A Focused Ethnography of Undergraduate Nursing Students Who Are Using Motivational Interviewing

by

Lisa Michele Howard

A thesis submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

Faculty of Nursing

University of Alberta

© Lisa Michele Howard, 2015

Abstract

With an increased focus in health care on lifestyle modification to reduce risk factors for non-communicable disease, nursing students would benefit from knowledge and skill in supporting clients with health behavior change. Nursing students receive content for health education but have limited exposure to using behavioral counselling skills. Motivational interviewing (MI) is a promising approach to increase pre-licensure students' skill in the area of health behavior change. The majority of studies of MI attend to measuring its effect on health management behaviors while the research on teaching MI focuses on licensed health professionals. There is little research on teaching students MI and no inquiry including in the perspectives of students, clients and instructors.

The purpose of this project was to understand how undergraduate nursing students learn and apply MI in the clinical setting, and to determine the salient features from the perspectives of key participants in the learning environment: students, instructors and clients. A focused ethnography was employed to extend the understanding of how a theoretically based collaborative approach could be learned by baccalaureate nursing students and applied in a clinical setting.

The product of the inquiry is a cultural description of key domains associated with teaching students a relational skill, motivational interviewing, and integrating that skill into a collaborative partnership. All features in the domains are supported with literature, yet many of these features – such as using MI in a collaborative partnership or transforming through experiencing MI – have not been previously described. Issues were raised regarding the processes of learning motivational interviewing to be addressed by educators, clinicians and researchers.

Preface

This thesis is an original work by Lisa Howard. The research project, of which this thesis was part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name "WHAT ARE THE FACTORS INFLUENCING HOW UNDERGRADUATE NURSING STUDENTS LEARN AND APPLY MOTIVATIONAL INTERVIEWING IN COMMUNITY HEALTH", No. Pro00045243, FEBRUARY 13, 2014, and from the University of Lethbridge, No. 2014-011, FEBRUARY 28, 2014.

Dedication

To my beloved husband Brad. Thank you for your love, friendship, support and patience.

Acknowledgments

I extend my sincere appreciation to the following:

1) My supervisor, Dr. Bev Williams, a wise mentor and supportive scholar. At our first meeting she recognized the potential for the topic of undergraduate students and motivational interviewing and encouraged me to focus on this area throughout my studies. She knew when to give me space so I could grow as a scholar and when to give a helpful nudge when I was getting stuck. Dr. Williams consistently demonstrated excellence in character and manner and I have learned a great deal from her impeccable example.
2) The supervisory committee members, Dr. Joanne Olson and Dr. Helen Madill, who both provided clear feedback and thoughtful advice to strengthen the research project and dissertation preparation.
3) The research participants who welcomed me into their culture and shared their experiences – they kept me grounded and made the research meaningful.
4) These generous individuals who made time to read my work and participate as external examiners for the candidacy and defense: Dr. Joanne Profetto-McGrath, Dr. Sandra Davidson and Dr. Johanne Goudreau.
5) My colleagues at the University of Lethbridge who were always willing to discuss ideas and provide encouragement. I am especially grateful to Mrs. Mary Nugent for her vision regarding teaching nursing students motivational interviewing and her commitment to community health nursing.
6) The donors who provided awards from: Alberta Registered Nurses Educational Trust (ARNET), Sigma Theta Tau – Mu Sigma Chapter, Edmonton Foundation (Foote Family Fund), University of Alberta Queen Elizabeth II Graduate Scholarship.

Table of Contents

APPENDICES

List of Tables

List of Figures

CHAPTER I
Introduction

Internationally, lifestyle related diseases are a significant health burden, and in Canada they account for two thirds of all deaths (WHO, 2005). By focusing on individuals' roles in their own health and by engaging persons to adopt positive health patterns, governments hope to decrease the social and economic impacts of chronic disease (Advisory Committee on Population Health, 2002). Stakeholders recognize that education alone is insufficient, but clients themselves must engage in changing their own health behaviors (Whitehead, 2007; Whitehead & Russell, 2004). One approach to this issue is motivational interviewing (MI). This approach is distinct from didactic teaching because it is non-directive and aims to understand client resistance to and motivation for change. Given the growing interest in MI as a means of helping people adopt positive health patterns, considerable research is into its effectiveness is being undertaken. Despite this, minimal scholarly activity is directed towards helping undergraduate nursing students employ MI.

Research Problem

Health professionals cannot assume that wellness will be achieved through providing standardized information about healthy lifestyles and targeting compliance to health promoting behaviors (Montgomery-Dossey & Keegan, 2013). To support clients with lasting behavior change requires that nurses understand the unique features that influence client decision making and have the skills to support clients acting on those decisions. Professional nursing programs provide opportunities for students to learn, practice and incorporate health behavior change skills into clinical care (Hoving, Visser, Dolan Mullen & vanden Borne, 2010). Self-efficacy literature indicates students perceive a gap between their knowledge of lifestyle modification strategies

and their skills to engage clients in conversations on health behavior change (Darkwah, Ross, Williams & Madill, 2011; Goldenberg, Andrusyszyn, & Iwasiw, 2005; Spence Laschinger, 1996; Spence Laschinger & Tresolini, 1999; Tresolini & Stritter, 1994). Several outcome studies on education interventions demonstrate that students can learn and apply behavioral interventions with basic proficiency (Arthur, 1999; Lozano et al. 2010; Schlundt, Quesenberry, Pichert, Lorenz & Boswell, 1994; White, Gazewood & Mounsey, 2007). However, research with undergraduate nursing students using MI is limited to one study (Arthur, 1999). Research does not include student descriptions of learning about or using MI and no results of qualitative research was found on how clients experience this type of intervention from students. This gap provides an opportunity for further research to extend the current research on MI. By understanding how this theoretically based, collaborative approach is taken up by nursing students in clinical practice, educators can strategically incorporate MI into program curricula to strengthen student communication repertoires and better prepare students for the complexities of professional practice.

Study Purpose

With an increased focus in health care on lifestyle modification to reduce risk factors for non-communicable disease, nursing students require knowledge and skill in supporting clients with health behavior changes. Nursing students receive content on health education and are exposed to clinical experiences in which they encourage patients to adopt healthy lifestyle behaviors; however, they receive limited preparation in behavioral counselling skills. The purpose of this research was to identify and describe factors (such as norms, values, beliefs and behaviors) that influence nursing students as they learn and apply motivational interviewing in their community health clinical experience.

Study Significance

Client education is a significant role for nurses, and limited scholarly activity exists on how baccalaureate nursing students learn and apply health behavior change techniques – such as motivational interviewing – in a community health clinical experience. The findings are important because they contribute to the pedagogy of client education, in general, and answer a challenge from educators for nurse scholars to implement evidence informed approaches to undergraduate nursing education (Yonge, et al., 2005). Also, project findings can support the preparation of nursing students to work collaboratively with clients on making positive health changes. An ethnographic research method provided an in depth view of the complex processes shaping this phenomenon and it highlighted the formal and unstructured practices influencing students using MI in a clinical setting.

Research Questions

The broad question guiding the research was this: "What are the perceptions and experiences of undergraduate nursing students in utilizing motivational interviewing during a community health clinical placement?" Sub questions included:

- How do students describe learning about MI?
- How do students apply the principles of MI?
- How do students describe the effectiveness of MI in their practice?

Deductive research strategies that support predictions do not always increase understanding of these complex phenomena, but understanding the complex social processes surrounding the students from an inductive research approach can enable educators to better prepare them to deal with the health needs of the current population. Therefore, this research

used focused ethnography to investigate how nursing students learned and applied motivational interviewing in a community health clinical experience.

Definitions

Client: Someone who receives motivational interviewing from a nursing student as part of the care process.

Community health clinical experience: A 13-week placement of two, eight-hour days each week (208 hours in 13 weeks). The experience targeted in this research is on reducing general vascular risk or tobacco use.

Instructor: A master's prepared, registered nurse who teaches and supports nursing students in using motivational interviewing as part of their community health clinical experience.

Motivational interviewing (MI): Motivational interviewing is a broad group of interventions variously referred to as health coaching, behavior based counselling and educational interviewing. In health education, MI is consistently defined as a client centered conversation that evokes personal importance and resolves ambivalence about change (Miller & Rollnick, 2013). These descriptors share the features of assessing readiness, addressing indecision and guiding action towards behavior changes that promote health, reduce disease risk or manage chronic illness. MI based education differs from didactic teaching, it is non-directive and elicits a client's internal motivations for change while exploring the real-life context where change occurs.

Undergraduate nursing student: A third or fourth year baccalaureate nursing student enrolled in a 13-week community health clinical experience who has education and support in using MI as part of a community health clinical placement.

CHAPTER II

Literature Review and Background to the Study

The purpose of this review was to locate the proposed study on MI by undergraduate nursing students in relation to the broad area of client education and the emerging practice of MI for lifestyle behavior change in health care. The review traced the question's origin along several lines of inquiry: health education for behavior change, nurses and health education, student nurses and health education, MI in health care, nurses and MI, and undergraduate students and MI.

Approach to the Research Literature

The search strategy was developed to identify research about baccalaureate students, nurses, client education, education, behavior change and motivational interviewing. The literature search comprised four phases: a search of online databases, a bread crumb strategy of scanning reference lists of retrieved articles, a review of articles citing the selected studies as additional sources and a hand search of tables of contents in health education journals. Electronic databases accessed included ERIC, Academic Search Premier, Medline, CINAHL, Psych Lit, and the Cochrane Database. The search terms were grouped in relevant areas as follows: nurses, nursing students, undergraduate, and baccalaureate; health promotion, health education, patient education, counselling, coaching, MI, motivational enhanced treatment, and behavior change; and health promotion, chronic illness, prevention, lifestyle, education research, pedagogy, teaching evaluation, education evaluation, training and staff development. Word truncations and wildcards accommodated variations in spelling, while adjacency operators supported within text searching.

Client health education is an active area of scholarship. I discuss both the approaches to and effectiveness of client education for behavior change in general as well as to undergraduate and practicing nurses in particular. This is important context for the research because it illustrates how traditional strategies to support client health education are related to emerging approaches – such as MI – for influencing lifestyle behaviors. To gain the pre-licensure perspective, articles in two topic areas are selected from the past 10 years: 1) preparing baccalaureate nursing students to educate clients on healthy lifestyle choices and 2) assessing intervention effectiveness. This work includes research studies and program evaluations of both classroom and clinical based health promotion experiences. The approaches used by practicing nurses and their effectiveness for client education are assessed using both synthesis and primary research.

For research on MI in health care, the search identified 100+ research studies. The review of this material included synthesis research published in the past 10 years (2003 onward) on training clinicians to provide MI and evaluating the effectiveness of MI. Several recent, primary studies are selected to highlight research that specifically looks at nurses using MI as well as client and clinician experiences with this approach. The date range for MI in this review reflects two parallel developments. The first influence is the emerging presence of any research activity on MI. Motivational interviewing developed in counselling only three decades ago and demonstrated utility in health care over the past two decades (Miller & Rollnick, 2013). The second aspect is a shift in health care in the late 20th century, where active involvement of patients in setting goals for their own health practices became a common feature of educational programs (Hoving, Visser, Dolan Mullen & van den Borne, 2010).

Due to minimal research into undergraduate nursing students using MI, the search strategy encompassed research on any undergraduate students in the health disciplines (leading to professional licensure) engaged in classroom or clinical activities focused on engaging patients or developing clinical skills related to health behavior change. Papers published between 1994 and 2015 were selected to address student perceptions, student clinical experiences and student performance outcomes related to supporting patients in health behavior change.

Client Education for Behavior Change

Health education interventions targeted at modifying lifestyles are the cornerstone of population level health promotion initiatives as well as individual level risk factor reduction and chronic disease management programs (Hoving et al., 2010; Kreindler, 2008; Whitehead, 2007; World Health Organization 2005; 2011). Traditional lifestyle education approaches include giving information on healthy lifestyle behaviors, instructing clients on managing conditions, profiling risk factors and direction on risk reduction, giving feedback on laboratory tests to support treatment adherence, and demonstrating how to monitor skills for condition management. These approaches are used singly or in combination and work through transferring generalized risk reduction strategies or illness knowledge to effect a change in client behavior through didactic and structured approach (Schwerin, 2004; Whitehead & Russell, 2004). That is, when clients understand the problem(s) associated with their current behaviors and have the correct information based on the best available evidence, they will voluntarily adopt healthy practices to reduce disease risk and improve their overall health through enhanced self-management. The underlying assumption is that education will influence a person's ability to manage their health or illness condition, and this can avoid or offset complications to have an effect on both individual health and system level costs (Duke, Colagiuri & Colagiuri, 2009).

The orientation to self-management evolved from the ideas of civil rights, patient rights, and feminist movements in western society that aspired to shift decision-making from institutional authority and to increase personal autonomy and decision making for individual citizens (Rothman, 2001). The impact of the civil, human and patients' rights movements persist today and shape health education through the amount of information available to clients and the health system's assumptions about client willingness to participate in health decision making. The spirit of self-management education is both benevolent – supporting client decision-making – and problematic – expecting client engagement. As Jonsdottir observed, the duty of involving clients in their care as part of self-management "turns to *making* clients become responsible for their health and well-being" (2013, p. 622). The conditions of making choices in the self-management of health are quite complex and this may be at play in the ambiguous results in the research on the effectiveness of health education.

The literature provides a mixed impression of the effectiveness of health education and authors posit this may be due, in part, to the pedagogical preparation of undergraduate and practicing nurses or to tensions in the practice environment such as lack of time or priority given to health education activities (Holt & Warne, 2007; Miller & Beech, 2009; Wiley, Irwin & Morrow, 2012). A contextual influence could be the nature of traditional health education interventions which are underpinned by best evidence and operationalized through standardized protocols (Berwick, 2009). The highly structured nature may (re)produce assumptions of homogeneity about client experience that strip the encounter of its inherent complexity and humanity that shape the uptake of new behaviors (Montgomery-Dossey & Keegan, 2013). A pedagogical influence presents in the sporadic attention to the use of theory to structured program delivery and guided clinician comportments (Anderson, Funnell & Hernandez, 2005;

Baranson, Zimmerman, & Lufei, 2012; Boyde, Turner, Thompson and Stewart, 2011; Jaarsma, Nikolova-Simons and van der Wal, 2012). Health education, then, may reach its limits as a means to address clients' behaviors because it neglects lifestyle patterns that are embedded in a complex network of social relationships and the choices to make changes are not simply based on information alone (Jusko-Friedman, Cosby, Boyko, Hatton-Bauer & Turnbull, 2011).

Teaching strategies in client education. The synthesis research of client education (Appendix A) identified a collection of strategies – or education components - applied alone or in combination in areas such as diabetes, congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD). The most common strategy was information giving using didactic education and written materials to increase knowledge about the disease condition (Baranson et al., 2012; Boyde et al., 2011; Effing et al., 2007; Heinrick, Schaper and de Vries, 2010; Hurley, Gerkin, Fahy and Robbins, 2012; Lovemann, Frampton and Clegg, 2008; Norris, Lau, Smith, Schmid & Engelgua, 2002; Steinsbekk, Rygg, Lisulo, Rise & Fretheim, 2012). Practising self-management included strategies such as exercise programs, food planning, relaxation techniques and self-monitoring skills for shortness of breath, body weight, blood sugar and blood pressure (Baranson et al., 2012; Boyde et al., 2011; Heinrick et al., 2010; Hurley et al., 2012; Steinsbekk et al., 2012). Preparing a treatment plan and using goal setting was rarely identified, described in Heinrick et al. (2010) for glycemic control in diabetes care and by Effing et al. (2007) for managing exacerbations of chronic obstructive pulmonary disease (COPD). Only two reviews did not specify or describe strategies beyond reporting that typical approaches were used for diabetes self-management education, however the nature of the typical approaches was not clear (Deakin, McShane, Cade & Williams, 2005; Duke et al., 2009).

Individual or group intervention with single or multiple components. Group and individual-based health education interventions were investigated solely or in comparison, however their effectiveness varies across the synthesis research. Multiple component interventions were those which used a combination of the strategies mentioned previously to target multiple self-management behaviors, for example using didactic education and hands-on practice within a program that focused on several lifestyle behaviors as well as self-monitoring practices. Single component interventions typically provided an educational program targeted at a single behavior.

While Norris et al. (2002) did not distinguish between group and individual education in their meta-analysis demonstrating the benefit of self-management on glucose control, the majority of the studies were group interventions. Deakin et al. (2005) reported group education was superior to routine care or wait list control group for persons with diabetes, however a subsequent review by Duke et al. (2009) compared individual education to both usual care and group interventions in a similar population and identified no indications to recommend group over individual education. The authors observed the body of research was small and the variety of approaches within each intervention may contribute to the varying outcomes between the reviews to date (Duke et al., 2009). As well, it is possible this is an early indication of the need to consider the best 'fit' of approach for the client – identifying those that may benefit from alternatives to group education – as these authors recognized a small subset of clients with elevated average blood glucose levels benefitted more from individual rather than group education (Duke et al., 2009). In a review of individual education trials, Loveman et al. (2008) compared targeted and multi-strategy approaches. The authors concluded that multi-component interventions appeared to have stronger effects on outcomes for persons with type 2 diabetes,

however the effectiveness the educational interventions was difficult to assess due to differences in combinations of components as well as the range of behaviors targeted (single or multiple) among the primary studies. A subsequent review evaluated the differences between not only individual and group education but also the effect of multi-focal strategies on diabetes outcomes (Heinrick et al., 2010). Similar to previous reviews identifying the benefits of group education in diabetes care and the need to include multiple components, Heinrick et al (2010) identified that group interventions with a practise component had the greatest potential to improve metabolic control. Despite lack of precise conclusions to guide specific format and components, the authors of the clinical practice guidelines for diabetes' self-management education recommended a combination of group and individual education using multiple strategies to allow for knowledge acquisition and practice with self-management (Jones, Berard, MacNeill, Whitham & Yu, 2013).

In a review of fourteen studies in COPD self-management education in individual and group format, Effing et al. (2007) noted nine studies used individual education. While all primary studies used multiple components to address knowledge of disease and self-management, only six interventions included use of a treatment plan and these demonstrated positive effects for decreasing hospital admissions (Effing et al., 2007). These authors combined both individual and group education in their analysis and did not distinguish if there were between group differences for group based or one-to-one education. Similarly, Hurley et al. (2012) observed variation in the impact of self-management education programs for COPD on exacerbation of symptoms and hospital admissions associated with different uses of components (individual, group, mixed) and multiple foci across studies. In a review of five studies to assess the impact of action plan usage as a tailored intervention for individual care, the reviewers could

not make a conclusive statement about this as an exclusive approach to supporting clients' responses to COPD exacerbation and recommended action plans be part of a multi-focal, self-management program (Walters, Turnock, Walters & Wood-Baker, 2010). Interventions to support adults with COPD may increase client knowledge and quality of life and decrease hospital admissions, however the focus of educational interventions varies within single and group education approaches. In addition, these authors observed that primary studies differed between targeting single or multiple behaviors so it is not clear which combination is most helpful to support comprehensive self-management (Bourbeau & van der Palen, 2009; Effing et al., 2007; Hurley et al., 2012; Walters et al., 2010).

Similar to diabetes and COPD, client education for heart failure self-care is an integral part of the disease management process. Given the complexity of the disease requires clients to take much of the responsibility for their daily monitoring to quickly identify changes in symptoms and proactively respond to prevent exacerbation or hospitalization (Boyde et al., 2011). In a review of 19 studies, Boyde et al. (2011) noted the common approach across the studies was an initial in person didactic session (12 studies) followed by supplemental strategies such as written information, group education or one-to one sessions. Multiple foci were targeted as part of self-management programming, perhaps reflecting the multiple behaviors involved in monitoring the disease and decreasing the impact of heart failure on daily life, but this made it difficult to combine studies to observe patterns of effectiveness. Of note, most studies identified at least one significant educational outcome; so the programs were effective to some extent but exactly what could be the most effective element is still not identified. In an integrative review of nineteen studies Baranson et al. (2012) identified eleven studies where both individual and group interventions were used and eight studies where only individual education alone was used.

Educational interventions targeted understanding the disease and adapting lifestyle behaviors to self-manage as well as monitor heart failure. Similar to Boyde et al. (2011), regardless of individual or group based intervention, participants increased knowledge and awareness of management and monitoring protocols (Baranson et al., 2012).

Theoretical frameworks and client education. The recent clinical practice guidelines for the management of COPD, diabetes and heart failure each recommend a client-centered approach to self-management (Arnold et al., 2006; Canadian Diabetes Association, 2013; O'Donnell et al., 2008). Some authors note that a theory-based educational intervention may provide both a cohesive explanation of what happens in the program and guidance for clinician practice in the delivery of the intervention (Baranson et al., 2012; Deakin et al., 2005; Loveman et al., 2008). Theories may be invisible and operating at the individual clinician level but the aforementioned authors note a coordinated strategy to base health education programming on one or more theories would guide the assessment and tailoring of the intervention to clients' needs and focus the research evaluation strategy. Health education doesn't occur in isolation, it intersects with the client's encounters with the wider health system, and therefore these encounters in turn influence how education is taken up and assimilated into the clients' lives. A validated, theoretically guided approach may address the inherent complexity rather than reducing education to a series of strategies. Theoretical frameworks were identified in the synthesis research, but few studies explicitly described how a theory was used in the context of the clinician's role or the nature of the intervention. Heinrick et al. (2010) observed that collaborative approaches in the primary studies were associated with increased participant knowledge in intervention groups, but did not describe the nature of the collaborative approach. Deakin et al. (2005) recommended educational programs adopt collaborative approaches and

future research could undertake a qualitative analysis of theory-based concepts and methods to uncover how these can be evaluated quantitatively. Several theories were mentioned in the diabetes and heart failure studies and including: self-efficacy theory, health belief model, Orem's self-care deficit theory (Baranson et al., 2012); and health decision model, Roy's adaptation theory, behavioral assessment theory (Boyde et al, 2011) in the area of congestive heart failure education; with adult learning theory, empowerment theory, participatory model, health belief model and trans-theoretical theory (Deakin et al., 2005) in diabetes education. A theory-based approach may be beneficial but this isn't typically included in study designs. In light of the increasing numbers of co-morbid conditions, a comprehensive theoretical approach may go further to engaging clients in change and supporting positive outcomes than a disease specific approach to self-management (Bodenheimer, Lorig, Holman & Grumback, 2002). A potential theory to guide client education is constructivism. This is a theory of teaching and learning that, in health education, would encourage educators to use active techniques to engage clients in real-world problem solving as well as reflecting on their own experiences to expand understanding (Brandon and All, 2010). A constructivist approach to health education focusses on psychological influences, attitudes and beliefs toward health, insights from past experiences and personal feelings, relationships between past experience and present context and compassion toward clients navigating their health experience (Braungart & Braungart, 2008). The relevance of constructivism for collaborative practice will be discussed later in the review.

Effectiveness of client education. Supporting clients to enhance their health through education aims to have a positive impact by increasing quality of life and decreasing illness related complications through self-management or self-care (Kingshuk et al., 2013). The effectiveness of education on self-management or self-care proves difficult to measure in

primary studies and to compare in the synthesis research due to the diversity of tools employed for measuring behavior change, treatment adherence or physiological response. Furthermore, changes in self-management may be insufficient to evoke a change in disease-related pathology; outcomes may show a positive directional change but may not reach statistical significance in the short duration of a clinical trial. To this end, client education some influence on client outcomes, but there is no consistent agreement on the specific combination of strategies to achieve those outcomes.

