

Sustainability Goes Change Talk: Can Motivational Interviewing Be Used to Increase Pro-Environmental behavior?

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Abstract

Motivational Interviewing (MI) is an interviewing style that has been used extensively in the field of addiction as a treatment intervention for clients that are either resistant to or ambivalent about change [11]. Since its origins in the field of addiction treatment, the use of MI has also been extended to health psychology, clinical psychology [6] and to a minor extent also coaching psychology [13]. This study explores the feasibility and efficacy of motivational interviewing in the field of ecological psychology. Specifically, we compared the effects of an MI with those of a Non-MI control interview on client change and sustain talk language about pro-environmental behavior. Interviewers in the intervention condition were trained in MI to talk with participants about their ecological behavior and to increase pro-environmental behavior. Seventy-one interviews were videotaped, and data was analyzed using a combination of two behavioral coding schemes: the German version of the motivational interviewing treatment integrity [5] and the motivational skill code for client language [10]. Results on client change talk show that clients in the MI condition uttered significantly more reasons for change and ability to change. It is suggested that MI may offer a method to increase pro-environmental behavior by means of increasing client change language.

Introduction

The negative impact humans have on the ecological environment constitutes a major problem to our society [6]. Specifically, human behavior has effects on global warming, air and water pollution, depletion of environmental and energy shortages. A challenging task for researchers and policy makers is to develop methods that can reduce the negative human impact on the environment. As most of the respective effects are rooted in human behavior, psychology can contribute to the solution of this problem by developing methods that increase pro-environmental behavior [15]. Pro-environmental behavior consists of all behavioral efforts made not to harm the environment or even to protect and safe environmental resources [15]. MI offers an innovative and promising approach for communicating the severity of environmental problems, increasing actions to conserve environmental resources and also reducing environmentally harmful behavior. MI originates in the treatment of difficult patients in drug therapy, especially the treatment of alcohol problems [11]. Its major aim is to increase a client's intrinsic motivation for change. Over the last two decades the method has increasingly been used in a variety of behavioral domains, for example for reducing risk behaviors, for the treatment of psychological problems [6] and also as a method to increase healthy behavior [cf., 8]. In the most recent meta-analysis on MI, the authors claim that they "have likely not yet found the limits of the types of problems (...) to which MI can be profitably applied" [8, p. 154]. A key skill of MI is to listen for and prompt change talk. Change talk (CT) is any client language that is directed towards changing a target behavior (in this case: pro-environmental behavior). This can include reasons, desires, needs, abilities or commitments by the client to demonstrate the specific target behavior. In contrast, sustain talk (ST) constitutes any client language against changing. This would include benefits of the current behavior or resistance to change. Previous research using MI in a drug population has demonstrated that CT and ST can predict outcomes of a target behavior, such as abstinent rates [1]. This line of reasoning suggests that MI can also be implemented as a method to increase CT about pro-environmental behavior. This is what the present study seeks to investigate. Specifically, we are interested in whether participants who talk about their ecological behavior with an interviewer trained in MI show higher levels of CT than participants who talk about their ecological behavior with an untrained interviewer.

Methods

Sample. Seventy-one participants (interviewees) received feedback on their environmental behavior. Interviewees were allocated to one of two different groups of interviewers: i) an interviewer that conducted feedback about ecological behavior in an MI style or ii) a control interviewer. All dyadic interactions were videotaped and analyzed by means of the German version of the motivational interviewing treatment integrity [MITI-d, 5] and the motivational skill code for client language [MISC 2.1, 10].

Intervention condition. MI has two aims: the first is to increase clients' intrinsic motivation for change; the second aim is to set goals for the new target behavior in collaboration with the client and develop measures for how to achieve them. The interviewing style is based on four principles: 1) expressing empathy, 2) rolling with resistance, 3) developing discrepancies, and 4) supporting self-efficacy. Within the MI style, specific techniques are used, such as asking evocative questions (e.g., "What is a good reason for you to act pro-environmentally?") that aim to prompt client CT. Also, reflecting client utterances is considered a key method of active listening skills.

Reflection

Client: "I don't want to pay 100 € for my electric bill!"

Interviewer: "You see better way spending 100 €, and saving energy is an easy method for you to achieve that."

Training for interviewers in the intervention condition. Interviewers in the intervention group received training in MI. The interviewers were thirteen bachelor students of Psychology, one master student in Human Resource Development and one PhD Psychology student. The author of the present study, who is certified in MI, conducted the training of interviewers. Training took place from November 2011 until January 2012 and lasted for a total of about 21 hours. It contained exercises aimed at improving MI performance using an active, empathic listening style that minimizes confrontation. Additionally, interviewers took part in bi-weekly peer coaching sessions to increase their communication skills. Supervision was included at the end of training by means of tape recordings of these peer coachings. Control interviewers did not receive MI training. They were given the task to convince their conversational partner to increase their pro-environmental behavior.

Procedure. To exclude the recruitment of clients who are already motivated to talk about their environmental behavior, clients were kept blind about the topic of the interview until the interview started. Beforehand, they received a questionnaire about their ecological behavior. They were told that it was a questionnaire to determine their ecological footprint. Interviewers were given enough time to assess their respective client's ecological behavior prior the interview by means of this questionnaire. Interviewers in both groups were given a short written agenda that listed the topics which needed to be covered during the conversation. These topics were: 1) Setting the agenda, 2) Asking current environmental behavior, 3) Giving feedback about environmental behavior to clients, 4) Asking for measures for increasing pro-environmental behavior, 5) Planning measures and giving advice.

