

SMOKING CESSATION COUNSELING: WHAT DO PHYSICIANS REALLY
SAY AND HOW DO THEY SAY IT?

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ABSTRACT

The U.S. Public Health Service Clinical Practice Guideline recommends that physicians provide tobacco cessation interventions to their patients at every visit. While many studies have examined the extent to which physicians implement the guideline's "5 A's" (for smokers ready to quit) few studies have examined the extent to which physicians implement the guideline's "5 R's" (risks, rewards, relevance, roadblocks, and repeat) which are to be used in a Motivational Interviewing (MI) consistent style with smokers not ready to quit. The purpose of this study was to examine to what extent physicians in usual practice and without specific training administered the 5 R's including the use of an MI style. Participants included thirty-eight physicians who were audio recorded by a research assistant during their routine clinical practice conversations with patients who smoked. The audio files were transcribed and coded by independent raters on the implementation of each of the 5 A's and 5 R's and counseling style using the Motivational Interviewing Skill Code. Results revealed that physicians frequently asked (94%) and assessed (87%) patients about their smoking status. For patients who were ready to quit, physicians frequently advised (74%) patients to quit, but less frequently offered assistance to quit (68%) and arranged a follow-up

appointment with patients (23%). During counseling sessions with patients who were not ready to quit smoking, physicians most frequently discussed the patient's personal relevance for quitting (82%), followed by discussing the risks of smoking (73%). roadblocks (45%) and rewards (36%) were discussed relatively infrequently. MI skill code analyses revealed that physicians, on average, had a moderate score for acceptance (4.5 on a 1-7 point scale) and autonomy support (4.0), a low to moderate score for collaboration (3.3) and low scores for empathy (3.0) and evocation (2.7). Specific behavior counts revealed that the most frequent behavior was to *give information*. Overall, physicians engaged in more MI inconsistent strategies rather than MI consistent strategies. Results suggest that for the Clinical Guideline to be implemented appropriately physicians will need specialized training or will need to be able to refer patients to counselors with the necessary expertise.

APPROVAL PAGE

The faculty listed below, appointed by the Dean of the College of Arts and Sciences have examined a thesis titled “Smoking Cessation Counseling: What Do Physicians Really Say and How Do They Say It?” presented by Sofie Ling Champassak, candidate for the Master of Arts degree, and certify that in their opinion it is worthy of acceptance.

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CONTENTS

ABSTRACT..... iii

LIST OF TABLES..... vii

LIST OF ILLUSTRATIONS..... viii

ACKNOWLEDGMENTS ix

Chapter

1. INTRODUCTION AND BACKGROUND 1

 The U.S. Public Health Service Smoking Cessation Clinical Practice
 Guideline: 5 A’s, Enhancing Motivation, 5 R’s, and Preventing Relapse ... 2

 Physicians Do Not Adhere to the USPHS Guideline 3

 Contributing Factors that Explain Why Physicians are Not Adhering to the
 Guideline5

 Smoking Cessation Training is not Retained Over Time6

 Impact of Brief Advice 7

 Impact of Physician’s Interpersonal Style 8

 Lack of Research Examining Style of Smoking Cessation Counseling 9

2. METHODOLOGY 11

 Recruitment and Data Collection11

 Coder Training Procedure12

 Transcribing and Coding of Counseling Sessions12

 Outcome Measures13

 U.S. Public Health Service Clinical Practice Guideline13

 MISC Global Scores14

MISC Behavioral Categories	15
Proficiency in MI	17
Analysis	18
3. RESULTS	20
Sample Characteristics	20
Interrater Reliability	20
Physicians Use of the 5 A's and 5 R's	21
MISC Global Scores	22
MISC Behavioral Categories	23
Proficiency	25
Correlations of Physician's MISC Global Scores	26
4. DISCUSSION	28
Adherence to the USPHS 5 A's and 5 R's	28
Overall Ability to Counsel Patients Using a Motivational Enhancement Approach	29
Use of Specific Counseling Behaviors that are Consistent with Motivational Principles	30
Limitations	30
Conclusion	31
REFERENCES	32
VITA	38

TABLES

Table	Page
1. Global Themes of the MISC	14
2. Major Categories from the MISC	16
3. MISC Summary Category, Calculation, and Minimum Scores for Threshold and Ideal Proficiency	17
4. Mean Frequencies, Range and ICC of MISC Global Scores.....	23
5. Mean Frequencies, Range, and ICC of MISC Behavioral Categories.....	24
6. Physician's Proficiency, Recommended Proficiency and Competency based on the MISC Coding System	26
7. Correlations of Physician's Demographics with the MISC Global Scores	27

ILLUSTRATIONS

Figure	Page
1. Physician's Use of 5 A's and R's	22

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CHAPTER 1

INTRODUCTION AND BACKGROUND

By 2030 it is estimated that more than eight million deaths will be caused annually by tobacco use worldwide and cigarette smoking is the leading preventable cause of morbidity and mortality (WHO, 2008). In the US each year, 443,000 deaths (one in five) are related to the use of tobacco (CDC, 2008). Effective interventions have been created to address this significant public health risk, however many patients are not receiving them. In fact, the vast majority of patients who smoke, approximately 80%, try to quit without any form of assistance (Zhu, Melcer, Sun, Rosbrook, & Pierce, 2000). There are many factors that lead to unassisted quit attempts, but many patients' lack of awareness and skepticism about the effectiveness of various pharmaceutical and behavioral treatments is a major problem (Hammond, McDonald, Fong, & Borland, 2004; Lynam, Catley, Harris, Goggin, Berkley-Patton, Thomas, 2012).

Physicians have the opportunity to educate and provide assistance to help their patients quit smoking. The U.S. Preventative Services Task Force recommends that physicians screen all adults for tobacco use and provide tobacco cessation interventions to their patients. To help with this effort, the U.S. Public Health Service (USPHS) published the Clinical Practice Guideline, which was created to assist clinicians, smoking cessation specialists, and health care administrators in identifying tobacco users and providing effective counseling for smoking cessation (Fiore, Jaén, Baker, Bailey, Benowitz, Curry et al., 2008). This guideline was designed to be brief and are also consistent with strategies endorsed by the National Cancer Institute (Glynn & Manley, 1997; Glynn, Manley, &

Pechacek, 1990) and the American Medical Association (American Medical Association, 1994).