Effectiveness of teaching on knowledge. In Deakin et al. (2005), diabetes knowledge was measured using a variety of tools and all eleven studies demonstrated positive change in knowledge from group intervention scores compared to usual care scores. The analysis of three studies of similar measures demonstrated the mean difference in diabetes knowledge scores increased for the intervention group (95% CI 0.7 to 1.2; $Z = 8.18$; $P < 0.00001$). The self-management assessment tools were likewise varied. Overall, the quality of food intake improved in group based educational interventions and the amount of oral diabetes medications decreased in five trials. Heinrick et al. (2010) noted positive effects in four of five studies evaluating diabetes knowledge as well as increased diabetes management self-efficacy in three of their five studies; however this did not translate into changes in clinical outcomes. Steinsbekk et al. (2012) noted improvements in diabetes knowledge up to twelve months beyond the intervention, but effects waned in studies following clients for more than one year. The decrease in knowledge retention over time may reflect a change in relevance of information related to maturation and increasing complexity of the condition as part of a chronic illness trajectory. In eight studies assessing heart failure knowledge following self-management education, Boyde and colleagues (2011) found the intervention groups demonstrated a statistically significant improvement in

heart function knowledge compared to control groups; however the assessment tools were unique for each study. Education is only one component and there may be a synergistic effect among a discrete combination of program components that influences self-management, outcomes measures or both.

Effectiveness of self-management or self-care. Self-management means learning about and adopting ways to promote your health or effectively manage one or more health conditions; this may involve technical skills, problem solving and goal setting (Bodenheimer et al., 2002). Self-care is very similar and is understood to include day-to-day activities – or adjustments in the activities - to maintain good health or chronic condition management that may require specific adaptations to daily routines in response to a change in health such as worsening of symptoms (Baranson et al., 2012; Deakin et al., 2005). Both self-care and self-management are used interchangeably in the literature and measured using a variety of approaches including adoption of specific lifestyle behaviors (eating, exercising, monitoring illness, taking medications) and response to changes in illness condition (adjusting behaviors or medications, accessing health services); it is assumed that *good* self-management or self-care will have a positive impact on clinical outcomes such as blood sugar level, body weight and shortness of breath. The small number of studies and the diverse measures to assess diet, psychosocial response and other self-management outcomes made it difficult to draw conclusions about impact of education in most of the areas assessed (Duke et al., 2009; Loveman et al., 2008; Steinsbekk et al., 2012). Loveman found little influence of self-management education on weight loss or body mass index (BMI), but a subset of studies reported a decrease in use of oral diabetes medications. Heinrick and colleagues' (2010) review of 14 studies showed behavior change in areas of diet and exercise in ten of these studies. Eight of the investigations reported positive effect sizes,

irrespective of educational strategy (individual or group) ranging from 0.29 to 1.00, but only one study reported improvement in BMI. Physical activity increased in five studies with moderate effect size. In two studies with positive effects related to diet and exercise, there was no significant impact on behavior change. While education may improve some behaviors, there was consistent improvement across all self-management behaviors and, in this review; the changes in self-management did not translate into changes in clinical outcomes (Heinrick et al., 2010).

Effing and colleagues (2007) reviewed 14 randomized trials of educational interventions for chronic obstructive pulmonary disease (COPD). The education approaches included group education, individual education with or without an action plan, written information alone, and multi-modal intervention (individual, group, written information and action plan). For measures of quality of life with COPD, seven studies used the same assessment tool and scores for intervention groups improved or were equal to the control groups on specific impact of COPD and overall quality of life. While this outcome was statistically significant, the differences did not reflect a clinically relevant improvement for this scale. For the studies assessing the impact of self-management education on shortness of breath, a small but significant reduction was detected in two studies. There was a positive directional change in the control group for one study, but the remaining three studies identified no differences for intervention or control groups. No significant effects were found for the effect of education on frequency of exacerbations. The authors noted that the measures used in the primary research were not consistent which may have influenced the conclusions and they recommended further research using consistent assessment tools in this area (Effing et al., 2007). In addition, the educational interventions varied considerably and it is unclear which combination was most helpful to quality of life and symptom management. Action plans are tailored strategies to support clients with COPD to

recognize and respond to exacerbations of symptoms. In a systematic review of the use of action plans, Walters et al. (2010) observed that action plans increased knowledge about exacerbation, but the authors lacked sufficient data to assess the impact of an action plan – as a sole intervention – for COPD quality of life and recommended a multi-focal approach to COPD education.

In a synthesis of 19 studies of educational interventions for persons with heart failure, authors observed positive changes that reached statistical significance in exercise tolerance, medication adherence, interpersonal support, self-efficacy and patient satisfaction (Boyde et al., 2011). The effects were not sustained for exercise tolerance or medication adherence and there were no changes in health literacy or depressive symptoms. Confidence in self-management decision making showed improvement but this did not reach statistical significance (Boyde et al., 2011). Six of the eight studies that assessed self-care outcomes demonstrated significant differences in self-care behaviors, but did so using variety of measurement tools. Similarly, quality of life measures in twelve studies used different tools and demonstrated improvements in scores in only two studies. The authors observed that knowledge is an aspect of self-efficacy, but programs need to provide skills and practice using the knowledge and feedback on how clients are applying these skills (Boyde et al., 2011). Baranson, and colleagues (2012) completed a review of 19 studies of heart failure self-care. In the 13 of 17 studies assessing self-care, the reviewers noted improvements in the intervention group compared to control on selected self-care behaviors, but noted that these studies augmented education with individual counseling. For measures of health related quality of life, there were statistically significant improvements in intervention groups compared to controls. Self-care was measured by performance of behaviors such as medication use and daily weights while self-management was often measured using

standardized tools. Because self-care maintenance and self-care management were measured as distinct features, and often differently between studies, the number of comparisons was too small to make conclusions about effectiveness.

Effectiveness of education on clinical outcomes. Norris et al. (2002) reviewed studies comparing self-management education with usual care and looked at net change in average blood sugar. On average, self-management education interventions decreased average blood sugar by 0.76% (95% CI 0.34–1.18) more than the control group at immediate follow-up; by 0.26% (0.21% increase - 0.73% decrease) at one to three months follow-up and by 0.26% (0.05–0.48) at greater than four months follow-up. The results should be considered carefully as the assessment of average blood sugar was measured differently in earlier studies and data presented as HbA1 was converted to equivalent HbA1c where possible. In this review, the heterogeneity of measures that may suggest meta-analysis was not appropriate as these results were not reproduced in subsequent reviews. Deakin et al. (2005) synthesized eight randomized controlled trials assessing average blood sugar (HbA1c) and overall, at 12–14 months follow-up, the intervention groups had significantly lower weighted mean HbA1c in seven trials of 0.8% (95% CI 0.7 to 1.0; $Z = 9.63$; $P < 0.00001$) and a significantly higher weighted mean diabetes knowledge score in three trials. A significantly larger number of patients in the intervention group reduced their use of diabetes medication over 12–14 months. Groups exposed to moderate or typical amounts of education had similar outcomes of HbA1c measures compared to the most intensive groups. Initially, there was no statistically significant impact on body weight or BMI until 12 month follow up. There was no improvement in lipid profile, which is often more sensitive to behavior change, and only a small positive directional change in triglyceride level, but this was not sustained at the final follow up. Blood pressure improved at four to six months,

but this was not sustained to the final follow up assessment. The impact on physical activity was inconclusive which was consistent with subsequent reviews. The substantial decrease in average blood glucose observed in this review was promising (but would not be observed in successive reviews) however, authors concluded that group-based education for diabetes self-management has a positive effect on clinical outcomes.

A narrative synthesis by Loveman et al. (2008) looked at 21 studies of interventions addressing a single behavior compared to comprehensive interventions addressing multiple aspects of self-management. The actual interventions varied widely as did the outcome measures. Six studies identified positive effects of the comprehensive interventions on average blood glucose and these studies were longer-term interventions (> 6 months) where there was a shorter interval between the completion of the program and the follow-up evaluation. The effect of the intervention on average blood glucose was stronger in clients with higher average blood glucose at baseline. The majority of the 31 studies did not report any significant differences in diabetic control measures, blood pressure, BMI, weight or other measures between control and intervention, or between different intervention groups. The exception was in two controlled studies that investigated medication use and identified a reduction in use of oral hypoglycemic agents (indicating improved blood sugar control) for the groups receiving comprehensive program intervention. A review by Heinrick et al. (2010) of fourteen studies examined multi-pronged education strategies for their influence on type 2 diabetes outcomes. Thirteen studies measured average blood sugar, yet only five of these studies demonstrated lowered levels for intervention groups at follow up (effect size ranged 0.26 to 1.25). The authors concluded that group interventions with opportunities to 'practice' self-management were superior to group interventions with education and care planning, individual education or usual care for lowering

average blood glucose. However, this occurred in less than half of the studies so there was no consistent influence and no studies measuring blood pressure reported effects that reached statistical significance.

Duke and colleagues (2009) evaluated nine studies to compare individual and group approaches to self-management education with usual care for the impact on blood sugar. The outcomes assessed included: blood sugar control (average blood sugar or HbA1c), body mass index (BMI), blood pressure (BP), diet management, diabetes self-care, psychosocial responses to a chronic condition and tobacco use. The small number of studies and diverse measures to assess outcomes made it difficult to draw conclusions about impact of health education and the differences between individual and group approaches in most of the assessment areas. Three studies compared individual with group based education and initially observed the group education was superior to individual or routine care for glycemic control at the six to nine months assessment (mean difference of HbA1c of 0.8% (95% CI 0.3 to 1.3, P = 0.0007) but this was not sustained at twelve or eighteen month follow up where there was no significant difference between groups on blood sugar control (decrease in mean difference of HbA1c 0.03%, 95% CI -0.02 to 0.1, P = 0.22). In the six studies evaluating individual education with usual care, there was no significant influence of the intervention on average blood sugar control (HbA1c mean difference decrease of 0.1%, 95% CI -0.3 to 0.1, p=0.33). However, for a sub-set of participants with poorly controlled blood glucose (HbA1c > 8.0%), there was a positive benefit of individual education to decrease HbA1c by 0.3% (95% CI -0.5 to -0.1, P = 0.007). The authors concluded that persons with more difficulty managing their diabetes may benefit uniquely from individual education, however there is no clear evidence to recommend group over individual care. The recommendations are interpreted with caution due to the small number

of studies. Duke et al. (2009), similar to other review authors, were challenged to evaluate self-management education effectiveness for the lack of consistent descriptions of the education interventions and varying outcome indicators on blood sugar control, body weight, psychosocial impact and burden of condition management. The nature of usual care is not homogenous across control groups in the primary studies and the content of the attention control should be included to better understand the nature of routine care as a comparator.

Steinsbekk et al. (2012) examined twenty-one studies to build on previous reviews of group based interventions compared to routine care. For the main clinical outcomes, average blood glucose (HbA1c) in group based education was significantly reduced at 6months in 13 studies by 0.44%, (P=0.0006), at 12months by 0.46% in 11 studies (P=0.001) and sustained at two years in three studies by 0.87% (P<0.00001). In three studies assessing fasting blood glucose levels, these were also significantly reduced for the group based intervention compared to usual care in five of the twenty-one studies at six months follow up by 1.26mmol/l (P<0.00001). However, this was not sustained in any studies at twelve months follow up. The consistent, irregular response of blood glucose to education interventions may be related to the inconsistencies in the kinds of education interventions as well as the measurement of blood glucose using HbA1, HbA1c or point of care testing using patient meter. Steinsbekk and collegues (2012) echoed observations by previous reviewers (Deakin et al., 2005; Loveman et al. 2008) when noting that a comparison of interventions based on theoretical underpinning may uncover what is most effective about group education and what could enhance the consistency in performance of either group or individual education.

In 14 studies reviewed by Effing et al. (2007), four studies used group programs and nine studies used individual programs, six of these studies also included an action plan. The results from those six studies showed positive effects of self-management education on health care utilization, with a significant decrease in the number of patients with one or more hospital admissions (odds ratio: 0.60; 95% CI 0.42 to 0.86) but no significant difference in primary care doctor and nurse visits for lung disease or absenteeism from work. To assess the influence of an action plan on COPD exacerbations, Walters and colleagues (2010) reviewed the use of individual action plans combined with limited to no self-management education. The use of action plans with limited COPD education support did support clients to identify a worsening of symptoms and take initiative to act appropriately through medication adjustment, however this did not have an impact of use of healthcare resources. In a meta-analysis of twelve trials of comprehensive COPD self-management education (education plus exercise program) on hospital admissions, Hurley et al. (2012) identified a reduced probability for a respiratory related admission in nine studies of clients participating in self-management education compared to usual care (odds ratio: 0.76, 95% CI 0.65 – 0.88 $p < 0.001$). In four studies that assessed education's impact on COPD exacerbation and emergency room visits, there was no difference between intervention groups and usual care. While the authors selected studies for their comprehensive nature (education plus exercise program), the intervention varied sufficiently across studies that the inconclusive results may be due to the diversity in approaches. In a synthesis of 19 studies of heart failure education interventions, Boyde et al. (2011) noted improvements in fifteen studies on at least one outcome of self-management however this translated into decreased hospital admissions in only four studies. The authors identified that B-

natriuretic peptide levels (a biomarker for heart function) decreased in intervention compared to control group participants but levels did not reach statistical significance.

Duration of follow up. Norris et al. (2002) noted that duration of interventions ranged from 1 to 27 months (median 6), the number of contacts ranged from 1 to 36 (median 6), and the total contact time ranged from 1 to 28 hours (median 9.2). Loveman et al. (2008) noted most studies followed participants for 12 months, with rare exceptions of 16-18 month follow up, and this may not be sufficient duration for self-management behaviors to either take hold or assert an influence on clinical outcomes. Duke et al. (2009) expressed concern that heterogeneity in clinical measurement as well as variations in follow up may dilute differences between intervention and comparator. Steinsbekk et al. (2012) noted that interventions to initiate change in self-management may be insufficient to sustain behavior change and this may be what is influencing the limited or even waning of treatment effects over time. In reviews of COPD education, follow up varied from four to twelve months and authors speculated changes in self-management status take time to accumulate and manifest in clinical outcomes such as hospital admission rates and longer follow may be appropriate (Effing et al., 2007; Hurley et al., 2012). Benady (2010) estimated 18% of persons with COPD had one hospital admission per year; therefore follow up of longer than twelve months may be needed to assess the long term impact of COPD self-management education on health system use. Baranson et al. (2012) and Boyde et al. (2011) likewise noted in their reviews of congestive heart failure education, the incremental changes that occur which may not manifest in significant changes in clinical outcomes measured at three to twelve months.

Health education appears to show benefit; however evidence reported in the empirica; studies is inconsistent when it comes to which components of self-management are beneficial. The inconclusiveness may stem from the diversity in approaches, the small numbers of similar studies for comparison purposes and the varied measurement tools for assessing knowledge, self-management and clinical outcomes. Interventions to address single facets may yield positive outcomes in specific areas, however the changes are diffuse both within and across the primary studies. While the variety of approaches may be justified, one must question if the particularities of an illness entity are reasonable drivers of health education programming. Bourbeau and van der Palen (2009) and Jonsdottir (2013) took a broad view of health education and noted the approaches are primarily clinician centered with only a recent move to incorporating a person centered relational stance. To this end, person-centered health education is ideally underpinned by a theoretical or conceptual framework that guides how the clinician interacts as well as how the material is tailored for each client. In addition, health education in its present form is criticized because it remains disease centered and this is out of step with the reality of chronic conditions that are often multiple (WHO, 2011). What may need attention is *how* a clinician interacts as much as what they say in that interaction. A clearly articulated collaborative approach that incorporates a theoretically based behavioral component with practical strategies may be a promising next step for health education. Authors recommend a theoretical underpinning (Baranson et al., 2012; Deakin et al., 2005; Loveman et al., 2008), however the theory should accommodate the varying degrees of willingness to participate. As well, theory should guide both assessment and tailoring of the intervention to the client's needs and inform the evaluation strategy (Boyde et al., 2011). A participatory theory based approach may go further to engaging clients in change and lead to positive outcomes that can be sustained. Health

education as a whole may be due for a cultural shift that situates education as a collective responsibility of the system – not just the disease specific program (Bourbeau & van der Palen, 2009; Butler et al., 2013; Jonsdottir, 2013).

Nurses and client education. The guidelines for diabetes self-management education emphasize a collaborative and coordinated approach by all team members involved in client care (Canadian Diabetes Association, CDA, 2013). In two meta-analyses of nurse-led education interventions, Welch, Garb, Zagarins, Lendel and Gabbay (2010) assessed the effectiveness of case management and Tshiananga et al. (2012) reviewed studies of multi-focal approaches (individual and group based care) in diabetes education. Neither review discussed a theoretical approach to health education or provided a complete description of the nature of education approach. Welch and colleagues' (2010) meta-analysis of 29 studies comparing control and intervention groups on reduction in average blood sugar (HbA1c) from baseline to final follow up at 12-36 months showed a large overall effect size favoring case management intervention (ES = 0.86, 95% CI: 0.52–1.19, Z = 5.0, $p < 0.001$). This corresponds to an average reduction in HbA1c of 0.89% (95% CI: 0.63–1.15) in intervention compared to control groups and similar improvement in blood glucose levels as noted in previous reviews by Norris et al. (2002) and Deakin et al.(2005) . The investigators performed subgroup analyses on clinical setting and team composition and demonstrated these were important predictors of effect size and sources of heterogeneity in blood glucose outcomes. Specifically, the hospital-based programs produced larger effect sizes than community based clinics ($p<0.0001$) and team-based care (led by a nurse case manager) was superior to a single nurse case manager ($p>0.0001$). Similar to Duke et al. (2009), this review identified that participants with higher blood sugars had better response to education. It is important to explore the distinctions between the performance of clients with

higher baseline HbA1c and those closer to the treatment target because the clinical focus and self-management support for each group is quite distinct. Clients with higher average blood sugars experience less hypoglycemic events and treatment focusses on lowering overall blood sugar through medication and lifestyle adjustments (CDA, 2013). The treatment focus for clients approaching the target average blood glucose focusses on lowering blood sugar in the immediate time period following eating and this is achieved through intensive medication adjustment that may increase the chances of a hypoglycemic state (CDA, 2013). The fine-tuning of medications to the client's metabolic response alongside hypoglycemic events may translate into slower progress in changes relative to average blood sugar and therefore appear to dilute the treatment effect for this particular segment of the sample. So the case management intervention may produce subtle positive directional changes which are as important but outcome measures might not be sensitive to these changes. Within case management interventions, it was not clear how much of the case management time with clients was focused on self-management education as there are many aspects to diabetes care such as referrals and financial considerations. Similar to other synthesis research, the heterogeneity of approaches made it difficult to discern what aspects of case management were helpful. Training of case managers was not well described and fidelity measures were not included. The authors recommended further research on case management approaches and that research should provide a full description of case management to allow for comparisons of particular features across studies.

In Tshiananga et al.'s (2012) review of 34 studies of nurse-led self-management education, the interventions incorporated individual and group based support and included multi-focal strategies of information giving and practice with self-management through discussion of personal experiences and hands on demonstrations. Nurses provided regular telephone contact to

aid client self-monitoring and support groups to complement education session. Participants were followed for as briefly as one month to longer than twelve months. Clients in the studies were typically older than 65 years and had higher average blood glucose at baseline (HbA1c >8.5%). The nurse led diabetes self-management education was associated with a significant, mean reduction in HA1c by 0.70% in the intervention group when compared to usual care. Nurse led programs were more effective for persons 65 and older and, similar to previous reviews, the education effects waned in follow up after six months or more. This was lower than previously observed by Welch et al. (2010), however this review included more studies and an older population. For cardiovascular risk factors, the authors noted a minor, but positive impact on blood pressure and blood fats and suggested further research into these kinds of outcomes because there may be other aspects that influences cardiovascular health that are not recognized as part of diabetes education. As mentioned previously, this kind of gap in a disease specific education program may be addressed by a comprehensive approach to health education (Bourbeau & van der Palen, 2009; Butler et al., 2013; Jonsdottir, 2013; WHO, 2008).

The consensus recommendations for COPD care suggest that self-management education should be disease specific and tailored according to optimal outcomes (O'Donnell et al., 2008). These guidelines identify that education interventions must address smoking cessation, monitoring for exacerbations and accessing community resources for support along with client specific goals for decreasing shortness of breath, increasing activity tolerance and responding to worsening in symptoms. Taylor et al. (2005) reviewed nine randomized controlled trials of nurse case-management type interventions of community based health education to decrease hospital admissions for COPD. While case-management was not described as the overarching approach, the review authors indicated the interventions were variations of a community based type of

case management (Taylor et al., 2005). The focus of the interventions guidelines for consistent self-care which involved nurses teaching clients about medication use, smoking cessation, exercise and response to exacerbations. Meta-analysis performed on the three studies using same quality of life measure demonstrated no influence of intervention on quality of life at one, three or six month follow ups. The outcomes of meta-analysis should be viewed with caution as there was variation in outcomes across trials and small numbers of studies using similar measures. The authors could not recommend nurse-led, community based or self-management education. Beyond nurses as the providers of care, there were few consistencies among the studies to support comparison. The authors' conclusion, in part, reflects insufficient results from meta-analysis but overall there were few trials of like interventions to allow sufficient pooling of data to make firm conclusions. In addition, the heterogeneity in case-management type of approaches may reflect the diverse needs of the COPD population and there may be benefit to using some consistent measures of generic features in health education and focus specific measures on client-related goals. Zakrisson et al. (2011) examined the impact of a nurse-led multidisciplinary team approach in a primary study on the effects of pulmonary rehabilitation education for clients with COPD. Participants in the intervention group increased scores on quality of life measures and decreased rate of exacerbations. Both intervention and control (usual care) groups increased functional capacity and while this improvement reached statistical significance it did not meet the test's clinical benchmark for walking performance in elderly persons. Participants in the intervention increased scores on quality of life at two months follow up and this was sustained for 12 months; while the change was statistically significant it did not reach the minimal clinically important difference which required an increase in sub-scores for all domains of the quality of life scale. Clients in the control groups (usual care) increased their use of medications

which did not increase their quality of life, suggesting that medications alone may not address symptoms sufficiently for clients to experience a better quality of life. The positive direction of change in measures demonstrate benefits to self-management education for COPD, but still raises questions to what is most helpful to support persons to live well with chronic lung disease. An integrative review of factors influencing COPD self-management identified that many education programs address a limited scope of personal determinants of self-management and overlook the importance of provider determinants (Disler, Gallagher & Davidson, 2012). These authors posit that physical and psychological impacts are addressed in most education programs; however personal factors such as social isolation, loss of role, spirituality and life meaning garner little attention. Provider determinants to address in preparing clinicians for self-management education include knowledge of community supports as well as communication skills for problem solving. To tailor the interventions to what is most helpful, nurses need to understand the complexity of COPD and how clients grapple with self-management. Similar to previous authors' observations, Disler et al. (2012) noted that self-management research has a narrow focus on discrete aspects of illness care and interventions to address these such as treatment adherence, exercise and symptom management (Bodenheimer et al., 2002; Butler et al. 2013; Jonsdottir, 2013). While these are important, there is a collaborative quality to care that must be strengthened across the health system to support clients so they feel they can trust clinicians to honor their situations and provide tailored support to help clients realize the fullest expression of health.

The guidelines for heart failure care recommend collaborative education activities that involve both client and caregiver (Arnold et al., 2006). Education should be ongoing with intensive follow up to support clients to self-monitor, recognize symptom changes and respond

to these quickly by adjusting medication and contacting a health provider for guidance. Nurses play a significant role in education through supporting medication adherence, assisting clients to problem solve around symptoms and communicating among team and client/family (White, Howie-Esquivel & Caldwell, 2010; Yehle & Plake, 2010). Despite intensive education for symptom recognition and good adherence to using a diary to track weights, in one study over 75% of clients did not follow up with a health care provider for treatment guidance about excessive weight gain (White et al., 2010). This may be due to the intense focus of the intervention (a single behavior and outcome) without a complete understanding of the multiple behaviors that influence behavior change (Vaughn-Dickson & Riegel, 2009).

