certain PCPs benefit from MI whereas others do not.

In addition, the use of the HAQ-II may be limited in several respects. It is possible that utilizing an observer rating measure (e.g., the Working Alliance Inventory (WAI) Short Observer-Rated version) to code the physician patient relationship might allow for more variability in alliance scores and help to mitigate the problem of ceiling effects in the patient reported ratings (Hatcher & Gillaspay, 2006). However, due to the importance of the patient's perception of the patient-provider alliance, the HAQ-II data may be preferable to data on the doctor's perception of the relationship (Webb et al., 2011). A meta-analysis on measures of

alliance also found the reliability of alliance measures varied by the type of rater, with patient raters holding the highest overall reliability, as determined by measures of internal consistency, interrater reliability, and test-retest reliability. (Martin et al., 2000).

It is also important to note that there was attrition for both conditions, with 81.4% of the MI trained PCP patients and 70% of the control patients providing alliance ratings at the final assessment point, which is comparable across groups.

Finally, examination of depression outcomes were not a focus of this report (as they will be addressed in an independent paper), thus, we did not examine the relationship between MI training, patient-provider alliance, and depression treatment outcomes. Adherence to treatment, specifically medication adherence, is an important aspect of primary care treatment of depression (Kaplan, Keeley, Engel, Emsermann, & Brody, 2013) upon which alliance might also have an effect. The examination of these relationships will be an important focus of future research.

In conclusion, this study failed to demonstrate that training PCPs in MI leads to higher alliance as compared to the control condition or that it increases patient-provider alliance throughout 12 weeks of treatment for depression. However, it is possible that training PCPs in MI may stabilize patient-provider alliance throughout 12 weeks of treatment for depression and protect against a worsening of alliance over time when treating depression in the primary care context. Future studies utilizing observer-rated alliance and larger PCP sample sizes are recommended.

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Table 1
Between group differences on baseline demographics

Patients	Characteristics		Group		test statistic	p
	<i>n</i>		MI*	Control		
			88	80		
	Age		49.4 (<i>SD</i> =13.3)	47.7 (<i>SD</i> =13.1)	t(166)=1.97	.40
	Race				$\chi^2(2, N=168)=4.71$	.09
		Black or African American	30%	40%		
		White	34%	38%		
		Other	36%	21%		
	Ethnicity				$\chi^2(1, N=168)=0.82$	.36
		Non Hispanic/Latino	61%	68%		
		Hispanic or Latino	38%	31%		
	Insurance				$\chi^2(2, N=168)=0.15$	.93
		Medicare/Medicaid	59%	58%		
		CICP	38%	39%		
		Other	2%	2%		
	Employment				$\chi^2(1, N=168)=.0003$	.99
		Employed	24%	24%		
		Other	76%	76%		
	Income				$\chi^2(3, N=168)=1.08$	.78
		<10,000	49%	49%		
		10-24,999	34%	33%		
		25-50,000	8%	7%		
		Other	9%	11%		
	Education				$\chi^2(3, N=168) = 4.34$	.23
		1 st -8 th grade	7%	1%		
		9 th -11 th grade	19%	15%		
		12 th or GED	30%	30%		
		Other	44%	54%		
	Marriage				$\chi^2(2, N = 168)=0.76$	.69
		Single	36%	38%		
		Married	22%	26%		
		Other	42%	36%		
Providers						
	<i>n</i>		10	15		
	Age		49.2 (<i>SD</i> = 7.6)	47.4 (<i>SD</i> = 8.6)	t(23) = 2.07	.21
	Gender				$\chi^2(1, N=25) = .12$	.73
		Female	60%	67%		
		Male	40%	33%		
	Race				$\chi^2(1, N = 25) = 0.09$	.76
		White	90%	93%		
		Other	10%	7%		
	Ethnicity				$\chi^2(1, N = 25) = .06$	.80
		Non Hispanic/Latino	90%	87%		

	Hispanic	10%	13%		
Years Practice		16.8 (<i>SD</i> = 8.6)	14.67 (<i>SD</i> = 9.2)	<i>t</i> (23) = 2.09	.56

Note. SD = standard deviation; *MI = Motivational Interviewing; n = number of participants in each group.

Table 2

Patient-provider alliance in MI and control groups

Assessment Period	Sample means						Test Statistic	<i>p</i>	<i>d</i>	95% CI for means
	MI (<i>N</i> = 88)			Control (<i>N</i> = 80)						
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>				
Wk 0	5.07	.68	86	5.02	.85	80	1.97	.66	.06	-0.24, 0.35
Wk 12	5.10	.65	70	4.91	1.01	56	1.99	.23	.22	-0.12, 0.58

Note. M = Mean HAQ-II score; SD = Standard deviation; n = number of participants in each group; *d* = Cohen's *d*; CI = confidence interval.

