Motivational Interviewing in Dental Hygiene Education: Past Lessons, Present Practices, and Future Directions

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Oral health affects an individual's quality of life, employability, and general health and well-being.[1,2] Oral diseases negatively impact an individual's speech, social development, and school and work performance.[1] Many oral diseases (i.e. caries, periodontitis, oropharyngeal cancers (OPCs)) can be prevented, yet are still epidemics in the United States (US).[1,2] Evidence-based behavioral science research indicates the application of patient-centered counseling to prompt positive health behavior change can reduce chronic oral diseases.[3,4]

Motivational Interviewing (MI) is a person-centered, goal-directed method of communication for eliciting and strengthening intrinsic motivation by eliciting change conversations for positive behavior change.[3] Motivational Interviewing encompasses a philosophy known as the *Spirit of MI*; this can be described when a provider and a patient have developed a collaborative partnership, rapport, and trust.[3] This engagement is required to evoke the patient's own thoughts or ideas, rather than the provider imposing goals or expectations set by the provider.

MI is widely applied to address behavior change including tobacco cessation, exercise, sexual risk reduction, gambling, and treatment adherence.[4–10] What characterizes MI is the specific way these skills are strategically used to help individuals move in the direction of change by implementing the processes in a manner that is consistent with the underlying philosophy (*Spirit of MI*). Through the four processes, MI uses a guiding communication style to engage with individuals, clarify their strengths and aspirations to evoke their own motivations for change, while promoting their autonomy in decision making. Since the early 2000's MI and brief MI have been utilized in dentistry to promote healthy behavior changes.[11–22] Reflecting on past lessons and present practices can provide valuable insights to develop future opportunities for MI to improving patient health outcomes, education and training for clinicians, embedding in dental education, and investigating the theory of '*why*' MI is effective.

PAST LESSONS

Motivation matters when building a commitment to healthier behaviors and is supported by several health psychology models. Individuals are more likely to do what they *hear* themselves say than what a dental provider tells them to do. Reflect on your own experiences, and think about what you are more likely to do 1) what you offer to do or 2) what you are told to do? Historically, dental hygienists provide information and educate patients as part of their daily clinical practice. Persuasive advice giving, sometimes referred to as the tell-show-do method, is commonly used in the dental hygiene (DH) profession. This method has not been shown to promote sustainable positive health

behavior change and can impair a patient's efforts to change a behavior.[3,11,15] The application of MI in dental practice allows individuals to illustrate their intentions and assist clinicians to evoke intrinsic motivation by initiating change conversations. This is a key concept because intrinsic regulated behaviors are more stable, done with greater care, and are accompanied by more positive experiences than externally regulated behaviors.[23] More importantly, effective provider-patient communication regarding health behavior is essential for providing optimal health care.

A number of meta-analyses indicate MI is significantly (10–20%) more effective than no treatment and generally equal to other viable treatments for a wide variety of problems ranging from substance use (alcohol, marijuana, tobacco, and other drugs) to reducing risky behaviors and increasing individual engagement in treatment.[4–7] The usefulness of MI for patients with alcohol use disorders has led to it being used for patients with other addictions including cocaine,[24–26] gambling,[9,10] and for a variety of other health behaviors (e.g., exercise, oral health, and nutrition) in which motivation plays a key role.[15,17,18,27–31]

Although the efficacy of MI is established in many areas, there is less understanding of the underlying mechanisms of action of MI. The development of MI is described as atheoretical because it was developed from the practice experience of Miller and Rollnick rather than on theoretical grounds.[3] Miller and Rose proposed a model of how MI works that involves technical and relational components.[32] The relational component refers to the underlying philosophy of MI as a crucial component of its efficacy. This philosophy is (a) collaborative rather than authoritarian, (b) evokes the individual's own motivation rather than trying to "install" it, and (c) honors the individual's autonomy. Without the relational component, the individual will not engage in the further processes necessary to increase motivation and the likelihood of change. Once the individual is engaged by means of an empathic interpersonal context, attention can be turned to a collaborative focus on a particular problem to be addressed. These relational factors guide the individual to tap into underlying motivation to change. This is consistent with an extensive body of psychotherapy literature which indicates therapy outcomes are strongly affected by the counselor-individual relationship.

