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UNIVERSITY of the WESTERN CAPE

From research to practice: Lay adherence counsellors' fidelity to an evidence-based intervention for promoting adherence to antiretroviral treatment in the Western Cape, South Africa

Sarah Dewing, Cathy Mathews, Allanise Cloete, Nikki Schaay, Madhvi Shah, Leickness Simbayi and Johann Louw

Abstract
In the Western Cape, lay counsellors are tasked with supporting antiretroviral (ARV) adherence in public healthcare clinics. Thirty-nine counsellors in 21 Cape Town clinics were trained in *Options for Health* (*Options*), an evidence-based intervention based on motivational interviewing (MI). We evaluated counsellors' ability to deliver *Options* for addressing poor adherence following 5 days training. Audio-recordings of counselling sessions collected following training were transcribed and translated into English. Thirty-five transcripts of sessions conducted by 35 counsellors were analysed for fidelity to the *Options* protocol, and using the Motivational Interviewing Treatment and Integrity (MITI) code. Counsellors struggled with some of the strategies associated with MI, such as assessing readiness-to-change and facilitating change talk. Overall, counsellors failed to achieve proficiency in the approach of MI according to the MITI. Counsellors were able to negotiate realistic plans for addressing patients' barriers to adherence. Further efforts aimed at strengthening the ARV adherence counselling programme are needed.

Introduction
South Africa has the largest burden of HIV/AIDS in the world [1]. Antiretroviral (ARV) treatment is being rolled out nationally, and patients are encouraged to adhere to their treatment regimens. Adherence is the most important predictor of viral suppression [2, 3]. Levels of ARV adherence in South Africa have generally been found to be high (that is, above 90 %) [4–6]. However adherence fluctuates over time [7], and sustained efforts to maintain high levels of long-term adherence are necessary [8].

In South Africa, as in other developing countries, lay health workers (LHWs) have been integrated into the formal healthcare system to expand capacity for service delivery. LHWs are individuals carrying out functions related to health care delivery but who have no formal professional, paraprofessional certificate or degreed tertiary education [9]. Within the context of the national ARV treatment programme, individual counselling delivered by clinic-based lay counsellors is one of the main strategies for supporting adherence in the public sector. Previous research has indicated poor basic

counselling skill among lay ARV adherence counsellors in the Western Cape province of South Africa. Weaknesses in their practice have been found to include poorly structured sessions and rapid topic shifting [10]. Counsellors have also been observed to contravene core principles of client-centred counselling such as the demonstration of respect and positive regard by issuing warnings, moralising, casting judgements and patronising patients [11]. Further, counsellors tend to use information and advice to address poor adherence [11]. This approach is inconsistent with evidence-based behavioural approaches to improving treatment adherence, which commonly assist patients to identify and address barriers to optimal adherence [12]. In an attempt to strengthen the adherence counselling programme in the Western Cape, we trained lay ARV adherence counsellors in an evidence-based intervention called *Options for Health* (*Options*). Shown to be effective at reducing sexual risk behaviour among people attending HIV clinical care in the United States [13] as well as South Africa [14–16], we included ARV adherence as a target behaviour of the intervention.

The *Options for Health* Intervention

The *Options* intervention provides an eight-step framework by which the provider and patient assess the patient's risk behaviour, identify barriers to behaviour change, develop strategies for overcoming these barriers and negotiate a plan for change [17]. The eight steps of the *Options* protocol are detailed in Table 1. *Options* is based on the information–motivation–behavioural skills (IMB) model of behaviour change in which information, motivation and behavioural skills are regarded as fundamental determinants of health-related behaviours [18]. In this model, poor ARV adherence (for example) is understood as the result of deficits in an individual's adherence-related information, motivation and/or behavioural skills [18].