The U.S. Public Health Service Smoking Cessation Clinical Practice Guideline: 5 A's, Enhancing Motivation, 5 R's, and Preventing Relapse

According to the USPHS Guideline, tobacco users should be identified at every visit. Once identified, smokers should be categorized into one of three groups: (1) Patients who use tobacco and are willing to quit; (2) Patients who use tobacco, but are unwilling to quit; and (3) Patients who have recently quit using tobacco. Next, clinicians are instructed to administer the “5 A’s” (i.e., Ask, Advise, Assess, Assist, and Arrange) to patients who are willing to quit, use a brief motivational intervention and administer the “5 R’s” (i.e., Relevance, Risks, Rewards, Roadblocks, and Repetition) for those unwilling to quit, and provide relapse prevention treatment for those who have recently quit. The 5 A’s include: (1) *ask* about tobacco use at every visit; (2) *advise* all tobacco users to quit; (3) *assess* readiness to quit; (4) *assist* tobacco users with a quit plan; and (5) *arrange* follow-up visits.

To help motivate those who are unwilling to quit, a brief intervention to increase motivation to quit (the “5 R’s”) is recommended. The guideline directs providers to enhance motivation using brief interventions with principles from Motivational Interviewing (MI). MI was created as a clinical method for the addiction field and is supported by empirical research and theoretical explanations (Anstiss, 2009). It involves a patient-centered care model, and is a method often used to elicit and strengthen personal motivation for change (Miller & Rollnick, 1991). The guideline provides specific MI counseling strategies for providers when discussing smoking, which can be used when addressing content related to the individual’s personal relevance, risks, rewards, and barriers to quitting tobacco use by

administering the 5 R's. The 5 R's include: (1) encourage the patient to indicate the personal *relevance* for quitting tobacco use; (2) ask the patient to identify potential *risks* of tobacco use; (3) ask the patient to identify potential *rewards* of stopping tobacco use; (4) ask the patient to identify barriers or *roadblocks* to quitting; and (5) the motivational intervention should be *repeated* every time an unmotivated patient visits the clinic setting.

Relapse prevention should be provided for recent quitters. There are two types of relapse prevention programs: (1) minimal practice relapse prevention and (2) prescriptive relapse prevention. Clinicians should provide encouragement for those who have recently quit. More specifically, during minimal practice relapse prevention, clinicians should encourage discussion related to the benefits of quitting, the success the patient has had in cessation, and discussion related to the problems experienced while maintaining abstinence. Prescriptive relapse prevention should be provided for patients who report specific problems related to: lack of support for cessation, negative mood or depression, strong or prolonged withdrawal symptoms, weight gain, and lack of motivation. During prescriptive relapse prevention, clinicians are encouraged to schedule follow-up visits or telephone calls with the patient, refer the patient to organizations that offer counseling or support, and provide counseling or prescribe medications.

Physicians Do Not Adhere to the USPHS Guideline

The guideline outlines empirically based strategies and provide informational content to address tobacco use and dependence with patients. Although it was created to encourage and assist health providers, most physicians fail to comply with all of the components (Balls, Price, Dake, Jordan, & Khuder, 2010; Ferketich, Khan, & Wewers, 2006; Jordan, Dake, & Price, 2006; Stevens, Solberg, Quinn, & Rigotti et al., 2005). For example, a national survey

demonstrated that from 2001 to 2003, physicians failed to assess patients' smoking status during 32% of the visits they conducted (Thorndike, Regan, & Rigotti, 2007). Worse, despite considerable efforts to encourage physicians' to routinely conduct this most basic assessment, completion rates remained relatively stagnant over nearly a decade (32% in 2001 to 2003 vs. 35% in 1994-1996). Counseling rates remained below 23% for the same period (22% during 1994-1996 and 20% during 2001-2003; Thorndike, Regan, & Rigotti, 2007). Similarly, poor rates of compliance for the guideline recommendations were found in a sample of Medicaid enrollees. Patient participants reported that at their last health care provider visit 13% of providers failed to ask about their smoking status, 35% failed to give advice on quitting, 49% failed to assess the patient's willingness to quit, 76% failed to offer any assistance, and 87% failed to give follow-up appointments (Chase, McMenemy, & Halpin, 2007). Past research has shown similar patterns revealing more than 70% of smokers visit a physician or other health-care professional at least once annually (Tomar, Husten, & Manley, 1996; CDC, 1993), but less than half (37%) report receiving advice to quit smoking in the previous year (CDC, 1993). In contrast, a separate study surveyed U.S. Veterans Health Administration physicians and found much higher self-reported rates of compliance with guideline recommendations. Specifically, only 7% of physicians failed to advise their patients to stop smoking, 14% failed to explain the risks of smoking, and 30% did not follow up with their patients (Ward, Vaughn, Uden-Holman, Doebbeling, Clarke, & Woolson, 2002). Although these rates are higher than rates reported in other studies, the results are likely inflated due to the self-report and social desirability of the physicians in the study.

The majority of research studies have assessed providers' adherence rates to administering the 5 A's. However, few studies have examined physicians' behavior toward

patients who are not ready to quit smoking, more specifically physicians' adherence rates to administering the 5 R's. To date, only one study has reported on the likelihood of administration of the 5 R's with patients who are not ready to quit smoking among a national random sample of African American physicians (Balls et al., 2010). Results indicate that the physicians were most likely to explain the risks of smoking (65%), provide examples of why quitting was relevant (59%), and asked their patients about the rewards of quitting (58%). The physicians were less likely to discuss roadblocks (33%) and use repetition (4%). Despite being clear and well established, evidence indicates that physicians are not adhering to all aspects of the current guideline.

Contributing Factors that Explain Why Physicians are Not Adhering to the Guideline

There are many factors that contribute to a physician's ability to fully adhere to the guideline. Some of the common barriers are: physician knowledge (e.g., lack of awareness of guideline), attitudes (e.g., lack of agreement with guideline, lack of self-efficacy in complying with all or some aspects of the guideline), and behavior (e.g., lack of skills, external barriers such as lack of time, and poor reimbursement; Cabana, Rand, Powe, Wu, et al., 1999; Orleans, Glynn, Manley, & Slade, 1993; Walsh & McPhee, 1992). However, there is evidence that physicians who are more self-efficacious and more familiar with standard cessation protocols are more likely to comply with the guideline and recommendations made by federal health agencies (Mas, Balcazar, Alberola, & Hsu, 2008).