In a review of heart failure self-efficacy education interventions by nurses, the authors noted that multi-modal approaches delivered by nurses using both individual and one-to-one appeared to positively influence self-efficacy but the combination of approaches that influenced self-efficacy was unclear (Yehle & Plake, 2010). Nurses customize care to meet clients' needs and this makes it difficult to determine a clear pathway to support all clients with diverse health experiences. In light of inconsistent results in the research on self-management education for clients with heart failure, Jaarsma et al. (2012) interviewed nurses who worked with CHF clients to understand how they provided heart function education. In the content analysis of interviews with eight nurses, the authors identified how these nurses tailor education interventions not only to each client, but also within each client encounter. Nurses described how they continually re-assess a client's ability and willingness to both receive and act upon new information. There was an ongoing effort on the nurse's part to win the client over to behavior change, evaluate barriers in a client's behavior, recognize opportunities to encourage autonomy, and provide both practical knowledge and relevant tools to help clients meet their self-identified goals. The tailoring

occurred through ongoing collaboration so the nurse matched the education intervention to the client's needs, in this way nurses applied both relational and educational skills to heart function education. While the study was qualitative and the sample purposive, these results provided insight into how educational programs could be provided and what decision making needed to tailor educational interventions.

The lack of compelling conclusions on the best approaches to health education may not signal ineffectiveness, but rather insufficient evidence to make firm recommendations for practice. Both primary and synthesis research note heterogeneity in approaches poses challenges to mapping a clear path of health education programs. The path to meaningful and helpful health education may be through a theory derived, client-centered approach that is flexible to accommodate single or co-morbid conditions and compassionate to the challenges clients face with making changes to improve their health. Clients' perceptions of their health education experiences tell us much about what needs to be included in health education as well as possible avenues to improve client-centered outcomes.

Client perceptions of education. In a study of patients' perspectives on diabetes health care education by Cooper, Booth and Gill (2003), a collaborative and group-based intervention underpinned by adult learning and personal learning theory was compared to usual group education. The intervention self-management education content was negotiated between the nurse and participants at each group meeting while the control group received standard information. Intervention group participants (n = 53) identified the nurse's approach as collaborative, inclusive and respectful compared to participants in the control group (n= 36) who commented on the nurses knowledge of the content and ability to answer questions. In addition, intervention group participants identified they felt they could discuss how to balance what they

'should' do for their diabetes and what they 'could' do in their lives. The group based environment with tailored education provided participants with an opportunity to hear how others managed the challenges of diabetes and a venue to get credible information that was both relevant and timely. The investigators used mixed methods and identified some parallels in clinical outcomes where participants in education intervention initially showed significant differences to the control group in their blood glucose control (P 0.005) at 6 months but this was not sustained at 12 months. Similarly, perceptions of effectiveness of self-care treatment did improve in the intervention group at 6 months ($p = 0.02$) yet this was not sustained at 12 months ($p=0.23$). Attitudes toward diabetes showed positive changes in the study group compared to control at both six ($p = 0.04$) and 12 months ($p=0.01$). This mixed-methods study drew upon a theoretical approach, but the authors did not describe how this guided the relational aspects of the nurse's interaction. Clearly linking the theory to program content and clinician comportment may help to identify how nurses develop relationships that support health behavior change and could provide insights on how to best adapt education programs over the long term to support sustained change.

Casey, Murphy, Cooney, Mee and Dowling (2011) interviewed both clients and nurses to develop and evaluate a structured education intervention for persons living with COPD. Because the existing literature was ambiguous on the combination of education interventions, the authors used a trans-theoretical model of change along with an empowerment model to provide a relational orientation to the program and practical guidance on how that education would unfold. Pre-program interviews with sixteen COPD clients revealed an interest for education that was less content specific and more oriented to how clients could maintain control, preserve energy and use medications to manage symptoms. Interviews with forty-four health care providers

identified a need for specific program admission criteria, content and delivery strategies. The authors developed and trained providers in program delivery. A grounded theory method was used to analyze participant experiences of program (Casey et al., 2011). The eighteen participants reported they knew more about COPD, how to manage shortness of breath and when to use medications for symptom control upon completing the program. Participants were initially fearful of breathlessness during exercise and the program helped them to adapt medication to activity. In addition, clients noted the relationship with the nurse was different than other education programs because they felt comfortable talking with the program nurse and through this developed skills in discussing their health with other providers. The ability to think out loud with the nurse and in the group education setting increased participants' confidence in making adjustments to their treatment plan when they were on their own. The observations of client experience are helpful and it would be valuable to have a better understanding of how the nurse incorporated theoretical principles into the education program and retest this approach with other groups.

Vaughan Dickson and Riegel (2009) analyzed focus group interviews of clients with heart failure to identify what clients found helpful as well as their perceived needs to improve skills in self-care. Participants commented that when faced with making behavior changes for heart failure control, they attempted rigid adherence to the protocol but were often unsuccessful with adherence as the demands were too much in the context of their lives. Some clients evolved to 'cheat' and 'fix' so that impulsive eating was balanced with medication adjustment and exercise and a return to healthy eating. Client education needs focused on two areas: tactical skills to manage the demands of the disease in their daily life and situational skills to manage when daily routines are disrupted by social commitments, work, cheating or symptom

worsening. Knowledge and skill development were supported through experiential learning where clients could connect symptoms with behaviors and draw on past experiences to problem solve their way through challenging situations. The support from both health providers and social networks enabled clients to have trusted persons to consult with around recognition of changes in symptoms and decision making to address problems. Clients may 'know' the best way to manage their conditions, but Vaughan Dickson and Riegel (2009) suggest that self-efficacy evolves through naturalistic decision making that aligns with the client's values and beliefs about health. A skill-building paradigm would begin with assessing the level of tactical skills needed for self-care and any unique circumstances that need to be considered in teaching these skills. Skill-building exercises would focus on skill deficits and managing those unique situations (Vaughan Dickson & Riegel, 2009). Through connecting the client's knowledge, experience and impact of their behaviors, clinicians can strengthen both tactical and situational skills that attune clients to managing the unique demands of heart failure in their lives.

The participants in health education programs for diabetes, heart failure and COPD are a diverse group and varied approaches are employed by health care providers when supporting individuals to make lifestyle behavior changes. The dichotomy of disease specific versus comprehensive education may oversimplify the complex processes at work in behavior change, what is needed to sustain change and how this can be integrated into clinician practice.

Nursing students and client education. Undergraduate nursing students' proficiency in client education for health behavior change is usually assessed through self-efficacy measures, anecdotal reports in learning journals or client feedback on surveys. Student's formation as health educators occurs in both the classroom and the clinical setting.

Student self-efficacy and client education. Students' perceptions of skill with health education for behavior change have been reported using self-efficacy measures (Darkwah, Ross, Williams & Madill, 2011; Goldenberg, Andrusyszyn and Iwasiw, 2005; Spence Laschinger, 1996; Spence Laschinger and Tresolini, 1999; Tresolini & Stritter, 1994) survey questions of knowledge and practice (Chalmers, Seguire & Brown, 2003; Mooney, Timmins, Byrne & Marie, 201: Wu, Deng & Zhang, 2011) and phenomenological descriptions of an exemplar case (Scheckel, Emery & Nosek, 2010). The body of literature in this area consistently demonstrates that students rate or describe their content knowledge of disease pathophysiology and modifiable risk factors somewhat higher in relation to their ability to engage patients in the process of health behavior change.

Self-efficacy (SE) is defined the expectancy a person has in their ability to succeed in specific situations; this belief is mediated by factors such as practice and self-evaluation, peer observation, feedback, and situational psycho-emotional responses (Bandura, 1977, 2001). Tresolini and Stritter (1994) used a mixed methods approach to examine *when* 4th year medical students received health education content and *whether* this content contributed to their health education self-efficacy. Students acknowledged receiving content on smoking cessation, nutrition and exercise throughout their program; however they reported no preparation in how to impart this knowledge. The most helpful sources of self-efficacy included clinical experience and role models. Feedback on clinical performance was described as vague and therefore not an important mediator of skill. Physiologic triggers were not identified as influential in self-efficacy assessment. The authors recommended using standardized patients to augment clinical experiences as well as integrating practical training into clinical experiences with skilled clinical roles that provide targeted feedback.

In three separate studies of nursing students' self-efficacy, students rated self-efficacy with knowledge of health promotion activities higher than their ability to counsel patients on health promotion topics such as smoking cessation, nutrition and exercise (Darkwah et al. 2011: Spence Laschinger, 1996; Spence Laschinger & Tresolini, 1999). Nursing students ranked feedback and observational experiences as less supportive of self-efficacy and ranked counselling practice – either in classroom or clinical setting – as more valuable for increasing proficiency. When nursing students are compared to medical students, the nursing students rank higher in all areas of self-efficacy with health promotion activities (Spence Laschinger & Tresolini, 1999). While three studies identified clinical experience strengthened self-efficacy with knowledge and skills (Tresolini & Stritter, 1994; Spence Laschinger, 1996; Spence Laschinger & Tresolini, 1999), Darkwah et al. (2011) demonstrated that classroom as well as clinical experience improved health promotion self-efficacy. Goldenberg et al. (2005) assessed self-efficacy with patient health teaching following a classroom simulation experience with both didactic education and role play. These authors observed significant improvement in SE for patient assessment and evaluation but no changes on SE scores in planning for behavioral change. The students had concurrent exposure to clinical teaching, yet were assessed only on the impact of classroom simulation experience. In ranking the intervention's effectiveness, more than 50% of respondents identified simulation as effective and more than one-third ranked the intervention as very effective. These studies suggest that students should be exposed to a variety of self-efficacy sources on as many occasions as possible throughout their undergraduate program to enhance proficiency in health education.

In describing knowledge, attitudes and behaviors of undergraduate nursing students, investigators noted that students may be exposed to theoretical material about risk factor

reduction however, the students perceived this content was not well connected to clinical experiences and this diminished both importance and confidence in carrying out risk reduction education (Chalmers et al. 2003; Mooney et al. 2011). Wu et al. (2011) noted that students scored high in general knowledge of cardiovascular disease, but only half of respondents could identify targets for risk factor reduction. All three studies reported competing clinical priorities and lack of knowledge in health education strategies as barriers to engaging patients in conversations about lifestyle modification. Some students viewed patients' tobacco use as a coping strategy (Chalmers et al. 2003) and perceived 'unwillingness' on the part of the patient as precluding any discussion of lifestyle modification (Wu et al. 2011). These studies reflect similar themes identified in the previously discussed self-efficacy research where there is a gap between students' knowledge and skill regarding health behavior education. To this point, the research on student perceptions has shown the importance of social contexts (demands of the clinical environment and norms about patient autonomy) where health behavior change is enacted. Nursing students are taught to respect patient choice, however engaging patients in health education interventions sometimes goes against patient choice (Chalmers et al. 2003; Wu et al. 2011). The complexities surrounding the processes of health behavior change may place students in a conundrum where they lack confidence, conviction and ability to both fulfill their perceived professional role obligations and develop the necessary type of therapeutic patient relationships to support lifestyle change.

In an interpretive phenomenological study of students' experiences with health promotion education, Scheckel, Emery and Nosek (2010) identified that students (N=8) perceived both content mastery and skill proficiency as equally important in their education encounters. The authors described how students learned patient education for behavior change through a process

called ‘addressing health literacy’. The themes of addressing health literacy included students attuning themselves to the patient’s language, demonstrating sensitivity about how and when to provide information and supporting understanding through customizing messages to align with the patient’s context. The authors link the phenomenon of addressing health literacy to van Manen’s (1991) work on pedagogical tact. In the research interviews, students shared how valuable it was to have feedback from both patient and instructor to help refine their education approach. In addition, the opportunity to tailor information to the patient’s health literacy sharpened the students’ interpersonal skills and strengthened their knowledge of lifestyle modification.

Many of the studies on student perceptions of knowledge and skill with behavior change demonstrate students have more confidence in their content mastery than skill level with patient engagement in health education (Darkwah et al. 2011; Spence Laschinger, 1996; Spence Laschinger and Tresolini, 1999; Tresolini and Stritter, 1994). Because the students’ perceptions of self-efficacy are based on self-report, it is possible that they may be less skilled than what is reported. At the same time, the assessment tools may not be sensitive to small incremental changes that signal higher self-efficacy in practice. Scheckel, Emery and Nosek’s (2010) study, set alongside the aforementioned research on students’ perceptions of self-efficacy and confidence, affirms the importance of supporting students to become skilled educators through opportunities to grapple with the complexities of patient education, receive targeted feedback from a variety of sources about performance and apply theoretical knowledge to meaningful clinical cases.

Innovative community clinical experiences for health education. Clinical experiences are an essential part of nursing education as students learn technical skills, build on critical

thinking skills and hone skills in patient teaching. The research on community based clinical placements has included innovative experiences for students to work with patients on behavior change in areas of exercise, nutrition, medication compliance, treatment adherence and smoking cessation. As part of their socialization to the profession, nursing students require opportunities to explore the personal aspects and practical complexities of education and health behavior change (Little, 2006) and these opportunities have taken the form of one-to-one client sessions, formal group education programs and health fairs.

Community placements to support underserved populations provide diverse opportunities for students to develop health education skills; two research studies (Aponte & Nickitas, 2007; Wheeler & Plowfield, 2004) and one evaluation summary (Watson & Pulliam, 2000) described health education interventions with seniors and under-insured adults. To support students' independent practice in health behavior change in a community setting, Wheeler and Plowfield (2004) developed an intervention to assess the effect of brief visiting and telephone follow up by student nurses with seniors living with congestive heart failure (CHF). In weekly telephone calls students provided medication counselling, symptom management and lifestyle information. The students' journal entries provided accounts of incidental teaching and emotional support. Seymour and Cannon (2010) developed a student led community based program to support frail elders to improve physical activity, nutrition and weight control as well as health promotion to decrease social isolation. Across these studies, students described an increased facility with developing supportive relationships and tailoring information to the client's or population group's unique needs (Seymour & Cannon, 2010; Wheeler & Plowfield, 2004). This observation is consistent with the research on self-efficacy where practice was a mediator of proficiency (Bandura, 1977, 2001). Watson and Pulliam (2000) examined the role of physical activity

education in supporting successful life transitions for senior citizens. The authors developed an inter-generational health promotion education program where junior nursing and allied health students were paired with community dwelling seniors. In the program, the student assessed the client's medical needs, physical health and psycho-social health and then collaboratively planned a creative lifestyle intervention to increase the senior's level of physical activity. The student completed the implementation alongside the participant to gain a lived experience of making the change from the seniors' perspectives. The program activities were guided by Schumacher and Meleis' (1994) transitions in health and Knowles' (1989) principles of adult education. The students reported they linked nursing theory with adult education pedagogy to learn and live how to support behavior transitions with seniors. The seniors reported they enjoyed the social support and indicated the educational guidance helped their confidence to successfully increase physical activity. In a study of 10 senior undergraduate nursing students during their seven-week community experience, Aponte and Nickitas (2007) assessed students' experiences of health education and community members' impressions of a student-led health fair intervention. The students applied Dorothea Orem's Self-Care Deficit theory (Taylor & Willis, 2001) to their community assessment and organized health fair content based on identified health deviations in areas of physical health, diabetes, hypertension, heart disease and blood fats. Following Orem's framework, students view knowledge as a precursor to personal agency, therefore the health fair intervention was designed to empower participants with sufficient knowledge to assume responsibility for their health (Aponte & Nickitas, 2007). Students tailored the formal teaching and client handouts to the participants' health literacy needs. Participant feedback indicated the health fair was successful in providing relevant information to the community's needs and members wanted further information on exercise and behaviors to support healthy eating and

smoking cessation. Students' reflective journals demonstrated an increase their nurse agency; this was achieved through working with community partners on the health fair intervention, educating participants to take responsibility for health and increased cultural competence by working with diverse groups. Community based experiences appeared to provide students with opportunities to deliver the content for lifestyle modification and to link nursing and education theory to practice, however the processes students engaged in to support health behavior change remained unclear.

Clinical placement opportunities for students to consolidate theoretical knowledge related to healthy lifestyle education are challenging to find; two authors describe collaborative partnerships with university health centers that benefit student skill development in health education and participant knowledge of risk reduction for cardiovascular disease. Aponte and Eques (2010) evaluated the clinical experience of 40 undergraduate nursing students during their seven-week community clinical rotation in a program where students provided screening, education and wellness activities to a population of university students. In addition to one-to-one education based on participants' cardiovascular risk, student dyads developed education sessions derived from their community assessment. The authors reported that students tailored information to the university population and prepared a teaching plan based on a teaching-learning process, however they did not describe the theory supporting the process. The survey of university health center identified an increase in use of services as well as an increased demand for additional education on diabetes and hypertension. Nursing students rated high on personal satisfaction with the experience and identified an increased confidence with discussing health information and designing education programs using a variety of teaching approaches include one-to-one, group, print materials and internet sources. In a similar collaboration, Carter, Kelly,

Montgomery and Chesire (2013) used a university health center to evaluate a cardiovascular risk reduction program developed to enhance health education skills of undergraduate students in nursing, kinesiology and psychology. The program was a volunteer opportunity for students and not connected to any curriculum requirements. The students received a four hour orientation to specimen collection, physical assessment and goal setting; the theory guiding the program activities was not described. Students performed point of care testing to assess blood sugar and blood fats, physical assessment of blood pressure and body mass index as well an interview about lifestyle practices. The test and assessment results guided the preparation of an individualized risk factor profile. In the health advising session, the student discussed the client's individualized risk factors, provided information from program based 'tip sheets' and supported clients to set goals related to risk behaviors. In the two-year evaluation, 300 allied health and 20 nursing students participated in the program. The authors noted that nursing students' scores on the licensure exam improved by 23%, however could not attribute this improvement directly to the volunteer health educator program (Carter et al., 2013). Anecdotal reports from the students identified the match between the intervention content and the societal emphasis on health education. They learned important skills to bring to future clinical placements and practice. Students benefit from health education experiences through the collaborations between nursing programs and campus health centers. These kinds of experiences provide accessible and meaningful opportunities, however there is a need to make clear the theory informing the education experience to understand the aspects that influence the formation of student skill and the uptake of participant behavior change. Furthermore, how participants receive the intervention could inform aspects which are particularly helpful to supporting the adoption of healthy lifestyle behaviors in the student population.

Scheckel and Hedrick Erickson (2009) used interpretive pedagogy as a strategy to inform the cognitive and affective teaching processes for undergraduate nursing students in clinical settings. Students described how they used open ended questions and a spirit of curiosity to hear the patients' health stories of health and students described how they followed the patient's lead on areas for information sharing, development of self-care skills and behavioral change. In this study, the teaching was guided by the patient and his/her context rather than a treatment protocol. Students reported that disease focused protocols 'froze' patient initiative; through reflective listening they were able to draw out patients experiences about their health and explore possibilities for changes in health patterns. The relational processes articulated in Scheckel and Hedrick Ericson's (2009) interpretive pedagogy provides a view of *how* students learn to support patients with health behavior change. Supporting students' understanding of the processes of health behavior change is a step towards a clinical experience that promotes skills beyond imparting knowledge and toward helping patients follow through and use health information in a meaningful way (Coster and Norman, 2009).

Classroom activities to support client education. Newly graduated RNs are expected to be competent health educators for individuals, groups, and communities. Jones (2007) and Little (2006) developed classroom-based approaches based on debriefing audio and video recordings of teaching scenarios in a non-threatening learning environment to support nursing students preparation for a health-educator role. Little (2006) used an innovative praxis strategy informed by Carper's (1978) ways of knowing to increase nursing students' personal knowing in relation to learning to teach client groups. Eight nursing students participated in a teaching skills workshop and then identified an area of instruction to develop for the group education role play. The nature of the instructional skills was not described. Through videotaped role-play, group

education, participant feedback, self-reflection and revised role play, the students identified areas of strength and goals for future improvement. Students reported increased self-awareness through receiving feedback and adapting their teaching in the second role-play scenario. In addition, they increased their comfort with educating small groups and identified how their skills improved through watching and critiquing their contemporaries' teaching. In a qualitative analysis of conversation patterns in health education, Jones (2007) examined the effectiveness of a teaching and learning strategy consisting of tapes and transcriptions with 48 undergraduate nursing students. Participants received a 40 minute lecture on interpersonal skills for client-centered education and then listened to an audiotaped four-minute teaching session. The evaluation included an assessment of the audiotape using a communication skills checklist to identify whether the student-nurse demonstrated proficiency in eliciting information and understanding the client's perspective. Despite previous education on use of conversation skills to engage clients in healthy lifestyle discussions, the student evaluators identified their contemporaries did not demonstrate best practice recommendations on client-centered education in the sample audio-tapes. The students identified conversational patterns where the student-nurse provided information and did most of the talking during the education session. In addition, the student evaluators gained insight to their own lapses in client-centered health education. All students appreciated the opportunity to hear a 'live' teaching scenario and to debrief this in a safe environment. While this is beneficial to support students to identify positive health education practices, there is a missed opportunity for students to correct or refine their interpersonal health education skills through a repeat role play. Jones' (2007) study results suggested that students have difficulty in transferring the principles of client centered health education from previous classroom education to their clinical interactions, but following up with a a refresher lecture on

communication skills can identify behaviors that need remediation. Little's (2006) descriptive summary of her classroom intervention demonstrated students can remediate behaviors following feedback; however whether these behaviors will transfer into the clinical setting is not known. Feedback on performance is important to students' gaining insight to how to improve their health education interventions, yet the type and amount of feedback that is most helpful to support sustained proficiency is still to be determined.

Challenges and opportunities in client education. The authors of primary and synthesis research observe many studies did not apply education theory to client education. The disparate results of various interventions' effectiveness may be due, in part, to methodological weaknesses. Poorly described theoretical foundations may further compromise the education intervention. In light of varying results, some observations across studies are possible. In general, knowledge appeared to improve with education yet this did not always translate into changes in behavior. Collaborative approaches to education – particularly ones that elicited client views, values, belief or concerns – were more effective than traditional information giving strategies. Ongoing reinforcement using a variety of approaches and tailoring the intervention to the client's needs demonstrated better outcomes than standardized, highly structured interventions. Taken together, these observations suggest that client-centeredness and engaged learning – which underpin constructivism – are reasonable principles to apply in health education.

Education interventions are beneficial, however behavioral focused interventions to support emotional engagement were demonstrated to be more successful in activating a patient to change behavior than education alone (Lindner, Menzies, Kelly, Taylor, and Shearer, 2003; Miller & Rollnick, 2013; Myers, 2010; Rubak, Sandboek, Lauritzen & Christensen, 2005). No

single approach – health education or motivational based health coaching -- is sufficient to support patients to change health patterns (Whitehead, 2007; Coster & Norman, 2009; Olsen and Nesbitt, 2010). To meet entry to practice requirements and thrive in clinical practice, students will benefit from a theoretical understanding of a variety of approaches as well as clinical opportunities to develop skills in each area. The research demonstrates that nurses and nursing students have exposure to health education approaches; however these are primarily focused on providing information and engaging the client to adapt their lifestyle preferences to the dictates of evidence informed practice (Berwick, 2009; Whitehead, 2007). There is potential to incorporate specialized health counselling skills as part of undergraduate nursing education to strengthen students' relational capacities in lifestyle behavior change (Hegarty, Walsh, Condon & Sweeney, 2009; Olsen & Nesbitt, 2010; Registered Nurses Association of Ontario, 2012). In response to the complex health challenges of today's clients, behavioral interventions can complement both traditional health education and the practices surrounding client care where nurses engage clients to identify their health needs, strengths, capacities and goals (Doane & Varcoe, 2005; Jackson, 2012).

