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## Comparing Primary Care Physicians' Smoking Cessation Counseling Techniques to Motivational Interviewing

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### Abstract

**Objectives**—This study examined the degree of similarity between Motivational Interviewing (MI) methods and smoking cessation techniques that are routinely used by primary care physicians. Its purpose was to inform the development of more effective MI-based health behavior change training programs for primary care physicians.

**Methods**—Visits to primary care physicians were audio-recorded in northeast Ohio from 2005-2008. Doctor-patient talk about smoking cessation (n=73) was analyzed for adherence to MI using the Motivational Interviewing Skills Code (MISC) version 2.1 behavioral coding system. Participating physicians were not provided with MI training as part of the study and were blinded as to the study's purpose.

**Results**—Physicians displayed MI adherent behaviors in 56% of discussions and MI non-adherent behaviors in 57%. The most common MI adherent statements involved affirming the patient; least common were requests for the patient's permission before raising concerns. The most frequent MI non-adherent behaviors were directing, confronting, and warning the patient. Physicians made simple reflections and complex reflections in 36% and 25% of visits, respectively.

**Conclusions**—Physicians used both MI adherent and MI non adherent behaviors in approximately equal proportions, suggesting a base of MI adherent smoking cessation counseling skills upon which additional MI skills can be built. Efforts to improve smoking cessation effectiveness may involve providing training in brief MI models and additional MI skills, while reinforcing physicians' current use of MI adherent methods.

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Conflicts of Interest: None declared.

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## Introduction

Motivational Interviewing (MI) is a widely utilized clinical method for increasing patients' motivation for changing health-related behaviors (Lai et al., 2010). Defined as a “collaborative, person-centered form of guiding to elicit and strengthen motivation for change,” (Miller and Rollnick, 2009) MI stresses the process of engaging the patient to identify, examine, and resolve ambivalence about change (Miller and Rollnick, 2002; Rollnick et al., 2007). The “spirit” of MI emphasizes a collaborative approach that evokes the patient's thoughts and supports their autonomy, rather than imposing the clinician's ideas and authority (Miller and Rollnick, 2002). Originally developed for use in clinical psychology, MI has been used successfully in primary care settings for smoking cessation (Butler et al., 1999; Rubak et al., 2005; Soria et al., 2006; Burke et al., 2003; Lai et al., 2010). The current study sought to determine the extent to which primary care physicians' clinical skills for smoking cessation are consistent with MI methods. This information may be useful in adapting MI to primary care and for developing training curricula that build on clinicians' current repertoire of skills.

## Methods

Between 2005 and 2008, 811 adult patient medical visits with 28 primary care physicians were audio-recorded in northeastern Ohio. Patients' smoking status and demographic information were obtained by telephone survey prior to the observed visit. The present analysis focuses on visits with self-identified smokers that included a discussion of smoking cessation (n=73). Visit transcripts were systematically reviewed to determine the extent to which primary care physicians' smoking cessation interactions were MI adherent. Physicians received no training during this study and were informed that the study's purpose was to understand physician-patient communication.

## MI Measures

Clinician's use of MI adherent techniques during cessation discussions was assessed using selected elements from the Motivational Interviewing Skills Code (MISC) version 2.1 (Miller and Mount, 2001; Moyers et al., 2003). The MISC was designed to evaluate trained psychotherapists' use of MI, and not all of its components were applicable to the analysis of naturally occurring smoking cessation talk within the context of typical primary care visits. For example, the MISC instructs the rater to complete global ratings of the clinician and client in domains such as *empathy* and *self-exploration*, but we did not assess our data using these global ratings due to the brevity of many smoking cessation interactions. We selected a subset of the MISC clinician communication codes to assess physician utterances that were either consistent or inconsistent with the MI framework for health behavior change. The 16 selected behavior codes and brief definitions can be found in Table 1. Two analysts (PL and VP) coded each physician utterance about smoking cessation using the behavior codes. Coding disagreements were resolved through discussion until consensus was reached between the coders.