Some of the barriers that contribute to physician's poor adherence to the guideline are reflective of patient factors (e.g., patient non-interest and non-compliance), while others are likely associated with the physician's training. Medical schools should provide training for tobacco intervention in their curricula, however few physicians receive any smoking

cessation counseling training in medical school or during their residency programs (Balls et al., 2010; Applegate, Sheffer, Crews, Payne, & Smith, 2008). Several studies of medical schools' curriculum demonstrate a complete lack of material on tobacco control and smoking cessation techniques (Tessier, Freour, Crofton, & Kombou, 1989; Tessier, Freour, Belougne, & Crofton, 1992; Crofton & Tessier, 1996; Richmond, 1999) or inadequate training on tobacco issues (Ferry, Grissino, & Runfola, 1999; Spangler, George, Foley, & Crandall, 2002; Roddy, Rubin, & Britton, 2004; Chamberlain, Bakemeier, Gallagher, et al., 1992). For example, of 561 medical schools surveyed around the world, only 27% provided a specific module on tobacco and only 38% formally introduced the Clinical Practice Guideline for smoking cessation (Richmond, Zwar, Taylor, Hunnisett, & Hyslop, 2009). Further, although there are a variety of instructional methods being used to train medical students, there is a lack of research on whether smoking cessation counseling skills are being retained (Spangler, George, Foley, & Crandall, 2002).

Smoking Cessation Training is not Retained Over Time

There is limited research indicating that even when medical students receive smoking cessation training, adherence to key aspects of this training drop off over time. For example, Kosowicz, Pfeiffer, and Vargas (2007) measured how effective first year medical students were in providing smoking cessation counseling to patients and determined whether these skills were retained through their fourth year of medical school. Results demonstrated that a portion of the skills were retained in the fourth year of medical school, such that over 90% of the students asked, advised, and assessed their patients about smoking. However, there was a steep decline in the important step of assisting patients to quit. Similarly, third year medical students still asked, advised and assessed their patients about quitting, but were less likely to

assist and arrange a follow-up visit (Prochaska, Teherani, & Hauer, 2007). Consistent with the research on physician's level of compliance with the guideline, medical students also failed to fully adhere to the Guideline because they typically are not conducting the last two steps of assisting and arranging a follow-up with their patients. Medical students reported more instruction on tobacco counseling in Family Medicine and Internal Medicine compared to Pediatrics, Gynecology, and Surgery. The same medical students self-reported being more skilled in asking about smoking and advising smokers to quit and less skilled in assisting with a quit plan and arranging a follow-up appointment (Geller, Brooks, Powers, Brooks, Rigotti, Bognar, McIntosh, & Zapka, 2008).

Impact of Brief Advice

The assistance physicians offer is important because research shows that the content of their advice has a significant impact on influencing patients' treatment decisions (Fox, Heritage, Stockdale, Asch, Duan, & Reise, 2009) regarding decreasing alcohol intake (Ahacic, Allebeck, & Thankker, 2010; Van Meter, 1997), increasing physical activity (Grandes et al., 2009; Lewis & Lynch, 1993; Loureiro & Nayga, 2006; Swiwburn, Walter, Arroll, Tilyard, & Russell, 1998), engaging in cancer screening (Bowen, Hannon, Harris, & Martin, 2011; Gonzales & Borrayo, 2011), and quitting smoking (Pignone & Salazar, 2009). The literature indicates that even providing brief advice about the hazards of smoking and the benefits of quitting results in increased quit rates among counseled patients compared to those who receive no advice. A review of several studies conducted between 1972 and 2007 assessed the intensity of interventions regarding smoking cessation (Stead, Bergson, & Lancaster, 2008). The type of advice (brief or intensive), supplementation of advice with aids (self-help manuals), and providing follow-up support were used to assess effectiveness. The

outcome was measured as patient abstinence from smoking after at least six months follow-up. Providing brief advice about quitting increased the likelihood (by 1 to 3%) that an individual who smoked would successfully quit and abstain from smoking 12 months later. Similarly, meta-analyses (Kottke, Battista, DeFries, Brekke, 1988; Viswesvaran & Schmidt, 1992) indicated that smokers were 5-7% more likely to quit after receiving brief advice. Moreover, intense advice may result in an additional increase of 15% in quit rates (Viswesvaran & Schmidt, 1992).

Impact of Physician's Interpersonal Style

Physicians' interpersonal style can also greatly impact patient behaviors. Research has shown health outcomes are influenced by physicians' verbal and non-verbal behavior including: level of empathy, and ability to communicate statements of reassurance or support, encouragement, friendliness, and expression of positive reinforcement or good feelings in regard to patients' actions (Beck, Daughtridge, & Sloane, 2002). Physicians can influence patients' motivation and behavior by supporting their patients' autonomy through listening carefully to their perspectives, encouraging questions, offering choice for treatment regimens, providing support when patients take initiative, and through minimizing control (Williams & Deci, 1998; Williams, Deci, & Ryan, 1995). Research has shown an association between providing an autonomy-supportive style and positive health outcomes in maintained weight loss (Williams, Grow, Freedman, et al., 1996), medication adherence (Williams, Rodin, Ryan et al., 1998), and increasing quit attempts for those who smoke (Butler, Rollnick, Cohen et al., 1999; Brown, Ramsey, Strong et al., 2003; Steinberg, Ziedonis, Krejci et al., 2004). Thus, when physicians use a patient-centered care model and support their patient's autonomy, patients are more likely to be motivated to change their behavior.

Lack of Research Examining Style of Smoking Cessation Counseling

Few studies have assessed the content of real world smoking cessation counseling and even fewer have examined the style of communication displayed by the physician towards the patient. However, the guideline outlines specific ways in which smoking should be addressed with patients. For example, providers are recommended to administer the 5 A's with all patients who smoke. For patients who are willing to quit, assistance should be provided by offering medication, referring the patient for counseling, or by providing additional appropriate tobacco dependence treatments. For patients who are not willing to quit, a brief motivational intervention should be provided using the 5 R's. The emphasis of the 5 R's is on the content of these interventions (e.g., advise the patient to quit smoking). In addition, the guideline recommends that providers employ counseling techniques that are based on the principles of MI to enhance motivation to quit smoking. MI counseling strategies are provided, however the guideline recommends training in MI because employing these strategies requires use of a specialized technique. The guideline recommend employing the 5 R's and counseling with an MI focus. Yet, little is known about what types of counseling physicians typically use when talking to their patients about their smoking as there are no studies that have evaluated how physicians are delivering this content in real world clinical settings.