Several studies described collaborative approaches to client education yet it was unclear how this was enacted through the education program. Because multiple behaviors influence lifestyle choices (Miller & Rollnick, 2013), multiple approaches to support behavior change may be warranted. At the same time, several authors recommend a sound theoretical approach. To this end, a theory that accommodates multiplicity and is responsive to client's needs using multiple approaches is a reasonable start to guide education programming and evaluation as well as one that articulates with the broader system of the client's life. The direction the research takes us, from client perspectives discussing their practical and emotional experiences, suggests

that learning is continuous and influenced by values, beliefs, emotions, experiences, social context and physical environment (Gottlieb & Feeley, 2006; Montgomery-Dossey & Keegan, 2013; Plews, 2005). Health education then has a role in addressing these influences. This requires a shift in how education is delivered as much as what is included in the content.

Constructivism and health education. A constructivist approach to health education focusses on psychological influences, attitudes and beliefs toward health, insights from past experiences and personal feelings, relationships between past experience and present context as well as compassion toward clients navigating their health experiences (Braungart & Braungart, 2008; Merriam, Caffarella & Baumgartner, 2007). This kind of orientation is an attempt to loosen the structured-ness of education such that tailoring education is more than enlisting clients' cooperation but rather a truly collaborative exercise to support clients to gain insight, knowledge, experience and confidence to deal with health on their own terms (Cooper et al., 2003; Ockford, Shaw, Willars & Dixon-Woods, 2008; Plews, 2005). The use of a constructivist approach requires a shift in health programming philosophy from the belief of clinician as expert toward the clinician and client as collaborative partners in a reciprocal relationship. Constructivism accommodates a view of learning as an individualized and active process of creating meaning from different experiences (Brandon & All, 2010; Martin, 2002). The principles of constructivism appear to align with motivational interviewing (MI) through the similarities in a client-centered spirit that clinicians bring to the encounter and a form of dialogue that respects client experience while guiding problem solving toward negotiate tensions between the current and an alternative way of being.

Motivational interviewing (MI) is a practice based theory derived from experiences of working with clients recovering from addiction and adapted to support clients health related

behavior change (Miller & Rollnick, 2013; Miller & Rose, 2009). Drawing on Carl Rogers' views on therapeutic alliance, MI requires clinicians to come alongside patients and establish a trusting relationship to explore beliefs, values, and experience with a current state of health and engage clients in discussing alternative behaviors to enhance their health (Rogers, 1961; Miller & Rollnick, 2013). Similar to constructivism, resistance to change is interpreted as a signal of dissonance between present and preferred behavior as well as a cue for the clinician to re-engage the patient through asking open ended questions to respectfully explore ambivalence. In addition to understanding patient motivation for change, Rollnick and his colleagues guided clinicians to explore and challenge their own assumptions about the patient's ability to change (Rollnick, Miller & Butler, 2008). The added feature of examining one's attitudes about patients demonstrates the importance of clinician values and beliefs to an authentic therapeutic alliance and reflects an important aspect of collaborative care. A constructivist approach is a shift in thinking that challenges not only approaches to health education, but also structures around who is knowledgeable about health education– or who is the expert -- and who decides what is important knowledge about health and illness. In a landscape where the research on what works in health education is still emerging and what sustains health behavior change remains unclear, the promising outcomes of MI align with aim of the current research's to exlpore how MI could fit with undergraduate education, nursing practice and client care.

Moving from expert to partner. Tapp (2000) suggested nurses turn away from identifying themselves as experts, and towards uncovering client talents and validating client experiences. Nurses may have a limited repertoire beyond a very structured approach to client education. This is particularly challenging in a health care context that encourages nurses to be experts in their chosen field. Nurses may struggle to align evidence informed practice derived

from the research literature with practice informed evidence distilled from the client's perspective. A collaborative partnership to care is a sound theoretical approach that is derived from nursing practice that has potential to align with MI and nursing. The McGill Model of Nursing situates health as a learned phenomenon that is shaped by social context, in particular the family as social context, and nursing's role with clients is to support, strengthen and develop health (or health within illness) through actively engaging clients' participation in the learning process (Gottlieb & Feeley, 2006: Gottlieb & Rowat, 1987). This collaborative approach embodies a strengths-based orientation that assumes clients and families have capacity to grow in their health. The degree of engagement with health promoting practices, problem solving and goal setting is unique for each client and family. The nurse-client relationship is characterized by reciprocity, where both partners 'expertise is acknowledged, influence is shared and goals are mutually negotiated. The collaborative partnership approach to care elevates personal experience as well as the social, cultural, and institutional influences as contexts which shape the expression of those experiences. MI aligns with a collaborative approach to care in that it shifts the focus of health education away from 'fixing' a pathology and toward identifying strengths so that clients are positioned to gain insight into their troublesome health behaviors by working collaboratively to develop skills for new health patterns. This approach draws on clients' strengths to increase their confidence in acting upon and following through on their change goals and the importance of the change for the client and the implications of making this change in their lives. Information is provided selectively and only when the client expresses a willingness to accept that view. A collaborative partnership approach to care presents as a viable theory to guide health education and MI could support clients as they navigate a path towards wellness.

Traditional education approaches targeted at risk factor reduction – as a stand-alone intervention – may be insufficient to support long term behavior change. Nurses must develop skills that sustain a productive and long term relationships that respects the clients' context for change and point of view about adopting a healthy lifestyle while providing 'best evidence' in a respectful and supportive manner (van Wormer & Boucher, 2004). Nursing students have some exposure to client education, however without a theory guided approach and sufficient experience with feedback on proficiency, this may be insufficient to prepare them for practice. MI is a guided, client focused approach that is gaining recognition as a positive way to engage persons in behavior change through exploring values and beliefs about change and addressing worries and fears about adopting new lifestyle patterns (Emmons & Rollnick, 2001).

Motivational Interviewing

The Ottawa Charter for Health Promotion drew attention to working towards good health through creating supportive environments, enabling access to health information and supporting citizens to gain knowledge about their health and make health choices about lifestyle (World Health Organization, WHO, 1986). A subsequent status report on communicable disease identified the growing disease burden associated with lifestyle choices and recommended multi-sectoral approaches to address both individuals and their social context as a way to address this burden (WHO, 2005). In Canada, nearly half of the population lives with at least one chronic condition. Lifestyle patterns such as inactivity, obesity, tobacco use and a diet high in fat and sodium contribute to one-third of the chronic disease burden in developed countries (Nasmith et al., 2010; WHO, 2005;). As rates of lifestyle related diseases increase, new education strategies emerge as a means to support clients' adoption of healthy behaviors, live independently with chronic conditions while decreasing overall system costs (Kreindler, 2008; Lindner et al., 2003; WHO, 2005). Education is generally accepted as a strategy to teach patients how to adopt

positive lifestyle patterns, adhere to treatment regimens or self-manage chronic conditions. However, traditional models based on providing standardized risk profiles and disease specific information have neither prepared patients for a lifetime of behavior change nor consistently supported skills in adherence or adaptation over the long term (Lindner et al., 2003). MI is an approach to address lifestyle behaviors that not only support patients to gain insight into cognitive and affective processes of change, but also prompts clinicians to adopt an approach that recognizes the influence of internal motivations and social contexts on change (Rollnick, Miller & Butler, 2008).

Health behavior change occurs through a complex array of processes at the intersection of the clinician's comportment and the patient's readiness, understanding, ability, values and beliefs (Miller & Rose, 2009; Myers, 2010; Olsen & Nesbitt, 2010; Whitehead & Russell, 2004). Until the late 20th century, research on behavioral interventions focused on patients with addictions and investigated the antecedents and outcomes of behavior change as well as impact on the social contexts where change occur. Stephen Rollnick's work in the area of MI grew out of questions about the influence of the clinician's comportment, or fidelity to MI spirit and style, on clinical outcomes (Emmons & Rollnick, 2001). Distinct from cognitive behavioral approaches that correct errors in thinking and belief systems, MI is founded on the belief that health behavior change is mediated by the patient's internal motivations and their external context as well as qualities of the clinician-patient relationship (Hettema, Steele & Miller, 2005; Miller & Rose, 2009). In the realm of health education, this approach represents a shift from expert driven and information laden strategies (Hunt, 2011). The theory and techniques represent a client centered counseling style that uses empathic communication to engage patients in exploring and resolving ambivalence about health behavior change (Resnicow et al., 2002;

Rubak et al., 2005). The MI based clinical encounter focuses on developing a therapeutic alliance and maintaining a supportive tone that encourages patients to talk through the 'normal' ambivalence associated with adopting different lifestyle patterns. William Miller and colleagues (2009) initially validated MI for use with persons with alcohol misuse, however this approach shows promise in other areas of the health sector for its potential to address multiple behaviors related to lifestyle patterns, treatment adherence and self-management (Hettema et al., 2005; Hunt, 2011; Rubak et al., 2005; Thompson et al., 2011). As part of an holistic and collaborative approach to client care, some nurse scholars suggest MI is well suited to nursing practice because of its client centered orientation and attention to contextual, social and psychological features influencing choice making about health (Maissi et al., 2011; Riegel et al., 2006; Southard, Bark and Hess, 2013),

What is motivational interviewing? MI is a clinician guided and patient focused approach to behavior change that guides clients to explore and address their values, beliefs, worries, anxieties and fears about change (Emmons & Rollnick, 2001). This approach is characterized by theoretical tenets, relational characteristics and interpersonal strategies over two intervention phases. An adaptation of MI, called motivational enhancement therapy (MET), incorporates the use of feedback on biometric or psychometric scores along with MI and is typically delivered in an abbreviated series or shorter encounters (Cutler & Fishbain, 2005). MI is rooted in Rogerian person-centered care and a belief that people can talk themselves into change through a reflective dialogue with their inner self about the importance of change and the internal struggles with their ability to follow through on goals (Hettema et al., 2005; Miller & Rose, 2009). What distinguishes MI from other client centered forms of counselling is the clinician's ability to recognize, elicit and sustain change talk as well as the acceptance of

resistance as a natural course of overcoming the strain associated with change talk (Miller & Rollnick, 2013). The clinician-patient relationship is based on mutual trust and respect where the patient is the 'expert' on their lived experience and the clinician supports patient independence with making their health choices (Brobeck, Bergh, Odencrants & Hildingh, 2011). Prominent features of a sound MI intervention include therapist empathy, MI consistent behaviors (open-ended questions, affirmations, reflections and summary statements), normalization of resistance, fidelity to change talk and supporting the patient's capacity to change.

Motivational interviewing unfolds in two phases. Because change is understood as contingent on the patient's readiness and ability, each phase may present in one session or over a series of encounters. The clinician's aim in phase one is to draw out statements of interest, importance and ability relative to adopting new health patterns. In this opening phase, the patient is engaged in change talk to explore the importance of any potential change through open-ended questions and then supported to explore ambivalence about adopting new lifestyle behaviors through targeted reflections that heighten the difference between current and possible lifestyle practices (Emmons & Rollnick, 2001). Change is more than weighing and choosing a course of action based on benefits, it is a complex interplay between clients' values, beliefs and social practices (Southard, Bark & Hess, 2013). Addressing this complexity is the focus of phase two, where the clinician works to strengthen the patient's ability to set and follow through on a goal. Resistance is diffused through affirming the difficulty associated with change and supporting the patient's capacity to set and act upon a reasonable goal (Emmons & Rollnick, 2001). While presented as theoretically informed strategies, William Miller - the parent author of MI - described MI as *both* [emphasis added] a spirit and a style where the clinician assumes a collaborative stance, tailors the conversation to the patient's stage of change and actively

supports the patient's capacity to adopt health promoting behaviors (Miller & Rose, 2009). Indeed, a scripted or manual-based approach emphasizing strategies alone produces a lack of attention to empathic and collaborative behaviors and is counterproductive to a successful outcome as patients recoil from pressure to follow a prescribed course of action (Hettema et al., 2005).

The state of the science for motivational interviewing. Since its inception, MI's presence in the research literature has grown to more than 200 published randomized-controlled trials (RCT's), dozens of quasi-experimental and descriptive studies and several systematic reviews (Miller & Rollnick, 2013). The synthesis research focussed on training approaches for clinicians and intervention outcomes for patients. Recent primary studies have focused on outcomes of nurse led MI interventions, practicing nurses' experiences of applying MI in practice and patient perceptions of this approach. Currently there is little qualitative research represented in the literature. What there is, is limited to a few studies of patients' perceptions of the intervention and health care providers' experiences applying MI in clinical settings (Brobeck et al., 2011; Dellasega, Anel-Tiangco; Gabbay, 2012; Everett, Davidson, Sheerin, Salamonson & DiGiacomo, 2008; Minet, Lonvig, Henriksen & Wagner, 2011).

MI training for health care providers and undergraduate students. Two systematic reviews of MI training determined which professions take MI training and how these individuals are prepared to deliver an MI intervention (Madson, Loignon & Lane, 2009; Soderlund, Madson, Rubak & Nilsen, 2011). Two qualitative studies described how cardiac rehabilitation and primary care nurses experienced MI implementation and five quantitative studies evaluated whether nurses apply MI following a training program (Brobeck et al., 2011; Everett et al., 2008; Maissi et al., 2011; Noordman et al., 2012b; van Eijk-Hustings et al., 2011). Overall, the

research on students' skill development in behavioral counselling included the disciplines of medicine, nursing, nutrition, kinesiology, physiotherapy and dental hygiene. Only a small body of this research examined MI in particular with attention to students in medical school (Lozano et al., 2010; White, Gasewood & Mounsey, 2007), dental hygiene (Croffoot, Krust Bray, Black & Koerber, 2010), and nursing (Arthur, 1999).

Madson and colleagues (2009) reviewed 27 studies where nurses and physicians had received MI training followed by allied health personnel including counsellors, dietitians, mental health workers and office assistants. Clinicians practiced MI in specialty areas such as addictions counselling, harm reduction and chronic care. Length of training ranged from nine to sixteen hours and was delivered in a workshop type format. Theoretical content focused on phase one characteristics of engaging, eliciting and sustaining change talk and accommodating patient resistance to change. Skill development included role play (50% of studies), standardized patient feedback (25% of studies) and ongoing supervision (25% of studies). Less than half of the synthesized studies prepared clinicians to support patients in phase two which is supporting capacity with goal setting. The basic skill development aspect addressed phase one attributes and included various techniques such as modelling good counselling, videotape role play with expert feedback, group-based role play with peer feedback, self-efficacy assessment and simulated patient feedback. Only six studies used an objective tool to assess MI fidelity. The authors observed theoretical content and experiential practice as consistent components of MI training, however the type of experience, source of feedback and duration of follow up to best support skill development, particularly in the area of goal setting, require further attention. In providing feedback it appears that self-assessment does not align with peer evaluation or an objective behavioral tool, therefore self-efficacy measures are not recommended to assess MI

proficiency. As MI gained attention for its application in health care settings, Soderlund and colleagues (2011) questioned how generalist clinicians gained proficiency with this complex intervention in primary care settings. Their systematic review of 10 studies identified physicians, nurses and dietitians as the most common professions to receive MI education (Soderlund et al., 2011). The MI interventions targeted general lifestyle behaviors (eating, exercising and weight loss), diabetes care, medication adherence and smoking cessation. The length of training ranged from a 20-minute video to a two day workshop. There are two noteworthy features of this review that reflect a turn in where MI was being used and how training was done. Soderlund and colleagues (2011) focused on primary care settings in light of an increasing activity in both primary promotion and secondary prevention and all studies provided clinician follow up to assess proficiency at intervals ranging from one to six months after the initial training. Similar to Madson's review (2009), workshop content targeted phase one skills and used an array of measures to assess MI proficiency. The variety of proficiency measures in the synthesis research made it difficult to discern which aspects of MI spirit or style warrant further attention in training programs therefore a standardized fidelity assessment remains important to include in future studies. As well, further research into the barriers and facilitators to nurses using MI in primary promotion and secondary prevention primary care contexts (Solderlund et al., 2011).

The primary studies of MI training for practicing nurses provide insights into philosophical, operational and organizational challenges. A process review of MI implementation in a cardiac rehabilitation setting identified that nurses made a shift from providing information to eliciting discussion with patients about their interests for living well with heart disease (Everett et al., 2008). The participants received MI accredited training,

however the authors did not describe training program content or make a fidelity assessment of the nurses' proficiency. Typically, nurses in specialty areas are sources of expert advice; they typically make only small adaptations to best practice guidelines to fit client needs. The MI intervention required nurses to listen more and talk less. The nurses reported MI consistent behaviors supported patients' problem solving about personal health issues and the impact of health behaviors on self, family and friends. The authors highlight the relevance of MI spirit, especially for clinicians who are more accustomed to adopting an expert stance when supporting patients with complex and chronic health issues (Everett et al., 2008). This relational shift is echoed in a study of nurses' experiences with MI in health promotion (Brobeck et al., 2011). The investigators' content analysis of interviews with twenty primary care nurses identified the MI intervention as professionally enriching, adaptable to a variety of problem areas, supportive of a caring relationship and effective for distinguishing responsibilities in the nurse-patient relationship. This small sample of nurses valued MI; however the study did not provide clear direction to how nurses can integrate this approach into day to day practice. To better understand implementation difficulties or how to persuade clinicians to apply this approach the authors recommended increasing the sample diversity and identifying clinicians who have training but chose not to use MI.

To understand how MI training supports the shift from expert on chronic illness to expertise with behavioral communication, van Eijk-Hustings and colleagues (2011) audiotaped clinician-patient encounters of MI interventions in a specialty diabetes clinic at six months and again at 12 months after training. Twenty clinicians (4 primary care nurses, 8 diabetic nurses and 8 dietitians) participated in a two-day intensive training program with three supplemental sessions over a two month period. MI proficiency was measured using a seven point, Likert-type

Motivational Treatment Integrity (MITI) scale to assess audiotapes of clinician-patient encounters that were collected at six and twelve months post training. All clinicians identified the basic MI skills were easy to learn, however when the conversation took a more challenging turn, such as increasing patient commitment to action, these skills were insufficient to move the client to setting a goal. In addition, clinicians need more time to prepare open-ended questions and probes to support patient engagement. Overall, it was difficult for clinicians to shift from educating to eliciting discussion about living with a chronic condition. These challenges were reflected in the integrity assessment where behaviors related to empathy and spirit increased for all clinicians at both measurement intervals, however only the dietitian group achieved proficiency (score of >/= 5/7). All clinicians increased listening time to at least 50% of the patient encounters and increased the use of open ended questions and simple reflective statements. Similar to the synthesis research on MI training, clinicians rated themselves as more proficient than demonstrated in objective observations (Madson et al., 2009) and used fewer phase 2 skills that support patient goal setting (Madson et al., 2009; Soderlund et al., 2011). Clinicians reported the MI intervention brought focus to the patient sessions and created a collaborative atmosphere where they observed patients took the initiative to talk more about solving problems related to behavior change. This increase in talking reflects the investigators' observations that patients spoke at least 50% of the time during the encounter is a positive indicator; however a gap persists with the clinician's skill in moving patients to action.

In a randomized controlled study comparing nurse proficiency with MI and cognitive behavioral therapy, Maissi et al. (2011) concluded that both generalist and specialist nurses could successfully deliver these interventions to patients with Type 1 diabetes. The clinician training program consisted of didactic education, role-play, self-critique of audiotape interviews and

clinical supervision from expert trainers. Trained assessors used the Motivational Interviewing Treatment Integrity (MITI) scale, the MI Skill Code Global Rating Scale (MISC GRS) and Cognitive Rating Scale to evaluate 40 audio taped - client encounters by six nurse participants providing MI alone or MI plus cognitive behavioral therapy. An acceptable proficiency for MI skill is a score on the MISC Global Rating Scale >/= 5/7 and a ratio of open to closed ended questions of 2:1. In this study, all nurses demonstrated proficiency with average scores of 4.8-5.3 on the MISC GRS and a ratio of open to closed ended questions of 1.8:1 (Maissi et al., 2011). While the nurses demonstrated higher identification of disruptive cognitions about diabetes and greater application of methods to change these beliefs in the CBT aspect of the intervention, they demonstrated higher scores on average in areas of empathy ($t(38) = 2.45$, $p=0.019$), acceptance ($t(38) = 3.97$, $p=0.001$) and collaboration ($t(38) = 2.09$, $p=0.044$) in encounters of MI alone compared to MI plus CBT (Maissi et al., 2011). The only patient outcome reported was attendance and the rate for MI alone was 82.9% and MI plus CBT had 55.7% attendance. Further studies of nurse training in psychological interventions such as MI are needed to validate this study and to examine the fit and feasibility of MI use by nurses for other client groups.

Noordman et al. (2012b) assessed primary care nurses' proficiency using MI and questioned whether they adapted MI for primary health promotion and secondary prevention. The investigators videotaped 10 encounters by each of 13 nurses and assessed four counselling skill sets using a validated, five point, Likert type Behavior Change Counselling Tool. The MI training varied among providers, from one-half day to a total of six days and the investigators did not report on content of the training session content. Nurses did not adapt the MI intervention based on a focus of promotion or prevention; rather they tailored the intervention to the patient's difficulty with managing the behavior change. This challenged the hypothesis that interventions

for primary promotion are less complex and raised the possibility that behavior change interventions should match the patient's needs rather than underlying pathology. In 82% of consultations the nurses spoke less than 50% of the time; however they scored below average on all domains of counselling including assessment of willingness for change, use of open-ended questions, discussion of confidence for change and goal setting on a specific behavior. While clinicians may engage patients to talk more, the encounter is potentially not productive for lack of proficiency with the MI intervention and this brings into question the providers' ability to tailor the intervention to the level of complexity.

Research interventions with students using MI are grounded in MI theory and assess student performance based on fidelity to MI congruent behaviors such as evocation, collaboration, support, direction and empathy (Moyers et al., 2010; Miller & Rollnick, 2013). David Arthur (1999) compared second year baccalaureate nursing (BN) students with registered nurses who returned to complete a BN degree (post RN BN) on behavioral counselling performance. Both groups completed five modules on basic communication and introductory MI skills followed by a 30 minute interview with a standardized patient. The students rated their knowledge and skills of MI based counselling and the instructor assessed video tapes using a validated tool for simulated client interviews. Both groups reported similar increases in self-assessment of counselling skills and the student self-assessment demonstrated a moderate positive correlation with the instructor evaluation ($r=0.297$, $p<0.001$). While the RN group was expected to have greater skill, it appeared that MI based behavioral counselling was new to both groups. The author suggested the similarities in performance highlight a need for both initial and continuing education in specialized communication skills.

White et al. (2007) examined the effect of including MI theory and practice in the medical school curriculum. In year one, students received didactic education and role play and in year three the students reviewed didactic information, practiced role play experience and prepared a video with a standardized patient. Students were evaluated on their performance of MI congruent skills in the video tape using an adapted version of the Motivational Interviewing Treatment Integrity Tool (MITI, 2010). Their knowledge of MI techniques increased, however the performance scores at completion reflected novice level proficiency on the MITI scale with students using MI adherent behaviors for 66% of the interviews. The authors suggest the MITI, a tool developed for counsellors in practice, may not capture the students' skill sets accurately and lack of pre-test data limited an assessment of student progress following the education intervention. Lozano et al. (2010) performed a randomized controlled trial to test the effect of education sessions plus feedback on MI skills in pediatric medical resident training. The students received two, half day education sessions followed by feedback on their performance in a skill testing scenario. Students were tested on MI skills at three and seven months following the education. Immediately after the education session, the intervention group had progressed in their MI skills with patients who were 'ready' or 'unsure' about change. However, when tested three months following the education session, the intervention group of students decreased in performance in scenarios with patients who were 'unsure' about change. At the final testing, seven months after the education intervention, students increased their skills with both 'ready' and 'unsure' patients. Proficiency in MI is a process of formation that requires consistent and targeted feedback (Miller & Rollnick, 2013). The investigators suggested the results reflected the learning trajectory of novice users of MI and recommended that students receive education and

feedback on advanced communication skills throughout their professional program (Lozano et al. 2010).