Coded utterances, counted and reported individually, were determined to be either MI adherent or MI non-adherent. Descriptive statistics are reported. This study was approved by the Institutional Review Boards (IRB) of the University Hospitals Case Medical Center, the Cleveland Clinic, and MetroHealth Medical Center.

## Results

Among 811 participants, 131 primary care patients reported smoking at least part of a cigarette in the past seven days. Smoking was mentioned during visits by 105 of these

patients. However, 32 visits were excluded from further analysis because 1) smoking status assessment (e.g. “Do you smoke?”) was the only talk of smoking (n=13), 2) patients were actively quitting (n=6), 3) smoking talk consisted less than three utterances that were relevant to cessation (n=6), or 4) the patient reported complete cessation when assessed by the physician (n=7). The remaining 73 discussions of smoking cessation that occurred during visits to 21 physicians are the subject of this analysis. Physician and patient demographics are shown in Table 2.

### Physicians' MI adherent and MI non-adherent Behaviors

Physician utterances expressed as frequencies of MISC codes are shown in Table 3. Physicians made at least one MI adherent utterance in 56% of the 73 smoking discussions. On average, 2.5 MI adherent statements were observed per visit. Physicians affirmed patients with positive or complimentary comments in 31% of discussions and supported patients with compassionate or understanding comments in 22% of discussions. Physicians requested permission before advising patients during 19% of discussions. Nearly half of physicians' smoking cessation utterances were MI adherent. MI non-adherent behaviors were observed in 57% of discussions. These involved directing patients (30%), confronting patients (25%), raising concerns without requesting permission (23%), warning patients about the consequences of smoking (22%), and advising patients without requesting permission (15%).

### Other Physician Behaviors

Physicians asked open-ended questions less often than they posed closed-ended questions that were answerable with a single word or short phrase (32% vs. 86%). Physicians mirrored patients' comments with simple reflections in 36% of discussions, and used complex reflections in 25% of discussions.

## Discussion

This study examined the content of smoking cessation discussions in primary care, and found that the utterances of physicians were MI adherent and MI non-adherent in approximately equal proportions. MI non-adherent behaviors including directing patients, raising concerns without requesting permission, confrontation, and warnings are thought to increase patient resistance to behavior change counseling (Miller and Rose, 2009). Just as frequently, however, physicians affirmed and supported patients using MI adherent techniques that build the empathically-based alliance that is at the core of MI (White and Miller, 2007).

It is notable that MI adherent techniques were used with significant frequency, which may suggest a substantial foundation upon which MI skills might be enhanced by additional training. It may be worthwhile for future investigations to examine the extent to which the efficiency of MI training programs for physicians may be improved by tailoring the training to the needs of individual learners, starting with a pre-training assessment of the learner's smoking cessation counseling techniques. This may be achieved through trainees' submission of audio recordings of clinical encounters to be analyzed using MI fidelity tools such as the MISC. Training may involve introduction to the spirit and principles of MI, followed by the dissemination of individual-level reports of MI-relevant behaviors. Subsequent individualized skills practice sessions can reinforce MI adherent techniques currently used and aid in reducing the frequency of MI non-adherent behaviors. Some changes in technique may appear to be simple replacements (e.g., replacing advising *without* permission to advising *with* permission) (Pollak, 2011), however, substantial learner engagement will be required to successfully teach the essential “spirit” of MI, which

emphasizes collaboration, evocation, and patient autonomy (Miller and Rollnick, 2002). Consistent with MI theory, physician-learners of MI should have opportunities to reflect upon and discuss how MI fits with their own professional values and goals and through this process build motivation for developing new clinical skills. Although a customized program may be resource intensive for trainers on the front end, its targeted methods may be significantly more time-efficient and effective for learners' skill development than traditional "one-size-fits-all" group training.