Research suggests that certain styles of communication can be more effective in increasing patients' motivation and in assisting patients to quit smoking. Guided by this research, the guideline recommends using a directive, patient-centered counseling approach. Despite suggestions that formal training in MI may be beneficial for providers, training in MI is typically not required nor available and may not be feasible in most settings. In the

absences of formal training, it is important to understand what content and what communication styles physicians are employing to deliver content to help their patients quit smoking. The purpose of this study was to examine to what extent physicians adhered to guideline recommendations by: (1) administering the 5 R's with patients who were not ready to quit smoking, (2) employing a counseling style that was consistent with MI principles known to enhance motivation, and (3) using specific MI consistent or inconsistent counseling behaviors. Content of the consultations was assessed with the recommendations of the USPHS Clinical Practice Guideline. Counseling style was assessed through use of coding schemes developed to assess MI counseling skills because these measures have been well validated and used successfully in smoking cessation studies. They also include measures of key elements of communication such as acceptance, empathy, collaboration, evocation, and providing autonomy support.

CHAPTER 2

METHODOLOGY

Recruitment and Data Collection

Audio recordings of smoking cessation counseling provided by physicians and physicians in training during routine practice visits were analyzed to characterize typical counseling styles employed. This study was conducted at a non-profit hospital in a large Midwestern city. Procedures were approved and monitored by the affiliated Institutional Review Boards. A research assistant first requested permission to shadow physicians during outpatient visits in Internal/Family Medicine clinics. Physicians were told the study was focused on understanding counseling styles that physicians typically employ with their patients when talking about smoking. Forty-one physicians were approached with 38 agreeing to participate in the study (93%). Three refused because of limited time and/or scheduled patient appointments that day. Physicians who agreed gave informed consent and completed a brief demographic survey. Potential patient participants were identified as smokers by physicians' schedule. Once identified, potential patient participants were approached in the waiting room and offered information about the study, which was described as an examination of communication between patients and providers. Of the 56 potential patient participants invited, 48 agreed (86%) to be in the study. Seven participants refused because of limited time and/or not wanting to be involved in research. Eligible patients gave informed consent and completed a brief survey to record demographic information.

Next, the research assistant entered the consultation room with the physician, turned on an audio-recording device, and sat in the room in order to record the interaction between

the physician and the patient. The audio-recorder was turned off once the consultation was finished. Patients were debriefed and were told that the study was focused on describing physicians' counseling styles regarding smoking cessation. Participants were compensated for their time with a \$5 gift card.

Coder Training Procedure

Two raters (a postdoctoral research fellow and a doctoral student) attended training sessions to review the Motivational Interviewing Skill Code manual (MISC; Miller, Moyers, Ernst, & Amrhein, 2008). The training sessions were led by an experienced MI-trainer and MINT-member who had participated in seminars about MISC coding led by MISC-author Theresa B. Moyers, PhD. The first phase of training included reading the MISC manual. The training sessions were held during several meetings over a 2-month period. Intensive training included three consecutive 6-hour training days. The raters practiced by listening to audio recorded sessions that were also transcribed. Nine audio-recorded consultations were used for practice coding during training sessions. Each coded statement was then discussed in the group. Disagreements between raters were discussed with the trainer. The total training involved was approximately 25 hours. Once the raters reached an acceptable level of reliability, they continued to code the 38 audio recordings. None of the audio recorded sessions used in the training sessions were used in the final dataset.

Transcribing and Coding of Counseling Sessions

To assess physician's counseling style, only audio recordings that included patient-provider dialogue related to smoking were used. The audio-recorded consultations were transcribed and edited by five research assistants, two were graduate students and three were undergraduate students. Each audio recording was transcribed verbatim for content that was

related to smoking. Thirty-eight audio-recorded consultations were coded and five were excluded because the audio file failed to play properly. To ensure the quality of the transcriptions, a different student listened to each audio recording a second time and any discrepancy between the transcription and audio recording was edited. Two independent coders analyzed physician's counseling style using the global and behavioral codes from the MISC Version 2.1. The coders first listened to the audio-recordings of the consultation without stopping, and then reviewed the transcript to conduct behavioral counts. Global ratings of acceptance, empathy and MI spirit (i.e., collaboration, evocation, and autonomy support) were then completed, and lastly, scores on administration of the 5 A's and 5 R's were given. Disagreements between coders were discussed and final decisions were made by consensus. All the audio-recordings were double coded and inter-rater reliability was assessed.

Outcome Measures

U.S. Public Health Service Clinical Practice Guideline

The content of the audio-recordings were analyzed with the Clinical Practice Guideline's 5 A's and 5 R's (Fiore, Jaen, Baker, Bailey, Benowitz, Curry et al., 2008). We coded for whether or not each aspect of the 5 A's or 5 R's content is discussed with the patient. The 5 A's (Ask, Advise, Assess, Assist, and Arrange follow-up) should be used in treating patients who are ready to quit. In contrast, Ask, Advise, and Assess, and then the 5 R's (Relevance, Risks, Rewards, Roadblocks, and Repetition) should be used for those who are unwilling to quit at the time. For patients who have recently quit smoking, we coded for whether or not content related to relapse prevention was discussed, distinguishing between

the types of relapse prevention provided (e.g., minimal practice relapse prevention or prescriptive relapse prevention).

MISC Global Scores

The global scores of the MISC are designed for rating the overall global impression of the provider, specifically how consistent it is with MI principles (Moyers, Martin, Manuel & Miller, 2007). For the purposes of this study, we focused on the global scores of the MISC: acceptance, empathy, collaboration, evocation, and autonomy support (Table 1). We chose to use the global scores as they provide a standardized rating of the physician’s overall ability to counsel patients with techniques that are consistent with a motivational enhancement approach. Global scores are rated on a 7 point-Likert scale. Raters are instructed to start with an initial score of 4 and then add or subtract points to reflect more or less compliance with each global rating. Use of MI consistent behaviors (e.g., advising with permission, affirming, emphasizing control, using open questions, reflecting, reframing, and providing support) increased physicians’ global scores whereas use of MI inconsistent behaviors (e.g., advising without permission, confronting, directing, raising concern without permission, and warning) decreased global scores.