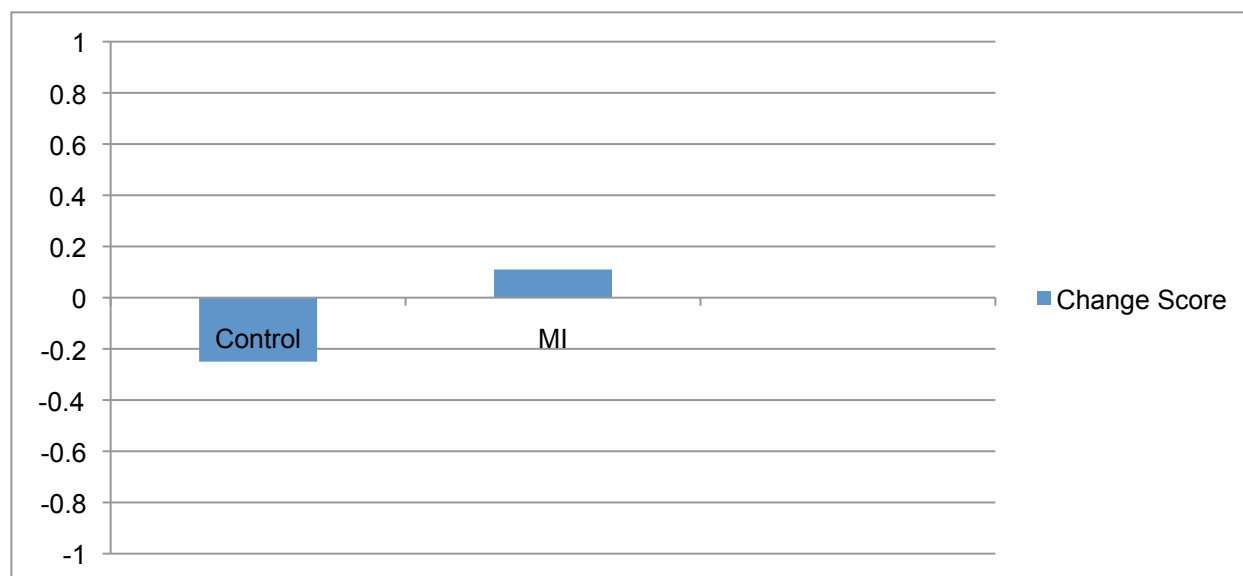


Figure 1. Alliance change scores (HAq-II ratings) between late and early acute phase treatment by condition.

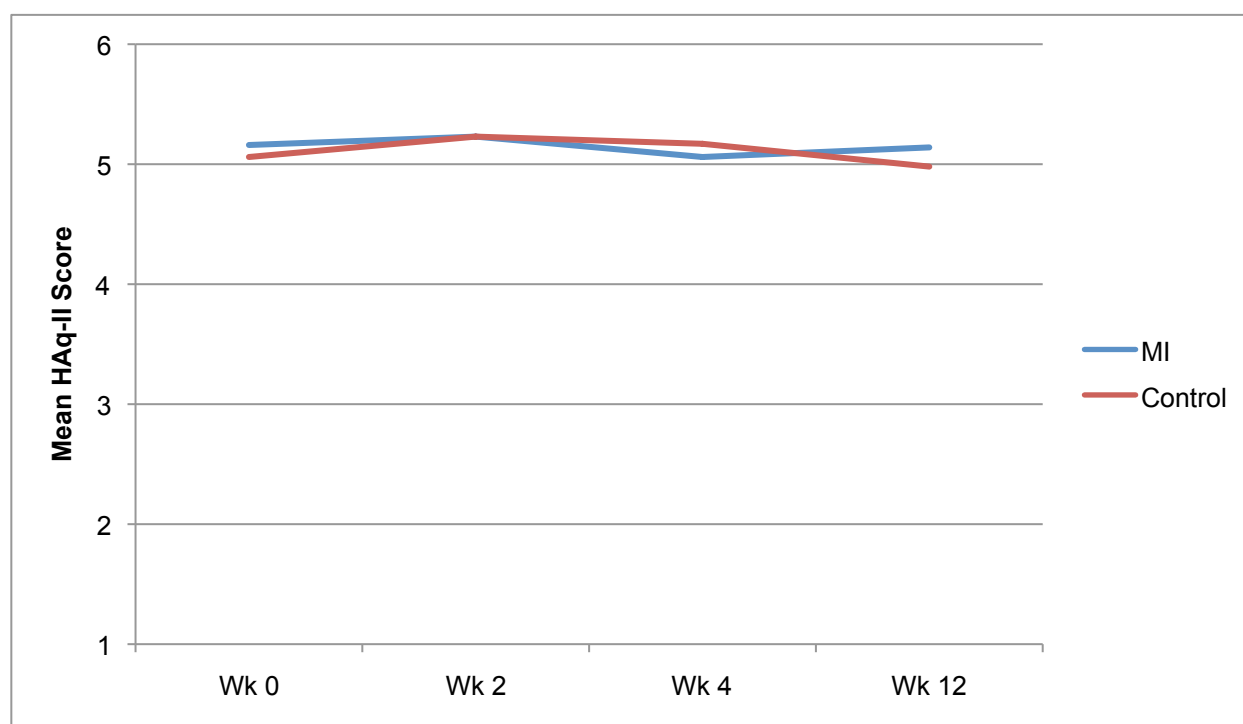


Figure 2. Change in alliance over time, using the supplemental form short version of HAq-II.