It is important to note that physicians may use MI non-adherent communication strategies because these techniques can be well-suited for communication about the diagnosis and treatment of physical problems. For example, physicians are often appropriately directive when instructing patients in the proper use of medication, and they may properly raise concerns when interpreting diagnostic test results. These types of fact-based discussions appropriately utilize the physician's medical expertise. In contrast, discussions about individual health behaviors such as smoking cessation require communication that emphasizes the patient's autonomy, choices, and individual preferences. A future investigation may explore and identify clinical communication tasks or situations in which MI non-adherent behaviors may be appropriate.

It is important that MI training programs teach physicians to adapt communication techniques to match the needs of patients during the course of clinical encounters. As part of a broader approach to physician-patient communication, it may be useful for MI trainers to help physicians develop what could be called "clinical situational awareness" in which the physician learns to mindfully match his or her clinical communication methods to the present topic of discussion, the patient's stage of change, individual preferences, health risks, the availability of time, competing demands, and other relevant factors. Such a framework may help physicians fit the most appropriate communication approach to various types of clinical situations and opportunities that emerge during fluid clinical encounters.

Primary care physicians can use MI effectively for smoking cessation after being trained in its use (Butler et al., 1999; Soria et al., 2006), and MI has been shown to increase the likelihood of smoking cessation for primary care patients (Lai et al., 2010). However physicians face increasing pressure to accomplish more in less time (Tai-Seale et al., 2007; Chen et al., 2009), therefore, the impact of increasing the proportion of MI adherent behaviors on primary care visit duration should be examined. MI adherent physician behaviors for smoking cessation may be more conversationally generative than those they replace, leading to increased visit duration (Butler et al., 1999; Soria et al., 2006). Concerns about visit length may limit physicians' receptivity to MI adherent methods if their use extends visits even minimally. Because of time pressure, it may be helpful for MI training programs to instruct physicians in techniques for facilitating brief smoking cessation discussions across multiple visits. Concurrently, it may be unrealistic to expect the full MI model to be implemented during brief primary care visits (Britt et al., 2004), as it was developed for use in more lengthy psychotherapy visits. Brief teachable MI techniques (Rollnick et al., 1999) developed specifically for primary care physician-patient discussions that typically address multiple problems during a single 15-minute visit may have the most potential for widespread adoption in primary care.

The study findings are limited by the modest sample size and the restriction of observations to a single geographic region. In addition, this data collection procedure did not specifically assess exposure to MI training among the community primary care physician participants. On average, participating physicians were 15 years post residency training and thus, were unlikely to have received MI training in medical school or residency. It is possible that physicians may have had exposure to MI through conference presentations, workshops or

continuing medical education activities and this has the potential to inflate the positive behaviors observed.

A strength of this study is that this analysis is the first to apply the MISC to audio-recordings of smoking cessation discussions during community-based, primary care visits conducted by physicians not trained in MI as part of study participation. It sheds light on techniques used by physicians to address smoking cessation, informs the development of MI training programs, and highlights important opportunities for subsequent research. Future studies should examine both the independent and combined effects on patient smoking cessation outcomes of reducing the number of MI non-adherent behaviors and increasing the use of MI adherent behaviors.

## Conclusions

This study provides evidence that physicians routinely use several MI adherent techniques during smoking cessation discussions, but their use is combined with MI non-adherent techniques that are likely to limit overall effectiveness. MI training programs specifically designed for primary care are needed to improve physicians' capacity to counsel patients about smoking cessation and other health behavior changes.

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## Appendix

### Appendix A:

#### Motivational interviewing behaviors evaluated from audio recordings using definitions from the Motivational Interview Skills Code (MISC)

Behavior	Definition
<i>MI-Adherent</i>	
Advise with Permission	Provides health advice after asking if the patient is open to receiving advice
Affirm	Complementing the client's strengths, abilities or efforts
Emphasize Control	Acknowledging or emphasizing the patient's control and freedom of choice in health behavior
Raise Concern with Permission	After obtaining permission, points out concerns about the patient's goal, plan, or intention
Support	Compassionate and sympathetic remarks by the physician
<i>MI Non-adherent</i>	
Advise without Permission	Offers solutions or possible actions without first obtaining permission from the patient
Confront	Directly disapproves or shames patient about health behavior
Direct	Gives orders, commands, or imperatives
Raises Concern without Permission	Physician points out a problem with the patient's behavior without the patient's permission