Table 1.

Global Themes of the MISC: Definition

Style	Definition
Acceptance	Provider communicates unconditional positive regard for the patient.
Empathy	Provider understands or makes an effort to understand the patient’s perspective.
Collaboration	Provider negotiates with their patient and avoids an authoritarian role.
Evocation	Provider emphasizes drawing out the patient’s ideas instead of educating or giving information without permission.

Autonomy support	Provider conveys understanding that the variables associated with change are within the patient and can't be imposed by others.
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MISC Behavior Categories

MISC 2.1 behavioral categories were designed to rate the occurrence of specific behaviors that providers may employ in a counseling session. The MISC 2.1 provides detailed decision rules and categorization for a total of 15 behavioral categories. However, for the purposes of this study we focused on the following 12 behavioral categories: *advise*, *affirm*, *confront*, *direct*, *emphasize control*, *giving information*, *question*, *raise concern*, *reflect*, *reframe*, *support*, and *warn* (Table 2). Three of the categories require differentiating between subcategories. Specifically, the categories *advise* and *raise concern* both require determining if the advise or raising of concern was done with or without permission. Similarly, the behavioral category of *question* requires raters to determine if the question was closed- or open-ended. As displayed in Table 2, all behavioral categories except for *giving information* are seen as either MI consistent or MI inconsistent. MI consistent behaviors are believed to enhance patients' motivation and MI inconsistent behaviors are seen to evoke defensiveness in patients that negatively impacts motivation.

Table 2.

Major Categories from the MISC: Definitions and Examples

Category	Definition	Example
Giving Information	Provider gives information to the client, educates, or explains something.	"People who smoke can get COPD, emphysema, and have a higher risk for lung cancer, heart disease, and many other things."
MI Consistent		
Advise with Permission	The provider gives advice, makes a suggestion, or offers a solution with prior permission from the patient	"Would it be all right if I suggested something?"
Affirm	Provider comments on the strength or efforts made by the patient in the form of appreciation, confidence, or reinforcement	"You've made a huge cut in your smoking." "You've accomplished a difficult task."
Emphasize Control	Provider directly acknowledges the patient's freedom of choice and autonomy.	"It's your decision whether you quit or not." "You're setting your own goals and boundaries."
Open Question	Provider asks a question that allows a wide range of possible answers, seeks information, invite's the patient's perspective	"Tell me about your smoking." "How might you be able to do that?"
Raise Concern with Permission	With the patient's permission, the provider points out a possible problem with the patient's plan, and contains language that demonstrates the provider's own concern rather than fact.	"Is it OK if I tell you a concern that I have about that? I wonder if it puts you in a situation where it might be easy to start using again."
Reflection	Provider responds to the patient with a statement that repeats or rephrases what the patient has said.	"You don't like what smoking does to your health, but it reduces your stress." "So you said you smoke about 10 cigarettes a day."
Reframe	Provider changes the emotional valence of the patient's experience by placing it in a new light.	"Each attempt can move you closer to success." In response to patient saying, "I've tried to quit before and failed."
Support	Provider makes sympathetic, compassionate, or understanding comments	"That must have been difficult." "I'm here to help you with this."

Category	Definition	Example
MI Inconsistent		
Advising without Permission	Without prior permission from the patient, the provider gives advice, makes a suggestion, or offers a solution or possible action.	"You could ask your friends not to smoke at your house."
Confront	Provider directly disagrees, argues, corrects, shames, blames, criticizes, or questions the client's honesty.	"Don't you understand what smoking is going to your health?" "You're willing to jeopardize the baby's health just for cigarettes."
Direct	Provider gives an order, command, or direction.	"You've got to stop smoking." "You must have more respect for yourself."
Closed Question	Provider asks a question that implies a short answer, specifies a restricted range,	"How long have you been smoking?" "On a scale from 1 to 10, how motivated are you to quit?"
Raise Concern without Permission	Without the permission of the patient, the provider points out a possible problem with the patient's plan, and contains language that demonstrates the provider's own concern rather than fact.	"I'm worried that you may have trouble when you're around your old friends."
Warn	Provider warns or threatens the patient, implying negative consequences if the patient does not take a certain action.	"If you get bored you'll smoke." "You're going to relapse if you don't get out of this relationship."

Proficiency in MI

The MISC provides possible performance benchmarks for "ideal" and "threshold" MI counseling proficiency based on the performance of expert therapists (Miller, 2000).

According to the MISC, threshold proficiency is indicated by a Global Therapist Rating mean score of >5 and ideal proficiency is a score of >6. The MISC also includes provisional summary indicators of the quality of MI by calculating frequencies of the behavior categories: *reflections*, *open-ended questions*, and *close-ended questions*. Summary scores were calculated for the percent of open-ended questions to total number of questions asked and the ratio of total reflection to total number of questions. Threshold proficiency in MI is

defined as >50% for the percentage of open-ended questions and ideal proficiency is defined as >70%. Threshold proficiency in MI for the ratio of total number of reflections to total number of questions asked is >1 and ideal proficiency is defined as a ratio >2 (Miller, 2000). Summary scores for MI consistent and MI inconsistent behaviors are also calculated. Threshold proficiency for MI consistent delivery is defined as >80% of all utterances and ideal proficiency is defined as >90%. Table 3 displays these scores.

Table 3.