Options employs motivational interviewing (MI) techniques to identify and address clients' IMB deficits in order to move them towards behaviour change [19]. MI is an evidence-based, client-centred counselling approach to enhancing an individual's motivation to change that is characterised by a particular interpersonal style or "spirit" of delivery [20]. In evaluations of the extent to which providers of MI demonstrate "MI spirit", it is generally measured by three variables: "evocation", "collaboration" and "autonomy/support" [21]. Evocation refers to the extent to which the clinician conveys an understanding that motivation (and the ability) for change lie within the client, and works to elicit and enhance it [22]. Collaboration refers to the extent to which the interaction appears to occur between two equal partners, and autonomy/support the extent to which the clinician supports and encourages the client as the active decision-maker [22]. Competence in several core communication skills is required, including the skilful use of open-ended questions, reflective listening statements, and making affirmations (also referred to as "MI consistent" statements) [21]. Strategies used to help the client to explore their feelings around behaviour change and to elicit motivation include eliciting "change talk" (that is, client speech that indicates desire/ability/reasons/ commitment to change, and is intended to increase motivation and confidence to change behaviour [19]), assessing importance and confidence (or readiness-to-change), exploring options, and negotiating plans of action [21]. In interventions based on MI, the assessment of a patient's conviction (or level of importance) regarding the need for change as well as their confidence regarding their

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ability to engage in a particular health behaviour is considered a key step that allows clinicians to provide interventions that are tailored to the patient's state of readiness and commitment to change [23]. The method thus requires flexibility on the part of the provider, because the selection of a plan for change must be tailored to the client's individual level of motivation [24].

Motivational interviewing is an advanced counselling technique, and true MI is time-intensive [25]. Adaptations of MI have thus been developed for use in brief consultations that occur in medical and healthcare settings [26]. These interventions, which include *Options,* are referred to as brief motivational interventions (BMIs) or behaviour change counselling (BCC), and omit some of the more psychotherapeutic elements of the parent method [25]. Many of the skills and principles from MI still apply in BMIs and BCC, including the demonstration of empathy and respect for client autonomy and choice, the development of action plans for behaviour change [25, 26], the spirit of the interaction [27], and the concept and assessment of readiness-to-change [28].

The implementation of evidence-based practice is a well-known challenge. Many promising health interventions face substantial barriers to effective implementation in practice settings [29–31]. In particular, the ability of LHWs to successfully deliver prevention interventions has been raised as one potential barrier to effective programme implementation [32, 33]. *Options* has been employed by South African lay counsellors in previous studies, and a positive impact on sexual risk behaviour was observed [14–16]. In these studies, the extent to which counsellors delivered the *Options* protocol as intended was measured using completed *Options* record forms (see Step 8 in Table 1) to assess the number of protocol steps completed for each session conducted. In the first of these studies, counsellors delivered at least 7 of 8 steps in 79 % of 216 counselling sessions [14]. In the second study, counsellors delivered at least 7 of 8 intervention steps in 65 % of 360 *Options* sessions [16]. Based on the success of the intervention in South Africa, we implemented *Options* in 21 ARV clinics in the Western Cape as a first step in rolling the intervention out into practice. The project was known as *Options for Health: Western Cape* (*Options: WC*).

One aspect of fidelity that is not assessed by counting the number of *Options* steps completed (as in the two above-mentioned studies) is how well counsellors can deliver each of the protocol steps. Furthermore, previous research conducted in the Western Cape suggests that lay counsellors generally do not achieve proficiency in the approach of MI following training [34, 35].

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Table 1 The *Options* counselling protocol for first sessions focusing on ARV adherence as trained in the 5 days *Options: WC* training course