Instruments. Two instruments were combined to code the dyadic interaction: for analyzing the interviewer behavior, the German Motivational Interviewing Treatment integrity, MITI-d, was used [5]. This instrument is a reduced version of the MISC and has specifically been designed to code interviewer behavior only. It includes seven different codes that are intended to capture behavioral micro-skills in MI (see left side of Figure 1). In order to have a mutually exclusive and exhaustive coding scheme, an eighth category "Other behavior" was added. This allowed coding every utterance of the conversation. Client behavior was analyzed by means of a German version of the Motivational Interviewing Skill Code, MISC 2.1, for client language [10]. The MISC includes 16 different codes that can be differentiated by their valence: client utterances with a positive inclination towards change are termed "change talk", whereas utterances that have a negative inclination toward change are termed "sustain talk". Coding was performed using INTERACT software [9], see Figure 2.

Interviewer (MITI-d) 	Client (MISC) 
MI Adherent (M) a. Asking permission before giving advice or information b. Affirming the client c. Emphasizing the client's control, d. Supporting the client Open question (o) Simple reflexion (e) Complex reflexion (k)	Change Talk (+) / Sustain Talk (-) Reasons (G/g) "I should"; "I must"; arguments for and against change Desire (W/w) "I want to..."; "I'd like to..."; "I love to..." Ability (F/f) "I can"; "I am able to..."
MI Non-adherent (m) a. Giving advise without permission b. Confronting c. Directing the client by giving orders, commands or imperatives.	Need (N/n) "I need"; "I must" Other (A/a) Client movement towards or away from change that is not captured by the other categories
Neutral Giving Information (I) a. Providing feedback from assessment instruments b. Personal feedback about the client that is not already available c. Explaining ideas or concepts relevant to the intervention d. Educating about a topic Closed Question (c)	Taking steps (S/s) Concrete and specific steps towards or away from the target behavior Commitment Language (V/v) Agreements; intention to change; obligations Follow Neutral (O) No inclination towards or away from change

Figure 1. Coding Schemes: the left side shows MITI-d codes for interviewer behavior; the right side shows MISC codes for client codes. Keyboard codes for each code are given in brackets.

To date, a subset of 28 dyads has been rated by two raters who had received 30 hours of training in the MITI-d and MISC. Within this subset, 17 subjects belonged to the intervention group (MI-interview), and 11 subjects belonged to the control group. To assess inter-rater agreement, a convenience sample of three dyads was double-coded by both raters. Interact-time-event sequential data files were converted into Sequential Data interchange standard (SDIS) using ActSds [3]. Interrater agreement (Time-unit kappa and event alignment kappa) was determined using GSEQ [3]. Time-unit kappa was $K=.77-.78$ (80-82% agreement) and event alignment Kappa was $K=.66$ (71 % agreement).



Figure 2. Coding of interviewer (left person) and client (right person) by means of Mangold Interact Software.

Preliminary Results

Interviewer language. In order to adjust for time differences in the interview length between both groups, we calculated rates for separate codes (i.e., frequency of a code per 60 minutes). Interviewers that received training in MI asked significantly more open questions and significantly fewer closed questions in comparison to interviewers in the control group. The MI group interviewers also showed significantly higher levels in active listening skills (rate of reflections) and less MI non-adherent behavior in comparison to the control group. We compared behavioral summary scores of the MI interviewer sample with indicators of good MI [12]. Using these benchmarks, the MI group can be classified within the beginning proficiency level (see Table 1).

Client language. Independent t-tests on client variables revealed that clients in the MI condition uttered significantly more reasons to change ($t(26) = 3.03, p < 0.005$) and showed significantly more language indicating ability to change ($t(16) = 2.60, p < 0.019$). Overall, clients in the MI group had more utterances of CT than of ST ($t(26) = 2.02, p = 0.054$) – although this was only nearly significant.

Table 1: MI quality benchmarks for competency and beginning proficiency: Means and standard deviations (in brackets) for the MI and the control group.

Behavioral measure	Expert level	Beginning proficiency	Mean values for MI group	Mean values for control
Percentage of open questions	70 %	50%	52% (17.8)	23 % (9.6)
Percentage of complex reflexions	50%	40%	65% (14.8)	69% (19.8)
Reflections to questions ratio	2:1	1:1	1.2: 1	0.46:1
Rate of reflections in 10 min.	>15	>10	10.6 (2.2)	4.7 (2.2)
Percentage of MI-adherent statements	100%	90%	95% (9.2)	68% (24.7)
Percentage of talk time	< 50%	< 60%	42% (0.5)	46% (0.4)

Discussion

Our results show that interviewers in the MI group demonstrated proficiency in MI as measured by the MITI-d, whereas interviewers in the control group perform below the MI quality performance threshold. More interestingly, clients in the MI condition had more reasons to change and showed higher ability to change – as captured by their natural language. These effects are in line with principles of MI that opt to increase clients' reasons to change and support their self-efficacy [11].

Preliminary Conclusions

Our study reveals that MI can be easily adapted to an ecological psychology framework. Further, the MI style effected client language in terms of increasing their reasons and ability to change. A previous study of MI in a drug population sample showed that reasons and ability to change can have a significant effect on outcome variables, such as abstinent rates [1]. Further analyses are needed to demonstrate whether this link can also be supported for environmental behavior. When the final coding is completed, sequential analysis [2] will be carried out to investigate sequential hypotheses from MI theory, and recurrence analysis will be used to detect specific interaction patterns [14].

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