Using a pre-test post-test design on the effect of brief education in MI, Croffoot et al. (2010) assessed videotapes of second year dental hygiene students performing a behavioral counselling intervention with either a standardized patient or role play scenario. Videotapes were assessed immediately following and several months after the education intervention. Students were provided targeted feedback and on their first videotape and their change in performance of their MI skills was compared to their second videotape. Overall, students improved on their performance of MI congruent behaviors, however the changes only reached statistical significance in relation to a decrease in use of closed ended questions ($p=0.01$) and an overall decrease in MI non-adherent behaviors ($p=0.03$) with no significant changes in areas of using affirmation, reflection and summarizing. Miller and Rollnick (1992) identify affirmation as a key feature of patient engagement and the clinician's ability to use reflection and summarizing as central to building a therapeutic relationship. In the feedback on the first tape, students were encouraged to provide more affirmative statements and to ask more open-ended questions. Croffoot et al. (2010) observed a positive change in MI behaviors between the first and second tape and this suggests students can use feedback to improve skills. Similar to the previous studies discussed, the authors observed health behavior counselling was a skill set that developed over time and while brief education interventions show merit, the challenge remains to ensure the technical skills and relational spirit become integrated into the complexities of daily practice. There is a need to better understand how students incorporate this kind of skill into their therapeutic repertoire.

A descriptive study of 675 students across 10 Midwestern American undergraduate nursing programs surveyed student self-efficacy and curricular content in behavior interventions related to smoking cessation (Lenz, 2009). Unlike earlier surveys on behavioral interventions for smoking cessation that focused on stage of change, Lenz (2009) included MI as an emerging approach that warrants consideration for inclusion into undergraduate nursing programs. Survey responses identified two out of ten nursing programs included content on theories of change and intervention approaches to support change, however no program provided clinical opportunities to practice behavioral counselling for smoking cessation. Students in programs with less curriculum content on behavioral approaches reported lower self-efficacy scores on knowledge of smoking cessation ($\bar{x}$ = 2.52 – 2.75 p = 0.07) compared to students with higher exposure ($\bar{x}$ = 3.65-3.77 p = 0.42). The investigators did not associate specific curriculum items with each institution so it is difficult to understand the relationship between content and self-efficacy. The author recommended nursing programs should include behavioral counselling content to meet the practice demands for tobacco reduction and other forms of lifestyle change, however there is a need to better understand how to best incorporate this into nursing curricula. Similar to previous surveys of smoking cessation counselling content in undergraduate nursing programs, it is still not clear what are feasible approaches to preparing pre-licensure professionals in behavioral interventions or how to best incorporate this material into nursing curricula (Hornberger & Edwards, 2004; Lenz, 2009).

The outcome studies of MI training interventions for practicing clinicians and pre-licensure students demonstrate the benefits of using both didactic and interactive approaches to support skill development. Many of the assessment tools are validated for use with counsellors in practice and it is possible the instruments do not capture the nuanced progression of novice

health professionals who are developing their communication repertoires (Croffoot et al. 2010; Lozano et al., 2010; White et al. 2007). The predominant research focus is on measuring education interventions to improve students' skills with behavioral counselling. Similar to the previously described synthesis and primary research on training clinicians in MI, it is possible the process and spirit of engaging patients in health behavior change is incremental and the brief duration of education interventions and infrequent feedback sessions may be insufficient to crystallize communication patterns. MI is a complex skill and perhaps suited to being taught over a longer period of time so trainees can apprehend basic skills that inhere phase one and then develop skills appropriate for goal setting that are associated with phase two. MI based counselling presents as a theoretically informed approach with clearly articulated skills and behaviors that can be included in health professions education curricula. The interventional studies demonstrate students can acquire skills and improve these skills with feedback. Without sustained encouragement and opportunities for continued development, aspiring and practicing clinicians may fail to realize the skill complement and professional comportment that imbues motivation based counselling for health behavior change. A better understanding of how students acquire and incorporate behavioral skills into clinical practice could provide context to enrich future empiric research on this patient centered approach to changing health patterns.

Summary themes across the research related to training clinicians and students in MI include duration of training, assessment of MI fidelity and feedback on proficiency following training. Soderlund (2011) speculated that newly credentialed nurses may be too preoccupied with technical aspects of care to cultivate a deep understanding of MI principles. Recently, van Eijk-Hustings et al. (2011) suggested preparation in patient centered approaches should be a part of pre-licensure education with professional development opportunities to strengthen skills upon

entry to practice. The duration of training for MI is still not well understood; education programs range from one to three days and are delivered in compressed format over days or short sessions over weeks to months (Brobeck et al., 2011; Everett et al., 2008; Madson et al., 2009; Maissi et al., 2011; Noordman et al., 2012b; Soderlund et al., 2011). It is acknowledged the basic phase 1 skills are learned and applied, but proficiency is low to moderate. In addition, some follow up to develop phase 2 problem solving skills supporting goal setting is required however the type and extent of follow up is unclear. Didactic teaching programs support an introduction to MI skill and spirit, but long term proficiency requires an investment in ongoing clinical based feedback; otherwise trainees rely on a small repertoire of basic skills (Madson et al., 2009; Noordman et al., 2012a; Soderlund et al., 2011).

The Motivational Interviewing Treatment Integrity Code and Motivational Interviewing Skills Code are validated tools developed for assessing counsellors' adherence to MI spirit and style, however there are an insufficient number of primary studies using either tool to fully understand its application to support skill development for students or health care workers or its feasibility in diverse health care settings (Croffoot et al., 2010; Lozano et al., 2010; Maissi et al., 2011; Moyers et al., 2005; While et al., 2007). MI is neither patented nor trademarked and researchers may report using motivational techniques, but these are not consistently described or when described they are not consistently validated. Beyond fidelity assessment, it appears there is an embodied quality of the intervention that requires a personal commitment to believing in patients' abilities that must imbue the clinician's conversational moves (Hettema et al., 2005). Noordman et al. (2012b) observed lack of proficiency may be compounded by the organizational mandate for clinicians to adhere to clinical practice guidelines that support externally prescribed health promotion or secondary prevention outcomes and this may present an agenda that is

contradictory to the MI intervention. An exploratory, qualitative study of rural nurse impressions of MI following an observation experience of skilled and unskilled providers similarly identified the intervention as very supportive and client-centered but potentially challenging to incorporate into generalist practice without training and follow up (Miller and Beech, 2009). The question remains as to what level of proficiency is sufficient for health care providers to support client behavior change (Emmons & Rollnick, 2001; Miller & Rollnick, 2013). Qualitative research of both patient and clinician experiences with MI may provide further insights into clinician training (Hettema et al., 2005; Miller & Beech, 2009). The most powerful quality of MI may be in the clinician's ability to resist an authoritarian stance by providing information about what the patient should be doing and to embrace a collaborative spirit that is genuinely interested in the patient's challenges with and capacity for positive behavior change (Everett et al., 2008; Miller & Rollnick, 2013; Thompson et al., 2011). Preparation and ongoing skill development in this area must be a priority and it is imperative to develop opportunities for clinicians to have feedback on their practice and assess what is particularly helpful to supporting them to develop both style and strategies of MI relevant to their practice population (Emmons & Rollnick, 2001; Hettema, Steele, and Miller , 2005).

Effectiveness of MI interventions. In addition to evaluating training approaches that support MI proficiency in clinicians, investigators tried to understand the impact of MI interventions on patients. The initial research on MI is in addictions counselling, specifically areas of tobacco cessation, alcohol misuse and substance abuse (Heckman, Egleston & Hofmann, 2010; Miller & Rose, 2009; Miller & Rollnick, 2013; Resnicow et al., 2002). With the success of MI in addictions, there was interest to explore MI's applications in health care. The parent author, William Miller, the motivations and contexts shaping lifestyle or chronic illness behavior

change may be different than those influencing addictions such that ambivalence may be high in the face of a lifetime of changes for questionable gains (Resnicow et al., 2002; Rollnick, Miller & Butler, 2008). Different than extinguishing addictive patterns, lifestyle adaptations for risk reduction and chronic illness management can take in multiple behaviors over the course of a lifetime; some behaviors are pleasurable and may not be perceived by patients or social contacts as problematic (Everett et al., 2008; Hettema et al., 2005; VanWormer and Boucher, 2004). To this end, increased research activity into MI's influence on patient behaviors related to health promotion and secondary prevention would benefit client care.

A review of the MEDLINE, CINAHL, PSYCHInfo, ERIC and Academic Search Complete databases yielded systematic reviews and meta-analyses of research studies published since 1985 on the effectiveness of MI in health promotion or secondary prevention, each review addressing anywhere from five to over a hundred studies. A number of general observations emerge from the synthesis research depending on the nature of the studies (i.e., intervention focus on addiction, health promotion or secondary prevention; whom is providing the intervention and in what setting; MI alone or combination therapy; methodological problems) and their relationship to recent primary studies in nurse-delivered MI interventions.

Intervention focus. The diverse foci reflect an expansion of MI's application from addictions to health care. Burke, Arkowitz and Menchola (2003) observed the majority of MI studies investigated tobacco, alcohol and drug abuse, and a small number of studies addressed diet and exercise. A meta-analysis of 72 clinical trials included problem drinking, gambling, smoking, drug abuse, harm reduction, eating disorders, water purification practices, treatment adherence, diet and exercise (Hettema et al., 2005). Rubak and colleagues (2005) noted that MI interventions were used in diabetes and asthma care. As literature accumulated, syntheses

concentrated on specific areas such as diabetes (Alam, Sturt, Lall & Winkley, 2009; Ismail, Winkley & Hrabe-Hesketh, 2004; Matinolli, Kyngas & Kaarliainen, 2012; VanWormer & Boucher, 2004), cardiovascular health (Thompson et al., 2011), obesity (Armstrong et al., 2011; Sargent, Forrest & Parker, 2012), musculoskeletal health (Chilton, Pires-Yfantouda & Wylie, 2012) and healthy lifestyles (Martins & MacNeil, 2009; Noordman et al., 2012a).

Professionals delivering motivational interviewing. With increased rates of unhealthy lifestyles and diseases associated with lifestyle practices, there is increased attention to understanding the feasibility of providing behavior change counselling in both specialty settings and primary care encounters with generalist clinicians (Noordman et al., 2012b). The intervention settings were inconsistently described, but when reported included community and acute care (Burke et al., 2003;Hettema et al., 2005), primary care alone (Chilton et al., 2012; Noordman et al., 2012a; Sargent et al., 2012), specialty care (VanWormer and Boucher, 2004;) or primary and specialty care combined (Alam et al., 2009). Only half of the reviews identified provider type and these typically included nurses, psychologists, physicians and dietitians (Alam et al., 2009; Armstrong et al., 2011) and one review included physiotherapists (Chilton et al., 2012). In response to claims that positive outcomes of behavioral interventions are dependent on professional role, a handful of reviews assessed effectiveness of intervention by provider type. One review of 72 studies observed that psychologists and physicians demonstrated positive effects in 80% of studies whereas nurse, midwife or dietitian providers achieved a positive influence in 46% of reviewed studies (Rubak et al., 2005). Alam et al. (2009) identified that specialist and generalist clinicians were similarly effective in achieving positive patient outcomes. Recent reviews by Noordman and colleagues (2012a) and Sargent and colleagues (2012) noted no difference in effectiveness of MI interventions among physician, nurse or

dietitian providers. The effectiveness of MI appears to be independent of provider type or clinical setting and this holds promise for incorporating MI into a variety of areas to provide increased patient exposure to collaborative approaches and enhanced consistency of messaging among clinicians.

Motivational interviewing alone or in combination. The outcomes research includes assessment of MI's effectiveness as a sole intervention, in comparison to other behavioral therapies or traditional advice giving, or as part of a multi-faceted intervention. The synthesis research provides some statistically significant evidence for the superiority of MI interventions, however this is not consistently reproduced for outcome measures across all studies. An early review of 30 studies identified overall moderate effect sizes (*ds* 0.50) for MI on alcohol and drug use as well as diet and exercise (Burke et al., 2003). Interestingly, MI was not effective in smoking cessation as demonstrated in previous systematic reviews. The authors noted the MI interventions in health care typically included some form of feedback in the manner of a psychometric assessment, biometric measure or risk assessment profile and recommended future research should compare MI alongside education, advice giving and other types of counselling (Burke et al., 2003). This synthesis was important because it was the first compilation of multiple studies of MI's applications in health care.

Traditional advice giving is generally understood as an approach where the clinician determines the problem behaviors based on risk profiling or screening and gives advice based on best available evidence without considering the patient's perspective, clinician patient relational dynamics or the patient's context (Hettema et al., 2005; Rubak et al., 2005). In Rubak's (2005) synthesis of 72 trials on the effectiveness of MI compared to advice giving on lifestyle behaviors, a meta-analysis of 19 studies for combined effects demonstrated significant results (effects

ranged from 0.27- 0.72, 95% CI) for changes in body mass index (BMI), blood pressure (BP), lipid profile and blood ethanol level, but not significant for number of cigarettes per day or average blood glucose levels. The same review noted that in 17 of 23 studies not aggregated for meta-analysis there were significant effects for MI compared to advice giving, while six studies reported no significant outcomes (Rubak et al., 2005). The authors advise discretion when interpreting non-significant effects because a positive direction of change – in absence of statistical significance -- may be an important indication of MI's clinical significance and signal the beginning of a patient's change process. Subsequent syntheses observed positive direction of change following the MI intervention for health promotion behaviors (Martins & MacNeil, 2009) as well as lifestyle patterns in cardiovascular care (Thompson et al., 2011), diabetes management (Matinolli et al., 2012) and in obesity treatment (Armstrong et al., 2011). All reviewers observed major issues in study design and reporting such as intervention description, treatment fidelity and outcome measures. Even if MI training is rigorous, it is difficult to approximate its true effect because the nature of MI requires clinicians to tailor the intervention to the patient's needs, and highly structured MI interventions to increase rigor may compromise patient outcomes (Hettema et al., 2005). In addition, the outcome measures are highly specific to treatment plan, chronic condition and lifestyle activity which make it difficult to aggregate data across studies and may contribute to the variability in such results.

While MI is more effective than no intervention at all, or advice giving alone, similar to varying effectiveness were reported when compared to *any* behavioral intervention such as cognitive behavioral therapy (CBT), self-efficacy interventions and brief therapy (Alam et al., 2009; Ismail et al., 2004; Noordman et al., 2012a). Ismail et al. (2004) synthesized 25 studies comparing MI, CBT and brief therapies to standard education for diabetes control and noted *any*

[emphasis added] form of behavioral therapy demonstrated a positive influence on outcomes and in 12 studies resulted in significant decreases in average blood sugar levels (HbA1c) of 1.06% and a decrease in psychological distress. However, all the behavioral interventions were poorly described so it is difficult to distinguish one from another and the precise nature of each intervention is unclear. Most of the studies reported were done as group interventions and used MI or CBT; however the sample was insufficient to compare MI against CBT in diabetes care (Ismail et al., 2004). In a subsequent review of 35 studies, Alam and colleagues (2009) reproduced Ismail's (2004) protocol and made similar observations about the comparative influence of any behavioral intervention over standard education, however they noted a decreased magnitude of influence on changes in blood sugar and psychological distress. Studies in this review were primarily individual rather than group interventions. Recently, a systematic review of 50 studies on behavior change techniques in primary care likewise identified self-efficacy, CBT, education and MI as similarly effective interventions for lifestyle behavior change (Noordman et al., 2012). While it is surprising that MI independently demonstrates effectiveness, but does not reproduce the same effectiveness compared to other interventions, authors speculate that increased attention to psycho-behavioral approaches in the past decade as well as a practice shift from group to individual encounters for behavior change has influenced practice to the extent that a control group getting standard education or another type of behavioral intervention receives some unacknowledged aspects of motivational support (Alam et al., 2009; Miller and Rollnick, 2013; Noordman et al., 2012).

Practical advice and education are beneficial, however empathic communication and individualized care can increase a patient's ability to both engage in behavior change and develop capacity for lifelong problem solving (Matinolli et al., 2012). Therefore, it is important

to consider how both education and MI intersect and influence lifestyle behavior change. VanWormer and Boucher (2004) synthesized five studies on MI as an adjunct to nutrition education and identified positive outcomes for both type and amount of food consumption. Three reviews compared MI alone to MI plus another intervention (Chilton et al., 2012; Hettema et al., 2005; Lundahl et al., 2010). The effects of MI combined with another treatment such as feedback, education and/or usual care were positive for target behaviors related to alcohol use, treatment adherence, sexual health and gambling; however effects were strongest (d = 0.11-0.80) and sustained on diet and exercise behaviors (Hettema et al., 2005). Similarly, Chilton et al. (2012) observed a positive direction of change when MI is added to usual care and Lundahl and colleagues (2010) reported a small but significant effect size for enhanced MI (d = 0.22) on mental health, lifestyle and harm reduction behaviors. Of note, authors continue to observe when enhanced MI or MI alone is compared to an active treatment group the effects of MI were smaller. This may be an effect of the spirit and style cross-pollinating the adjunct interventions (Chilton et al., 2012; Ismail et al., 2004; Lundahl et al., 2010).

The synthesis research takes in over five hundred investigations on MI's effectiveness alone or as an adjunctive intervention for use with a variety of behaviors in both primary and specialty care settings delivered by a diversity of health care providers. Common observations across the research identify clinician training and assessment of proficiency as well as outcomes measurement and length of patient follow up are approached in a variety of ways (Appendix B). The dose of MI warrants further investigation, as MI sessions vary dramatically; brief sessions of only 15-30 minutes demonstrated a positive influence (Chilton et al., 2012; Hettema et al., 2005; Sargent et al., 2012) as did longer sessions of 60 minutes duration (Armstrong et al;, 2011; Burke et al., 2003; Rubak et al., 2005). While there is variability in efficacy between trials, due to

disparate training and fidelity assessments as well as diverse interventions, outcome measures and follow up intervals, there is consistent agreement that MI yields a small to medium effect size in meta-analysis across trials (Lundahl et al., 2010). Although authors of synthesis research conclude MI holds potential for use in health care, there is a need for further research that attends to training and proficiency as part of the study protocol and for an accumulation of research on similar interventions that allows for comparisons across a larger number of studies (Chilton, 2012)

Nurses and MI. Setting recent primary nursing research alongside accumulated synthesis research provides an opportunity to identify whether challenges are being addressed related to training description, MI fidelity, dose of intervention and comparable outcome measures. The emerging research of nurse-led MI interventions however remains inconsistent in clinician preparation and proficiency, yet adds an important view of the challenges to measuring patient processes according to their stage of change.

Developed in 1983 and revised in 1997 by psychologist James Prochaska and colleagues, the Trans-Theoretical model of change (TTM) was proposed as explanation of patient's readiness for change progress over time towards maintaining that change. For any given behavior, patients can be categorized into one of six stages of change: pre-contemplation, contemplation, preparation, action, maintenance and relapse (Prochaska et al. 2008). Stages of change and MI work together in that the intervention is always tailored to the client's stage of readiness (Miller & Rollnick, 2013). Four studies included measurement of participants' stage of change and reported varying results about the impact of MI.

In a randomized controlled trial of 197 post-stroke clients in a stroke rehabilitation program, the intervention participants received a single, one-to-one, 15 minute MI intervention followed by a group education session on stroke risk reduction while control group participants had usual care (Green, Haley, Eliasziw & Hoyte, 2007). The investigators reported a 15% increase in stroke risk knowledge in the intervention group ($p<0.001$), however 70% of *both* [emphasis added] intervention and control participants moved from a passive to an active stage of change. While brief MI interventions can be effective (Hettema et al., 2005), the authors did not describe the clinician training or proficiency assessment so it is difficult to know whether intervention fidelity on the part of the clinicians or motivational characteristics of the participants influenced the similar outcomes in both groups. Leonhardt and colleagues (2008) made similar observations in a cluster randomized controlled trial in primary care settings of 1,261 clients with low back pain. Participants in the control arm received usual care from their physicians, the attention control group received advice consistent with guidelines from their physicians and the intervention group received physician supported guideline based care plus MI by a nurse for one to three sessions over a six month period. The nurses received training in a two-day workshop format and practised stage-specific interventions to increase patient participation in physical activity. A case-based, paper and pencil test assessed the nurse's ability to correctly identify the stage of change. While 70 nurses participated in the training workshop, no nurses accepted follow up supervision for skill assessment. Both intervention and attention control participants increased while the non-attention control group had decreased their level of physical activity at 6 months. At 12 months the intervention effects waned and all groups had similar low scores on physical activity. There was no difference in the stage of change between the three groups. The authors speculated the sample characteristics influenced the outcomes as participants with

diagnoses of either chronic or acute low back pain were included and these two conditions might respond differently to the intervention. In addition, clients may have reached a maximum level and/or tolerance for physical activity at enrollment and the intervention may have helped to maintain this capacity (Leonhardt et al., 2008).

To assess the impact of MI with the heart failure population, Paradis et al. (2010) included a Likert type scale developed by Rollnick et al. (2008) to assess ability – or confidence – to act upon change in 30 clients at a tertiary care heart function clinic. Nurse training in MI was described but the nature of the proficiency assessment was not specified. The intervention was provided as an enhancement to typical heart failure care and the nurse used an intervention protocol to tailor the intervention to the patient's stage of change. Participants received three MI sessions where they selected one of the following behaviors as a focus: salt intake, daily weight, medication adherence, exercise or fluid restriction. Participants in the intervention group scored higher relative to the usual care group on confidence in performing heart failure self-care at mid-point in the intervention ($p = 0.05$) however this effect diminished at the one-month follow up and there were no significant differences between groups on measures of symptom management, independence with health promoting behaviors or efficacy with illness recovery (Paradis et al., 2010). The brief duration of intervention in a complex client population may account for the lack of significant changes, yet the effect on client confidence is promising and would benefit from further investigation with a longer follow up. Perry and Butterworth (2011) used a Likert type scale developed by Rollnick et al. (2008) to assess importance of change – or commitment strength and compared this to stage of change in a sample of 20 women participating in an exercise program with MI as an adjunctive intervention to explore ambivalence about increasing physical activity. The nurse training was reported as completed but no details of the content

provided and the fidelity assessment included the MISC tool. Participants in the exercise program received six, 10-30 minute MI sessions by a nurse. There was no significant relationship with stage of change or commitment strength to physical activity, however commitment strength was positively correlated to stage of change ($r = 0.465$, $p = 0.04$). Miller and Rollnick (2013) suggest commitment strength is associated with a person's desire, ability and reasoning about moving forward with change. The study results reflect that change talk and stage of change are inter-related. The implication for MI training and use in practice is for clinicians to attend to strengthening commitment to change as an antecedent to action (Perry & Butterworth, 2011).

Chair and colleagues (2012) assessed the impact of MI as an adjunct to standard education with 146 participants who had dropped out of a community based cardiac rehabilitation program in Hong Kong. Traditional cardiac rehabilitation programs use didactic education and some feedback with non-specified client centered approaches, but these have a strong element of direct persuasion targeted to specific behavioral changes and evidence based targets (Chair et al., 2012). MI is identified as particularly beneficial for persons resistant to change (Hettema et al., 2005; Lundahl et al., 2010; Rubak et al., 2005) and the study authors were interested to identify the benefits of adding MI to the existing cardiac rehabilitation program. Nurses providing the MI intervention received comprehensive training and feedback on proficiency. Despite considerable attention to clinician preparation, there was no significant difference between those who received the standard cardiac rehabilitation protocol and those who received the MI enhanced program ($p > 0.05$). Intervention group participants had no difference in stage of change compared to control group participants. The measures of health related quality of life improved on general health (4.74, $p = 0.048$) and role strain due to

emotional health (8.80, $p = 0.024$), however this group also reported increased anxiety levels compared to the standard care group. The three month follow up may limit the fullest expression of the program's benefits and it is possible the standard program was sufficient for this population without the MI enhancement. Contextual features such as social norms observed by the study clients related to 'following expert advice' and 'saving face' may have contributed to the lack of differences between intervention and control participants.