Step	What	How	Why
1	Introduce the discussion	Explain that you would like to talk about ARV adherence and ask permission to proceed with the discussion.	The patient should experience a sense of control over the session and of being respected.
2	Identify current non-adherence	Use simple open questions to explore the patient's behaviours. Avoid judging/criticising and asking a series of close-ended questions. This takes control away from patient and can come across as an interrogation.	To determine the adherence problem as quickly and efficiently as possible, and the conditions under which non-adherence occurs.
3	Assess importance and confidence to evaluate the patient's readiness to increase their adherence	"On a scale of 1–10, where 1 is "not at all important" and 10 is "extremely important", how important is it to you to [take your ARVs every day and on time?"] "On a scale of 1–10, where 1 is "not at all confident" and 10 is "extremely confident", how confident are you that you can [take your ARVs every day and on time?"]	The constructs of importance and confidence map on to the patient's levels of information, motivation and behavioural skills. Low importance usually indicates inadequate information and/or low motivation. Low confidence usually indicates insufficient behavioural skills, and sometimes low motivation.
4	Decide whether to focus on importance or confidence	Use the *Options* algorithm: • If importance <7, explore importance. • If importance ≥7, explore the construct with the lower rating. • If both importance and confidence are ≥9, explore any remaining barriers to change.	If the patient does not view adherence as important, then it is unlikely they will be adherent even if they are confident they can do so. If adherence is important to them, but their confidence is low, they most likely require behavioural skills.
5	Identify barriers to consistently practicing safe sex or adherence	"You gave yourself a score of [#] for [importance or confidence], why did you give yourself a [#] and not a lower score?" (down the ladder) "What would have to happen for your [importance or confidence] score to increase?" (up the ladder)	By explaining why the rating is not lower, the patient presents their own argument/s for change that they regard as important and do-able (eliciting change talk). To elicit reasons for the lower score and why the patient is not adherent (barriers). This also directly identifies strategies that might be effective in increasing their adherence.
6	Discuss strategies for change	Ask the patient to come up with ideas of their own. Ideally strategies for change should come from the client they will best know what will/won't work for them. If they are unable to come up with any, ask permission to offer some.	To identify one/more strategies that could (1) address obstacles to adherence and (2) increase the patient's readiness and ability to change.
7	Negotiate an action plan	"We have talked about some possible ways to increase your adherence, would you be willing to try any of these things between now and your next visit?" The client should choose an action plan that they are willing to try and commit to. Plans may include "baby steps" toward optimal adherence, and even agreeing to think about changing and continuing the discussion in the next visit.	To increase the probability of behaviour change by allowing the client to choose an action plan that is realistic and attainable in the context of his/her life.
8	Document the session on the *Options* record form	At a minimum the following should be recorded: barriers to adherence, importance and confidence ratings and the agreed upon action plan.	To ensure continuity from one session to the next by providing a record of what occurred during previous sessions.

As an advanced counselling technique, failure to develop sufficient competence may be a significant barrier to transferring MI training into practice [36]. The study presented in this paper is an evaluation of the integrity with which the *Options* counselling protocol was delivered by lay counsellors in the Western Cape following training. Specifically, we aimed to determine the quality with which counsellors delivered the steps of the *Options* protocol apart from the number of steps delivered. We also aimed to determine counsellors' proficiency in terms of the communication skills and approach associated with MI.

Methods

Participants

At the time of the study there were 11 non-governmental organisations (NGOs) that employed clinic-based lay ARV adherence counsellors in the Western Cape. These NGOs

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covered all 80 clinics that were providing ARVs at the time of the study. Four of these NGOs were randomly selected (their names were drawn out of container holding the names of all 11 NGOs) to take part in the implementation of *Options: WC*. Together, these four NGOs employed 39 adherence counsellors based in 21 clinics around Cape Town. All 39 counsellors were trained in the *Options* intervention, and agreed to take part in the evaluation of their performance following training.

In terms of previous training experience, all clinic-based lay HIV counsellors in the Western Cape are initially trained by the provincial AIDS Training, Information and Counselling Centre (ATICC). After taking part in a 10-day HIV/AIDS Information Course, counsellors take part in a 20-day Intensive Counselling Course in which basic counselling skills are trained. Counsellors having successfully completed these two courses are eligible to take part in ATICC's 10-day Adherence Counselling Course. This course covers information about taking ARVs; basic counselling skills are not revised. Further training (e.g., refresher training) is not required by the health authorities, but NGOs may sponsor their counsellors to take part in training courses provided by other NGOs.

Options: WC Training

In January 2008, the *Options: WC* implementation team took part in a 5-day master training programme facilitated by one of the co-developers of the *Options* intervention. The training programme for ARV adherence counsellors was later developed by the *Options: WC* implementation team based on the materials delivered in this course, and adapted to include modules on MI and ARV adherence.

The module on MI focused on ambivalence, readiness-to-change, change talk and resistance, reflective listening, asking permission before giving information or advice, open- and closed-ended questions and providing information in a manner consistent with MI. The module on ARV adherence focused on the use of the *Options* protocol for addressing sub-optimal adherence, potential barriers to adherence (e.g., side effects, forgetting, alcohol use, depression) and strategies for addressing these. Other modules included in the training focused on barriers to safer sexual practice (e.g., issues around condom use, desire for pregnancy, gender-based violence) and the use of the *Options* counselling protocol in counselling around these issues. MI skills were a continued focus throughout the training.

