Motivational Interviewing: Assessment of Dental Hygiene Students' Perceptions of Importance in Using and Confidence in Applying

By

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DEDICATION

This work is dedicated to my daughter, Ava Marie Burman. You have inspired me in ways you may never understand. Thank you for the encouragement, love, support, and most of all your patience.

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CHAPTER I

INTRODUCTION

1.1 Problem Statement

Oral health has a significant impact on the overall health of adults and children.[1-4] Major oral diseases affecting these populations include dental caries, periodontal diseases, and oral and pharyngeal cancers.[1-5] The majority of oral diseases are preventable, yet millions of Americans suffer from these debilitating conditions.[2-5]

Dental caries is the most common chronic disease among children.[1-3] When left untreated, children not only suffer the negative outcomes from the disease, but also miss more than 51 million hours of school because of the negative ramifications.[1,2] Periodontal disease is a chronic inflammatory disease that affects half of American adults 30 years and over.[4] In addition to causing tooth loss, this infection also has been found to be correlated with systemic diseases such as cardiovascular disease, pulmonary disease, and diabetes.[4,6] Oral cancer is responsible for 8,000 deaths in the United States each year.[1-3,5] More than 30,000 new cases of oral cancer will be diagnosed annually with less than a 5-year survival rate.[1,5]

Oral diseases have a substantial negative impact on the United States population.[1-6] Patient adherence to recommended treatments and healthy behavior changes are essential in preventing oral diseases. Avoiding unhealthy lifestyle

behaviors combined with performing adequate home care have been shown to be effective in disease prevention.[5,7]

Counseling patients using methods of persuasion and confrontation have been shown to be ineffective in promoting lifestyle behavior change.[7] According to DiMatteo et al., traditional clinician recommendations on health behavior are generally not followed and can lead to disappointment for the clinician and a setback for the patient.[8] In 1983 research began on the use of Motivational Interviewing (MI).[7] MI is an evidence-based approach used to provide health behavior change counseling.[9-12]

1.2 Goal Statement

The goal of this study was to examine University of Michigan (U-M) dental hygiene students exposed to the enhanced MI curriculum and to assess both their perceptions of the importance of MI and their confidence in using it.

1.3 Specific Aims/Hypothesis:

Specific Aim *1:* Assess dental hygiene students' perception of the importance of using Motivational Interviewing in delivering health education to patients.

Null Hypothesis (H_0): Participating in the enhanced Motivational Interviewing curriculum will not increase students' perception of importance in applying MI skills in the delivery of health education.

Alternative Hypothesis (H_1): Participating in the enhanced Motivational Interviewing curriculum will increase students' perception of importance in applying MI skills in the delivery of health education.

Specific Aim 2*:* Evaluate dental hygiene students' perceptions of their confidence in their ability to deliver health education to patients using Motivational Interviewing techniques.

Null Hypothesis (H_0): Participating in the enhanced Motivational Interviewing curriculum will not increase students' confidence in their ability to use MI to elicit positive behavior change with their patients.

Alternative Hypothesis (H_1): Participating in the enhanced Motivational Interviewing curriculum will increase students' confidence in their ability to use MI to elicit positive behavior change with their patients.

1.4 Significance

Motivational Interviewing is an evidence-based, patient-centered counseling approach for eliciting behavior change.[10-12] Using a non-authoritative approach focusing on interpersonal communication, MI enables the patient to naturally break through uncertain thoughts, feelings, and attitudes to achieve positive health behavior change.[11,12] Studies have shown incorporating Motivational Interviewing into health care curriculum has positive effects on students' abilities in discussing health behavior change with patients.[13] In 2012, the U-M Dental Hygiene Program embarked on a project to develop an enhanced MI program and integrate it into the curriculum. The desired outcome was for students to translate content learned in the classroom into clinical application during patient care.

In evaluating the University of Michigan Dental Hygiene Program MI curricular enhancement, it was important to assess the effect it has on student learning and as well as students' ability to apply it in the clinical setting. Assessing the student

perceptions on the importance of MI and the confidence they have in using this skill provided information on the effectiveness of the curriculum and the likelihood that students will incorporate this technique into their professional patient care.

There is no available research on the impact of Motivational Interviewing education on dental hygiene students' perceptions of importance of MI, and the confidence they have in applying MI in the delivery of health education.

1.5 Thesis Overview

A broad overview of this thesis is provided to aid the reader. In Chapter II, Review of the Literature, the author first presents a summary of the impact of oral disease on overall health, current health behavior change methods and Motivational Interviewing. The later sections of this chapter will provide the reader with detailed descriptions of the spirit of MI as well as principles and strategies. This chapter also discusses MI's application to overall heath as well as oral health, its use in health professions education, MI training, perceptions of importance and confidence, gaps in the research, and conclusions. Chapter III describes the Materials and Methods used for this study. Chapter IV provides the Results in detail, and Chapters V and VI offer the Discussion and Conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

2.1 Impact of Oral Disease on Overall Health

Oral health has a significant impact on the overall health of adults and children.[1-4] Major oral diseases affecting these populations include dental caries, periodontal diseases, and oral and pharyngeal cancers.[1-5] Most oral diseases are preventable, yet millions of Americans suffer from these debilitating conditions.[2-5]

Dental caries is the most common chronic disease among children.[1-3] When left untreated, children not only suffer the negative outcomes from the disease, but also miss more than 51 million hours of school because of the ramifications.[1,2] Periodontal disease is a chronic inflammatory disease that affects half of American adults 30 years and over.[4] In addition to causing tooth loss, this infection also has been found to be correlated with systemic diseases such as cardiovascular disease, pulmonary disease, and diabetes.[4,6] Oral cancer is responsible for 8,000 deaths in the United States each year.[1-3,5] More than 30,000 new cases of oral cancer will be diagnosed annually with less than a 5-year survival rate.[1,5]

Caries, periodontal diseases and oral cancer have the potential to be prevented by altering lifestyle factors.[2,5,6] Patient adherence to recommended treatments and healthy behavior changes are essential in preventing oral diseases. Avoiding unhealthy

lifestyle behaviors combined with performing adequate home care have been shown to be effective in disease prevention.[5,7]

The U.S. Department of Health and Human Services developed the Healthy People 2020 initiative to create science-based objectives for improving the health of Americans.[4] One of these objectives is to promote quality of life by encouraging healthy behaviors, and motivating individuals toward making educated health decisions.[4] Significantly, Healthy People 2020 recognizes the need for primary care practitioners to provide health counseling for their patients.[4] Health care practitioners with little experience in counseling patients in behavior change may be more likely to perform screenings that they get reimbursed for rather than focus on behavior modification counseling.[9] Formal, rigorous training in behavior change counseling is imperative for health care practitioners because of their limited background in counseling and communication skills.[9] In addition, a study by Kushner surveyed 1,030 private practice physicians and reported barriers to delivery of counseling were lack of time, patient noncompliance, inadequate teaching materials, lack of counseling training, lack of knowledge, inadequate reimbursement, and low physician confidence.[14] To address this need it is essential for health care practitioners to be proficient in counseling their patients in health behavior change using an evidence-based approach. Incorporating effective behavior change strategies may alleviate the problem of noncompliance and improve the quality of patient care and outcomes.

2.2 Current Health Behavior Change Methods

Counseling patients using methods of persuasion and confrontation have been shown to be ineffective in promoting lifestyle behavior change.[7] According to DiMatteo

et al. traditional clinician recommendations on health behavior are generally not followed and can lead to disappointment for the clinician and a setback for the patient.[8] Conventional healthcare focuses on what patients lack such as knowledge, skills or medication.[7] Patients then are looking for health care practitioners to provide them with a cure or a medication to alleviate symptoms, when in fact the focus should be on lifestyle changes and prevention.[7] This traditional approach to behavior change counseling can cause resistance because people have a natural tendency to resist persuasion, especially when a patient is feeling uncertain (ambivalent) about the desire to change.[7]

There are a number of health promotion theories that support efforts to increase health and wellness. These theories can be categorized into three levels: intrapersonal, interpersonal, and community.[15] In looking at behavior change with patients, the focus is on the intrapersonal level. Theories at this level include the Health Belief Model and the Stages of Change/Transtheoretical Model.[15] The Health Belief Model concentrates on a person's perceptions of a health issue or problem and their perceived level of susceptibility to the problem. The model also takes into consideration the person's perception of the severity of the health issue, benefits to taking positive action, barriers to making change, cues to actions that activate readiness, and self-efficacy or confidence in making the change.[15]

Another intrapersonal health promotion theory is the Transtheoretical Model. This theory was established by Prochaska and DiClemente, is cyclical in nature and hypothesizes that people are in a different stage of change at different times.[16] The stages include precontemplation, contemplation, preparation, action and maintenance.[15]

Understanding these concepts can help health care practitioners determine if a patient is ready to change or needs assistance moving to the next stage.[15] This theorizes if a patient is in the precontemplation stage they are not aware of risks or benefits and need more information. The contemplation stage is described as a patient thinking about change and the health care practitioners can assist them by motivating and encouraging the patient to move to the next stage.[15] Health care practitioners work collaboratively with patients to create a plan when they are in the preparation stage.[15] Once a patient is in the action stage they need to have the positive behavior reinforced.[15] The final stage is maintenance and its purpose is to avoid relapse through the use of reminders and assistance with coping if slips happen.[15]

2.3 Motivational Interviewing

Motivational Interviewing (MI) is an evidence-based approach used to provide health behavior change counseling, incorporating concepts from intrapersonal health promotion theories.[7,9,11] Instead of the clinician being an authority figure, MI is patient-centered and helps individuals work through their own uncertain thoughts, feelings, and attitudes to achieve positive health outcomes.[9,11] MI is different from traditional methods of behavior change counseling because it focuses on collaboration not compliance. It empowers the patient and reinforces a positive relationship between the practitioner and the patient.[9,11] Using MI has been shown to improve the health care provider's rapport with their patient.[9,11] This offers an individual the autonomy of making their own decisions in a positive and encouraging environment.[9,11] Motivational Interviewing application increases the likelihood that patients will adhere to health

recommendations.[9,11] Positive patient behavior outcomes have been demonstrated when health care providers use MI techniques with patients.[17-19]

In 1983 research began on the use of Motivational Interviewing by Miller and Rollnick.[7] They initially began research on MI in the area of addiction counseling. MI then evolved and expanded into an evidence-based, patient-centered counseling approach for eliciting behavior change that can be beneficial for chronic conditions and lifestyle behavior modification as well as addiction counseling.[9,11] Miller and Rollnick found using a non-authoritative approach focusing on interpersonal communication enables the patient to naturally break through uncertain thoughts, feelings, and attitudes.[9,12]

2.3a Spirit of Motivational Interviewing

The spirit of MI was influenced by the client-centered counseling theory Carl Rogers developed in 1953.[20] Miller and Rollnick describe this spirit as collaborative, evocative, and autonomous.[11] Collaboration between clinician and patient permits a positive relationship, allowing for change to occur.[11] MI evokes patients' personal motivation, channeling their own values, good reasons, and resources to make lifestyle changes.[11] A component of evoking motivation from patients is eliciting patient articulation of their goals and aspirations in which the practitioner does more listening than talking.[9,11] Another key component regarding the spirit of MI is patient autonomy. This means the decision in the direction of change is ultimately up to the patient.[9,11] Chan et al. measured the impact of physiotherapists' autonomy-supportive behaviors on patients' motivation and rehabilitation adherence.[21] Findings demonstrated the greater the importance placed on patients' autonomy, the more likely they will adhere to

changing behaviors and the less emphasis on the expert role of the clinician, the greater the likelihood patients will be adherent to the behavior change.[21]