A cluster randomized controlled trial of 615 patients distributed across 25 primary care practices compared minimal nurse-intervention to a nurse-led MI strategy to support behavioral modification for cardiovascular risk reduction (van Loon et al., 2010). Nurses received a two-day workshop in MI with feedback on three audio taped client interviews to enhance proficiency. Participants in the intervention group received a personalized vascular risk assessment along with two MI sessions with a nurse to address problem areas identified by the client related to risk reduction. The intervention group demonstrated a small improvement in vegetable consumption and exercise, but neither reached statistical significance. There was a positive direction of change in some measures in both groups: for fat intake, fruit consumption, smoking and alcohol use but again no statistical significance or influence. Surprisingly, at one year follow up there was a decrease in absolute cardiac risk in both the intervention (decrease of 0.5%, $p = 0.047$) and the control groups (decrease of 0.7%, $p = 0.004$). The absence of difference may be attributed to a lack of skill in the trained nurses or a crossover of skill into the control group as MI is an area of interest among clinicians and health administrators. Participants had low risk profiles and a ceiling effect may influence the extent of influence of the intervention.

Motivational interviewing was beneficial for smoking cessation or decreasing tobacco use when compared to traditional advice giving in a sample of 88 participants from a

cardiovascular outpatient program (Bredie,Touwels, Wollersheim & Schippers, 2011). Control group participants received advice to quit from their primary physician and intervention group clients received advice plus two to six motivational sessions of 10-30 minute duration with a nurse. Nurse training and assessment of proficiency were not described. The participants' readiness to address tobacco use was assessed at each encounter and the MI intervention was tailored to match the stage of change. At three months following completion of the intervention, 7 % of controls quit smoking and 15% decreased tobacco use, whereas the intervention group achieved a 26% quit rate and cessation in 31% of participants. Two features distinguish the study results; one, quit results were higher for this sample than those previously reported for MI interventions in primary care (Burke et al., 2003; van Loon et al., 2010) and two, there was no difference in stage of change (expressed as a motivation score) between quitters and non-quitters. Similarly, Perry and Butterworth (2011) reported there was no relationship between commitment strength and stage of change in physical activity. The absence of movement in stage of change suggests that ambivalence may be resurfacing and at the same time social factors in the client's life may have contributed to struggles with goal setting and follow through (Miller & Rollnick, 2013; Resnicow et al., 2002). Lifestyle behavior change requires multiple attempts and adjustments over time and variance between stage of change and commitment to change may reflect the client's state of negotiating the borderland of experimenting with a change and adopting the behavior into their typical lifestyle patterns. In this setting, participants incurred the cost of nicotine replacement therapy and the financial burden may have accentuated participants' interest to explore multiple approaches to enhance their change in tobacco use (Bredie et al., 2011). The small sample size and homogeneity of participants having elevated cardiovascular

risk may be amplifying the outcomes; however the positive results may indicate that MI interventions in addition to advice giving is particularly helpful with this population.

Fischer and colleagues (2012) assessed the impact of a nurse-run, MI intervention delivered by telephone in addition to usual care in a sample of 762 participants who were identified as 'difficult to manage' and active clients in a State funded, community based diabetes program. In addition to standard diabetes care, intervention group participants in the intervention received 3 MI sessions delivered by telephone which focused on behaviors that lower blood fats. At 20 months following the intervention, the number of participants with a low levels LDL (low density lipoprotein or 'lousy' cholesterol) increased by 6.5% in the intervention group and decreased by 9% in the control group (p <0.01). There was no change in average blood sugar levels or blood pressure. The investigators completed a cost analysis and demonstrated the cost per patient was $3,000.00 USD less in intervention compared to control group due to decreased overall resource utilization by those in the intervention group (Fischer et al., 2012). Participants in this study represented a unique group as 81% of participants were Latino and all participants were under-insured. It is possible the intervention is effective, not only because the telephone contact was less threatening and more accessible than face to face encounter, but also the style and spirit may have helped a group that is talked over by experts who now felt heard and therefore more engaged in behavior change (Resnicow et al., 2005).

Methodological challenges of synthesis research. The synthesis research and most of the primary studies reviewed draw from experimental studies as this form of research should provide sufficient evidence to estimate the effect size or influence of an intervention (Egger, Davey Smith & Altman, 2001). The majority of research in MI is experimental so that research design ensured assessment of the intervention's effectiveness in an objective manner. In the literature

reviewed on MI for primary health promotion and secondary disease prevention, the vulnerability of experimental studies includes: heterogeneity in clinician training, treatment fidelity, exposure to MI and outcome measures (Appendix B and C). MI, and the comparators such as education or behavioral change therapies, were often described in general terms, therefore what is 'working' in the intervention is difficult to discern. Clinician training in MI remains inconsistently described and infrequently assessed and this makes it difficult to begin to understand the level of proficiency required to achieve benefits for the clients and subsequently inform practitioner training programs. There is still variation in the exposure to the motivational intervention and therefore a need to clarify the number of consultations needed to optimise the processes of change talk or the effects in terms of behaviour change. Client outcomes on lifestyle behaviors are predominantly self-reported and may be vulnerable to the influence of social desirability. While clients are randomized into intervention or control groups, the investigators draw from convenience samples in clinics or hospital programs where participants and clinicians alike may be particularly motivated. It is difficult to have a truly naïve control group design in behavioral intervention research because participants may access personal social support or professional caregivers outside of the study. Similar outcome measures are collected in a variety of ways, for example: weight is assessed as BMI or body weight; glycemic control is assessed as HbA1c (average blood glucose), random or fasting glucose; nutrition is assessed as amount of fruits and vegetables and/or quality of food such as fat, fiber, salt and sugar content; and activity is measured in distance, duration, frequency and type. The lack of consistent outcome measures poses challenges for aggregating data to determine pooled effect sizes from a number of studies (Alam et al., 2009; Armstrong et al., 2011; Hettema et al., 2005; Ismail et al., 2004).

There is consistent agreement throughout the synthesis research that MI can be performed by an array of providers (Hettema et al., 2005; Madson et al., 2009; Soderlund et al., 2011) but they need specialized training, feedback and support to engage in and incorporate MI into practice (Resnicow et al., 2002). Nurses are well positioned to deliver this intervention because of their relational skills and proximity to clients in a wide array of settings (Brobeck et al., 2011; Everett et al., 2008; Maissi et al., 2011; Noordman et al., 2012a, 2012b; van Eijk-Hustings et al., 2011). However future studies should fully explain the intervention and the training of clinicians. Health encounters are frequently precipitated by a problem and the conversation often focuses on addressing that problem; so a proactive conversation about health behavior change may be diminished by time constraints on the visit and the urgency of the problem at hand. For the preparation of clinicians, it is valuable to look at the contexts where MI is practiced, what contributes to successful uptake of MI in busy clinical settings and what clients find particularly helpful (Brobeck et al., 2011; Hettema et al., 2005; Miller and Beech, 2009; Thompson et al., 2011). Potentially, the kinds of motivational interventions in diabetes, heart failure, musculoskeletal or cardiovascular care are quite different because of the inherent complexity of a single or co-morbid chronic health challenge and the need to tailor the intervention to the client's context. Emmons and Rollnick (2012) cautioned that one cannot expect significant behavior changes in persons with complex conditions in challenging socio-economic environments. In addition, MI requires a shift from clinician as expert to clinician as motivational support; this may be at odds with the clinician's philosophical orientation or the agency expectations about what should happen in patient encounters (Resnicow et al., 2002).

The focus on clinical biomarkers as outcomes for impact of the intervention on illness management (such as blood pressure, blood glucose, blood fats) may be juxtaposed to the reality

that some of these measures reflect pathophysiology of a disease process that deteriorates over time (Vallis et al., 2005). Alternatively, objective measures of change such as average blood glucose, blood pressure, weight, BMI and lipid levels may need more intensive exposure to MI and longer follow up to move from a positive direction of change to a statistically significant change so the dose or exposure to MI in health promotion and secondary prevention warrants further investigation. Indeed, behavior change for health promotion or risk reduction may require multiple changes over time and in the context of a chronic illness that is progressive in nature *no change* [emphasis added] in objective measures may be a successful outcome (Emmons & Rollnick, 2012). For each lifestyle behavior or range of behaviors in a treatment program there is a range of measures to assess the outcomes these have on client lifestyle or condition management. To allow for synthesis of MI outcomes on lifestyle behavior change there may be benefit to using a consistent approach to measurement, such as extent of risk reduction (Sargent et al., 2012). While effect sizes vary in studies of MI in chronic illness, there is a need to accumulate research in this area, provide some consistency in treatment approaches and identify context-specific features in health care settings that might influence clinician performance or client engagement (Hettema et al., 2005; Martins & MacNeil, 2009; Thompson et al., 2011). Despite recommendations from the synthesis research to adopt consistent outcome measures it is challenging to find a measure that crosses all interventions. Measures of stage of change and commitment to change in recent primary studies (Chair et al., 2012; Green et al., 2007; Leonhardt et al., 2008; Perry & Butterworth, 2011) show promise as approximates of a client's progression with the process of change; future studies could include these to better understand the correlations between beliefs about change and actions taken in response to 'change talk' to explore these beliefs.

The synthesis research provides a vantage point from which to examine the state of the science and to consider the opportunities for future research in health care applications. An appraisal of selected primary studies of MI by nurses identifies some promising features of MI for nursing practice as well as areas for further investigation to better understand how MI fits with nursing practice and aligns with a comprehensive approach to primary promotion and secondary prevention. While the impact of MI by health providers has a presence, there is a gap in the research on the influence of MI interventions delivered by undergraduate nursing students.

Patients' perceptions of MI interventions. MI evolved in response to recognition that advice and information giving as well as repeated persuasion and confrontation were neither satisfactory for patients nor suitable to support the desired behavior change (Emmons & Rollnick, 2001). The research on MI is largely organized around the effectiveness of the intervention with some attention to the training in relational style and interpersonal strategies. At this juncture, the scholarly literature provides no clear regimen for ensuring trainees are proficient and no consistent account of the benefits of MI interventions (Alam et al., 2009; Burke et al., 2003; Heckman et al., 2010; Hettema et al., 2005; Madson et al., 2009; Martins & MacNeil, 2009; Sargent et al., 2012; Soderlund et al., 2011). Health behavior by internal motivation and external social context (Emmons & Rollnick, 2001; Lundahl et al., 2010; Miller & Rose, 2009) therefore it is beneficial to examine the emerging body of literature on patients experience of MI interventions to better understand what aspects of training best prepare clinicians to support patients to achieve positive health outcomes.

The current synthesis and emerging primary research demonstrates that MI holds promise as support for patients with lifestyle behavior change in health care settings. In chronic disease, such as diabetes, patients have to balance a lifelong treatment regimen that influences diet,

activity, medications, monitoring and social interactions. In a phenomenological study, investigators identified how the MI intervention influenced patients' ability to engage with diabetes self-care (Minet, Lonvig, Henriksen & Wagner, 2011). Focus group interviews with 22 participants were completed one year following MI intervention. The intervention was provided by registered nurses and consisted of intensive one-to-one sessions in addition to routine quarterly physician visits. The training content and follow up was not described. Participants identified the empathic and exploratory nature of the intervention not only acknowledged how challenging it was to change, but also their preparation to commit to and act upon lifestyle goals. Themes related to MI's influence on self-management illustrated how the intervention helped patients become self-aware about caring for themselves: increased confidence with adapting rules to their unique situation and setting a strategy to be a 'good diabetic' (Minet et al., 2011). The themes make visible the nurses basic phase one MI skills and illustrate the proficiency with the complex phase two skills of building capacity for goal setting.

In a qualitative study of 19 adult patients living with type 2 diabetes, investigators used focus group interviews to identify which aspects of MI were most helpful. The MI intervention was provided by three registered nurses who had training over a four month period. Training included didactic education and intensive feedback on audio and videotaped patient encounters. Patients received the MI intervention every two weeks for two months and then quarterly for two years. The investigators identified fives themes through content analysis of four focus group interviews: non-judgemental accountability; being heard and respected as a person; encouragement through empathy; collaboration and goal setting; and coaching not critiquing (Dellasega et al., 2012). At the time of publication these results were still to be linked to a larger, unpublished outcome study, however the authors suggested the patients' experiences

provided a compelling reason, along with the cost effectiveness of the intervention, to integrate MI into primary care settings as part of caring for patients with chronic conditions (Dellasega et al., 2012). Taken together, both studies demonstrate how a MI intervention can build a collaborative relationship and help persons to problem solve through the complex aspects of living with a chronic illness. What is striking was how patients reported they developed capacity from the relationship and goal setting activities to independently adapting to different situations. This observation raises an important distinction between MI in health care and MI for treating addictions. MI in health promotion and secondary prevention primarily focusses on adapting health behaviors rather than MI in an addictions model that works to extinguish problematic behaviors (Miller & Rollnick, 2013). Therefore, patient accounts of their experiences of MI and the nature of its impact on problem solving are important areas for future research.

The desire to accomplish a checklist of tasks during a brief primary care visit must be balanced with the futility of trying to coerce patients to change by providing advice and information alone. The patient responsiveness reported by Dellasega et al. (2012) and Minet et al. (2011) demonstrated how relational connection was achieved and provides an indirect reflection of clinicians' proficiency with MI spirit and style. The patients' reports of their MI experiences may be valuable to add to futures studies using treatment fidelity tools to understand how proficient pre-licensure and practicing clinicians could successfully support primary promotion and secondary prevention.

The potential disease burden associated with poor lifestyle choices creates an impetus to find effective approaches to support clients to adopt positive health patterns (Armstrong et al., 2011). Lifestyle modifications can require long-term behavioral adaptations. For clients with chronic health conditions, such as diabetes, heart failure and/or COPD, there is a need for

concomitant decision making about modifying behaviors, adapting to a treatment plan and managing a health condition that changes over time (Benady, 2010; Hunt, 2011; Nasmith et al., 2010). Social context shapes the commitments clients make and keep; these contribute to the behavior change dynamic and must be brought into conversations about client commitment for change and the focus of efforts to strengthen that commitment to set goals that fit with the client's reality (Lawn and Schoo, 2010). The rising prevalence of chronic disease and the limits to pharmacological interventions on disease progression necessitate interventions that support lifestyle behavior change to promote health and decrease illness (Bodenheimer et al., 2002; Kreindler, 2008). MI contributes a promising approach to broaden the skill repertoire as well as deepen the interpersonal communication as part of continuity of care (Hunt, 2011). This approach shows promise in sensitizing clinicians to the turmoil clients experience with behavior change and to navigate the interpersonal dynamics of negotiating new lifestyle patterns (Hunt, 2011). MI spirit and style represent a shift from information-focused and expert-driven education and this kind of skill has a place in an integrated repertoire of client support skills.

Summary of Literature Review

MI is not a mutually exclusive treatment and it is most powerful as an adjunct to education to strengthen the efficacy of care planning sessions, multidisciplinary team consultations and traditional education programming (Burke et al., 2003; Hettema et al., 2005). Pre-licensure education is an ideal time for aspiring nurses to learn to explore behavioral moderators – such as personal relevance, readiness to change, risk and values -- and become proficient in client centered approaches that engage patients to act upon change (Hegarty et al., 2009; Little, 2006; Myers, 2010). The current research demonstrates how MI adds to the undergraduate nurse's repertoire of skills to meaningfully engage with clients about health

behavior change in a collaborative partnership. In an effort to better prepare nurses for the rigors of current practice, an orientation to an array of interpersonal and health behavior change skills that reveal what is feasible and manageable for a client from their perspective is a beneficial step forward to collaborative client encounters that are distinguished by individualization, respect, candor and participation in all aspects of care.

CHAPTER III

Research Method

In this chapter I describe the choice of method and strategies for the current research on undergraduate nursing students learning and applying motivational interviewing. I begin with a description of ethnographic assumptions and an interpretation of focused ethnographic's fit for the research question. Next, I describe the setting, the sample and how I gained access to the cultural field. In the tradition of qualitative research, data collection and interpretation were concurrent (Morse & Richards, 2002) and I elaborate on the process of generating and analyzing the evidence.

The Address of Question to Method

Competing priorities within the clinical environment may present an agenda that is juxtaposed to using MI as part of a client centered approach to care (Miller & Beech, 2009; Noordman et al., 2012b). Miller (1985) observed that nursing students are prepared for a holistic approach to care by their education programs however they are socialized to a biomedical approach in their practice. Indeed this tension may be increasing in light of the momentum toward evidence based practice models and guideline concordant care (Mol, 2008; Redman, 2011). From the current body of knowledge on health education and motivational interviewing, it is clear that preparing clinicians and undergraduate nursing students to engage clients in health behavior change is both a pedagogic and cultural enterprise. With this in mind, I made a number of choices in aligning the research question with a suitable method. Qualitative research accommodates a flexible approach, subjective reasoning and real life examples to understand a phenomenon (Richards & Morse, 2007). Traditional ethnography aims to understand what shapes social practices and can show patterns that inform tentative observations about what is

generalizable from the particular situation and link this back to the existing literature for explanatory power (Berg & Lune, 2012). The research question guided me to do a focused ethnography to get the insider's perspective (emic) of the cultural practices organized around undergraduate nursing students learning and applying MI in a clinical experience.

Ethnography and Focused Ethnography

Ethnography is distinct from other qualitative designs by its focus on culture, the researcher's immersion in the cultural milieu and the concurrence between researcher as both investigator and participant (Berg & Lune, 2012; Boyle, 1994; Schwandt, 2007). The research question drew me in to a social world as it was constructed around students learning and applying motivational interviewing in clinical practice. Morse (2007) acknowledged the utility of qualitative designs to understand phenomena and experiences in health care, yet observed that typical qualitative research designs require adaptation for health care research. A focused ethnography (particularistic or micro-ethnography) is an adaptation of traditional ethnography (macro-ethnography) that addresses a phenomenon as it is experienced by a particular group in a specific context (Boyle, 1994; Erickson, 2011; Knoblauch, 2005). In responding to a question about meaning making in a cultural milieu, I recognized the fit between focused ethnography and the research question. From this view, I sought to understand the social realities as perceived and created by the culture and its constituents.

In its broadest sense, culture is understood as the spoken and unspoken guidelines that shape world view, experience and behavior (Knoblauch, 2005). This reflects a constructivist viewpoint where knowledge, descriptions and experiences of reality are culturally shaped according to shared, and sometimes tacit, norms and values (Brandon & All, 2010). The constructivist paradigm was helpful to understanding culture for the current research because it

accommodated the investigation of constructed meanings and assumptions as well as variations in the participants' perspectives.

Focused ethnography requires the investigator to be present in the culture under study, participate in the day-to-day world of participants, build relationships with the constituents and understand the common features that shape the culture (Knoblauch, 2005; Scott-Jones & Watt, 2010). Since the aim of this research was to understand how undergraduate nursing students make sense of motivational interviewing, a focused ethnographic approach was most suitable.

Assumptions and distinctions. Ethnography, in general, is based on four assumptions: knowledge is constructed, made sense of and transmitted through language; culture is a system of generating and transmitting knowledge; group members create, learn and share culture; and individuals interpret experience and engage in behavior relative to the culture (Berg & Lune, 2012; Knoblauch, 2005; Higginbottom, Pillay & Boadu, 2013; Morse and Richards, 2002; Roper & Shapira, 2000). As a genre of ethnography, there are important distinctions between traditional and focused ethnography and these distinctions relate to scope, sample, data management and researcher role (Cruz & Higginbottom, 2013; Knoblauch, 2005; Muecke, 1994) (Table 1).

Table 1

Comparison of Traditional and Focused Ethnography

	Traditional Ethnography	Focused Ethnography
Feature		
Question	broad, informed by immersion	narrow, defined by experience
Focus	groups, organizations, milieus	situations, interactions, activities
Sample	convenience, key informants	purposive, insider perspective
Data Collection	continuous, long term field immersion; writing	intermittent, short term field visits or structured vignettes; recording
Data Analysis	solo data analysis	data session groups
Researcher Role	participant as observer	observer as participant

Adapted from Boyle, 1994; Erickson, 2011; Knoblauch, 2005; and Muecke, 1994.

Focused ethnography, nursing students and motivational interviewing. Roper and Shapira (2000) conceptualize culture in the context of focused ethnography as constituted by place, people and practices. I studied the social unit of baccalaureate nursing students as they incorporated motivational interviewing into a community health clinical practicum placement. The use of short-term field visits aligned with the nursing students' thirteen week community health clinical placement in the third year of their program. Data generation encompassed field observations, semi-structured interviews, focus group interviews and student journals. Focused ethnography is distinguished by specific attention to a selected phenomenon and therefore the researcher should be familiar with the area of investigation (Knoblauch, 2005). I have background knowledge of motivational interviewing, community health teaching experience, and client education for health promotion and secondary prevention. Therefore, focused ethnography was a very personal experience where I drew on my sensitivity to both obvious and nuanced

aspects of the clinical practicum to understand the culture surrounding the students' learning experience.

Research Context and Setting

The context for this research was a baccalaureate nursing program, specifically the community health placement. The community health clinical experience provided important opportunities for nursing students to both practice collaborative approaches to client education and embody knowledge informed practice about population level health issues. The community placement is a 13 week clinical rotation that students take during year three or four of their program. The sites for the placement include schools, community centers, not for profit organizations, workplaces and primary care clinics. The location for this research was a post-secondary institution in Southern Alberta, Canada. Ethnographic research assumes the physical site is not the focus of study; rather the ethnographic 'field' encompasses common or joint activities around a phenomenon mutually connected by the social network's experience of that phenomenon (Knoblauch, 2005; Nadai & Maeder, 2005). The ethnographic field took in activities as part of the community clinical placement where students applied MI to support clients with health promotion and risk factor reduction. Ethical approval for the research was granted by the affiliated institutions (Appendix D and E).

Sample

In a focused ethnography, the sample is drawn from the setting, observed reality or context and informed by the (potential) participants' membership in the culture or relationship to the phenomenon of interest (Berg & Lune, 2012; Boyle, 1994). I anticipated a challenge in recruiting participants because of the small number of students who learned motivational interviewing as part of the community health clinical placement (12-24 per semester) and the

available instructors (three) who taught MI. To represent the phenomenon at its fullest (Boyle, 1994; Higginbottom, 2004; Knoblauch, 2005), I drew the study sample from clinical instructors who taught MI, students in community settings who learned this technique and clients who received motivational interviewing from these students. Considering the inclusion criteria and following the recommendations presented by Morse (2001) and Sandelowski (1995) on identifying sample size for qualitative research, I estimated 20 baccalaureate nursing students, 15 clients and 2 instructors would provide sufficient data saturation (Table 2).

As mentioned previously, I sampled purposively and drew from community health experiences where students had instruction and support in motivational interviewing techniques for client encounters. I recruited two instructor participants and considered whether the available instructor data represented their contribution well enough to inform the research question (Knoblauch, 2005; Scott Jones & Watt, 2010). The instructors' input was consistent with themes from the student data and increased my confidence in the representativeness their contributions.

Table 2

Participant Role, Actual Sample Size and Inclusion Criteria

Participant Role	Sample Size	Inclusion Criteria
Student	20	3rd or 4th year of baccalaureate nursing program; enrolled in community health clinical; received MI; able to reflect upon and speak to experience
Client	16	participated in health promotion/risk reduction with a nursing student using MI; able to reflect upon and speak to experience of student support
Educator/Mentor	2	teaching motivational interviewing to students &/or supporting students to apply MI

The participants (N=37) ranged from 23 – 55 years of age, 8 identified as male and 29 as female. All students were in their third year of the four year nursing program. In each academic term there were 24 students who had motivational interviewing as part of their community experience. I collected data over two terms, therefore I sampled from a total of 48 students. Twenty students, two instructors and sixteen clients consented to interviews and observations. I received journal submissions from ten students.