Counsellors were divided into two groups and trained over two consecutive weeks in June 2009. Smaller training groups of about 15 people allow for more opportunities for practising skills [37] as well as individual attention from facilitators. Teaching methods used included didactic presentations and hand-outs, experiential learning exercises, modelling (by facilitators and in video demonstrations) and supervised role-play with feedback. On the last day of training, counsellors paired up to conduct role-plays. These were audio-recorded and transcribed. Each counsellor received their transcript with written and verbal feedback in the 2 weeks following training.

Training was conducted in English, although Xhosa and Afrikaans translations were generated for key concepts by facilitators in collaboration with the training participants.

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All counsellors were presumed to possess sufficient knowledge of English for this to be appropriate as all training provided by ATICC is conducted in English.

Data Collection

Data collectors visited counsellors at their clinics over a period of 3 months following training to collect digital audio-recordings of *Options* counselling sessions. Upon referral of a patient for adherence counselling, the counsellor would inform the data collector who would conduct the informed consent procedure with the patient (convenience sampling). Counsellors were visited until recordings of three sessions had been received or until the end of the data collection period. Counsellors were provided with vouchers to the value of US $2.50 for each recording provided; patients were not provided with incentives. Data collectors did not sit in on counselling sessions. Ethical approval for the study was granted by the Human Research Ethics Committee at the University of Cape Town.

Data Analysis

Digital audio files were labelled with study identification numbers allocated to counsellors to ensure anonymity. Recordings were transcribed verbatim and translated into English. Translations were independently checked for accuracy.

In total, audio-recordings were collected from 36 of the 39 participating counsellors. Of the three counsellors who did not contribute any recordings, two had no patients referred for adherence counselling while a data collector was on site, and one declined to take part in the study after a few weeks. Where more than one recording was received from counsellors, one transcript was randomly selected for analysis. One transcript was excluded from the analysis as the recording had been cut short near the beginning of the counselling session. This transcript could not be replaced as the counsellor had provided only this one recording. In total, 35 transcripts (one from each of 35 counsellors) were analysed.

Counsellors' adherence to the steps of the *Options* protocol within the recorded sessions was evaluated using a coding sheet developed by the first author. Transcripts were coded for the presence (yes/no) of seven of eight *Options* steps. *Options* Record Forms (Step 8) for recorded sessions were not collected from the field; this step was thus not included in the analysis. Steps consisting of more than one discrete activity were coded for the presence of each activity. Specifically, Step 3 was coded for the presence of both an assessment of importance and an assessment of confidence. Similarly, Step 5 was assessed in terms of whether the counsellor went "down the ladder" to elicit change talk, and then "up the ladder" to elicit the specific barrier to adherence (see Table 1). Those steps with which counsellors had been observed to struggle during training were assessed for more than their mere presence/absence. For example, during training, counsellors were seen to experience difficulty in explaining the 10-point rating scale and the behaviour that they were asking their role-play patients to rate when using the importance and confidence ladders (Step 3 in Table 1). Transcripts were thus also scored according to (1) the clarity with which the counsellor explained the scale to their patient, and (2) whether they were specific about the behaviour that they were asking their patient to rate them self on.

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Counsellors' proficiency in MI was measured using the Motivational Interviewing Treatment and Integrity (MITI) code (version 3), an instrument appropriate for assessing entry-level competence in MI [22]. The MITI consists of two components: global scores and behaviour counts. Global scores require the rater to assign a score from a five-point Likert scale to characterise the interaction in terms of the following dimensions: evocation, collaboration, autonomy/support, direction, and empathy. The first three terms have been defined in the introduction above. "Direction" refers to the extent to which the counsellor maintains appropriate focus on a specific target behaviour, and "empathy" the extent to which the counsellor understands, or makes an effort to understand, the client's perspective, feelings and situation. These dimensions are associated with proficiency and competency thresholds: a mean of 3.5 indicates beginning proficiency, while a mean of 4 indicates competency.