2.3b Motivational Interviewing Principles

The four main principles of MI are expressing empathy, developing a discrepancy, rolling with resistance, and supporting self-efficacy.[9,11] One way for a clinician to express empathy is through reflecting upon what the patient says, thus showing concern and understanding.[9,11] This allows the patient to feel acknowledged and enables them to elaborate on their feelings. Another MI principal is to develop a discrepancy between where the patient is now, and where they would like to be.[9] The third principle is rolling with resistance. This is achieved by avoiding tension between the clinician and patient relationship. The clinician needs to avoid confronting and arguing with the patient. The fourth major MI principal is to support self-efficacy. Clinicians can promote self-efficacy by building up the patient's confidence in their ability to change.[9,11]

2.3c Motivational Interviewing Strategies

Effective MI strategies help achieve desired behavior change. MI strategies that support an individual's motivation to change consist of asking open-ended questions, providing affirmations, reflective listening, and summarizing. Open-ended questions are those that cannot be answered with "yes" or "no." Asking open-ended questions allows the patient to elaborate on their situation and perception, allowing the clinician to elicit more information than closed questions.[7,9,11] Once a patient explains their experience or is done explaining their situation, a clinician should provide an affirmation, encouraging the patient to recognize their own strengths.[7,9] This assists in building the individual's

confidence as well as rapport between patient and practitioner.[7,9,11] Another core strategy is reflective listening. The purpose of reflective listening is to communicate empathy and affirm to the patient that their perspective is understood and validated.[9,11] This is achieved by repeating and paraphrasing what the patients states. Eliciting change talk incorporates exploring goals and values helping the patient develop a discrepancy between where they are now and where they would like to see themselves.[9,11] Using a pros/cons list is one way a patient can develop a discrepancy.[9,11] This investigates the patient's internal reasons for change and is an element that impacts individual behavior.[9,11] When someone talks about their own desire to change, they are more likely to actually make that change.[9,11] The fourth MI strategy is summarizing, used to wrap up the conversation and presents the discrepancy between current behavior and desired behavior.[9,11] It is a specialized form of reflective listening that highlights significant parts of the conversation and allows the clinician to guide the conversation into a productive direction.[9,11] Through the spirit, principles and strategies of MI, the patient is brought in as an active participant.[9,11]

2.4 Application to Overall Health

For the first time in history, the current population of children and young adults may be less healthy than their parents.[22] Some prevalent chronic illnesses include diabetes, cancers, heart and liver disease, and obesity.[22] In the United States 70 percent of deaths are caused by chronic conditions.[22] Often these conditions can be managed through behavior and lifestyle changes. MI can help patients change high-risk behaviors such as smoking, poor diet, and excessive alcohol intake, which contribute to chronic diseases.[7]

MI is being utilized successfully in many health settings, producing significant practical outcomes.[23] A meta-analysis of studies using MI by Rubak et al. showed patient adherence to behavior change was predominantly improved among those with chronic conditions such as hypertension, hypercholesterolemia, intestinal disease, and sleep apnea.[24] A study by Olsen examined patient adherence and acceptance of continuous positive airway pressure (CPAP) machines and after a counseling session using MI, notable improvements were made.[22] CPAP machines are used to treat patients with sleep apnea and obesity which can be one of the main risk factors for obstructive sleep apnea. Patients receiving MI were six times more likely to accept treatment than the control group.[25]

Most chronic oral diseases are preventable and related to lifestyle choices made throughout an individual's lifetime.[5] Oral healthcare practitioners treat acute conditions when a patient is in pain, and also deal with chronic conditions for which the patient is responsible through continued self-management.[11] Oral disease etiology includes oral biofilm, poor oral hygiene, poor diet, stress and tobacco use.[5] These behaviors that cause chronic oral diseases can be reshaped with the assistance of an oral health care practitioner.[5] Among health care providers, dental hygienists have a unique opportunity to facilitate health behavior changes because their patients are inclined to visit the dental office on a regular basis.[26] These repeated interactions allow the clinician and patient to build a collaborative relationship where the clinician has a deep understanding of the patients situational factors and can provide support for behavior change.[26] Dental hygienists are prevention specialists, educators and health promoters. Understanding methods of educational theory to develop health promotion strategies assists in the assessment of health needs of their patients.[26]

2.5 Application to Oral Health

A study by Jonsson et al. showed application of MI techniques increased patient compliance with home care and enhanced oral hygiene in those undergoing periodontal therapy.[27] Studies by Weinstein et al. revealed children whose mothers received MI counseling related to the child's oral health had fewer carious lesions than children whose parents were not provided with MI counseling.[16,17] In one study, Weinstein used a control group of parents who were provided health education using a video and pamphlet outlining instructions on dental care for their children.[16] The experimental group received information and guidance using MI[16,17] The children of the MI instructed parents had significantly fewer carious lesions and were more adherent to fluoride varnish application regimens.[16] This study concluded that MI can be a promising approach in dental settings.[16] Another study by Weinstein et al. followed participants a year after the MI intervention and demonstrated a reduction of new caries in children whose parents were provided home care education using MI techniques when compared to the children of parents who were shown a video and given a brochure.[17] This study demonstrated MI was effective over time and not just short term.[17]

Brief motivational interviewing has also shown to be effective in health promotion. Brief interventions, between 5-15 minutes long, encourage patient problem solving, elicit change talk, and provide a set of options for planning the next steps of the change.[11] Rubak et al. found brief MI to be effective over traditional methods of health behavior change education even when delivered as 15-minute exchanges.[24] López-Jornet et al. compared oral hygiene instruction outcomes in hyposalivation.[28] Both groups had significantly lower plaque indices, bleeding indices, and an improvement in probing depths after the 2-month study period.[28] However, the experimental group that received

education using MI techniques demonstrated significantly greater adherence to interproximal brushing.[28]

2.6 Incorporating MI into Health Professions Curricula

Health behavior change is an important concept for practitioners to understand when treating chronic conditions attributed to lifestyle choices.[7,11] With a much greater emphasis on management and prevention of disease, patients are more likely to adhere to treatment when health care practitioners provide them with information, along with patient-centered health behavior change counseling.[29] Health care practitioner communication has a significant positive correlated with patient adherence.[29] Learning effective health promotion skills takes practice and time.[9] According to Emmons and Rollnick failure to properly train health care providers will result in inadequate adoption of the counseling style.[9] Incorporating Motivational Interviewing into health care curriculum has positive effects on practitioners' abilities in discussing health behavior change with patients.[30]

Health care providers' ability to successfully deliver health care education is imperative for the long-term health of patients.[11] Important factors in education are practitioners' perceptions of patients and application of effective models of communication by the clincian.[9] A rigorous curriculum that enables students to have the opportunity to develop these skills is important.[9] Knowledge, practice, and experience also are among the essential elements necessary for success.[9] Students perform better when they understand the material, have a positive attitude, and have an array of skills gained by practicing.[31] Teaching students effective interviewing and communication, such as MI, is attained by connecting theory to practice. In order for

health education strategies to be assimilated into the clinical setting, appropriate training and education are needed. Incorporating health education into program curricula is necessary to give students time to develop the skills and have confidence in applying them.[9] MI is challenging and involves a complex set of skills that requires training and practice to be done effectively.[30]

A study by Haeseler et al. included 99 Yale University medical students. This study demonstrated that medical students who participated in a 2-hour curriculum in MI, compared to students who had not had this training, were significantly more proficient in their use of the importance and confidence ruler technique.[31] While there was no difference in their use of patient-centered counseling skills, there was a tendency to be inconsistent with other MI strategies including collaboratively discussing plans for changing behavior.[31] White et al. recommended providing the students with specific feedback on their areas of strength and weakness and placing more emphasis on self or peer-evaluation of practice performance may be beneficial to include in the MI curricula.[34]

2.7 Motivational Interviewing in Dental and Dental Hygiene Education

Unfortunately, past educational focus on health behavior change was often minimal in the dental and dental hygiene curricula.[11] In the United States the dental board exams have limited questions on aspects of behavior change, or ways clinicians can aid their patients in modifying negative lifestyle behaviors.[11] More educational emphasis should be placed on the psychological and behavioral aspects of patient care focusing on overall improved quality of life.[11] An important element in achieving this is communication. Being novices in the profession, students may often perceive

themselves as effective communicators, but in reality, they may be doing a poor job.[11] This is why the interpersonal communication aspect has to be evaluated, practiced, and well-assessed.[11] Training research indicates that proficiency in MI is not readily developed through self-study or by attending a workshop, but typically requires practice with feedback and coaching over time.[29] Education activities need to include clinical instruction along with repeated assessment and feedback, all of which are imperative in building student confidence.[35]

A study by Koerber et al. examined dental students smoking cessation counseling interactions with standardized patients utilizing brief MI.[36] Significant differences were found between the MI trained and the untrained groups.[36] In the trained group students applied more brief MI techniques and patients were more actively involved.[36]

Dental hygienists are uniquely positioned to counsel patients on health behavior change because they are trained in health promotion and prevention techniques.[24] Croffoot et al. studied the effects of coaching dental hygiene students while being taught to use MI strategies.[13] The results indicated that education in combination with faculty coaching/feedback provided achievement of some core MI skills and increased MI adherence by the students.[13] In order for dental hygienists to be proficient with MI and develop confidence in its application they need to be exposed to this early in the dental hygiene curriculum so they have time to develop skills.[13] Real skill and confidence grow through rigorous practice, feedback, and coaching from a knowledgeable guide.[29]

2.8 Perceptions of Importance and Confidence

A pilot study by Wiley et al. measured health care practitioners' perceptions of Motivational Interviewing training for facilitating behavior change among patients. Practitioners in this study included dieticians, pharmacists, nurses, and social workers.[37] Before MI training their perceptions of health behavior change consisted of low perceived confidence and competence in the ability to help others with feelings of frustration.[37] After a 7.5 hour workshop on MI, practitioners' perceptions were assessed and resulted in a renewed inspiration and motivation to facilitate behavior change. Also noted was a desire to partner with patients with less focus on advice giving, a feeling that behavior change is easier and less stressful than anticipated, higher levels of competence and confidence, and greater mindfulness of practitioner impact.[37]

Students need to value what they are learning, feel it is important, and have the confidence to apply concepts learned. In a study, Humair et al. used a self-administered questionnaire to assess students' perceptions of MI curriculum related to smoking cessation counseling techniques.[38] The students participated in two four-hour sessions of smoking cessation training that took place two weeks apart allowing students time to practice MI and reflect between sessions.[38] The sessions incorporated role play activities, observation of others, and practice with standardized patients.[3] The results revealed the students valued the importance of this curriculum and the skills they attained and also enjoyed their involvement in learning activities.[38] White et al. delivered an evaluation to 112 students after the introduction of a MI curriculum that consisted of a lecture series and small group teaching, role playing activities, and evaluation of MI video recordings. Eighty-three percent felt that the MI curriculum helped them be more

comfortable in discussing behavior change with patients and 98% felt it was an important skill for physicians to have.[34]

A study by Perry et al. assessed the role confidence plays in nursing students' learning[39] This study found that a decrease in confidence unfavorably impacts the accomplishment of meeting learning objectives and goals.[39] A study by Bell et al. assessed medical students' success with promoting health behavior change through a newly implemented MI curriculum.[40] The study measured medical student confidence in utilizing MI after four two-hour training sessions and found they were more confident.[40] Student confidence can be increased by actually performing skills rather than merely observing.[41] Teaching students effective interviewing and communication skills is attained by connecting theory, knowledge, practice through exposure. Students perform better when they understand the material, have a positive attitude about the content, and have an array of skills gained by practicing.[41] Kaufman et al. examined medical students' communication confidence when observing, assisting, or performing the procedures and found that students who performed the procedures had higher confidence levels than those students who only observed or assisted.[41]

2.9 Survey Research

Survey research is a common, efficient, and productive method for investigating a wide array of educational questions.[42] Surveys are used in institutional settings and can elicit data on opinions and perceptions.[42] Data is collected by communicating with people and asking them for information using questionnaires, telephone interviews, or face-to-face interviews.[42] Survey research standardizes variables in a study to analyze relationships between specific variables.[42] Sample populations are used in survey

research and inferences are made from the data.[42] Causality can be inferred from longitudinal survey data by looking at variables over different points in time.[42]