Accessing the Culture

I accessed the culture through observing students working with clients, reading student journals and interviewing participants. As Germain (2001) noted, and I experienced in this study, the motivations of people who agreed to be in the study and granted access to the field ranged from pride in their culture to a commitment to supporting purposeful inquiry.

The relevant students and instructors each received an information letter sent by e-mail from an administrative support person (Appendix F and G). An information letter was provided to eligible client participants through the area where they accessed health services (Appendix H). Exclusion criteria were identified, and these included persons who had accessed health services but not participated in a session with a nursing student as well as students who were absent for the MI teaching session.

When participants indicated their interest to participate, I reviewed the consent form in detail. Prior to obtaining the participant's signature I described the range of activities they may be involved in as part of the research and discussed how participants could select specific activities they wished to participate in or be excluded from (Appendix I, J and K). Field observations commenced in the first weeks of the semester to allow students time to become familiar with using MI in the community setting. I was prepared to access a sample of recent

nursing program graduates who had completed a community health placement where they learned and applied motivational interviewing. It was not necessary to draw on this sample as concurrent data collection and analysis generated through my second exposure to the cultural field revealed saturation in participant accounts.

Generating Data

Focused ethnography uses various data collection strategies to bring a depth of understanding to the phenomenon of focus (Berg and Lune, 2012; Knoblauch, 2005; Nicholls, 2009). The primary methods of data collection in this research were field observations, interviews, student journals and investigator field notes (Table 3).

Table 3

Data Collection Strategies

Role	Data Collection Methods*
Student	field observation, focus group interview, student journal, one-to-one interview*
Client	field observation, one-to-one interview
Educator	field observation, one-to-one interview

* Note: one-to-one interview was an alternative to focus group interview but not used

Field observation. Unstructured field observation is a distinguishing feature of the ethnographic approach (Schwandt, 2007). Field observation is an opportunity to witness the relationships between what people say and do as a way to help the researcher develop a better understanding of participants' actions relative to the phenomenon of interest (Boyle, 1994; Berg & Lune, 2012; Mulhall, 2003). Consistent with the ethnography's naturalistic approach, the field

observations for a focused ethnography yield insights about the group members' interactions, conserve the context of the interactions and illuminate the influence of the immediate environment. In this research, the field observations occurred in weeks five through twelve of the 13-week semester. I observed 15 student-client encounters and 20 student-instructor/mentor debrief sessions. Due to scheduling conflicts I was not able to participate in the high fidelity simulation sessions and I explored this experience during the student focus group interviews in the question about techniques that helped students learn MI. Prior to each observation, I reviewed the voluntary nature of participation and discussed how observations could be stopped at participants' request.

Field notes. The investigator's field notes augment the on-site observations as well as support data analysis and auditability (Knoblauch, 2005). In the current research field notes were used to describe the setting and context as well as the investigator's thoughts and responses to the observations and interviews. I recorded my notes in a private environment and in close proximity to the observed events. To help my journal blend into the field, I selected a similar style to the notebooks that students used. The field notes were kept with me at all times to record incidental reflections. Mulhall (2003) recommends that field notes include contextual features, interactions, special occurrences, typical routines and personal reflections. As concurrent data collection and analysis progressed, I added a cross reference notation to my field notes of potential linkages among cultural features for further exploration. The intersections of data from field notes, observations and participant interviews revealed common cultural symbols that were organized into categories and used to identify salient themes to describe the culture.

Interviews. The spirit of the focused ethnographic interview reflects a constructivist orientation where knowledge is produced within and transmitted by the culture; therefore the

constituents of the culture should have a voice in purposeful inquiry about their culture (Morse & Richards, 2002; Nicholls, 2009; Robinson, 2013; Roper & Shapira, 2000). There were unstructured interviews that occurred spontaneously during field observations and these functioned to clarify elements that surfaced in the midst of the observations; the semi-structured one-to-one and focus group interviews occurred following the field observation and expanded on experiences that surfaced during the fieldwork (Schwandt, 2007; Robinson, 2013).

Semi-structured interviews outline broad questions or themes that both frame the encounter and provide opportunity for participants to add new information as needed (Nicholls, 2009). The ethnographic interview – although semi-structured - has distinct stylistic elements. These elements include outlining the interview's explicit purpose, seeking explanations of specific experiences or language patterns and asking clarifying questions (Spradley, 1979). Prior to beginning each interview, I shared the interview questions with participants and invited them to modify or add to the questions. Like many ethnographic interviews, the current research used three forms of questions: descriptive to understand the 'emic' perspective of culture; structural to uncover how knowledge/understanding about the phenomenon was organized; and difference questions to clarify how participants used language to convey meaning about the phenomenon (Sorrell & Redmond, 1995; Spradley, 1979).

During the interviews, participants debriefed and clarified interactions; from these data I identified clues from the culture that influenced nursing students' use of motivational interviewing in clinical practice. Questions were refined to deepen the understanding of participants' experiences and perspectives, and to help explore how students learned and applied MI. With the concurrency of data collection and analysis, the interview guide for each

participant group (students, instructor and client) evolved to help explore gaps and expand emerging themes (Appendix L, M and N).

At the beginning of each interview, I explained the study's purpose, the nature of participants' involvement, made introductions (if necessary) and established etiquette or ground rules. Each interview opened with a general question and subsequent topics were explored until respondents ceased to raise new or discrepant ideas. Toward the end of the interview, I invited participants to add anything that was left unsaid or ask me questions. Often the participants would summarize their thoughts and add no new material. Some participants asked what others said in their interviews. In response, I acknowledged the value of this question and discussed the importance of locating one's perspective relative to others with similar experience. I explained data analysis was still in progress and I could not share results. What I did share was how previous research related to the participant's current experience. Participants responded very positively which I attributed to validation when hearing what others said who had similar experiences.

One-to-one interviews. The instructor and client interviews occurred in a private space and all but one, at the participant's request, were audio-recorded. In the case where the participant declined the audio recording, I took notes during and immediately following the interview. I reviewed informed consent prior to starting the interview and discussed how participants could signal their wish to stop the audio recording and/or the interview. I started each interview with a broad question. For both instructors interviewed, I asked them to describe the clinical setting and how MI fitted with community health nursing from their perspective. I met with twenty clients and each interview started with a description of what interested them in coming to a student-led program. From here, I asked more specific questions to draw out each

participant's experience of the culture; I used probes to help participants elaborate on responses and inquired about specific examples from the setting to illustrate the experiences. I supplemented interview questions with observations from the field. For example, I noticed goal setting was easier for some clients than others. To better understand how working with the nursing students influenced health decision making I asked about setting goals. This question revealed surprising information about the impact of change talk during the clinic encounter on subsequent decision making. Because of my time in the field, I could tailor a client's interview question to my recollection of how things went in the MI session. For example, I would say "I noticed you identified some goals quite quickly – what helped you identify the goals?" or, for someone who struggled I would say "it seemed like it was really hard to settle on a goal, what made it that so hard?" As the client interviews progressed, I asked questions to clarify recurring phenomena that emerged in concurrent analysis. For example, I repeatedly noted phrases such as "the student got me" or "the student personalized things to me" and I used the interview as an opportunity to clarify the meaning and importance of these statements. This led to the recognition of several cultural symbols that were used in relation to 'meeting the clients where they are at' and the development of a domain related to client connection.

Focus group interviews. The focus group setting creates a small scale sub-culture where the facilitator can observe the participants both reflect upon and explore the "how" and "why" of their thinking and acting (Basch, 1987). Krueger and Casey (2009) noted that focus groups do not capture aspects of human behavior that are unconscious; participants can tailor their answer to reflect what they believe is correct, but this may not reflect their true experiences. In light of this, the focus groups occurred at the conclusion of the students' clinical placement.

I selected focus groups for the nursing students because the inherent group process could help these participants both explore and clarify their understandings of using MI in ways that are less available through a one-to-one interview (Freeman, 2006; Krueger & Casey, 2009; Nicholls, 2009). It was a strategic decision to use one-to-one and focus groups for the different participant groups. Lambert and Loiselle (2008) described the benefits of using both focus group and individual interviews that include triangulating findings, surfacing individual and contextual features influencing the phenomenon, enriching the interpretation of the phenomenon itself and converging characteristics of the phenomenon across different groups. While the focus group interview was the preferred strategy for interviewing students, I did provide students the option a one-to-one interview and student participants selected the focus group format. In the context of this research, it is possible the focus group was a particularly good fit. During the field observations I noticed the nursing students worked and debriefed in dyads and I thought this may have increased their comfort with talking about MI in a group interview. In light of this, the students were uniquely positioned to discuss their experiences in a focus group setting and build on insights from their clinical dyad debrief sessions.

There were four focus group interviews: two focus groups each had two participants and another two focus groups were each attended by eight participants. Focus groups occurred in a private interview room in an area familiar to students. All focus groups took place at the end of term when classes were finished. As I prepared for the focus groups, I recalled an instance during a field observation when I overheard the students describe how finances were short and some students were cutting back on meals to save money. In consideration that each focus group was immediately before lunch, I included a generous array of nutritious food and beverages. To my surprise, this was acknowledged as a substantial meal and the students distributed the

remaining items amongst themselves at the interview's conclusion. Beyond hosting the interview, moderator roles included: welcoming participants, making introductions, reviewing the research purpose and use of data, providing guidelines for participation, posing questions and guiding discussion (Berg & Lune, 2012; Freeman, 2006; Krueger & Casey, 2009).

The structure of a focus group is unique to enable participants to develop one another's ideas as well as accommodate different points of view (Berg & Lune, 2012; Krueger & Casey, 2009). To support this kind of group dynamic while maintaining focus for the interview, I structured the interview questions to engage participants in a general discussion about how they learned motivational interviewing and then transitioned to addressing key aspects of applying motivational interviewing with clients and closed with the students' recommendations. I transitioned to a new question when the responses became repetitive and did not add further insight or description. Data saturation was achieved through comparisons across the focus groups interviews, individual interviews, student journals and field observations. This kind of comparison was important because it distinguished cultural themes from individual opinions (Polit & Beck, 2008).

Student journals. While the interview as a data collection strategy elevated participants' voices, similarly the documents used by participants in the course of their work represented a textual voice to deepen the understanding of culture's influence. Nicholls (2009) commented on the textual nature of North American culture and noted written texts provide rich data for qualitative researchers. Cultural practices of nursing students may be developed or transmitted through a text such as the clinical journal. The students who agreed to share their journals were asked to provide these at week 11. For the current research, I received 10 student journals. In their journals the students reflected on either community health nursing in general (6 journals) or

motivational interviewing in particular (4 journals). I compared the journal material to the field observations, reflected on the emerging themes in concurrent analysis and refined interview questions in the areas of receiving instructor feedback, connecting with clients and being transformed by incorporating MI into practice.

Data generation strategies were selected and timed to bring depth and breadth to the understanding of how undergraduate students learn and apply MI in clinical practice (Table 4).

Table 4

*Data Generation Strategies Summary**

Week of semester	1	2	3	4	5	6	7	8	9	10	11	12	13
Information letters	√												
Field observations													
-students					√	√	√	√	√	√	√	√	
-clients					√	√	√	√	√	√	√	√	
Client interviews					√	√	√	√	√	√	√	√	√
Instructor interviews													√
Student focus groups													√
Student journals											√		

*Note: data collection procedures occurred twice, once for each academic term

Ethical Considerations

Ethical considerations require that participants in the research be free to give informed consent, personal identity is protected, data collection materials are kept secure and no harm presents to participants as a result of the study (Langford & Young, 2013). The Tri-Council Policy Statement on ethical conduct for research involving humans (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada and Social Sciences and Humanities Research Council of Canada [Tri Council], 2010) is a guide for ethical conduct and processes. In relation to qualitative research, the Tri Council (2010) acknowledges that flexibility is required, as changes to research and interview questions can arise during the

course of data collection. The recommendation is for ongoing reflexivity and responsiveness to change by the investigator to help ensure the overall strength and rigor of data collection and analysis in a qualitative study (see section on Rigor). The current research was approved by the Health Research Ethics Board at the University of Alberta (REB1, Appendix D) and the Human Subject Research Committee at the University of Lethbridge (Appendix E).

Proximity. This research brought myself and the participants into close contact and necessitated that mutual interests were balanced to respect the rights of participants and the aims of the research. For example, sometimes students would identify it was too busy in the setting and they declined observations. One member of a student dyad initially consented to observations and then declined, however the peer-partner wanted observations to occur. I reminded both students of the voluntary nature of participation and reminded them they could participate in a focus group interview. After I was in the field, the student who withdrew heard from peers about their experiences of observations and approached me to re-join that aspect of the study. This experience was not atypical of nursing education research and investigators with any affiliation to student participants routinely take steps to accommodate student vulnerability and protect the education experience (Aycock & Currie, 2013; Ridley, 2009). I was, and am currently, an instructor in the program from which the participants were recruited; however I had no direct connection with any of the participants. Participants were advised that I was a nursing instructor and I assured them that I had no influence over the students' academic assessment, progression or employment prospects. I have a collegial relationship with the instructors and they expressed enthusiasm when they engaged in the research project and saw the project as a way to enhance the student education experience. I proactively discussed my role in the nursing

program and my role as a PhD student and suggested that any participant who was uncomfortable with my affiliation could decline to participate in the study.

Reciprocity. Germain (2001) uses the term reciprocity to explain the mutual relationship between the ethnographer and those who share their experience of the culture. In ethnographic research, the investigator is situated on a continuum in field observation from naïve observer to engaged participant (Berg & Lune, 2012). I experienced reciprocity during the field observations. For example, I transitioned from being told to 'sit over there' and invited to 'sit near me'. When I was told to 'sit over there' (in the early weeks of observations), this meant I was perched on the edge of an examination table approximately four feet away from the students and their client. This was amusing for the participants because it put me in an awkward space above the scene and between two stirrups attached to the examination table. I felt like this friendly teasing was a process I would work through to develop a mutual relationship. Eventually I was invited to 'sit near me', this meant I sat on a chair beside the students, at the same height as the participants and this felt like I was physically part of the encounter and the field. While the field observations were short, I engaged in relational behaviors to help me blend into the environment without actively participating such as gathering materials for students or bringing clients into the consultation space. The small gestures of helping out demonstrated my interest to be a part of their world and students thanked me for taking the initiative with things that supported the workflow.

Informed consent. Materials used for securing informed consent included an information letter (Appendix F, G and H) as well as a consent form with the title, aim and explanation of the research study (Appendix I, J and K). When potential participants confirmed their interest to participate, I reviewed the consent process and had the consent form signed with

one copy for me and one copy for the participant. Consent is a fluid process and not limited to affixing a signature to the form at the study outset (Langford Young, 2013). I renegotiated consent throughout the observations and interviews. Field observations posed additional considerations relative to ethical treatment as people may not be aware a research study is in progress. The instructors and mentors were diligent about alerting people in the observational field to my presence. I watched carefully for signs of stress during observations and reminded participants they could decline observations. In addition, I assessed the effects of my presence in the field and asked regularly if it was a good time for me to be in the field. There was local newspaper and radio coverage of the study broadcast because a participant told the site communication department about the research and believed media exposure would highlight the program's value. Following the media coverage, there were regular announcements about the study on the community notice board at the research site.

Confidentiality. The research used interviews, field observations and field notes as data collection tools. All verbal and visual communication among the participants constituted data. If a participant had requested an observation to cease or the interview to be stopped I would have complied with this request. In the course of observing students work with clients I had access to sensitive medical information related to a client's cardiovascular risk; this information was kept in confidence according to the requirements of my professional code of ethics for nursing practice. Participation in the interviews was voluntary and the interviews were conducted in private and convenient spaces at mutually agreeable times.

Anonymity. To protect participant anonymity I kept the consent forms and demographic information (sex, age, year in program) in a locked filing cabinet. Interview tapes were likewise secured in a separate and locked filing cabinet. I disguised potentially identifying information

and used code names in the field notes, journals and interview transcripts. In this report, I obscured the description of the research setting but included sufficient information to retain the context. Participants were aware that interview text and observations may be used in publications about the research project, however I emphasized I would remove their identifying information and change distinguishing features about any events.

Rigor

The quality of the research is influenced by the investigator's ingenuity, insight, adaptability and skill in using verification strategies (Morse et al., 2002). Rigor includes strategies which guide the research process as well as criteria against which qualitative research is assessed. Morse, Barrett, Mayan, Olson and Spiers (2002) recommended that qualitative researchers select verification strategies that align with the study method and implement these concurrent with the inquiry. These strategies were applied to the current research and included: methodological coherence, sampling appropriateness, concurrent data collection and analysis, thinking theoretically and theory development (Morse et al., 2002). I include a discussion of investigator responsiveness and reflexivity to account for the influence of my background and personal experiences.

Methodological coherence. Ethnographic approaches are grounded in a constructivist philosophy that perceives the nature of reality as something socially constructed by human beings rather than naturally given (Roper & Shapira, 2000; Scott-Jones & Watt, 2010). To support coherence between method and question I used data collection strategies reflective of the constructivist orientation of ethnography. Specifically, data collection addressed the various types of performances within the nursing student community health clinical culture such as observations, field notes, interviews and student journal analysis. Meaning making, specifically

how participants make meaning of MI, is the essence of this research. As the investigator, my role was to grasp the participants' meaning, understand how they make sense of their world and provide a coherent interpretation. Central to ethnographic research is the investigator's presence in the field to have cultural experience that is up close and in-person. When interpreting the cultural features, I gave priority to some interpretations over others. For example, I would make interpretations about student-client interactions that using MI can disrupt paternalistic power relations in the clinic encounter, but I could not substantially locate this interpretation in observed behaviors or verbal accounts. Therefore, when I interpreted cultural features I carefully supported these with descriptions and amplified the descriptions with theory.

Sampling. It is not uncommon for qualitative research studies to have small sample sizes. This is because the goal is not to generalize data to the wider population but to garner a rich explanation of the phenomena and contribute to the extant theory (Sandelowski, 1995; Nicholls, 2009). Sampling sufficiency shapes the recruitment process by guiding the investigator to draw from participants who can speak to their experience. Furthermore, sampling saturation is demonstrated through a diverse sample that can provide a thorough understanding of the phenomenon (Morse, 2001; Sandelowski, 1995). In this research, sampling sufficiency was achieved by interviewing students with experience of learning and applying MI as well as instructors with experience teaching nursing students MI in the clinical setting. Clients who received support from nursing students using MI approach were included to provide a broader view of how the practice of using MI unfolds for nursing students. Sampling saturation was monitored through the concurrent data collection and analysis until categories were rich in detail, replicated in several cases and no new themes emerged.

As the study progressed along with concurrent data analysis, the emerging results identified that learning and using MI was a consistently positive experience for students. I was aware that in some cases a student had challenges learning MI, but I had not observed any instances, recruited a student with a negative experience or identified sufficient accounts in the data. While the discrepant student experience was rare, I was aware from previous research that nurses in practice experienced difficulty using MI. In consultation with my PhD supervisor, it was determined this study would be strengthened by sampling for that rare case. In instances like this, the researcher theoretically samples to give depth to emerging themes, challenge evolving analyses and explain exceptional findings (Erickson, 2011; Morse & Richards, 2002; Muecke, 1994). I continued data collection for a second academic term and this exposed me to a different group of students. During this time, first-hand accounts emerged of some challenges students experienced when they learned and applied MI. One participant demonstrated remarkable courage to allow my observation of this struggle and I describe the account in the following chapter.

Constant comparative analysis. The focused ethnography, as an inductive process, guides the investigator to concurrently collect and analyze data (Knoblauch, 2005). This verification process assesses emerging data for responsiveness to the question and identifies the need for additional or alternate data sources to fully address the phenomenon of interest. In this study, the multiple data collection methods (observations, field notes, interviews, student journals) provided sufficient material to alert me to the fit between the data and research question. Another advantage of using multiple data collection strategies was I could triangulate strategies, explore and recognize consistent patterns and relinquish compelling, but unsubstantiated ideas. The negative cases that appeared to confound the emerging understanding

of MI as a positive experience were carefully analyzed and provided a nuanced account of particular issues students face when learning this complex relational skill. As mentioned previously, I adjusted the interview questions to allow for deeper exploration of emerging themes. While the process of writing memos is not a part of ethnography (Muecke, 1994), this doctoral research was a collaborative effort and I kept records of decisions related to data collection, sampling and analysis using memos to provide an audit trail of actions taken throughout the research process.

Thinking theoretically. Thinking theoretically is a reiterative process where raw data are abstracted to emerging theoretical understandings; these understandings are in turn verified by existing data and the current state of the science (Morse et al., 2002). This verification process was enacted through concurrent activities of data collection, data analysis, literature review and consultation with committee members. In the analysis I articulated the intersections among emerging data and current literature and then tested these interpretations with my PhD supervisor. Theory development occurred when the salient features of learning MI, connecting with clients and engaging in a collaborative partnership were consolidated into the cohesive perspective of navigating a labyrinth towards a transformational experience. The theory describes the cultural workings that shaped students experiences. Central to the experiences of learning, connecting and collaborating was the students' transformation in their development as professionals.

Investigator responsiveness. When surveying a scene, two observers at different positions will provide distinct views of what they see. In the current research, I endeavored to provide a view of learning and applying motivational interviewing from the perspectives of the culture's participants. The assimilated account was undoubtedly filtered through my

professional, scholarly and personal experiences such that I was as linked to the research as the participants. Creswell (2013) suggested that researchers examine their personal assumptions and remain alert for their potential influence on the research process. As I wrote about my experiences and pre-understandings at the outset of the investigation, I recognized I have professional understandings about how knowledge is developed and used in nurse-client relationships. It also was clear that I developed a research question used to align with my personal commitment to constructivism. My education, professional development and nursing practice are influenced by writers who take a critical view of social institutions and how these institutions shape choice and health. Therefore, it was difficult to set aside my view of MI as a problematic approach to supporting health behavior change because I see ways that MI potentially neglects broader socio-political features influencing individual health behaviors. Given these biases, I paid careful attention to working deductively rather than inductively. Therefore, I was sensitive throughout the concurrent data collection and analysis to my biases and diligent to privilege the culture's perceptions of MI over my own views.

At the same time, my knowledge of both motivational interviewing and teaching nursing students sensitized me to identify when the research process should be refined to achieve depth or breadth. For example, I was unclear of the distinctions between the cultural symbols of 'practice' and 'experience' as they related to MI. Therefore, I asked probing questions in focus groups two, three and four about the meanings and uses the students associated with 'practice' and 'experience". In the initial client interviews there was a pervasive theme of clients feeling like students connected with them at a personal level. As well, clients identified the information they received was tailored to them and therefore more meaningful. In the last ten client interviews I asked questions about personal connection and information tailoring as well as the

influence goal setting had on health decision making. As a novice investigator, the thesis committee supervisor provided important feedback that heightened my responsiveness and ability to attend to the verification processes throughout the project.

Reflexivity. As an educator with experience both using and teaching motivational interviewing, it was difficult to be completely objective in the research endeavor. Reflexivity is the intersection of the investigator's biography and the research project (Finlay, 2002). In focused ethnography, the intent is to use the investigator's background knowledge to bring forward the constituents' perspectives on the influence of culture (Knoblauch, 2005). My presence during field observations and my knowledge of the culture were an advantage as I recognized multiple and alternative voices that spoke to the influence of culture on learning and applying motivational interviewing.