Behaviour counts require the rater to parse clinician speech into utterances to which one of the following codes can be assigned: giving information, open/closed question, simple/complex reflection, and MI adherent/non-adherent [38]. Allocated codes are counted and combined to calculate a number of summary scores associated with proficiency and competency thresholds. Behaviour count and summary scores are defined and presented with their associated proficiency and competency thresholds in Table 2.

All transcripts were evaluated using the MITI 3.0 by the first and fifth authors. Intraclass correlations (ICC's) on global ratings ranged from 0.13 (poor) for empathy to 0.52 (fair) for collaboration [39]. For behaviour count data ICCs ranged from "good" (0.67 for simple reflections) to "excellent" (0.97 for closed questions) [39]. Quantitative data analysis was conducted using IBM SPSS Statistics 19. Data was screened for normality using standard procedures. Non-parametric statistics were used where assumptions of normality were not met.

Results

The majority of the 35 counsellors were female (89 %) and had completed Grade 12 schooling (74 %). Seventy-seven percent of counsellors (n = 27) spoke Xhosa as a first language; the remainder were first language Afrikaans speaking. Most counsellors (80 %) had 3 years or more of counselling experience in the field of HIV/AIDS (range: 1–6, median: 5) and could thus be regarded as experienced lay counsellors.

Recordings for the 35 sessions analysed ranged from 6 to 34 min in length, with an average time of 15 min. Five sessions were conducted in Afrikaans, and three were conducted in English by counsellors who spoke Afrikaans as a first language. The remaining sessions were all conducted in Xhosa.

Fidelity to the *Options* Eight-Step Counselling Protocol Only 23 % of counsellors conducted all 7 of the 7 *Options* steps assessed; half (51 %) of counsellors assessed conducted 5 steps or fewer. Most of the 35 counsellors introduced the discussion as part of Step 1 (89 %) and conducted a risk assessment as part of Step 2 (97 %). The delivery of Steps 3 to 7 are discussed individually below.

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Table 2 Definitions and proficiency thresholds for behaviour count summary scores in the MITI 3.0

Behaviour count summary score	Beginning proficiency	Competence
Reflection to question ratio	1	2
The number of all reflective statements made compared to the number of all questions asked		
Percent open questions	50 %	70 %
The percentage of all questions asked that are open		
Open questions are those allowing for a wide range of responses, while *closed questions* can be answered with "yes", "no" or similar one word responses		
Percent complex reflections	40 %	50 %
The percentage of all reflective listening statements that are complex		
Simple reflections add little or no meaning to what clients have said, but convey understanding of the expressed thought/feeling etc. *Complex reflections* add substantial meaning to what has been said		
Percent MI Adherent	90 %	100 %
The percentage of all MI adherent and non-adherent statements that are adherent		
MI adherent behaviours include asking permission before giving advice or information, affirming the client's self-efficacy, emphasising the client's control and offering supportive statements. *MI non-adherent* behaviours include advising without permission, confronting (e.g., by disagreeing, shaming, criticising) and giving orders, commands or imperatives		

Adapted from the Motivational Interviewing Treatment and Integrity (MITI) tool [22]

Step 3: Assessing Importance and Confidence

All 35 counsellors (100 %) assessed both importance and confidence but this was not always done well. Counsellors were trained to (1) give clear explanations regarding the importance and confidence rating scales, and (2) to be specific about the behaviour that they ask their patient to rate (e.g., "How important is it to you to take your treatment *every day and on time*?" or "to use a condom *every time* you have sex"). In terms of importance, three counsellors (9 %) provided a clear explanation of the rating scale and were specific about the behaviour they were asking patients to rate. The majority of counsellors (57 %) provided a clear explanation of the rating scale and were reasonably clear about what they were asking the patient to rate themselves on. Twelve counsellors (34 %) gave confusing explanations about how the rating scale worked, and where unclear about what they were asking their patients to rate. For example:

[Immediately following the risk assessment] Sister, I have two ladders here, this one shows importance of a person, this one shows the confidence of a person, so in these steps that are here in this ladder can you show me where you are? Where do you place yourself in these numbers? (Counsellor 2).