Weaknesses of survey data can arise from the way questions are asked, characteristics of the respondents, the way questions are written or the approach interviewers use in asking the questions.[42] Using existing and previously validated survey instruments, attractive questionnaires, refined test questions, and open and closed ended questions are recommended in survey reseach.[42] Building upon existing instruments designed around a specific topic or key concept can ensure the questions are relevant and the instrument is reliable.[42] A mix of open and closed-ended questions can have many benefits. Closed-ended questions are easily analyzed and open-ended questions provide the investigator with a wealth of information, including the perceptions of individuals.[42] A clear, neat, and spacious questionnaire will be less confusing for both the respondent and the investigator.[42] Utilizing a pilot study can be one of the best ways to make certain the questions are valuable and clear.[42]

In addition to saving time and expense, another significant advantage to survey research is there are often fewer risks to participants.[43] A cover letter should be used to increase credibility, catch the interest of participants, and explain ethical considerations such as voluntary participation and confidentiality.[43] Another advantage to survey research is the ability to use surveys to address a variety of research questions. Surveys can aid in curriculum development and evaluation in educational settings and can be easily administered online if desired.[43]

The retrospective pre-test is different from the traditional pre-test-post-test design because both post-test and pre-test perceptions of respondents are collected at the same time.[44] The retrospective pre-test questionnaire asks respondents to answer

questions about their level of understanding or skill after an intervention and to think back to their understanding prior to the intervention.[44] A strength of the retrospective pre-test is the ability to gain perceptions that may not have been understood by participants prior to the intervention such as terminology or new concepts only understood after the intervention. Used appropriately, retrospective pre-test surveys and post-test combinations yield the most comparable levels of criterion validity and the least biased measures of program effectiveness.[45] Replacing the traditional pre-test with the retrospective pre-test is recommended as a practical and valid means to determine program outcomes, controlling for the effects of response–shift bias and sensitization effects.[46] Hill recommends the use of retrospective pre-tests for examination of subjective experiences related to curricular change.[45]

2.10 Gaps in the Research

The way dental professionals obtain new health behavior change methods is not well documented.[11] This leads to a limited understanding of how new information from research studies is incorporated into clinical practice.[11]

2.11 Conclusions

Chronic diseases have an increasingly negative effect on the U.S. population.[1-6] Health professionals have the challenge of not merely treating a treating a wide array of acute signs and symptoms, but also need to understand how to plan interventions and help patients modify lifestyle behaviors related to chronic illnesses.[3,5,7,9,11] Health care practitioners need to understand proven behavior change theories and models to develop an understanding of the tools that are available to guide patients through lifestyle modifications. MI is an evidence-based approach proven to be an effective

method to counsel ambivalent patients in the direction of behavior change.[7,11] MI can be appropriate for improving oral health and overall health.[7,11]

Dental hygienists focus on prevention, health promotion, and disease management.[24] Incorporating MI appropriately in the dental hygiene curriculum provides students with an opportunity to translate content learned in the classroom into clinical application during patient care. Regular and specific feedback on application-based activities is recommended to support this outcome. Oral health care professionals need to stay abreast of health promotion strategies and have the confidence to use them in everyday practice.

Assessing student progress during the motivational interviewing education and application is critical in evaluating educational outcomes. Another important factor for student success is determining students' perceptions of the importance of motivational interviewing, and their confidence in applying MI techniques. In addition, it is imperative to assess the effect it has on student learning and as well as their ability to apply it in the clinical setting. Importance and confidence play an important role in the likelihood that students will incorporate MI into their professional patient care.[38] Research on students' perceptions of MI curriculum will benefit future educational activities and give insight as to how students learn MI strategies. Survey research, when conducted properly can be an effective way of gathering this information.[42-46]

CHAPTER III

MATERIALS AND METHODS

3.1 Study Population

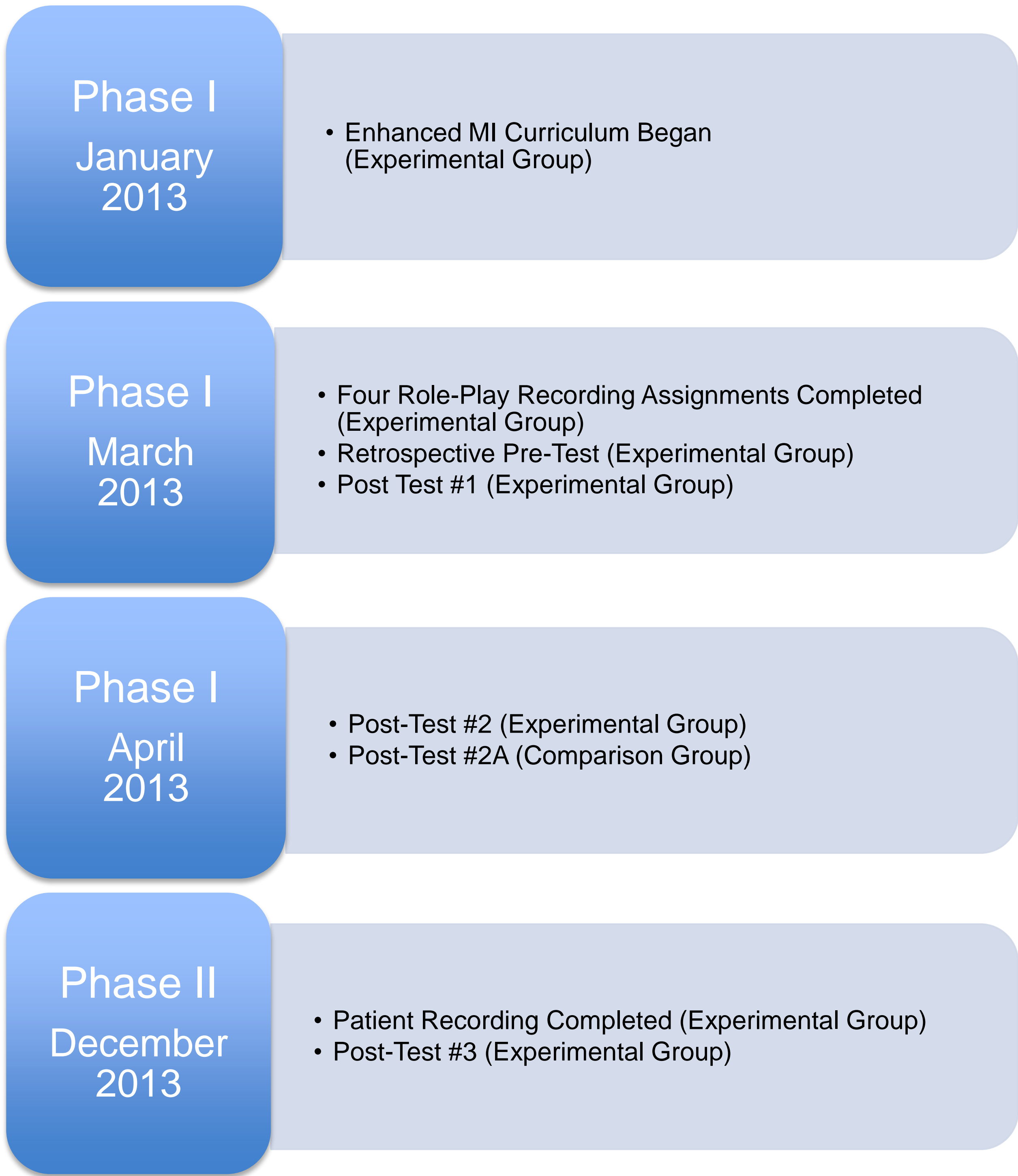
A convenience sample of 22 first-year University of Michigan (U-M) dental hygiene students from the Class of 2015 (experimental group) enrolled in DENTHYG 338-Health Education Methods class participated in Phase I of the study. Within DENTHYG 338, the students participated in 10 consecutive fifty-minute sessions of the enhanced MI education and skill instruction. A comparison group consisting of 28 dental hygiene students from the Class of 2014 and 25 students from the Class of 2013, who did not experience the enhanced MI curriculum, also participated. The four evaluation instruments focused on assessing students' perceptions of the importance of using MI, and their confidence in doing so when delivering health education. This data collection phase of the study spanned from January 2013 to April 2013.

Phase II of this study exclusively included the dental hygiene students from the Class of 2015. This portion of the study focused on the application of Motivational Interviewing during patient care.

Below is a timeline that documents both phases of the study and the associated MI evaluation instruments used.

MI Evaluation Instrument Timeline

- Experimental Group: Class of 2015
- Comparison Group: Classes of 2013 and 2014



3.2 Phase I

3.2a DENTHYG 338-Health Education Methods Curriculum

Health Education Methods (DENTHYG 338) is a 14-week course delivered in the Winter semester of the first year of the three-year U-M Dental Hygiene (DH) Program curriculum. The 10 class sessions for the MI curricular content were delivered during February and March. Prior to DENTHYG 338, during the Fall semester of the first year of the U-M DH Program, students were introduced to the concepts of MI and experienced practice focusing on active/reflective listening using a Standardized Patient Instructor (SPI). During DENTHYG 338 the students were assigned to read MI literature, watch videos depicting scenarios of a MI counselor with a patient, and were required to complete four audio-recorded role-play assignments applying MI skills. For the first three role-playing assignments, the students were placed in groups, and instructed to use a different partner for each assignment. For the final recorded assignment, the student was asked to use an acquaintance outside of class. The interactions were recorded using a Philips digital audio recorder then uploaded online to an M+Box folder, providing students and faculty access to the recordings. M+Box is a password-protected environment integrated into CTools (U-M Learning Management System) enabling the secure electronic storing and sharing digital data files.

3.2b Evaluation Instruments

The four evaluation instruments used in Phase I of this study were adapted from those used by the University of Missouri-Kansas City Dental Hygiene Program during the assessment of their Motivational Interviewing curriculum. Modifications were completed in consultation with U-M's Center for Research on Learning and Teaching

(CRLT). The modified instruments were then pilot-tested by two faculty members who have been involved with MI faculty professional development training. The faculty members were asked to complete the survey instruments and then fill out a feedback form with comments and suggestions (Appendix A). Their recommendations were considered for incorporation into the evaluation instruments.

Clinical Dental Hygiene Proficiency Assessment: Preventive Education (Appendix B)

The “Clinical Dental Hygiene Proficiency Assessment: Preventive Education” was utilized throughout this study. Both students and faculty used this proficiency form to assess audio-recorded MI role-playing interactions during DENTHYG 338. Questions 12 & 13 of this form ask students to self-assess their perceptions of the importance of using MI, and confidence in applying MI techniques. Four faculty members team-graded each recording and provided feedback to individual students. Details on assignments using the Preventive Education Proficiency can be found in Appendix C.

Audio-recorded assignment #1 focused on the students’ application of open-ended questions, affirmations, reflective listening, and summarizing (OARS) principles. Assignments #2 and #3 were combined. Assignment #2 asked that their partner identify a ‘real’ behavior change they wanted to make. Using complex reflection (values and emotions), the student was to use the reflection only to elicit and guide information from the patient. The student was to identify ambivalence from the patient and then used a double-sided reflection (pros/cons statement) to continue moving the patient toward change talk. There was a minimum of one question to every 3 to 4 reflections. The goal of audio Assignment #4 was for the dental hygiene student to assimilate all the MI techniques learned throughout the semester, and guide their patient through a behavior change discussion.

Retrospective Pre-Test: (Appendix D)

A Retrospective Pre-Test was delivered at the end of the 10 MI class sessions in DENTHYG 338 to the Class of 2015. This assessed the students' perceptions of how important they believed utilizing the MI counseling strategies were before the start of the course. This also assessed how confident the students were with using MI before DENTHYG 338. The MI strategies that were evaluated included: using open-ended questions, listening reflectively, making affirmations, summarizing, eliciting change talk, using the importance ruler, asking for elaboration, and enhancing self-efficacy. The Retrospective Pre-Test collected both importance and confidence responses using a Likert scale rating (0= unable to answer, 1= not very important, 2= of little importance, 3= neutral, 4= somewhat important, 5=very important). The following demographic information was also collected: gender, age, and years of college prior to entering the U-M DH Program.