More unique to MI is the technical component which refers to the role of "change talk." Change talk consists of the individual's utterances that favor the target behavior change. As the individual discusses his or her experience of ambivalence regarding the target change, the MI counselor selectively attends to language in favor of changing. The intent is to increase both the quantity and strength of change talk so that the individual will hear their own arguments for change. This is based on the hypothesis that people are more likely to be persuaded by arguments they make themselves than those they hear from others. In essence, MI-counselors help individuals to talk themselves into changing. MI is thus thought to lead to behavior change because it encourages or elicits change talk from individuals. Expressions of change, particularly with strong commitment utterances, are good predictors of future change.

PRESENT PRACTICES

Shortly after the inception of MI in 1983, the patient-centered approach to care was adopted throughout healthcare and other public facing settings. The University of Missouri-Kansas City (UMKC) Division of Dental Hygiene program was an early adopter of MI for person-centered collaborative counseling. The UMKC was the first DH program in the US to publish evidence on its effectiveness to improve patient outcomes, fully incorporate throughout the entire DH curriculum, and measure MI fidelity.[11–15] The UMKC used a collaborative model partnering with the psychology department on their campus to establish curriculum reform and utilize appropriate measures of success. The implementation team from UMKC also presented several faculty development workshops at the American Dental Education Association (ADEA), the American Association for Women Dentists (AAWD), and the International Federation of Dental Hygienists (IFDH).

Following UMKC leadership, the University of Michigan (U-M) DH program developed the health behavior change curriculum. Professional development activities for MI were implemented to support U-M faculty; in addition to a 2-day MI workshop (2012) and a 5-hour refresher course (2014) facilitated by MI-trained faculty members from UMKC.[21] The U-M DH program's evaluation of the MI thread in the curriculum also contributed to the literature on faculty and students' perceptions of importance and confidence applying MI during patient care.[21,22]

Around the same time, the University of Minnesota (UMN) DH faculty were trained by a MI counselor from the Motivational Interviewing Network of Trainers (MINT). Additionally, their lead DH MI trained faculty attended additional training through MINT to ensure sustainability of MI in the UMN DH curriculum. The UMN DH program continued with research efforts on applying brief MI for reduction of early childhood caries (ECC), reduction of clinical indicators of periodontitis, students and alumni perceptions of applying MI during patient care, and for HPV-related prevention of OPCs.[18–20,33] University of Minnesota DH research also identified that brief MI evokes periodontal patients' interest, importance and self-efficacy and promotes more change talk conversations toward total health.[16,18]

West Virginia University (WVU) developed the first national Tobacco Treatment Specialist (TTS) certificate program for the WVU Health Sciences Center (HSC).[34,35] This TTS certificate program provided communication training on MI concepts via simulations and interprofessional education (IPE) case-study sessions for dental, DH, pharmacy, and physician assistant students.[34,35] More recently, Eastern Washington University (EWU) has implemented an MI learning module to assist DH students' utilization of a nutritional risk assessment and counseling tool.[36]

The incorporation of MI in the DH curriculum aligns with the Commission on Dental Accreditation (CODA) Standards for Dental Hygiene Education Programs (2-8a, 2-8d, 2-12, 2-13, and 2-15).[37] Standard 2, Curriculum, encompasses the broad graduation competencies expected; 2-8a states general education content (prerequisites) must prepare students for effective communication to provide "individual oral health counseling."[37] Further, 2-8d states DH content "must include oral health education and preventive counseling" (i.e. health promotion).[37] Standard 2-12 encompasses competence in communication for all populations (children, adolescents, adults, geriatric and special needs).[37] Standard 2-13, includes patient-centered care to minimize risks and optimize oral health.[37] Embedding MI in the DH curriculum to train students on patient-centered collaborative counseling to support positive behavior change is supported by evidence to minimize risks and optimize oral health (i.e. oral self-care, dietary choices, behaviors that increase the risk of oral cancers such as use of tobacco, alcohol or HPV exposure).[5,8,11–15,17,18,36,38] The primary focus of Standard 2-15 is graduating students who are competent in interprofessional communication and collaboration.[37] Examples provided by CODA include students being able to communicate with individuals, groups, and the health care team; in addition to interdisciplinary communication and collaboration.[37] Although incorporating MI in the DH curriculum is not explicitly stated in the CODA Standards, many DH programs have recognized the positive impact MI has on successful provider and patient communication and have incorporated its principles into their curriculum.