In terms of confidence, 3 counsellors (9 %) gave (1) a clear explanation of the rating system and (2) were specific about what they were asking the patient to rate. Thirteen counsellors (37 %) explained the scoring system well but were unclear about the behaviour they were asking their patients to rate themselves on. The majority of counsellors (n = 19; 54 %) gave neither a good explanation of the rating scale, nor were they clear about what they were asking their patients to rate. Explanations of the confidence rating provided by these counsellors revealed confusion around the concept of confidence. For example Counsellor 4 asked: "How sure are you that you want to take your pills?" while Counsellor 5 asked: "In this second [ladder], is it important?" Counsellor 6 asked the patient: "How sure are you (that) you're taking your pills

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correctly?" Five counsellors, including Counsellor 5 quoted above, referred to the concept of importance when assessing confidence.

Step 4: Selecting the Appropriate Construct to Follow-up on

In Step 4 counsellors are required to use the *Options* algorithm to select and focus on the appropriate construct in moving forward. Nineteen counsellors (54 %) did not focus on the correct construct. Some of these counsellors went "down the ladder" (see Table 1) on their patient's importance and confidence scores. Others simply chose the wrong score, focusing on confidence (for example) when the patient's importance score was the lowest score. Importantly these 19 counsellors included 12 counsellors whose patients rated themselves at 10 for each of importance and confidence as part of Step 3 described above. These scores did not make sense in the context of known non-adherence. These patients' scores thus did not indicate whether the barrier to adherence was related to a lack of information, motivation or behavioural skills. Regardless, these 12 counsellors moved forward with the counselling session.

Step 5: Eliciting Change Talk and Barriers

In the first part of Step 5, counsellors should use the patient's score for the construct chosen in Step 4 to elicit change talk (see Table 1). Only 16 counsellors (45 %) attempted to elicit change talk from patients. Following the first part of Step 5, only 12 counsellors (34 %) attempted to elicit specific barriers to change by asking patients how their scores might be increased (see Table 1).

The following excerpt contains a number of the issues mentioned above, and illustrates some of the difficulty experienced by counsellors (and patients) in relation to the readiness-to-change assessment:

Counsellor: [reflecting the patient's importance and confidence scores] You are saying you put yourself at ten in both of them?
Patient: Because I want to be healthy.
Counsellor: Why may be you put yourself at ten in both numbers, why maybe you not putting yourself at three or four? What are you thinking?
Patient: I don't know I'm just putting.
Counsellor: Okay, if you allow me may be I can explain why you put yourself at ten okay? You put yourself at ten in Importance that shows it is very important to you, this thing, your treatment, it's only this problem you are staying alone, and you don't have someone to give you money, and here [in] Importance [but referring to Confidence], you put yourself at ten…it shows you that you are sure that you can use your treatment, it's just that you said you have this problem of staying alone and you don't have money, so that is why I am asking now, why do you not put yourself at two and three and four?
Patient: Because I don't know how it works.
Counsellor: Why do you not put yourself here at two or three in both ladders? What do you think?
Patient: I don't know.
Counsellor: Okay, do you think they are the lowest numbers, or what is happening?
Patient: I'm not thinking, I'm [just] putting the number.

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Step 6 and Step 7: Strategies for Change and the Negotiation of an Action Plan

Twenty-eight counsellors (80 %) facilitated a discussion around strategies for behaviour change (Step 6). Twenty-eight counsellors (80 %) negotiated a specific plan of action with their patient (Step 7) and of these action plans, 21 (75 %) appeared to have the potential to effectively address the patient's barrier.

Fidelity to the Approach of Motivational Interviewing

Data presented in Table 3 shows that direction was the only global rating on which counsellors, as a group, exceeded the threshold for beginning proficiency of 3.5. On all other global dimensions, mean scores were well below this threshold, with empathy as low as 1.8. This data is based on the coding that was conducted by the first author. Because empathy and autonomy were those dimensions for which inter-rater agreement was poorest, the mean scores were calculated using the second rater's data for comparison. The mean score for empathy remained low at 1.9. The mean score for autonomy remained the same when using the second rater's data at 2.9.

Table 4 presents the results of counts of particular counsellor behaviours. In total, 1871 utterances were coded. By far the most common behaviour was asking closed questions, with one counsellor asking as many as 80 closed questions in one session. No counsellors managed any complex reflections.