Post-Test 1: (Appendix E)

Post-Test 1 was delivered to the Class of 2015 at the end of the 10 MI sessions in DENTHYG 338. This assessed the students' perceptions of the importance of MI and their confidence in using it after completing the educational training. It utilized the same questions and Likert scale response options as the Retrospective Pre-Test.

Post-Test 2: (Appendix F)

This assessment was delivered to the Class of 2015 on the last day DENTHYG 338. This assessed the students' perceptions of the importance of MI and their confidence in using MI based on responses to the same questions and Likert scale response options as the Retrospective Pre-Test and Post-Test 1. This created an additional opportunity to measure the change in students' perceptions after the 5

weeks that passed since the completion of the MI content included in DENTHYG 338. Additional questions included evaluating students' ability to apply MI skills in clinic and assessing their perceptions of different aspects of the MI content covered in DENTHYG 338.

Post-Test 2 A: (Appendix G)

For comparison purposes, a modified version of Post-Test 2 was delivered to the U-M DH Classes of 2013 and 2014. These students received an abbreviated MI curriculum when they were enrolled in DENTHYG 338 during the Winter semester of the first year in the DH program. This included learning about MI during a class session talking about behavior change models. There were no associated assignments related to MI, nor were students evaluated on this during the final exam. However, both classes participated in a 4 hour "Rx for Change" tobacco cessation program presented by GlaxoSmithKline in March 2012, which included review of MI techniques and participation in short group practice session. Also, the members of the Class of 2013 were evaluated on their use of MI for tobacco cessation counseling during a clinical encounter with a Standardized Patient Instructor in February 2013.

3.3 Phase II

3.3a MI Curriculum within DENTHYG 312-Clinical Dental Hygiene Seminar

In the fall of 2013 (third semester of the DH program) during DENTHYG 312-Clinical Dental Hygiene Seminar, the Class of 2015 viewed a video entitled, *Motivational interviewing: Clients arguing for change -- Introducing DARN-C.* After viewing the video,

students were required to complete a worksheet asking them to critically analyze change talk and commitment strategies demonstrated.

Additionally, the students participated in a 110-minute class session delivered by Kenneth Resnicow, PhD, and Professor Health Behavior & Health Education in the U-M School of Public Health. Dr. Resnicow is an expert in the area of MI use for disease prevention. His presentation focused on eliciting change talk and setting the agenda for change with patients. During this semester, students were also required to audio record an educational interaction with a patient in clinic. Using the Preventive Education Proficiency form, students self-assessed their interaction, including their perceptions of importance of MI and their confidence in applying MI techniques. The team of faculty members also used this proficiency form to assess the students' recorded interactions and provide feedback.

3.3b Evaluation Instrument

Post-Test 3: (Appendix H)

Post-Test 3 was administered to the Class of 2015 at the end of the Fall 2013 semester. The Post-Test 3 was used to again measure students' perceptions of the importance of MI and their confidence in using MI in delivering health education. There were additional questions about how valuable they felt their MI education was, and if they were able to apply it during patient care. At the point when this was delivered, the students were in their second semester of patient care in clinic.

3.4 Data Analysis

SPSS version 21 was utilized for data analysis. A series of paired t-tests were used within the class of 2015 to see if differences exist between retrospective pre-test

and post-tests. Another series of paired t-tests were also used to analyze the importance and confidence questions asked in the Preventive Education Proficiency from the Class of 2015, who completed their self-assessment of importance/confidence using this form five times. Analyses of the Classes of 2013, 2014, and 2015 students were compared with a series of one-way ANOVAs, evaluating three discrete groups and continuous outcomes of interest to determine which cohorts were significantly different.

To assess open-ended question results three reviewers identified themes found from each question's responses. Individually, each reviewer identified their own categories of themes per question. These themes were then shared and grouped into like categories. The reviewers then achieved consensus on three theme categories per question. With consensus categories then established, each reviewer individually inserted student responses into each theme category. These responses were then coded according to those agreed upon by all three reviewers, responses that had two person agreement, or responses with only one person identifying a response in a theme category. The reviewers then came to consensus regarding issues such as dividing up sentences that had multiple themes (i.e. time and patient issues). Then for several remaining questions where consensus had not yet been reached, re-coding took place one more time and full agreement was established on the appropriate theme. Descriptive statistics were used to report response theme outcomes.

3.5 Limitations

A limitation to this study was the lack of a control group within the Class of 2015. Although there was comparison group they were from the Classes of 2013 & 2014. Also, there were only 22 students in the Class of 2015 which limited statistical power.

3.6 Human Subjects

This study requires the involvement of human subjects. The Institutional Review Board at the University of Michigan approved this study as exempt.

3.7 Consultants/Collaborators

There were two consultants involved with this study. Janet Kinney, RDH, MS, is the course director for DENTHYG 338-Health Education Methods where the MI curricular enhancement has been implemented for the Class of 2015. Professor Kinneyis Clinical Assistant Professor & Director of Dental Hygiene in the Department of Periodontics and Oral Medicine (U-M) and a Research Fellow at the Michigan Center for Oral Health Research. She has been involved with planning and implementation of the curriculum change. Dina Korte, RDH, BSDH, MS, Clinical Lecturer, Department of Periodontics and Oral Medicine, School of Dentistry, co-taught DENTHYG 338 with Janet Kinney (Appendix I).

CHAPTER IV

RESULTS

The experimental group consisted of 22 study participants from the Class of 2015. Descriptive statistics for this group are provided in Table 1. Over 90 percent of the participants were female (n=20). Four years of college was the largest category regarding years of college prior to entering the U-M Dental Hygiene Program (31.8%) (n=7), and the range was 1-6 years of previous college. The mean age of the participants was 23.05 years, with the youngest being 19 and the oldest reported as 32 years.

A t-test was used to compare the Class of 2015 means and standard deviations reported for the importance and confidence questions at each time point (Table 2). Significance was set at ($p<0.05$). On average students rated the importance of "affirmation" at time 1 (Retrospective Pre-Test) to be 3.27 and by time 4 (Post-Test 3) the importance of "affirmation" was rated to be 4.19. This change over time was found to be statistically significant ($p<0.001$). Additional significant increases of importance were found between time 1 and time 4 in "summarizing," "eliciting change talk," using the "importance ruler," and "enhance self-efficacy." No significant difference was found between time 1 and time 4 for "ask for elaboration," "listen reflectively," and "use of the importance ruler."

Confidence in “using affirmations” at time 1 (Retrospective Pre-Test) was on average rated 3.00 and by time 4 (Post-Test 3) the confidence of “affirmations” was rated 4.24. This change over time was found to be statistically significant ($p<001$). On average confidence in “summarizing” at time 1 was rated 3.14 and at time 4 “summarizing” was rated 4.29, this change over time was found to be statistically significant ($p=.000$). Significant changes ($p<.001$) were found between time 1 and time 4 ratings in “elicit change talk,” the “importance ruler,” and “enhance self-efficacy” with all of the overall scores Increasing over time. No significant changes between time 1 and time 4 were found for “listen reflectively.”

Using the Proficiency Evaluation, self-perception of the importance of MI and confidence in apply MI skills was evaluated for the Class of 2015 using a t-test. Students self-assessed their performance using a scale of satisfactory (S), improvement needed (I), and unsatisfactory (U). These were computed numerically to S=1, I=2, and U=3. For those in the Class of 2015, means and standard deviations are identified for the importance and confidence questions from the proficiency assessment assignments (Table 3). On average students rated the importance at time 1 (Assignment 1) to be 1.16 and by time 5 (student recording of patient interaction) the importance score increased to 1.21. However, this change over time is not statistically significant. Further, on average students rated their confidence at time 1 as 1.42 and by time 5 their confidence score increased to 1.47 but this was not statistically significant.

Comparisons between the Class of 2015 (experimental group receiving the enhanced MI curriculum) and the Classes of 2013 and 2014 were analyzed using a one way ANOVA. Table 4 presents the Post-Test 2 means and standard deviations for both importance and confidence questions broken out by graduating class (Classes of 2013

[n=24], 2014 [n=28], and 2015). Significant ($p<.05$) cohort differences were found for importance of make “affirmations,” “elicit change talk,” and use of the “importance ruler.” Similarly, significant changes were found for confidence in “elicit change talk” and use of the “importance ruler.” Of the importance questions identified with significant differences, 2013 had the highest average scores, 2014 had the next highest, and 2015 had the lowest on average (Table 3). The 2013 scores were significantly different from the 2015 scores for each of these measures. Further, the 2014 score was significantly different from the 2015 score for use the “importance ruler.”

In Post-Test 2, in addition to the importance and confidence assessment, four open ended questions were presented to the Class of 2015. The following questions were asked:

- Explain why (or why not) the self-assessment of my recording of an MI interaction with a patient in clinic was valuable.
- Explain why (or why not) the faculty feedback on my recorded MI interaction with a patient in clinic was valuable.
- What successes have you achieved using MI during patient care?
- What challenges have you experienced using MI during patient care?

To assess qualitative data from open-ended questions, three reviewers categorized response themes. Responses were then coded into themes once consensus among reviewers was achieved. Descriptive statistics were used to report response theme outcomes.

For the question relating to students’ perception of the value of self-assessment of recording of an MI interaction with a patient in clinic (Table 5), out of the 22 participants from the Class of 2015, 36% provided a response addressing “self-

assessment." The majority of responses in this theme (n=6) indicated that self-assessment was valuable. Value ranged from seeing personal strengths and weaknesses to identifying improvement as a listener. Two responses however, indicated uncertainty about the self-assessment process.

Two additional response themes were found related to this question and were somewhat tangential to the self-assessment question posed. However, these provided additional insight regarding thoughts that students were having about their experience. The second theme in the self-assessment category was "patient issues." Fourteen percent (n=3) of the participants identified that the patient and their willingness to participate in an MI discussion made this assignment challenging. In the third theme, "other responses not related to self-assessment," was identified by 27% (n=6) of the participants. These included concerns about time to engage in an MI approach with a patient and feeling they had to do this (assignment) too often.

For the second open-question relating to students' perception of the value of faculty feedback provided for a recorded MI interaction with a patient in clinic three themes emerged (Table 6). Eighteen percent (n=4) reported they "did not receive feedback," 8% (n=4) identified "concerns about the process of faculty feedback" and 18% (n=4) indicated the feedback was "valuable for self-improvement." One of the students who reported not receiving feedback indicated that although they had not received feedback by the time this survey was taken, the instructor had provided verbal feedback that indicated the student did well. Concerns related to the process of feedback included participants feeling the feedback was subjective, confusing and concerns with faculty only listening to the recording and not being present in clinic.

Participants were also questioned about successes using MI in patient care (Table 7). Of the 22 study participants 27% (n=6) identified “improved communication” with patients. Responses included gaining more information about patients, opening up patient relationships and patients appreciating praise and affirmations. Of the participants, 36% (n=8) found success with “patient changes” which included patients developing an action plan for change, realizing behavior changes are needed for better health, and identifying what changes can be made for improved health outcomes. For the participants who identified that they had “no success” with MI, 14% (n=3) reported no changes mainly because they only saw their patient once.

For the open-ended question related to MI challenges, the themes identified were “time,” “patient issues” and “other” (Table 8). Out of the study participants, 41% (n=9) perceived “time” as a challenge and identified the MI recording difficult to fit in along with other clinical requirements and also that it was challenging to complete an entire MI session in one visit. “Patient issues” were identified as a challenge by 45% (n=10) with participants reporting patients not cooperating, being resistant as well as not wanting to discuss their feelings. Fourteen percent (n=3) of the responses fell into the “other” theme indicating the student was talking more than the patient and feeling awkward using MI in clinical patient care.