MISC Summary Category, Calculation, and Minimum Scores for Threshold and Ideal Proficiency

Behavioral Indicator	Calculation	Threshold Proficiency	Ideal (Expert Level)
Global Therapist Ratings	Mean score for each global score: Acceptance, Autonomy support, Collaboration, Empathy, and Evocation	> 5.0	> 6.0
Percent Open Questions (%OQ)	Total open questions/ total questions	> 50%	> 70%
Reflection to Question Ratio (R/Q)	Total reflections/ total questions	> 1.0	> 2.0
Percent MI-Consistent (%MICO)	MI consistent/ (MI consistent +MI inconsistent)	> 80%	> 90%

Analysis

This study examined and described the typical counseling styles employed by physicians when they talk to their patients about smoking. Descriptive statistics were used to

describe basic characteristics of the sample (e.g., age, level of experience, and gender). Frequency of administering the specified content of the 5 A's and/or 5 R's were tallied to determine whether and how often physicians complied with the USPHS Clinical Practice Guideline. MISC global scores were tallied to explore how consistent physicians were in communicating *acceptance, empathy, collaboration, evocation, and autonomy support* for their patients during smoking counseling sessions. Mean frequencies of each type of MI consistent and MI inconsistent behavior were tallied. Finally, correlations of physician's MISC global scores and MI behavior categories, physician's experience, gender and age, as well as patient's age were conducted.

CHAPTER 3

RESULTS

Sample Characteristics

Participants included both physicians (54%) and physicians in training (46%) and their patients from a large Midwestern city. Audio-recordings of 38 physicians (51% female) counseling 38 patients (57% female) were used in this study. To ensure that each physician contributed only one sample recording, 10 audio-recordings were excluded from the analysis. Excluded audio-recordings were used to train coders. Physician's ages ranged from 25 to 72 years old ($M = 37.56$, $SD = 10.83$). Sixty-seven percent of the physicians identified as White, 17% identified as Asian, and 16% identified as other. Patient's ages ranged from 25 to 67 years old ($M = 46.19$, $SD = 9.96$). The majority of patients identified as African-American (65%) and had an income \leq \$2,000 a month (73%).

Interrater Reliability

Interrater reliability for the rating the 5 A's and 5 R's, MISC global ratings and behavioral categories was assessed by calculating the intra-class correlation coefficient (ICC). The ICC is a conservative measure that takes the frequency of equal ratings into account, as well as the possible systematic differences between raters into account (Shrout & Fleiss, 1979). Guidelines for assessing the ICC coefficient are: 1.00-0.75 is excellent; 0.74-0.60 is good, 0.40-0.59 is fair; and < 0.40 is poor (Cicchetti, 1994). As displayed in Table 3 the ICC coefficients ranged from 0.77 to 0.95 for physicians' usage of the 5 A's and 5 R's. As displayed in Tables 4 and 5, the ICC coefficients for MISC Global scores and MISC behavioral categories ranged from .50 (Autonomy-support) to 0.965 (number of closed questions), with the majority of the ratings in the good-to-excellent range.

Physicians Use of the 5 A's and 5 R's

Table 4 describes the frequency with which physicians used the 5 A's and 5 R's with their patients for quitting smoking. Physicians most frequently asked (94%) and assessed patient's smoking status (87%). A little more than 70% of the physicians advised patients to quit (74%), with fewer offering assistance to quit (68%). However, only a small proportion of physicians arranged a follow-up appointment with patients (23%).

Regarding the 5 R's, physicians are encouraged to administer all of the 5 R's with patients who are not ready to quit. Of the 87% of patients who were assessed by physicians, 11 (33%) communicated that they were not ready to quit. During counseling sessions with these not ready to quit patients, physicians most frequently discussed the patient's personal relevance for quitting (82%), followed by the discussing the risks of smoking (73%). A little over 40% of time, physicians discussed the roadblocks (45%) to quitting and less frequently (36%) than the rewards of quitting with patients (See the Table 3).