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Table 3 Mean scores achieved by counsellors on global ratings on the MITI 3.0

Measure	Mean	SD	Range[a]
Evocation	2.4	1.1	1.0–4.0
Collaboration	2.4	1.1	1.0–4.0
Autonomy/support	2.9	0.6	1.0–4.0
Global spirit[b]	2.6	0.8	1.3–4.0
Direction	5.0	0.0	5.0–5.0
Empathy	1.8	0.9	1.0–4.0

[a] "Range" refers to the range of counsellors' scores; the possible range was 1–5

[b] This score represents the mean of mean scores achieved for evocation, collaboration and autonomy/support

Table 4 Use of particular counselling behaviours assessed by behaviour count using the MITI 3.0

Behaviour	Median	SD	Range	No. of counsellors scoring zero[a]
MI adherent	2.0	1.8	0–7	6
MI non-adherent	2.0	3.0	0–14	6
Closed questions	23.0	13.8	7–80	0
Open questions	6.0	2.9	1–13	0
Simple reflections	6.0	4.1	0–15	1
Complex reflections	0.0	0.0	0–0	35

[a] "No. of counsellors scoring zero" refers to the number of counsellors that did not exhibit a particular behaviour. For example, six counsellors made no statements that were MI non-adherent

One-sample Wilcoxon Signed-Rank tests were used to evaluate counsellors' summary scores in relation to the proficiency thresholds suggested by the MITI 3.0. Results are presented in Table 5, together with the number of individual counsellors achieving proficiency on the various dimensions. As a group, counsellors fell well below proficiency thresholds for all criteria.

Discussion

A loss of fidelity is a well-known challenge when evidence-based interventions are transferred into practice settings [40, 41]. Counsellors attempting to deliver the *Options* intervention protocol in this study were no exception. In this study, fidelity in terms of the number of intervention steps delivered was evaluated by direct observation of one counselling session per counsellor. This is in comparison to the two previous South

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African *Options* studies where fidelity was monitored using *Options* Record Forms collected over the study period [14, 16]. This means that the present study is not able to reach conclusions about variability between sessions and over time. This method was chosen to examine lay counsellors' ability to deliver the intervention in more depth than has previously been done. Indeed, the present findings show that while particular steps of the *Options* protocol were delivered, they were not always delivered well, or in a way that is consistent with the underlying theory. These findings question the ability of lay counsellors to deliver this intervention with fidelity following training of 5 days (35 h). However, the lack of a second rater in coding transcripts for fidelity to the *Options* eight-step protocol is a limitation to this study. While coding for the yes/no presence of particular steps is likely to have been reliable, assessments of the quality with which particular steps were conducted were more subjective and could have benefitted from a second coder.

It is important to acknowledge that counsellors (and probably most patients) did not speak English as their first language. Counselling is a product of Western cultures and writers like Maree and Du Toit [42] draw attention to the fact that, in counselling across cultures, not only will some concepts be absent in the language of the individual, but they may also be completely foreign to the culture that s/he inhabits. While care was taken in translating important concepts such as importance and confidence from English into Afrikaans and Xhosa during training, it is possible that semantic equivalence was not achieved. It is also important to note that judgements regarding counsellors' ability to deliver the readiness-to-change assessment (Step 3) are dependent on the quality with which transcripts were translated. Translations were independently checked for accuracy, and no significant errors were identified.

The development of an individualised action plan for change is a key aspect of brief motivational interventions thought to be partially responsible their effectiveness [23, 43]. Despite diffi managing the readiness-to-change assessment, the majority of counsellors in this study did go on to discuss strategies for change with their patients. Furthermore, the majority of plans devised appeared to be realistic and to have the potential to address patients' adherence barriers. This was judged by the first author in relation to what was revealed in session transcripts about the barriers to adherence faced by patients. However, in terms of MI theory, the development of a seemingly achievable plan is unlikely to result in behaviour change if it is not matched to the individual's state of readiness-to-change [44]. The negative consequences of having clients agree to actions for which they are not yet ready have been shown by Amrhein et al. [45]. In a psycholinguistic analysis of MI counselling sessions taken from a randomised control trial that failed to find an effect for MI on drug use, Amrhein et al. observed that motivation and commitment to change declined substantially towards the end of counselling sessions for those participants who did not respond to the intervention. The authors explain that therapists in the study delivered the intervention in accordance with a manual which, like *Options*, prescribed the development of a behaviour change plan towards the end of the session. For participants less ready to change, this was seen to elicit resistance and was associated with little change in drug use behaviour.