CHAPTER V

DISCUSSION

The goal of this study was to examine U-M dental hygiene students exposed to the enhanced MI curriculum and to assess both their perceptions of the importance of MI and their confidence in applying it. This study had two specific aims. The first aim sought to assess dental hygiene students' perception of the importance of using MI in delivering health education to patients. The second aim evaluated dental hygiene students' perceptions of their confidence in their ability to deliver health education to patients using MI techniques.

The experimental group (Class of 2015) of this study were students exposed to the enhanced MI curriculum. In five of eight MI strategies students identified an increased perception of the importance of MI from time 1 (Retrospective Pre-Test) to time 4 (Post-Test 3). Those that had statistical significance included "use open ended questions," "make affirmations," "summarize," "elicit change talk," and "enhance self-efficacy." The MI strategies "listen reflectively" and "use of the importance ruler" increased over time however were not statistically significantly. There was no statistical difference in perceptions for "ask for elaboration."

At time 4 students had participated in four graded MI recording assignments in which faculty feedback was also provided. In addition, they had three semesters in which MI had been integrated within didactic course work. Lastly, they had been

providing clinical care to patients in two out of the three semesters. This increase in perception of importance associated with five MI strategies may be attributed students' involvement with the enhanced MI curriculum. This is similar to the results documented by DiMatteo et al. finding rigorous MI training was essential for skill development and involves practice and time.[9] This finding is also consistent with studies documenting increased perception of importance of MI after students participated in curricula consisting of lectures, role-play activities, recordings including patient interactions, and faculty feedback.[34,37,38]

It is also important to note that from time 1 to time 4, student perceptions of importance of using MI strategies did not always increase incrementally. For example, perceptions of importance of “make affirmations” and “elicit change talk” initially increased from time 1 (Retrospective Pre-Test) to time 2 (Post-Test 1). Then at time 3 (Post-Test 2) student perception of the importance of these decreased. Finally, at time 4 (Post-Test 3) the perceptions of importance increased again and were ultimately found to be statistically significant over time. Time 4 was after an actual patient interaction recording. This authentic experience might have contributed to a change in perception because students may have had a positive experience using MI techniques while discussing health behavior change with their patient. Utilization of MI could have improved the student's interpersonal communication skills and enhanced their relationship with their patient. Actual application of MI strategies with patients appears to play a crucial role in training and education. Similar results were documented in a study by White et al. who found 83% of students reported MI in the curriculum had a positive impact on patient interactions and helped students be more comfortable discussing health behavior change with their patents.[24]

For two of the MI strategies ("listen reflectively" and "ask for elaboration") there was an incremental increase in student perception of importance from time 1 to time 4, but these changes were not statistically significant. "Use of the importance ruler" initially increased and then after the patient encounter it decreased, however it still stayed above the initial time 1 response. The perception of importance of this strategy decreased more than others over time and may be attributed to the students' not using this technique during their patient interaction. Not all strategies can be interwoven within every MI interaction so if this was not used and the interaction still went well, it may not have been seen as important by the students as originally thought. Nonetheless, analysis of all of these results provides valuable insight related to the enhanced MI curriculum and each strategy might require further exploration of students' perceptions to uncover why these trends occurred.

When the Class of 2015 was assessed on their perceptions of confidence in applying MI techniques, in seven of the eight MI techniques students identified a statistically significant increase from time 1 (Retrospective Pre-Test) to time 4 (Post-Test 3). These included all MI techniques with the exception of "listen reflectively." This strategy was rated the highest initially and there may not have been much room to grow. "Listen reflectively" rating did follow the trend of increasing in student perception of confidence from time 1 to time 4, however it wasn't statistically significant. The significant increase in students' perception of confidence identifies a positive outcome related to the implementation of enhanced MI curricula. Students gained valuable MI experience through classroom content, literature, watching videos depicting scenarios of a MI counselor with a patient, and recording roll-play assignments and a patient interaction. In all five assignments students participated in self-assessment and were

provided faculty feedback. This provided students documentation of their growth overtime, which may have supported their confidence increase. This is consistent with previous studies indicating coaching with feedback had positive results in students' perceptions in their abilities to deliver healthcare education and counseling.[34,37-41]

The Class of 2015 used proficiency evaluations to self-assess their perception of the importance of MI and their confidence in applying it at the completion of five MI assignments. Overall the results of the self-assessment increased from time 1 (assignment 1) to time 5 (patient recording assignment) however, the increase was not statistically significant. This could be due to the fact that the students used a small, three point scale to rate themselves [satisfactory (S), improvement needed (I), and unsatisfactory (U)] and it did not allow for robust analysis. Consideration should be given to revising the proficiency assessment to include a broader response scale.

The Classes of 2013 and 2014 participated in Post-Test 2A and the results were compared to the Class of 2015 Post-Test 2. The Classes of 2013 and 2014 had not participated in the enhanced MI curriculum. Among the three classes, there were statistically significant differences in the importance category. These included "making affirmations," "eliciting change talk" and "using the importance ruler" with the Class of 2013 being the most confident cohort in all three MI techniques. This difference could be attributed to the fact that at the time the survey was disseminated, the students from this class were just weeks from graduating and had more clinical experience than those in the other two classes, contributing to their increased perception of confidence.

For the confidence category questions two MI techniques, "eliciting change talk" and "using the importance ruler," were found to be statistically different between the Class of 2013 and 2014 with the Class of 2013 perceiving more confidence. There was

no significant difference between the experimental group and the comparison classes in the confidence categories. This increase in confidence could be due to the additional year of clinical patient care senior students in comparison to the juniors. Studies have shown practice over time can equate to more confidence.[9,41]

In comparing all three classes, a number of MI strategies approached statistical significance and may warrant future investigation. These included importance of the use of “open ended questions,” “listen reflectively,” “summarize,” “ask for elaboration,” and “enhance self-efficacy.” Additionally confidence in the use of “open-ended questions,” “listen reflectively,” “make affirmations,” “summarize,” “ask for elaboration,” and “enhance self-efficacy” approached statistical significance. Placing more emphasis on these strategies within the MI curriculum may show more positive outcomes. This difference could be due to the differing amount of clinical experience between classes and thus needs to be examined when class of 2015 is near graduation.

With regard to the analysis of the open-ended responses to questions posed to the Class of 2015 on the value of self-assessment, although 36% included a response related to this question, two indicated they were uncertain about the self-assessment process. The remaining responses were tangential to the question posed and found students were concerned about patient willingness to engage in a health behavior change conversation using MI strategies and/or time MI took during patient care. Studies have also shown self-assessment related to MI can be challenging for novice learners.[14]

Of the question posed about the perceived value of faculty feedback, 18% indicated this was valuable however, 26% of the students indicated they were either concerned about the faculty feedback process or did not receive feedback at all. At the

time this survey (Post-Test 4) was disseminated there were a number of students who had not turned in their patient interaction recordings by the assigned due date. Thus, they had not received the feedback at the time they completed the survey. Those who met the assignment deadline had received feedback prior to taking the survey. In addition, the concern about the process of faculty feedback could be attributed to the fact that although the proficiency form was utilized for students' self-assessment, a different rubric was used for grading and providing feedback on the MI recorded patient encounter. This was a change made by the DENTHYG 313 Course Director that the research team was not aware had taken place. This could have contributed to the confusion about the feedback and the process by which it was delivered. In addition, in the assignments prior to the patient recording, feedback was provided through team grading of recorded assignments. An individual faculty member provided the feedback provided for the patient recording. Although that faculty member had been part of the initial team of graders, the feedback provided for the patient recording reflected only one person's perspective.

In one of the open-ended questions, students were asked about success they had experienced using MI. Both improved communication and health behavior changes achieved by patients were identified as successes. This affirmed the ability for the students to utilize MI effectively with their patients, an important desired outcome of the enhanced MI curriculum. Miller and Rollnick documented students experiencing a positive perceived impact on patients achieved higher levels of competence and confidence.[30]

Challenges reported with MI included not having enough time in clinic to complete the proficiency recording with a patient. Time management was also a

reported challenge and aligns with the feelings of health practitioners working in the field.[14] Given that the utilization of multiple MI strategies in one sitting can take a significant amount of time, utilizing brief motivational interviewing may be more appropriate. Previous studies have shown brief motivational interviewing has been successful in health care settings.[11,24,28] Knowledge, practice, and exposure is key for MI success.[9]

This study had limitations, one of which was the small sample size and lack of a control group. A larger sample of students would increase the validity of the results. Development of interpersonal communication skills should involve practice and be closely evaluated.[11] Training research indicates that proficiency in MI is not readily developed through self-study or by attending a workshop, but typically requires practice with feedback and coaching over time.[29] Moving forward, it is recommended that the U-M Dental Hygiene Program continue this study longitudinally so that the outcomes from the Class of 2015 can be determined after involvement in three full years of the enhanced MI curriculum. In addition, future studies should concentrate on measuring student performance related to patient health behavior change outcomes over time. Lastly, faculty members' understanding of MI and calibration of student feedback should be assessed.

CHAPTER VI

CONCLUSIONS

In 2012, the U-M Dental Hygiene Program embarked on a project to develop an enhanced MI program and integrate it into the curriculum. The desired outcome was for students to translate content learned in the classroom into clinical application during patient care. This study had two specific aims. The first aim sought to assess dental hygiene students' perception of the importance of using MI in delivering health education to patients. The second aim evaluated dental hygiene students' perceptions of their confidence in their ability to deliver health education to patients using MI techniques.

Motivational Interviewing is an evidence-based, patient-centered counseling approach for eliciting behavior change.[10-12] Using a non-authoritative approach focusing on interpersonal communication, MI enables the patient to naturally break through uncertain thoughts, feelings, and attitudes to achieve positive health behavior change.[11,12] Studies have shown incorporating Motivational Interviewing into health care curriculum has positive effects on students' abilities in discussing health behavior change with patients.[13] In evaluating the U-M Dental Hygiene Program MI curricular enhancement, it was important to assess the effect it had on student learning and as well as students' ability to apply it in the clinical setting. Assessing the student perceptions on the importance of MI and the confidence they had in using this skill

provided information on the effectiveness of the curriculum and the likelihood that students will incorporate this technique into their professional patient care.

A convenience sample of 22 dental hygiene students from the U-M Class of 2015 received the enhanced MI curriculum participated in this study. Students were assigned literature/textbook readings, watched videos, and completed four audio-recorded role-play assignments. The assignments were uploaded online for self, peer, and faculty-feedback using a clinical dental hygiene proficiency assessment. This study also utilized a retrospective pre-test and post-test design focusing on assessing the students' perceptions on importance and confidence. A comparison group, consisting of 28 dental hygiene students from the Class of 2014 and 25 students from the Class of 2013, who have not experienced the enhanced MI curriculum, also completed one of the post-tests

SPSS version 21 was utilized for data analysis. A paired t-test was used within the class of 2015 comparing the retrospective pre-test to post-test. Another paired t-t compared the importance/confidence question in proficiency. Analyses of the classes of 2013, 2014, and 2015 students were compared with one-way ANOVAs. To assess qualitative data from open-ended questions, response themes were categorized by three reviewers. Responses were then coded into themes once consensus among reviewers was achieved. Descriptive statistics were used to report theme outcomes.

Student perceptions of importance of using MI had a statistical significant increase in five out of eight strategies. Perceptions of confidence had statistical significance in seven out of eight strategies. Using the proficiency evaluations, student's rated their self-perceptions of importance in using MI and confidence in their ability to use MI with a patient decreased over time, however the results were not statistically significant.

Comparisons between classes found significant differences in perception of importance for three of the eight strategies between the Class of 2013 and 2015 and one of the strategies finding the Class of 2014 different from 2015. Of the importance strategies recognized to have significant differences, 2013 had the highest ranking on average. For the perceptions of confidence between classes, two of the eight strategies were found to have statistically significant differences between Class of 2014 and the class of 2013. The Class of 2013 reported the highest of the classes for the two statistically significant confidence strategies.