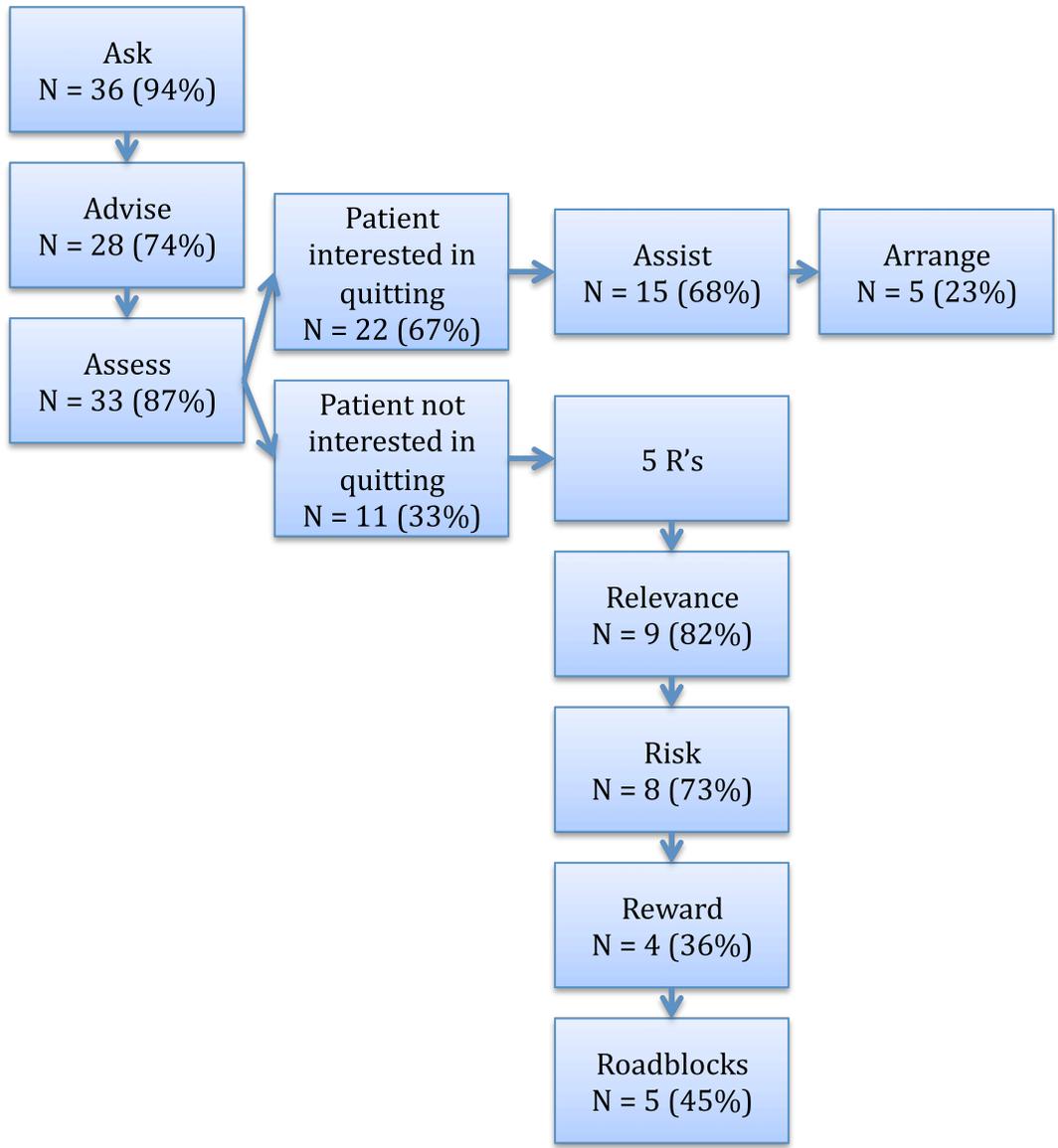


Figure 1. Physician's Use of 5 A's and R's

MISC Global Scores

Guided by MISC proficiency scores defined above, physicians, on average had a moderate score for acceptance and autonomy support, a low to moderate score for collaboration and low scores for empathy and evocation (See Table 4). They were modestly able to communicate unconditional positive regard and respect to the patients, and they were

not judgmental, harsh, or condescending. The physicians were also able to modestly acknowledge that quitting smoking was up to the patient and did not convey a sense of urgency that patients needed to quit. Physicians did a mediocre job manifesting collaboration with patients by demonstrating little effort to include patient’s ideas about how quitting can be accomplished. Lastly, physicians did a poor job communicating empathy and evocation as they communicated little interest in gaining a deeper understanding of patient’s perspectives and/or exploring patient’s reasons for quitting.

Table 4.

Mean Frequencies, Range and ICC of MISC Global Scores

MI Variable	Mean (SD)	Range	ICC
Acceptance	4.53 (1.11)	2-7	0.743
Autonomy support	4 (0.96)	1-6	0.496
Collaboration	3.32 (1.12)	1-6	0.671
Empathy	2.95 (1.37)	1-6	0.763
Evocation	2.74 (1.06)	1-6	0.600

MISC Behavioral Categories

Overall, coding revealed that physicians were most likely to *give information* during counseling sessions. Despite the guideline recommendation to use counseling strategies that increase motivation, physicians more frequently used MI inconsistent than MI consistent strategies (See Table 5). Specifically, physicians were most likely to rely on the MI inconsistent strategies of asking closed questions (e.g. “Are you still smoking?”), and advising without permission (e.g. “Have you ever thought about when other people light up a

cigarette, you could either leave the room, or put something else in your mouth like a hard candy or something?”). They were less likely to rely on raising concern without permission (e.g. “Is it okay if I share with you a concern I have? I wonder if that may make you want to smoke more?”) or providing warnings (e.g. “You can die if you keep smoking.”) during counseling. Physicians rarely used the MI inconsistent techniques of confronting (e.g. “You’re willing to put your children in danger just so you can smoke.”).

In terms of MI consistent strategies, physicians were most likely to provide reflective and affirming statements (e.g. “You really cut down on the number of cigarettes you smoke each day.”). However they were unlikely to ask for permission before offering advice (e.g. “Would it be okay if I made a suggestion?”), reframe patients’ statements, make supportive statements (e.g. “I’m here to help you quit smoking.”), or emphasize patients’ control (e.g. “It’s your choice to quit smoking.”) during counseling sessions.

Table 5:

Mean Frequencies, Range, and ICC of MISC Behavioral Categories

MI Variable	Mean (<i>SD</i>)	Range	ICC
Giving information	4.89 (5.06)	0-20	0.895
MI Consistent			
Advise with permission	0.03 (0.16)	0-1	0.570
Affirm	1.26 (2.09)	0-8	0.944
Emphasize control	0.39 (0.86)	0-3	0.856
Open questions	1.03 (1.15)	0-4	0.933
Reflections	3.34 (4.33)	0-24	0.924

MI Variable	Mean (<i>SD</i>)	Range	ICC
Support	0.32 (0.57)	0-2	0.688
Reframe	0.13 (0.41)	0-2	0.727
MI Inconsistent			
Advise without permission	2.37 (2.58)	0-9	0.787
Confrontation	0.13 (0.41)	0-2	0.725
Closed questions	6.18 (5)	0-23	0.965
Raise concern without permission	0.68 (1.34)	0-5	0.783
Warn	0.61 (1.50)	0-8	0.881

Proficiency

Physicians in the present study were well below the recommended threshold for proficiency in summary scores for Global Therapist Ratings, the percent of open questions asked, the ratio of the number of reflections to the total number of questions asked, and the percent of delivering in an MI consistent style (See Table 6).

Table 6.

Physician's Proficiency, Recommended Proficiency and Competency based on the MISC

Coding System

Behavior Indicator	Physicians' Mean	Threshold Proficiency	Ideal (Expert Level)
Global Therapist Ratings		> 5.0	> 6.0
Acceptance	4.53		
Autonomy Support	4.00		
Collaboration	3.32		
Empathy	2.95		
Evocation	2.74		
Percent Open Questions (%OQ)	14%	> 50%	> 70%
Reflection to Question Ratio (R/Q)	0.53	> 1.0	> 2.0
Percent MI-Consistent (%MICO)	62%	> 80%	> 90%

Correlations of Physician's MISC Global Scores

The correlations between the physician's MISC global scores and the physician's level of experience, gender, age, and patient's age are presented in Table 8. The global rating of MI spirit (the average of collaboration, evocation, and autonomy support) was positively related to the global ratings of empathy and acceptance. There was no evidence to suggest associations between MISC global scores and physician's level of experience, gender, age, and patient's age.

Table 7.

Correlations of the Physician's Demographics with the MISC Global Scores

	MI Spirit	Empathy	Acceptance	Physician's Experience	Physician's Gender	Physician's Age	Patient's Age
MI Spirit	-	.646*	.720*	-.140	.137	.056	.295
Empathy		-	.645*	.283	.254	-.085	.203
Acceptance			-	-.094	.110	.137	.192

*Correlation is significant at the 0.01 level (2-tailed).