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Table 5 Results of the comparison between counsellors' ($N = 35$) scores and proficiency thresholds suggested in the MITI 3.0

	MITI 3.0 proficiency threshold	Observed median (range)	Test statistic	p	No. at beginning proficiency
Global scores	3.5	2.8 (2–4)	66.500	<0.001	9[a]
Reflection to question ratio	1	0 (0–1)	0.000	<0.001	2
Percent open questions	50	18 (8–38)	0.000	<0.001	0
Percent complex reflections	40	0 (0.0–0.0)	0.000	<0.001	0
Percent MI adherent	90	44 (0–100)	27.000	<0.001	6[b]

[a] One of these nine counsellors achieved the threshold for competency

[b] All six counsellors achieved the threshold for competency (that is, 100 % MI adherent). $p < 0.05$

The authors warn that a danger associated with MI-based interventions that follow a prescribed script (such as the eight-step *Options* protocol) is that they can result in an inflexible approach to MI. They suggest that the delivery of MI that is not responsive to the individual's particular circumstances and state of readiness-to-change could yield worse outcomes among less motivated clients. If this is true, an important question is whether LHWs are able to manage a counselling process like MI that requires the kind of flexibility and judgement that is expected of professional counsellors.

Other potential mechanisms of change in MI pertain to the counsellor's overall style, specific behaviours and use of specific techniques [46]. As a group, counsellors in this study scored well below suggested thresholds for beginning proficiency on overall style (although these results need to be interpreted in the context of low inter-rater agreement), MI consistent behaviours and communication techniques when assessed using the MITI 3.0. Two previous studies among lay counsellors in the Western Cape have also shown that counsellors generally fail to achieve proficiency in the approach of MI according to the thresholds set by the MITI following brief training [34, 35], although counsellors in the current study scored even lower than counsellors in this previous research. One possible explanation for this is that counsellors in the previous two Western Cape studies were provided with training that was delivered over time. For example, counsellors in the study by Evangeli and colleagues attended six 2 h sessions of training and two individual feedback sessions (the period of time over which these sessions were delivered is not specified) [34]. Counsellors in the study by Mash and colleagues received a 3-day training programme followed by 5 monthly meetings involving simulation and feedback [35]. The opportunity to implement newly learned skills in between training sessions may support skill refinement as well as the transfer of skills into practice. This may be a more effective method for training lay counsellors and for supporting change in practice as well. Indeed, research suggests that it is difficult to suppress prior counselling habits and practices that may be inconsistent with MI [47]. For example, Evangeli et al. [34] observed that, following training, counsellors retained a tendency toward pre-training behaviours, and would follow MI adherent behaviours with direction and advice (MI non-adherent behaviours). It is possible that lay counsellors simply require more intensive training and supervision to reach the proficiency levels required by the MITI [48].

This study indicates that lay counsellors in the Western Cape were not able to implement the *Options* intervention with fidelity to its underlying theory following 5 days of training. Specifically, the training provided was not sufficient for counsellors to

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develop proficiency in some strategies associated with MI, such as assessing readiness-to-change and eliciting change talk. Condemning counsellors' ability to effectively deliver the *Options* protocol and techniques associated with MI is premature. A limitation of this study is the lack of a pre-training MI assessment. Counselors may not have achieved proficiency in MI after 5 days of training but it is possible that their counseling skills were improved. Further efforts to strengthen the adherence counselling programme are needed.

Particularly with regard to LHW programmes, the provision of ongoing training and support is emphasised in ensuring and maintaining programme delivery of good quality. In terms of the *Options: WC* programme, additional training and supervision could build competence in the MI approach and the eight-step *Options* protocol. Future research investigating the efficacy of *Options* and other BMIs for behaviour change for should determine the fidelity with which the intervention is delivered, so that we may know the level of proficiency required to achieve behaviour change.

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