Open-ended questions provided additional insight into students' overall perceptions of the MI enhanced curriculum in the areas of self-assessment, faculty feedback, successes achieved using MI in patient care and challenges experienced. Students' perceived self-assessment to be valuable and found it beneficial in identifying strengths, weaknesses and areas for improvement. Students found faculty feedback to be helpful. However, they had concerns with the process of feedback. Successes reported in using MI in patient care were improved communication and health behavior changes achieved by patients. The challenges identified were time and patient issues such as resistance and uncooperative patients.

Overall, this study found students' global perceptions of the importance of MI and their confidence in applying MI strategies increased over time. In addition, students identified the value of self-assessment and faculty feedback in this process. Students also identified important successes when applying MI and also identified realistic challenges in the process. These findings supported that the enhanced curriculum had a positive outcome on students' ability to learn important MI concepts and apply these in

health behavior change interactions. The enhanced MI curriculum should continue to be part of the U-M Dental Hygiene Program.

Limitations of this study include the small sample size and lack of a control group. A larger sample of students would increase the validity of the results. Moving forward, it is recommended that the U-M Dental Hygiene Program continue this study longitudinally so that the outcomes from the Class of 2015 can be determined after involvement in three full years of the enhanced MI curriculum. Greater focus should be placed in the curriculum on brief motivational interviewing as an approach used in clinical interactions.

Future research should focus on in-depth exploration of the use of individual MI strategies as they relate to importance and confidence. In addition, future studies should concentrate on measuring student performance related to patient health behavior change outcomes over time. Lastly, faculty members' understanding of MI and calibration of student feedback should be assessed.

TABLES

Table 1	
Demographic Information: Class of 2015 (n=22)	
	Frequency (%)
Gender	
Male	2 (9.1%)
Female	20 (90.9%)
Years College	
1	4 (18.2%)
2	2 (9.1%)
3	2 (9.1%)
4	7 (31.8%)
5	4 (18.2%)
6	1 (4.5%)
Mean Age (years)	23.05

Table 2 Pre/Post Test(s) MI Importance & Confidence : Class of 2015						
Variable	T1 Retrospective Pre-Test Mean (SD)	T2 Post-Test 1 Mean (SD)	T3 Post-Test 2 Mean (SD)	T4 Post-Test 3 Mean (SD)	T(df) (t-test is between T1 and T4)	Sig. (t-test is between T1 and T4)
Importance*						
Use open ended questions	3.86 (1)	4.59 (0.67)	4.59 (0.67)	4.52 (0.98)	2.233(18)	.038
Listen reflectively	3.95 (1.36)	4.36 (1)	4.41 (0.91)	4.43 (1.08)	1.819(18)	.086
Make affirmations	3.27 (1.32)	4.14 (0.77)	4.05 (0.72)	4.19 (0.98)	3.897(18)	<.001
Summarize	3.05 (1.13)	3.91 (1.27)	4.09 (0.87)	4.05 (1.07)	3.508(18)	.003
Elicit change talk	3.14 (1.06)	4.23 (0.87)	4 (0.98)	4.29 (0.9)	3.580(17)	.002
Use the importance ruler	2.53 (0.94	3.09 (1.06)	3.27 (1.49)	2.9 (1.48)	1.979(13)	.069
Ask for elaboration	3.70 (1.08)	4.09 (0.97)	4.23 (0.92)	3.76 (0.94)	0.000(16)	1.00
Enhance self-efficacy	3.59 (1.14)	4.32 (0.84)	4.41 (0.8)	4.38 (1.16)	2.501(18)	.022
Confidence**						
Use open ended questions	3.55 (1.34)	4.95 (0.67)	4.95 (0.80)	4.43 (1.03)	2.560(18)	.020
Listen reflectively	3.82 (1.22)	4.23 (0.92)	4.95 (0.67)	4.33 (1.20)	1.531(18)	.143
Make affirmations	3.00 (1.11)	4.05 (0.95)	4.27 (0.94)	4.24 (1.14)	3.805(18)	<.001
Summarize	3.14 (0.99)	3.91 (0.92)	4.32 (0.65)	4.29 (0.85)	4.652(18)	<.001
Elicit change talk	2.35 (0.88)	3.41 (0.96)	4.00 (1.02)	3.52 (1.03)	3.922(16)	<.001
Use the importance ruler	2.21 (1.03)	3.55 (1.14)	4.09 (1.27)	4.00 (1.14)	4.038(15)	<.001
Ask for elaboration	3.24(1.09)	3.82 (1.05)	4.41 (0.85)	4.05 (1.12)	2.364(17)	.030
Enhance self-efficacy	3.05 (1.25)	3.91 (1.02)	4.27 (0.83)	4.33 (0.97)	3.753(18)	<.001

0= unable to answer, 1= not very important, 2= of little importance, 3= neutral, 4= somewhat important, 5= very important.
0=unable to answer, 1= not at all confident, 2= little confidence, 3=neutral, 4=somewhat confident, 5= very confident.

Table 3 **Self-Assessment of MI Importance & Confidence Using Proficiency Assessments: Class of 2015**									
Variable	T1 Assignment 1 Mean (SD)	T2 Assignment 2 Mean (SD)	T3 Assignment 3 Mean (SD)	T4 Assignment 4 Mean (SD)	T5 Patient Recording	T1-T4 t(df) (t-test is between T1 & T4)	Sig (t-test between T1 & T4)	T5 t(df) (t-test between T1 & T5)	Sig (t-test between T1 and T5)
Importance **Confidence**	1.16 (0.37) 1.42 (0.61)	1.11 (0.32) 1.37 (0.5)	1.11 (0.32) 1.32 (0.48)	1.1 (0.3) 1.29 (0.46)	1.21 (0.42) 1.47 (0.51)	.566(17) 1.144(17)	0.579 0.269	-0.436(15) -0.324(15)	0.669 0.751

Key: Satisfactory= 1, Improvement needed= 2, Unsatisfactory =3

Table 4 Post Test 2 (Class of 2015) & Post Test 2A (Classes of 2013 & 2014) Group Comparison				
Variable	2013 Mean (SD)	2014 Mean (SD)	2015 Mean (SD)	F(df1,df2) p
Importance*				
Use open ended questions	4.92(0.28)	4.61 (0.63)	4.59 (0.67)	F(2,72)=2.819, p=.066
Listen reflectively	4.92 (0.40)	4.61 (0.83)	4.41 (0.90)	F(2,72)=2.847,p=.065
Make affirmations	4.72 (0.46)	4.43 (0.79)	4.05 (0.72)	F(2,72)=5.846,p=.004 [2]
Summarize	4.60 (0.71)	4.63 (0.73)	4.09 (0.87)	F(2,72)=2.585,p=.082
Elicit change talk	4.80 (0.50)	4.43 (0.74)	4.00 (0.98)	F(2,72)=6.599,p=.002 [2]
Use the importance ruler	4.48 (0.85)	4.08 (0.80)	3.27 (1.49)	F(2,68)=7.382,p=.001 [2,3]
Ask for elaboration	4.36 (0.81)	4.46 (0.64)	4.23 (0.92)	F(2,72)=.559,p=.574
Enhance self-efficacy	4.84 (0.37)	4.64 (0.69)	4.41 (0.78)	F(2,72)=2.688,p=.075
Confidence*				
Use open ended questions	4.4 (0.58)	4.32 (0.48)	4.59 (0.8)	F(2,72)=1.209,p=.304
Listen reflectively	4.48 (0.71)	4.36 (0.87)	4.59 (0.67)	F(2,72)=0.583,p=.561
Make affirmations	4.4 (0.65)	4.14 (0.71)	4.27 (0.94)	F(2,72)=0.753,p=.475
Summarize	4.56 (0.65)	4.21 (0.79)	4.32 (0.65)	F(2,72)=1.649,p=0.199
Elicit change talk	4.17 (0.7)	3.5 (0.92)	4 (1.02)	F(2,71)=3.980,p=0.023 [1]
Use the importance ruler	4.26 (0.69)	3.42 (0.95)	4.09 (1.27)	F(2,68)=4.958,p=0.010 [1]
Ask for elaboration	4.32 (0.69)	4.18 (0.61)	4.41 (0.85)	F(2,72)=0.665,p=0.517
Enhance self-efficacy	4.4 (0.71)	4.11 (0.88)	4.27 (0.83))	F(2,72)=0.876,p=0.421

***** 0= unable to answer, 1= not very important, 2= of little importance, 3= neutral, 4= somewhat important, 5= very important.

****** 0=unable to answer, 1= not at all confident, 2= little confidence, 3=neutral, 4=somewhat confident, 5= very confident.

([1]=2013 is significantly different from 2014; [2]=2013 is significantly different from 2015; [3]=2014 is significantly different from 2015)

Table 5. Question 1: Self-assessment & its value		
Consensus Themes	**Responses from Students Related to Themes**	**Total Study Participants Class of 2015 n=22**
• Self-assessment	• I don't understand MI, so I don't understand how to assess myself. • I got to see what my strengths and weaknesses were first hand. • I take points from MI and use them selectively to make me a better listener. • I think it was valuable to understand patient's point of view, and see why or what is holding them back. • It's valuable to have others listen to it to pick up on what I did well and what I didn't do well. • Reflection statements always force me to think more in depth about certain situations. It's valuable for me to assess myself to see what I'm doing well and how I can improve. • Self-assessment I think is not valuable because I always want to think I am doing it all right- even when I'm not. • The self-assessment helped me review what I did right and wrong.	36% (8/22)
• Patient issues identified rather than student self-assessment focused responses	• I felt that the patient I did my recording on may not have been benefitted by the MI. • My pt. suffered from neurological damage, and therefore was simplistic in responses and hesitant to elicit change talk/elaborations. • Varies from patient to patient.	14% (3/22)
• Other responses not related to self-assessment	• I believe that using some MI technique are of value however I feel as though we are doing it way to much (overkill). • I feel I do a good job with my patients, I feel if they do not want to be "recorded" or if they do not have enough time that I should be required. • Motivational interviewing is a great tool... to a certain extent. With time as an issue in clinic it should not be stressed as much as it is. I think there are other things that are more important than MI. • The MI that we did this semester seemed to be pretty repetitive from the DH 338 class last semester. • There is not enough time in clinic to record something like and to use all the steps. MI takes a long time and it is difficult to find applicable patients. • Too much time and focus in teaching us how to do it ONE way- we are graded on our performance ONE WAY! It's not like that in real life.	27% (6/22)

Table 6. Question 2: Feedback and value		
Consensus Themes	**Responses From Students Related to Themes**	**Total Study Participants Class of 2015 n=22**
• None received	• Did not currently get feedback for our MI this semester • Did not receive feedback yet • Didn't get feedback yet • I have not received a grade or written feedback yet, but my instructor verbally told me that I did well.	18% (4/22)
• Concerns related to process of faculty feedback	• Been a constant battle and just very confusing with clinic. • Depending on who gives feedback? • I feel as though grading is subjective...I feel like it's different when you are in the situation as well. • The faculty is not present when the recording is taken place, so they don't know how the conversation could or should go- it's subjective.	18% (4/22)
• Valuable for self-improvement	• Even though I barely had enough time, it's good to have an instructors view. • Getting professional feedback helps me learn. • I like knowing what I can work on. • I need to hear how I am doing as MI is a new concept for me.	18% (4/22)

Table 7. Question 3: MI success		
Consensus Themes	**Responses from students related to these themes**	**Total Study Participants Class of 2015 n=22**
• Improved communication	• Gaining more information from patients. • Getting patient to open up, OHI. • It allowed my patients to be more open with me. • Opened relationships w/ patients and was told I listened better than their doctor. • Patients appreciate being noticed and praised. • Patients opened up to me and seem to be willing to make a change.	27% (6/22)
• Patient changes	• Building confidence to change. • Higher frequency of brushing and flossing. • I have gotten patients to develop their own plans for change, which I believe will help them to be more successful in actually making the change. • It is brought the changing key for the patient- so (they) can realize what (they) can do! • Patient understood what they need to improve for a better oral health. • Patients realize that what they are doing is not good enough. • Some, I'd say 50-50. • Patients after a 3-hour appointment are not eager about MI- so not very successful.	36% (8/22)
• None	• I do not know since I have only seen my patients once. • I don't know, haven't seen those patients again to assess their progress. • None	14% (3/22)