FUTURE OPPORTUNITIES

Dental hygiene programs should encourage prerequisite psychology courses to include MI for foundational knowledge to align with CODA Standard 2-8a. To meet Standards 2-8d, 2-12, 2-13, and 2-15, DH programs can focus on the inclusion of brief MI with the technique of elicit-provide-elicit (E-P-E) in the curriculum.[39] Brief MI encompasses the collaborative *Spirit of MI*, the MI principles, guiding strategies and rules to assess motivities, raise awareness, and evoke change conversations.[3,40,41] Brief MI is intended for providers that have limited time (5-10 minutes) to support an individual's positive behavior change.[18,42] Elicit-provide-elicit is a time saving strategy to find out what the individual already knows, fill in the gaps or correct misconceptions, and explores how a positive

behavior change may fit into an individual's life by evoking change conversations.[3,39]

Considering that the majority of DH programs in the US confer an associate's degree and may have limitations to expand the course content, thoughtful curriculum design may be required. Plus, DH programs would need to examine where MI is first presented as didactic content then discuss how to weave it throughout the curriculum. MI is now a part of major DH textbooks providing easy access to faculty and students alike (DH Theory and Practice, Foundations of Periodontics for the Dental Hygienists).[43,44] Dental hygiene programs may have initial success embedding brief MI training in their didactic clinical courses to provide coaching, role-playing, and feedback[45] to apply MI strategies (i.e. OARS, importance/confidence/readiness ruler, ask for elaboration) to elicit change talk and self-efficacy for lifestyle behaviors negatively impacting oral and general health that are often discussed during patient care (i.e. caries and periodontal disease process, head and neck cancers/OPCs, nutritional counseling, tobacco cessation). The incorporation of Objective Structured Clinical Examination (OSCE) with standard patients (SPs) is another way to evaluate student competency for the application of brief MI for a variety of health topics.

A caveat to embedding brief MI in DH curriculum is faculty 'buy-in' and training.[11,21] However, there are many resources available for faculty through the MINT,[46] Cardiff Training Workshops with the co-founder of MI, Stephen Rollnick,[47] and Psychwire.com with MI creators William Miller, Stephen Rollnick, and Theresa Moyers.[48] Professional development courses and videos are available on CareQuest Institute for Oral Health and at Kings College.[49,50] Additionally, Educators Platform offers MI MasterMinds providing content, assignments, and rubrics for DH curriculum.[51]

Innovative approaches for student and faculty training include the use of artificial intelligence technology such as generative artificial intelligence (genAI) and simulated environments such as virtual reality (VR). GenAI has promising programs for chatbots that understand and respond to user input, allowing both students and faculty to role-play by applying brief MI strategies. Character. AI is one such example of a free genAI program that allows the user to develop chatbots with relevant patient characteristics creating a unique simulated interaction for each learner. There are many benefits to using genAI and simulated patient encounters including cost, range of health conditions/behaviors, standardization of student experiences, and improved learning outcomes.[52,53] Considering the rapid pace of emerging technologies such as genAI and VR in education, DH education programs need to be forward-thinking and use technology as a tool to enhance student critical thinking skills and practice ethical-decision making.[54]

There are still gaps in the research on the theoretical reasons *why* MI works for individual behavior change. There is evidence that individuals' self-efficacy and behavioral regulation are core components for engaging and supporting the focus of the behavior change;[3,55] however, more research is needed to understand how MI enhances self-determination and autonomous motivation.[16,56–59] More studies are need with MI and vulnerable populations to address health disparities, promote patient-centered care, and improve patient outcomes. Additionally, future research needs to investigate sustainable interventions that address 'upstream variables' and ensure that MI is adaptable to diverse cultural contexts.

CONCLUSION

Motivational interviewing has emerged as an effective, evidence-based approach to fostering positive health behavior change across various health care settings, including DH. By emphasizing patient-centered communication and intrinsic motivation, MI supports individuals in making sustainable changes that improve oral and overall health outcomes. Embedding brief MI into the DH curriculum aligns with CODA standards and enhances students' ability to engage in meaningful patient interactions that promote preventive care and behavior change. As brief MI continues to be integrated into DH education, programs must prioritize faculty training, curriculum development, and assessment strategies to ensure its successful implementation. Students need to learn

communication techniques such as MI in safe and controlled settings. Emerging technologies such as genAI and VR offer promising avenues for enhancing MI training and facilitating interactive, standardized learning experiences for both students and educators. More research needs to be done on the efficacy of these technologies on improving learning outcomes and multicultural adaptations. Future studies focusing on self-determination and self-efficacy present significant potential for advancing knowledge and refining MI and brief MI interventions.

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