CHAPTER 4

DISCUSSION

The purpose of the current study was to examine the content and communication styles physicians employ when counseling their patients about smoking. Specifically, to what extent physicians adhered to the guideline recommendations by: 1) administering the 5 R's with patients who were not ready to quit smoking, 2) employing a counseling style that was consistent with MI principles known to enhance motivation, and 3) using specific MI consistent or inconsistent counseling behaviors. Much of the published research on smoking cessation and physicians has assessed physicians' adherence rates to the 5 A's and have used data from self-report assessments. The current study is the first study to analyze data of physicians' behaviors with patients in the actual clinical setting.

Adherence to the USPHS 5 A's and 5 R's

The current study indicated that most physicians asked patients' about their smoking status (95%) compared to 68% in a 2001-2003 national survey (Thorndike, Regan, & Rigotti, 2007). Similarly, physicians in the current study were more likely to advise (74%), offer their patients assistance to quit smoking (53%), and arrange a follow-up appointment (18%) compared to self-reported rates shown in previous studies (CDC, 1991; Goldstein, Niaura, Willey-Lessne, DePue, Eaton, Rakowski, & Dubé, 1997). Regarding the 5 R's, similar to the study by Balls and colleagues (2010), physicians were most likely to discuss the relevance and risks of smoking with patients. These findings are similar to those of other studies (Ferketich, Khan, & Wewers, 2006; Jordan, Dake, & Price, 2006; Stevens, Solberg, Quinn, Rigotti et al., 2005) such that physicians failed to adhere to all of the components of the USPHS Guideline. The higher frequency of identifying smokers, advising, providing

assistance, and scheduling follow-ups in the current study may be attributed to the stimulus cue of having a research assistant in the room during the appointment. Although our results suggest that the rate of adhering to the guideline have increased among physicians, the results also demonstrate the continued lack of adherence to all of the components which suggest that physicians are not complying with the guideline and patients are not being provided with the recommended amount of care to assist them in quitting smoking.

Overall Ability to Counsel Patients Using a Motivational Enhancement Approach

The physicians in the present study had MI global scores that were in the low to moderate range. The global scores are given on a 7 point-Likert scale, with a beginning score of 4 and then adding or subtracting from that start point depending on MI consistent and MI inconsistent behaviors. Overall, the mean scores for acceptance and autonomy support was 4.53 and 4, respectively. Although physicians were more likely to communicate acceptance and autonomy support compared to other global themes, a mean score of 4.53 and 4 is moderate. Moderate scores suggest that without training in MI, the physicians were neither good nor bad at communicating acceptance or autonomy support. All other global themes had a mean score that was less than 4 (See Table 6). These findings highlight that untrained physicians have weak motivational enhancement counseling skills to communicate collaboration, empathy, and evocation. Physicians rarely included patients' ideas about how to quit smoking, communicated a lack of understanding the patient's perspective, and showed little interest in exploring the patients' reasons to quit smoking. Similar results have been found among primary care residents discussing alcohol consumption with patients (Chossis, Lane, Gache, Michaud, Pecoud, Rollnick, & Daeppen, 2007). Residents who were not trained in MI were less likely to use a patient centered approach compared to the trained

residents. Trained residents were more likely to guide patients to understanding the implications of their drinking by using tailored information to help facilitate behavior change.

Use of Specific Counseling Behaviors that are Consistent with Motivational Principles

Physician's use of MI consistent skills was low while the use of MI inconsistent skills was high. This indicates that although the physicians failed to utilize many of the MI consistent skills (likely because they have not been formally trained in the principles of MI), the majority of physicians successfully avoided the use of the most damaging MI inconsistent strategies of arguing, shaming, blaming, and questioning patients' honesty. The specific uses of confrontational statements were very low, with a range of 0 to 2 ($M = .13$). Physicians avoidance of confrontational statements is a positive finding as their use often provokes a negative reaction in patients (e.g. arguing) which leads physicians to erroneously conclude that their patients are resistant to change when they are merely defending themselves (Miller & Rollnick, 1991). Additionally, the use of confrontational statements from providers may damage the relationship between patients and providers (Boardman, Catley, Grobe, Little, Ahluwalia, 2006; Catley, Harris, Mayo, Hall, Okuyemi, Boardman, & Ahluwalia, 2006). Using an approach that includes more MI-consistent strategies would likely enhance collaboration and engagement of patients and increase the likelihood of behavior change.

Limitations

Knowing that they were participating in a research study and having a research assistant in the room during the patient appointment may have encouraged physicians to behave differently and address smoking more than they normally would. However, the results indicated that even with the presence of the research assistant in the room and the

possibility of being primed about smoking, most physicians still failed to adhere to the USPHS Guideline. This study did use a convenience sample, which may have biased the results because physicians who agreed to participate may be significantly different from those who chose not to participate. Lastly, this study did use a sample of physicians and physicians in training. Therefore, physicians' skills obtained in this study might not be representative of the skills of general physicians. On the other hand, counseling skills among physicians do vary depending on factors such as knowledge and self-efficacy. Thus, these results may generalize to many physicians in hospital settings.

Conclusion

This is the first study to examine physician's counseling style in a natural setting. The increase of physicians' adherence to the guideline compared to the past 20 years is promising, however much more work is needed to ensure that physicians are providing assistance to patients who are ready and not ready to quit smoking. Moreover, the lack of ability to counsel patients using a motivational enhancement approach and adhering to the current USPHS guideline suggest that there may be several barriers for physicians to meet current recommendations. Perhaps physicians lack the time and skills to conduct effective smoking cessation counseling. Additionally, physicians may not be aware of how patient outcomes are impacted when spending time discussing smoking cessation in place of other relevant health issues.

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VITA

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Prior to graduating from SDSU, Sofie was accepted to the Clinical Health Psychology doctoral program at the University of Missouri-Kansas City (UMKC), which she began in August, 2010. Since that time, Sofie has been involved in research with Project MOTIV8, an NIMH funded 3-arm randomized control trial testing the efficacy of novel counseling approaches to improve antiretroviral (ARV) medication adherence in HIV+ patients. Additionally, Sofie has assisted in research with KC Quest, an NIH funded 3-arm randomized control trial to assess different types of communication with smokers. KC Quest is dedicated to learning from smokers who do not want to quit, or are not ready to quit, and how health care providers should talk with them. Sofie had completed and collaborated in multiple research projects that have been presented in national and international research conferences. She is a member of the Society of Behavioral Medicine.