Table 8. Question 4: MI challenges		
Consensus Themes	**Responses from Students Related to Themes**	**Total Study Participants Class of 2015 n=22**
• Time	• I just feel like with all of our other requirements, it is very hard to fit in a very full MI session. I have to learn how to condense my MI sessions. • In clinic it is time however in real life (not in school) I could see less challenges since patients are seen more often. • Time is an issue. • No time to record this. • Time • Time • Time management • Time to incorporate it all • Time	41% (9/22)
• Patient issues	• Having patients be resistant. • Not everyone reacts well to MI. • Not many like to chat during clinic time. • Patient resistance. • Patients not wanting to talk, patients thinking me "summarizing" what they have said is weird. • Patients want no part in discussing their feelings or issues. • Pt do not expand. • Some are very shut off and don't want to talk. • Patients who don't provide enough feedback • Patients are not very cooperative	45% (10/22)
• Other	• It always seems so awkward. • It seems that if we are supposed to be doing this all the time, I'm confused why we need to do specific test for it. • Not talking more than the pt.	14% (3/22)

APPENDIX A

PILOT TEST DOCUMENTATION

Dear Mary Grace and Jan,

I am a graduate student in the University of Michigan (U-M) Dental Hygiene Online Master's Program. As part of my thesis I am conducting a study focusing on the evaluation of the Motivational Interviewing (MI) curriculum enhancement. I have three evaluation instruments that I will be using with the DH2s this semester. One of these I am also using with the DH3 and DH4 students to collect comparison data. These instruments (adapted from UMKC) were developed from the ones that were distributed at our faculty in-service. These have however, been slightly modified and this was done in consultation with U-M's Center on Research, Learning & Teaching. I am working with U-M Dental Hygiene faculty mentor, Anne Gwozdek, RDH, BA, MA, on this project.

Thank you for agreeing to be participants in the pilot test of the surveys I have developed for my thesis project on MI. There are three surveys and a "feedback form" attached to this email. After completing/reviewing the surveys, I would appreciate you completing the short feedback form. This feedback form will ask questions about the wording and concepts included in the surveys and will help ensure that the students taking it will understand the questions and the directions, allowing for valuable data to be collected. Once you have completed your review of the surveys and the feedback form, **please e-mail the feedback from back to me (ajmah@umich.edu) by Sunday February 24, 2013.**

Three separate surveys will be passed out to the dental hygiene students. One is a retrospective pre-test, one is a post-test, and another is an end of the semester evaluation. In addition, the end of the semester survey will be distributed to the Class of 2013 and 2014 to provide comparison data regarding those students' perceptions of their MI curricular experience, prior to the introduction of the "enhanced" curriculum.

Thank you for reviewing my introductory remarks to the Class of 2015 in addition to the three surveys. I estimate this would take no more than 15-20 minutes total time for you to complete.

Assessment of the University of Michigan's Dental Hygiene Motivational Interviewing Survey
Pilot Test Feedback Form

As you go through and review the Motivational Interviewing surveys, please complete this "survey feedback form." When completed, please return it via email to me (ajmah@umich.edu) by Sunday, February 24, 2013. Thank you very much for your valuable feedback!

1.) Was the description of the project in the introduction message clear? **Yes** **No**
(If **no**, please explain.)

2.) Was it made clear that participation was voluntary? **Yes** **No**
(If **no**, please explain.)

3.) Were the survey directions clear? **Yes** **No**
(If **no**, please explain.)

4.) Overall, were the questions understandable? **Yes** **No**
(If **no**, please explain.)

5.) Were there any specific questions that may have been confusing? **Yes** **No**
(If **yes**, please identify which questions and why.)

<u>Introduction-Delivery of Evaluation Instruments to Class of 2015 on 3-11-13</u>

Hello, as most of you know my name is Mrs. Mills, and I am a graduate student in the Master of Science in Dental Hygiene Program at the University of Michigan. As part of my program, I must complete a "thesis." A thesis is a research project that I need to complete as part of my master's degree.

My thesis research is focusing on the evaluation of the U-M Dental Hygiene Program's "enhanced" Motivational Interviewing curriculum you are experiencing in DH338. I will also follow you through your growth in the use of MI during patient care next Fall.

An important element of any curricular change is evaluation of its outcome. The focus of this thesis study involves dental hygiene students and your perceptions of Motivational Interviewing, specifically your perception on importance in applying MI skills in the delivery of health education and the confidence in your ability to use brief MI to elicit positive behavior change with your patients.

To assess this I have been involved with the development of a number of surveys. Today I am requesting that you complete the first two. This participation is voluntary and it is important to know that your responses are identified with your Honor Code only. This study has been submitted to the University of Michigan Institutional Review Board and it has been approved as "exempt." Because it involves involving normal educational practices

I will distribute stapled yellow and blue papers. The first survey I request that you complete is on the yellow paper. It is called a "retrospective pre-test." To complete this survey, stop and think back to the beginning of this semester in January. Answer the questions based where your understanding of Motivational Interviewing and behavior change were at that moment. Before you begin, ask me questions as I want to make sure this is clear to everyone.

Now that you have completed the yellow form, begin the "post-test" on the blue paper. When you complete this survey please answer the questions based on your understanding of Motivational Interviewing and behavior change **right now**.

When you have finished both surveys, pass them to the end of the row and I will pick them up. Thank you so much for your participation!

APPENDIX B

Clinical Dental Hygiene Proficiency Assessment: Preventive Education

Student ____________________ Assignment #____

Name of Partner ______________ Self-assessment_____ Peer-assessment____

Directions: For each skill evaluated, indicated the level as:

S = Satisfactory
I = Improvement Needed
U = Unsatisfactory

Criteria:	Self	Instructor
1. Uses assessment data to determine 1-3 oral health education topics to elicit from patient.		
2. **Asks permission –** elicits patient's readiness and interest in addressing an oral health care education topic.		
3. Asks **open-ended questions** to explore patient's oral health perceptions.		
4. **Affirms** the patient's strengths and efforts.		
5. Uses **reflection statements** to confirm an understanding of what patient is saying immediately following patient responses.		
6. **Recaps** and checks accuracy of conversation.		
7. Utilizes strategies to **elicit change talk** such as leading to a decision by asking patient for pros/cons of change vs. the status quo; implementing the decisional balance and/or importance/confidence ruler.		
8. With patient as an **active participant**, determines priorities and establishes oral health plan.		
9. **Rolls with resistance** by avoiding "pushing back," persuading, or arguing with patient.		
10. When elicited, **demonstrates desired oral health skill** and checks patient's ability to perform skill.		
11. Provides appropriate **summary** and **strengthens patient's commitment**.		
12. During today's patient interaction, it was **important** to utilize Motivational Interviewing (MI) skills in the delivery of health education. **(Student self-assessment only)**		
13. During today's patient interaction I was **confident** in applying MI strategies in the delivery of health education. **(Student self-assessment only)**		

Critical Errors (two or more indicate automatic fail)	**Fail**	**Instructor Initials**
Asks more than 3 open ended questions in a row		
Directs conversation in a non-adherent MI manner		
Fails to recognize change talk		
Fails to strengthen commitment		

APPENDIX C

DH338
Motivational Interviewing Assignment #1
OARS
DUE: Wednesday, February 13, 2013
Recordings uploaded to CTools by Monday, February 11, 2013 at 10:00pm
Self- and Peer-Assessments turned in during class on Wednesday, February 13, 2013

Directions

Using the digital recorder, each student-clinician will explore a medical history finding from the student-patient's mock medical history. Using the OARS technique of motivational interviewing, the student-clinician will engage the student-patient in an effective interaction using each of the OARS components. The interaction will be recorded using the digital recorder.

After the recording session, tapes will be uploaded onto DH338 CTools site where each student will complete a self- and peer-assessment form by Wed, February 13, 2013. Self- and peer-assessment forms will be turning in during DH338. Recordings should be uploaded by Monday evening (2/11/13).

This assignment will be graded on three components – 1) completion of digital recording (5 points); 2) completion of self-assessment (5 points); and 3) completion of peer-assessment (5 points). NOTE, self-assessment questions include 1-6 and 12 & 13. Peer-assessment questions include 1-6 only.

In addition, each student will receive a written summary of their performance from one of the DH faculty.

Mock Medical History Findings

1. Your patient has circled 'yes' to having *diabetes*, but no additional information is given.

Patient Background Information Known to Mock Patient Only

You were diagnosed with Type II Diabetes 5 years ago. You are currently 45 pounds overweight and trying to lose weight as a means of stabilizing your diabetic condition. If you are able to lose weight, then you will not have to take medication. If you don't lose weight, then your doctor has informed you that medications will be mandatory. You know you should be exercising and eating better and recently joined the YMCA, but you don't always follow through on getting in your weekly workouts in and making the needed dietary changes.

DH338

Motivational Interviewing

Assignment #2 Reflection/Double Reflection and

Assignment #3 Importance Ruler

DUE: Wednesday, February 25, 2013

Recordings uploaded to CTools by Monday, February 25, 2013 at 10:00pm

Self- and Peer-Assessments turned at beginning of class on Wednesday, February 27, 2013

Directions Assignment #2

Using the digital recorder, each patient will identify a "real" behavior change they want to make. Using complex reflection (values and emotions), the clinician will use reflection only to elicit and guide information from the patient. The student-clinician will listen for ambivalence from the patient and then use a double-sided reflection (pros/cons statement such as, "On the one hand….) to continue moving the patient toward change talk. There must be a minimum of one question to every 3 to 4 reflections.

Directions Assignment #3

Using the digital recorder, each patient will identify a "real" behavior modification they want to make. After reflecting with the patient about their behavior, the clinician will use the Importance Ruler to assess the patient's motivation for change and assist in eliciting change talk.

After the recording session, tapes will be uploaded onto DH338 CTools site by February 25, 2013. Each student will complete a self- and peer-assessment form and turn them into class on Wednesday, February 27, 2013.

This assignment will be graded on the following criteria:

- completion of digital recording (2 points)
- completion of self-assessment (2 points)
- completion of peer-assessment (2 points)
- a minimum of 3 complex reflections and one double-sided reflection (9 points for assignment #2)
- complete usage of the Importance Ruler (6 points for assignment #3)
- NOTE, self-assessment questions include 1-7 and 12 & 13. Peer-assessment questions include 1-7 only.

In addition, each student will receive a written summary of their performance from one of the DH faculty.

DH338

Motivational Interviewing

Assignment #4

“Putting it all together” A Complete MI Patient Encounter

Recordings uploaded to CTools by Monday, April 8, 2013 at 10:00pm

Self- and Peer-Assessments turned at beginning of class on Wednesday, April l0, 2013

Directions Assignment #4

Using the digital recorder, you will record an interaction between yourself and a non-dental hygiene student. This person could be your roommate, family member, or friend. The goal of this final assignment is for you to assimilate all of the MI techniques you’ve learned this semester. The person being interviewed will state a ‘real’ health or life-style behavior they may want to change. Your assignment will be to try to guide the person toward change, meaning the person comes up with a behavior change plan. You are not to dictate or devise a plan, rather to direct/guide the person through ‘complex’ reflections** whereby they explore what behavior change might look like for them, and gain confidence in their ability to make a change.
Expect your MI encounter to be approximately 10-15 minutes, depending on the behavior.
After the recording session, tapes will be uploaded onto DH338 CTools site by *Monday, April 8, 2013.* Each student will complete a self- and peer-assessment form and turn them into class on *Wednesday, April 10, 2013*.
This assignment will be graded on the following criteria with a total of 25 points available:

- completion of digital recording (1 point)
- completion of self-assessment (1 point)
- completion of peer-assessment (1 point)
- see the Proficiency Assessment for additional point values (22 points)

**Complex reflections - Review pg 68 and 69 of the MI: STEP document. ‘Complex’ reflection refers to deeper, feeling reflections; getting at what the client is really saying. Simple, repeating reflections may be used early on in the encounter, but move toward amplified/feeling reflections as you guide the client toward deeper intrinsic motivators.