Behavior	Definition
Warn	Physician implies that negative outcomes will result from patient's health behaviors
<i>Other behavior codes</i>	
Closed Questions	Asks a question that can be answered with a "yes" or "no" response
Open Questions	Asks a question that allows a wide range of possible answers
Giving Information	Gives information, educates, provides feedback, discloses personal information, or provides an opinion without advising
Reflect Complex	A statement that adds substantial meaning or emphasis to what the patient has said
Reflect Simple	Repeats what the patient has said, adding little or no meaning or emphasis
Reframe	Repeats what the patient has said but changes the valence of the patient's statement (e.g. "nagging" becomes "showing concern")

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Table 1

## Participant Characteristics

<b>Patient Characteristics, n=73</b>		
	<b>n</b>	<b>(%)</b>
<b>Female</b>	52	(71)
<b>Race</b>		
African American	47	(64)
White	24	(33)
Other race	2	(3)
<b>Education</b>		
High school or less	24	(47)
Some college	23	(31)
College graduate	16	(22)
<b>Age, mean (std dev)</b>	52	(9)
<b>Health Conditions</b>		
High blood pressure	41	(56)
Heart disease	5	(7)
<b>Cigarettes per day, mean (std dev)</b>	13	(8)
<b>Stage of Change</b>		
Immotive	10	(14)
Pre-contemplative	11	(15)
Contemplative	32	(44)
Preparation	20	(27)
<b>Physician Characteristics, n=21</b>		
	<b>n</b>	<b>(%)</b>
<b>Female</b>	8	(38)
<b>Race</b>		
Asian	2	(10)
African American	7	(19)
White	12	(57)
<b>Board Certification</b>		
Not board certified	3	(14)
Family Medicine	4	(19)
Internal Medicine	14	(67)
<b>Years from residency, mean (std dev)</b>	14	(8)



**Table 2**  
**Frequency of smoking discussions including specific MI communication behaviors and the mean number of utterances per discussion (n=73 visits)**

<b>MI Relevant Behavior Assessed</b>	<b>n</b>	<b>(%)</b>	<b>mean</b>	<b>(std dev)*</b>
Total number of behaviors coded per discussion			8.3	(6.7)
<i>MI Adherent Behaviors</i>				
<b>Any MI-Adherent</b>	<b>41</b>	<b>(56)</b>	<b>2.5</b>	<b>(1.9)</b>
Advise with Permission	14	(19)	1.8	(1.5)
Affirm	23	(31)	1.5	(1.1)
Emphasize Control	10	(14)	1.0	(0.0)
Raise Concern with Permission	3	(4)	1.3	(0.6)
Support	16	(22)	1.7	(1.2)
<i>MI Non-Adherent Behaviors</i>				
<b>Any MI Non-Adherent</b>	<b>42</b>	<b>(57)</b>	<b>3.2</b>	<b>(3.0)</b>
Advise without Permission	11	(15)	1.4	(0.5)
Confront	18	(25)	2.1	(2.3)
Direct	22	(30)	1.6	(0.8)
Raises Concern without Permission	17	(23)	1.4	(0.9)
Warn	16	(22)	1.4	(0.8)
<i>Other MI-Relevant Behaviors</i>				
Closed Questions	63	(86)	2.7	(3.0)
Open Questions	24	(32)	1.5	(0.8)
Giving Information	33	(45)	2.5	(1.1)
Reflect Complex	18	(25)	1.3	(0.6)
Reflect Simple	26	(36)	1.5	(1.1)
Reframe	8	(11)	1.1	(0.4)

\* Mean and standard deviations reported for number of instances of the behavior observed among those cases that contained at least one instance of that behavior