APPENDIX D

Honor Code #:________

Motivational Interviewing Questionnaire
Retrospective Pre-Test

Adapted from UMKC Division of Dental Hygiene (2009 version)
U-M DH March 2013

1. **Gender (circle one): Male Female**
2. **Age: ________________**
3. **Years of college prior to entering the U-M Dental Hygiene Program: ________________**

Directions: For each Motivational Interviewing (MI) strategy, select the rating that most closely describes the importance you placed on each MI strategy and the confidence you had in applying each MI strategy in your delivery of health education **BEFORE** you completed your MI training in DH 338-Health Education Methods.

- In the left column rate the "importance" of the strategy for you, at the beginning of DH 388.
- In the right column rate your "confidence" with the strategy, at the beginning of DH 388.

Rate the importance of each of these strategies.							Rate your confidence with each of these strategies.					
Unable to Answer	Not Very Important	Of Little Importance	Neutral	Somewhat Important	Very Important		Unable to Answer	Not at all Confident	Little Confidence	Neutral	Somewhat Confident	Very Confident
0	1	2	3	4	5	**Use open ended questions**	0	1	2	3	4	5
0	1	2	3	4	5	**Listen reflectively**	0	1	2	3	4	5
0	1	2	3	4	5	**Make affirmations**	0	1	2	3	4	5
0	1	2	3	4	5	**Summarize**	0	1	2	3	4	5
0	1	2	3	4	5	**Elicit change talk**	0	1	2	3	4	5
0	1	2	3	4	5	**Use the importance ruler**	0	1	2	3	4	5
0	1	2	3	4	5	**Ask for elaboration ("What else?")**	0	1	2	3	4	5
0	1	2	3	4	5	**Enhance self-efficacy**	0	1	2	3	4	5

APPENDIX E

Honor Code #:_________

Motivational Interviewing Questionnaire
Post Test-After MI Training
Adapted from UMKC Division of Dental Hygiene (2009 version)

U-M DH March 2013

Directions: For each Motivational Interviewing (MI) strategy, select the rating that most closely describes the importance you placed on each MI strategy and the confidence you had in applying each MI strategy in your delivery of health education **AFTER** you completed your MI training in DH 338-Health Education Methods.

- In the left column rate the "importance" of the strategy for you, after your MI training.
- In the right column rate your "confidence" with the strategy, after your MI training.

Rate the importance of each of these strategies.							**Rate your confidence with each of these strategies.**					
Unable to Answer	Not Very Important	Of Little Importance	Neutral	Somewhat Important	Very Important		Unable to Answer	Not at all Confident	Little Confidence	Neutral	Somewhat Confident	Very Confident
0	1	2	3	4	5	**Use open ended questions**	0	1	2	3	4	5
0	1	2	3	4	5	**Listen reflectively**	0	1	2	3	4	5
0	1	2	3	4	5	**Make affirmations**	0	1	2	3	4	5
0	1	2	3	4	5	**Summarize**	0	1	2	3	4	5
0	1	2	3	4	5	**Elicit change talk**	0	1	2	3	4	5
0	1	2	3	4	5	**Use the importance ruler**	0	1	2	3	4	5
0	1	2	3	4	5	**Ask for elaboration ("What else?")**	0	1	2	3	4	5
0	1	2	3	4	5	**Enhance self-efficacy**	0	1	2	3	4	5

APPENDIX F

Honor Code #:_________

Motivational Interviewing Questionnaire
Post Test-End of DH 338
Adapted from UMKC Division of Dental Hygiene (2009 version)
U-M DH March 2013

Directions: For each Motivational Interviewing (MI) strategy, select the rating that most closely describes the importance you placed on each MI strategy and the confidence you had in applying each MI strategy in your delivery of health education **AT THE END of DH 338-Health Education Methods**.

- In the left column rate the "importance" of the strategy for you, at the end of DH 338.
- In the right column rate your "confidence" with the strategy, at the end of DH 338.

Rate the importance of each of these strategies.							**Rate your confidence with each of these strategies.**					
Unable to Answer	Not Very Important	Of Little Importance	Neutral	Somewhat Important	Very Important		Unable to Answer	Not at all Confident	Little Confidence	Neutral	Somewhat Confident	Very Confident
0	1	2	3	4	5	**Use open ended questions**	0	1	2	3	4	5
0	1	2	3	4	5	**Listen reflectively**	0	1	2	3	4	5
0	1	2	3	4	5	**Make affirmations**	0	1	2	3	4	5
0	1	2	3	4	5	**Summarize**	0	1	2	3	4	5
0	1	2	3	4	5	**Elicit change talk**	0	1	2	3	4	5
0	1	2	3	4	5	**Use the importance ruler**	0	1	2	3	4	5
0	1	2	3	4	5	**Ask for elaboration ("What else?")**	0	1	2	3	4	5
0	1	2	3	4	5	**Enhance self-efficacy**	0	1	2	3	4	5

Directions: For each of the following statements check the box that most closely coincides with your perspective.

	Unable to Answer	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. MI is a valuable strategy that can be used during clinical care to assist patients in achieving behavior change.						
2. Using MI, I am able to help my patients achieve behavioral change that will assist in enhancing their oral health.						
3. I have enough time in clinic to incorporate MI strategies.						
4. I have the skills I need to use MI strategies in the clinic.						
5. The MI training sessions in DH 338-Health Education Methods were worth the time spent.						

Directions: In this section, rate the different aspects of the MI content covered in DH 338-Health Education Methods.

	Unable to Answer	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
6. The material covered in DH 338 was sufficient in detail for me to understand the application of MI.						
7. The environment in DH 338 was conducive to active participation in MI activities.						
8. MI practice sessions in DH 338 mimicked potential real patient interaction.						
9. I was comfortable using the MI practice strategies with my colleagues.						
10. There were sufficient application activities in DH 338 to provide me with MI experience.						
11. I received valuable feedback in DH 338 that helped me improve my MI skills.						

12. How frequently do you use MI skills with your patients in clinic?

Never **Seldom** **About half the time** **Most of the time** **All of the time**

Please explain why you use MI skills with your patients in clinic at this frequency.

13. I am interested in additional MI training sessions. **Yes** **No**

If yes, what additional MI training topics or experiences would you like to see included?

APPENDIX G

Honor Code #:________
Class of:____________

Motivational Interviewing Questionnaire
Dental Hygiene Classes of 2013 and 2014
Adapted from UMKC Division of Dental Hygiene (2009 version)

U-M DH March 2013

Directions: For each Motivational Interviewing (MI) strategy, select the rating that most closely describes the importance you **CURRENTLY** place on each MI strategy and the confidence you have in applying each MI strategy in your delivery of health education.

- In the left column rate the "importance" of the strategy for you.
- In the right column rate your "confidence" with the strategy.

Rate the importance of each of these strategies.							Rate your confidence with each of these strategies.					
Unable to Answer	Not Very Important	Of Little Importance	Neutral	Somewhat Important	Very Important		Unable to Answer	Not at all Confident	Little Confidence	Neutral	Somewhat Confident	Very Confident
0	1	2	3	4	5	**Use open ended questions**	0	1	2	3	4	5
0	1	2	3	4	5	**Listen reflectively**	0	1	2	3	4	5
0	1	2	3	4	5	**Make affirmations**	0	1	2	3	4	5
0	1	2	3	4	5	**Summarize**	0	1	2	3	4	5
0	1	2	3	4	5	**Elicit change talk**	0	1	2	3	4	5
0	1	2	3	4	5	**Use the importance ruler**	0	1	2	3	4	5
0	1	2	3	4	5	**Ask for elaboration ("What else?")**	0	1	2	3	4	5
0	1	2	3	4	5	**Enhance self-efficacy**	0	1	2	3	4	5

Directions: For each of the following statements check the box that most closely coincides with your perspective.

	Unable to Answer	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. MI is a valuable strategy that can be used during clinical care to assist patients in achieving behavior change						
15. Using MI, I am able to help my patients achieve behavioral change that will assist in enhancing their oral health.						
16. I have enough time in clinic to incorporate MI strategies.						
17. I have the skills I need to use MI strategies in the clinic.						
18. The material covered in DH 338 was sufficient in detail for me to understand the application of MI.						

19. List other courses/presentations within any year of the U-M Dental Hygiene Program where you received MI Education.

20. How frequently do you use MI skills with your patients in clinic?

    Never **Seldom** **About half the time** **Most of the time** **All of the time**

    Please explain why you use MI skills with your patients in clinic at this frequency.

21. I am interested in additional MI training sessions. **Yes** **No**

    If yes, what additional MI training topics or experiences would you like to see included?

APPENDIX H

Honor Code #:________
Class of:_____________

Motivational Interviewing Questionnaire
Proposed Draft for Class of 2015 End of Fall 2013 Semester
Adapted from UMKC Division of Dental Hygiene (2009 version)
U-M DH August 2013

Directions: For each Motivational Interviewing (MI) strategy, select the rating that most closely describes the importance you **CURRENTLY** place on each MI strategy and the confidence you have in applying each MI strategy in your delivery of health education.

- In the left column rate the "importance" of the strategy for you.
- In the right column rate your "confidence" with the strategy.

Rate the importance of each of these strategies.							Rate your confidence with each of these strategies.					
Unable to Answer	Not Very Important	Of Little Importance	Neutral	Somewhat Important	Very Important		Unable to Answer	Not at all Confident	Little Confidence	Neutral	Somewhat Confident	Very Confident
0	1	2	3	4	5	**Use open ended questions**	0	1	2	3	4	5
0	1	2	3	4	5	**Listen reflectively**	0	1	2	3	4	5
0	1	2	3	4	5	**Make affirmations**	0	1	2	3	4	5
0	1	2	3	4	5	**Summarize**	0	1	2	3	4	5
0	1	2	3	4	5	**Elicit change talk**	0	1	2	3	4	5
0	1	2	3	4	5	**Use the importance ruler**	0	1	2	3	4	5
0	1	2	3	4	5	**Ask for elaboration ("What else?")**	0	1	2	3	4	5
0	1	2	3	4	5	**Enhance self-efficacy**	0	1	2	3	4	5

Directions: For each of the following statements check the box that most closely coincides with your perspective.

	Unable to Answer	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
22. MI is a valuable strategy that can be used during clinical care to assist patients in achieving behavior change.						
23. Using MI, I am able to help my patients achieve behavioral change that will assist in enhancing their oral health.						
24. I have enough time in clinic to incorporate MI strategies.						
25. I have the skills I need to use MI strategies in the clinic.						
26. The material covered in DH 338-Health Education Methods, was sufficient in detail for me to understand the application of MI.						
27. The material covered in DH312-Clinical Dental Hygiene Seminar built upon DH 338 to provide a deeper understanding of the application of MI						
28. The self-assessment of my recording of an MI interaction with a patient in clinic was valuable.						
29. Explain why (or was not) this was valuable.						
30. The faculty feedback on my recorded MI interaction with a patient in clinic was valuable.						
31. Explain why (or was not) valuable.						

32. How frequently do you use MI skills with your patients in clinic? *[Circle one]*

Never **Seldom** **About half the time** **Most of the time** **All of the time**

33. What successes have you achieved using MI during patient care?

34. What challenges have you experienced using MI during patient care?

35. I am interested in additional MI training sessions. *[Circle one]*

YES **NO**

36. If yes, list what additional MI training topics or experiences would have been helpful to address these challenges?

APPENDIX I

COLLABOTATOR CONFIRMATION LETTERS

Hi Angie,
I'd be happy to be a collaborator on your study. Attached is my CV. Let me know if I can be of any additional help,
Dina Korte

Dear Angie,

I'm writing to confirm with you that I would be delighted to serve as a collaborator on your thesis research project. Please accept this message as my written confirmation.

Attached please find my NIH Biosketch.

Thanks,

Janet Kinney

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