Field work was vital to the research and an opportunity to take in the vivid details and subtle cues in verbal and non-verbal interactions. My 'focus' in an observation was both what did happen and what did *not [emphasis added]* happen. My personal experience enabled me to recognize moments when the authorized understanding of what should be occurring was different from what was actually happening. For example, students were taught to use advanced communication techniques as part of motivational interviewing, however in the early stages of practicing MI students defaulted to providing information and 'told' rather than 'motivated' their clients. In cases like this, I observed what was happening in the environment that might have influenced student performance and planned to ask about this type of situation in the focus group interview. I experienced one situation where I noticed inconsistencies in student performance and the impact this had on the client. As I made a mental note to follow up on the observation, I was abruptly shifted from observer to participant when the student enlisted my feedback to help

remediate challenges using MI. This spontaneous interaction demonstrated reflexivity on my part, as I helped the student with performance feedback, and recognition of me as both observer and participant. I documented my impressions of reflexivity and drew on my reflections to engage the participants in a richer and deeper exploration of the role of culture on nursing students' learning and applying of motivational interviewing.

As I continued with the field observations, I noticed my ongoing presence mitigated the studied performance of the members. At the same time, I was aware my presence influenced the clinical routine. I noticed this when at first students wanted me to come and observe what they thought would be good examples for the research study, but as the study progressed this ceased.

The focused ethnography was an intense social process where I had to navigate my way into the culture and negotiate the privilege of remaining part of the culture. The students identified an affiliation with me because they perceived that I – as a graduate student - understood their struggles. The clients identified with me as a nurse and expressed hope that the students would take their learning forward to their practice as real nurses. I not only learned about the culture of MI, but also glimpsed the many cultures that intersected and shaped the participants' lives. I heard students vent about the demanding academic program and their busy personal lives. I listened with a heavy heart as clients lamented the absence of a personal connection to their primary health provider. I became increasingly anxious as participants asked when I would finally be finished! After I left the field, I had incidental contact with several participants and they were compelled to remind me of the value of their experience and the importance of the research.

Data Analysis and Interpretation

The main goal of data analysis and interpretation is not to produce generalizable results, but to obtain in-depth description of cultural features (Berg & Lune, 2012; Creswell, 2013). To identify and process the abundant information from interviews, journals and observations, I saved documents according to date and code name in folders indicating the type of data. Organizing data in this way helped me to maintain an overall view of the documents and retrieve material as I progressed through the research. I followed guidelines for analysis that facilitated concurrent data collection and analysis to give depth and breadth to the evolving cultural understanding (Morse & Richards, 2002; Polit & Beck, 2008; Spradley, 1979). This included clustering data into similar units, assigning representative codes to these units and then grouping this material according to shared concepts.

Interviews were transcribed verbatim by a professional transcriptionist and I assessed each document for accuracy. Transcripts were annotated from notes I took following interviews and paralinguistic features observed during the interviews. Data were saved and organized for analysis using Microsoft Office Professional Plus 2010 Word program (Hahn, 2008). I used this approach because it was efficient and, as data collection and analysis progressed concurrently, I could easily work with coded and analyzed material in Word database while re-examining the raw data in situ to reevaluate and validate emerging themes.

All data (interviews, journals, observations) were initially organized into a Word document, formatted into a four-column table and reviewed line by line to identify cultural symbols and their meanings. This approach aligned with the analytic guidelines described above and supported the comparison of emerging patterns between the different types of data (journals, observations, participant interviews). Symbols are gestures, phrases, actions, objects and words

that are used by the culture and connected to something of meaning for the culture (Spradley, 1979). The symbols were clustered into categories and transferred to a document where the aggregate symbols from all data sources were grouped into similar categories. A category is derived from the data and represents a collection of distinct symbols that share common relationships or meanings (Spradley, 1979). The arrangements of symbols into categories was based on cues from the culture and refined as concurrent data collection and analysis revealed nuanced meanings of symbols and their associations to categories. I went back and forth between documents to revise the allocation as I added new data that clarified symbols and gave depth to the categories.

The diverse categories gave me a comprehensive view of field observations, participant interviews and journal material supporting those categories. I could also identify consistencies and gaps as well as discern which participant groups to target for clarification and augmentation. I revisited the raw data with the initial categories to determine whether the cultural symbols and categories sufficiently represented the culture and to identify any aspects that were missed in the initial coding. To make sure the categories were comprehensible over the lengthy period of concurrent data collection and analysis, I made notes explaining their meaning and how I intended their use. As I shifted symbols from one category to another, added new data to previously coded material, and refined the coding structure I saw the symbols augment one another to achieve saturation within the categories.

When I was in the field and concurrently analyzing data I felt like I was so bound to the culture that I became entrenched in the minutiae of details and somewhat myopic to the broad features shaping the culture. Once I left the field and revisited the data, I gleaned fresh insights to the cultural features. It became clearer how categories articulated together to create a cohesive

description of the practices that shaped how nursing students learned and used motivational interviewing in their clinical experience. As I revisited the data and grouped affiliated categories into broad domains I was challenged to connect the domains into a coherent cultural description. The findings should provide a comprehensive picture of both culture and its influence on the phenomenon of interest (Langford & Young, 2013). I felt a tension to provide a thorough description of the culture and an interpretive account of how that culture shapes nursing students learning a relational skill like motivational interviewing. The analysis to this point was orderly, however this did not reflect the transformative experience the students described and I observed. The analysis was shared with two student participants and their feedback was that the description was thorough but not interesting – it was rich in detail but lacked drama! I discussed my predicament within my instructor peer group and I was guided to a colleague who worked with students in challenging circumstances. My colleague suggested I join her in a contemplative activity of walking a local labyrinth where I could return to the cultural field in my mind's eye and walk the students' journey. This activity was the threshold to the interpretive or meaning making stage of data analysis. As I travelled the circular path towards the labyrinth's center, I recognized the similarities between the labyrinth's winding path and the twists and turns in the culture of learning MI. I considered the everyday experiences of the culture and the current state of the analysis. On the return journey from the eye of the labyrinth to its mouth, I realized a labyrinth would represent the analytic domains and restore the culture to its original complexity. I returned to the literature and read extensively on the physical and symbolic properties of labyrinths. Interpretation upholds the factual aspects of the cultural world and translates these facts into meaning (Germain, 2001). Returning to the domains, I saw natural groupings of learning MI, connecting with clients, collaborating as partners and transforming through the

experience and these are discussed in the analysis. Appendix O is a coding sample that delineates a set of cultural symbols, their meanings and the linkage to the domain of connecting meaningfully. Discerning the patterns among the domains created a cohesive interpretation of the culture that shaped nursing students experiences of learning and applying MI. The triple spiral labyrinth is discussed in the following chapter in relation to its ability to represent the culture. I met with a student participant to discuss the interpretive analysis and it was acknowledged the work had progressed to capture the intensity of the student's experience, however it would be difficult to recreate the drama.

Summary

In an inventory of nursing research, Yonge et al. (2005) recommended that nursing education strategies be grounded in research. Client education is a significant role for nurses and the aim of the current research was to contribute to the understanding of how baccalaureate nursing students learn and apply motivational interviewing. In the following chapter, the participants' accounts from this research shed light on how educators can effectively teach and support nursing students to use motivational interviewing as part of a collaborative partnership. By integrating description, analysis, interpretation and theory, the research findings take on a representational richness as the results shed light on how to prepare nursing students to meet the complex challenge of supporting clients with health behavior change.

CHAPTER IV

Findings and Discussion

The aim of this research project was to explore and describe the perceptions and experiences of undergraduate nursing students in learning and utilizing motivational interviewing (MI) during a community health clinical placement. The purpose of this chapter is to give voice to the common meanings and practices associated with the culture of learning and applying motivational interviewing from the perspectives of the study participants – students, instructors and clients. While they do not represent all persons who teach, learn, use and receive motivational interviewing, this chapter highlights salient features from the participants' perspectives. This chapter is organized into four sections. The first section provides a metaphor for interpreting cultural context and meaning for this research; the second profiles the study participants; the third describes the cultural themes and interpretations that emerged from the participant interviews, journals and observations; and the fourth discusses a constitutive cultural theme of motivational interviewing as a transformative experience that supports students navigating their way from *doing to clients* towards *being with* clients in a collaborative partnership.

Making Culture Tangible

The research participants consistently commented on the meaning and importance of their experiences. The challenges and insights that surfaced in the data inspired me to use a labyrinth to represent the culture itself and the members' experiences of that culture. I selected a triple spiral labyrinth (Figure 1) to situate/anchor the interpretations in a coherent metaphor that supports both illustration and explanation. Labyrinths have been in use for more than 4 millennia and their designs represent a search for guidance and meaning (Kern, 2002; Lonegren, 2007). Distinct from a maze, which has visual barriers to distract one from the path, a labyrinth has a

unicursal path to its centre and out again. The continuous path aims to provide a sense of security despite the path's non-linear quality and disorientation to the proximity of the labyrinth's center. Spiral labyrinths are connected with practices that encourage persons to step beyond the concrete and expand awareness to find new ways of being (MacQueen, 2005). The triple spiral labyrinth is made up of three equal spirals culminating in a common center. Each of the three spirals' paths inwards has a turning point to guide one onwards to the common center – the eye - of the labyrinth. This design is also referred to as the Triskele; a three armed Celtic Symbol that signifies cycles of awareness, connection and expansion (Heinz, 2008). I was drawn to the triple spiral as it fitted with a cultural experience that lent itself to both education and transformation. In this cultural context students were re-oriented to a new way of being as a professional, guided towards connecting with clients as people (not problems) and expanded in their professional capacity to collaborate in clinical practice.

In the context of this research, the first spiral represents undergraduate nursing students developing awareness of a relational approach to practice through learning and practicing MI. As students practice, or apply their skills using MI with 'real' clients and receive feedback from peers and mentors, they move into the labyrinth's second spiral of connecting with clients, meeting them 'where they are at' and engaging with clients as people. In the third spiral, the synergies of experience with using motivational interviewing, connecting with clients as partners and applying critical thinking skills supports the expansion of students' work with clients to a collaborative partnership. At the center of the labyrinth is the students' and clients' recognition of themselves as transformed. The labyrinth metaphor conveys the non-linear - sometimes disorienting - journey of undergraduate nursing students in an unfamiliar environment

(community clinical) as they adopt motivational skills to support a collaborative approach to client care – an approach that both students and clients identify as transformative.

Figure 1: Labyrinth of Student Experiences with Motivational Interviewing

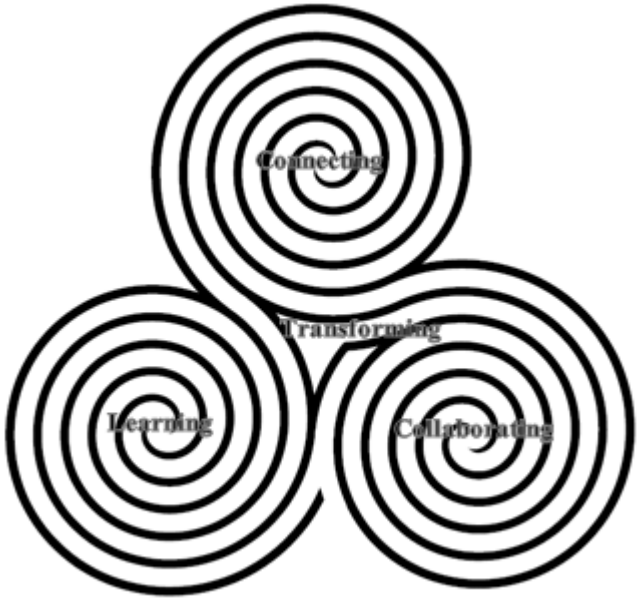

Figure 1. The students enter the cultural field and learn motivational interviewing as a skill; with practicing MI students connect with clients and through experience students collaborate with clients. Central to the experience of learning, connecting and collaborating is the students' transformation in their development as professionals.

Profile of Participants

Nursing student participants were either in their third year of a 4-year Nursing Baccalaureate, or their second year of two of a 2-year after-degree Nursing Baccalaureate. All students were enrolled in a community health clinical rotation where they learned and applied motivational interviewing to client encounters. The clinical instructors were Masters prepared and each had at least 10 years of clinical experience with five or more years in a teaching role. The client participants came from diverse occupations and half were recurrent attendees of the

program. The university health center was the setting for the experience. This is a service learning experience where students provide a health service – vascular risk assessment – with academic supervision in a community location. This placement was first established as a community placement in 2007 and is accessed twice yearly for the Fall and Spring semesters. Table 1 summarizes the culture's members and their roles. Pseudonyms are used to protect members' identities.

Table 1

Culture Members and Role*

Member*	Role	Member*	Role	*names are pseudonyms
Aisha	Student	Amanda	Client	
Charlotte	Student	Diane	Client	
Dalton	Student	Elizabeth	Client	
Daria	Student	Faith	Client	
Delaney	Student	Hilary	Client	
Eileen	Student	Jonathan	Client	
Fallon	Student	Lily	Client	
Grace	Student	Mark	Client	
Heather	Student	Mike	Client	
Helen	Student	Paula	Client	
Isabella	Student	Reg	Client	
Jackie	Student	Robert	Client	
Juliette	Student	Sabrina	Client	
Laura	Student	Sarah	Client	
Megan	Student	Thomas	Client	
Petra	Student	Tony	Client	
Reece	Student	Colleen	Instructor/Mentor	
Rhianna	Student	Michelle	Instructor/Mentor	
Rielle	Student	Sandra	Instructor/Mentor	
Shelley	Student			

Understanding Culture and Meaning

Domain 1: Entering the clinical setting and learning a relational skill. Clinical experiences are an essential part of nursing education as students learn technical skills, build on critical thinking skills and hone skills in client teaching. The research on community based clinical placements includes innovative experiences for students to work with clients on behavior change in areas of exercise, nutrition, medication compliance, treatment adherence and smoking cessation (Aponte & Nickitas, 2007; Little, 2006; Seymour & Cannon, 2010; Watson & Pulliam, 2000; Wheeler & Plowfield, 2004), however the approach taken to client education is unclear. The clinical experience in this research study is similar to ones described by Carter, Kelly, Montgomery and Chesire (2013) and Aponte and Eques (2010), however neither of these two studies described the behavioral intervention nor identified how students were prepared to counsel clients. To date, the research literature on undergraduate students and motivational interviewing focusses on skill acquisition and this is assessed through student performance in role play (Croffoot et al., 2010; Goggin et al., 2010; Lozano et al., 2010; White et al., 2007) or with standardized patients (Arthur, 1999; Croffoot et al., 2010; Czart, 2014; Martino et al., 2007; White et al., 2007). While client education is recognized as a major part of nursing, the research participants in the studies on students using motivational interviewing are drawn from medicine and pharmacy programs. Therefore, the research findings of this cultural domain are important because they address nursing students, clinical setting, timing and instructional techniques.

Setting and space. This research took place in the context of a collaborative experience between a university health center and a community health clinical course. This type of community clinical placement is considered a service learning experience. Service learning occurs in collaboration with an agency partner and supports the students' clinical learning

objectives as well as the agency population-based needs for low-acuity health encounters such as health promotion, screening and risk reduction education (Langham & Schutt, 2012). In the first days of being in clinical, the students expressed some apprehension about what they are doing for the next 13 weeks. In this placement the students complete individual client assessments for vascular disease risk through measures of blood sugar, blood fats, blood pressure and body mass index followed by a motivational interviewing intervention to discuss risk factor reduction. The kinds of assessments described sounded familiar to the students, but motivational interviewing to support clients with health behavior change is very unfamiliar to many students. The concept of a partnership approach is valued amongst the group members but the process to engage in a collaborative relationship is nebulous. Cognitive dissonance is a heightened emotional state that is triggered when a person is faced with equally compelling but opposing views (Festinger, 1962); this state is heightened during MI and helps clients recognize the importance a preferred view holds and commit to acting on that view (Miller & Rose, 2009). The instructors intentionally heighten cognitive dissonance so the students gain insight that telling clients what to do is inconsistent with collaborative communication or ethical practice. Isabella shared her thoughts on the first exposure to MI, saying "I can see I have a way to go because when I look back I see it was pretty much barking orders at [clients] much of the time". This recognition of the importance of a skill like MI to collaborative care is the first step on the labyrinth's path towards a collaborative-partnership approach that is transformational for these students.

At the beginning of their clinical rotation the students were arranged into dyads. Throughout the term the students work in these pairs, one is the primary nurse for the client encounter and the second student is available to support their peer. The consultation rooms are private, 10X12 foot spaces with two or three chairs, a desk, and an examination table and, in

some cases, a desktop computer. Debriefing rooms are temporarily repurposed private offices or meeting spaces near the consultation rooms. These rooms are where the students review the client's measurement results with the instructor/mentor, strategize discussion topics, and debrief the client encounter with their partner and instructor/mentor. During a debriefing session there are other students in the room preparing for their sessions, therefore the conversations are audible amongst all the people in the room. While a debriefing focuses on a student pair, the other students present will spontaneously offer feedback. I noticed students provided verbal praise and non-verbal, affirmative gestures as peer support. For example, students appeared relieved that peers shared similar struggles with asking open-ended questions and were swift to brainstorm and add ideas to their own communication repertoire. During my field observations several students shared that this community health environment was like living in a crowded fishbowl where everyone sees you learn how to swim – or sink. Indeed one student said she delayed having me doing observations with her group because "I was afraid of one more person watching me do this [MI] badly" (Helen). In general, students identified the environment as familiar, "we're in the clinic rooms so it feels familiar in a sense of seeing some of the things, like equipment, around us like in a hospital" (Megan). The setting and the degree of scrutiny created an air of gravitas that influenced performance. While students identified with learning in a fishbowl, it was also comforting to have people help them learn to swim.

> It was real; I know we don't take this seriously if it was just role play. I would not take this seriously but it's a real person in front of me and it's no role play. So I'm like yeah, I gotta be serious about what I say because here I'm not doing stuff with the stuff to the client even though we are poking [clients] and weighing and checking blood pressure. But that's in the back[ground] and here, in real life and real time I'm focusing on what

> I'm saying and doing all this listening to get to know the person. So I'm doing both but I know that if I get stuck or lost they [my partner or mentor] will kind of reorient me because my communication is as serious to the whole thing as checking the blood pressure. (Delaney)

Timing. The students identified year three as significant for revisiting the basic skills and learning an advanced approach such as MI. Reece indicated "year three is a time when a full circle moment comes with communication and it is something that now forms my identity as a nurse" (Reece). Similarly, Aisha observed "motivational interviewing is something that comes with creating your own practice and third year is when you truly create your own practice". In years one and two the student participants described developing basic interpersonal skills while acquiring clinical skills - "in those first two years you know I was caught up in trying to hold a conversation with people while doings hands-on things" (Isabella). Fallon explains,

> well, I just did not have that big picture view in first and second year; I would think "well, whatever it's way cooler to learn to hang that IV bag" so I did not have the focus that I do now [in third year]. (Isabella).

The instructors, Michelle and Sandra, lamented that a relational skill such as MI was not taught earlier in the program,

> I think we need to teach this early and nurture students over the entire four years. When I get them to reflect back on the previous two years [students] see that they are telling – not teaching -- and talking at clients -- not relating to or collaborating with clients, so we have to start them with this approach and build on it. (Sandra)

Another instructor, Michelle, identified benefits to teaching MI earlier in the program – such as in year two – with general health promotion conversations and then in more complex client scenarios throughout the program.

The need for nursing students to have effective communication skills is clearly identified in the entry to practice competencies for Registered Nurses (CARNA, 2013). Health communication is foundational to relational practice (CNA, 2008), yet how and when these skills are taught is at the discretion of individual nursing programs. van Eijk-Hustings et al. (2011) suggested preparation in client centered approaches should be a part of pre-licensure education with professional development opportunities to strengthen skills upon entry to practice. While presented as theoretically informed strategies, William Miller - the parent author of MI - describes MI as *both* [emphasis added] a spirit and a style where the clinician assumes a collaborative stance, tailors the conversation to the client's stage of change and actively support the client's capacity to adopt health promoting behaviors (Miller & Rose, 2009). In regards to this research, there appears to be benefits to introducing motivational interviewing preparation early in the undergraduate experience – prior to year three - with an ongoing commitment to develop skills, spirit and style of this relational practice throughout all undergraduate clinical experiences.

Techniques. "I mean you could give me all the theory you want, but I've got to do it" (Reece). The outcome studies of MI training interventions for practicing clinicians and pre-licensure students demonstrate the benefits of using both didactic and interactive approaches to learning MI (Armstrong et al., 2011; Arthur, 1999; Chilton et al., 2012; Croffoot et al., 2010; Czart, 2014; Goggin et al., 2010; Hettema et al., 2005; Lozano et al., 2010; Martino et al., 2007; White et al., 2007). For this research, the students received their primary preparation for

motivational interviewing in the form of pre-reading materials on health behavior change theories followed by an interactive one-half day session that included stages of change theory, motivational interviewing theory, case studies, videos and student role play. The students varied in their responses to the initial session. Megan's journal reflection identified "the diversity of learning experiences helped me to grow and develop skills as I'm preparing to do this with real people". Daria found it beneficial to be "exposed to this skill in a safe place before facing a client and to get help from my instructor and other students". For two students there was an immediate comfort level. "I believe in this and it came naturally so I was worried about being bored – I found I kind of had to 'lead' some of the group to go with this" (Petra), and Aisha "like in just a short time I just learned this and I feel like I could talk with somebody about their tobacco use for example – it's not that hard" (Aisha).

While the initial teaching session is quite structured, there is a spirit that imbues MI (Miller & Rollnick, 2013) and the instructors encouraged students to develop their own style. Some students identified an immediate struggle with finding this style "well I was okay with seeing the initial structured approach to this and then I felt clumsy and awkward and not doing too well adapting to my own version of this" (Eileen). Similarly for Helen,

> I felt like I was thrown to the wolves. I needed a demonstration, so after that first session I just relied on lists of things I should do like open-ended questions, affirmatives, reflections – it wasn't me, it was mimicry and I was following a list of skills. [Helen]

Two weeks after the initial session, Michelle provided a 45 minute review with a demonstration. Participating in the demonstration had powerful results for Eileen "for me, once I had that MI session with Michelle well then I got it" and likewise for Helen "I just needed to see someone do this who is a professional at it so I could see the flow". Barwick et al (2012) suggested that

health providers acquired the skill easier when it was transferred in a classroom, with discussion and examples of the motivational interviewing sessions. Helen elaborated in her journal on the value of personally experiencing Michelle, an instructor, use MI.

> I found it resonated - it would have been easier for me to view a session, or have it done with me right at the start, and then do my best to mimic the flow even without having experience in the field. (Helen)

At mid-term, Sandra provided a simulation session as a skills refresher and an opportunity to use motivational interviewing with a client in an acute care setting. The shift in application from the community setting back to the acute setting got Aisha thinking about how she might expand how she uses these skills.

> I think lots of the time it's been taught it's like a step-by-step process that you only use in specific setting, and that's not how it is really. So I think just having that experience in the Sim Lab and kind of taking away like the formal attitude of Motivational Interviewing took my skills that much further. (Aisha)

Reece saw common features in using MI across different scenarios.

> In simulation it was me being able to take whatever situation I was given, and I had three different situations, and be able to turn that to a conversation about how they're feeling, what are they're thinking, what do they know and raising some different options to consider. I see where I can go a lot of places in different situations with just that kind of conversation. (Reece)

Guiding students into the labyrinth. The duration of training for MI is still not well understood; typically education programs range from one to three days and are delivered in compressed format over days or short sessions over weeks to months (Brobeck et al., 2011;

Everett et al., 2008; Madson et al., 2009; Maissi et al., 2011; Noordman et al., 2012b; Soderlund et al., 2011). The didactic approach may support an introduction to MI skill, but the development of one's own style and proficiency requires an investment in ongoing practice and personal feedback; otherwise trainees can rely on a small repertoire of basic skills (Madson et al., 2009; Noordman et al., 2012a; Soderlund et al., 2011). The findings in this domain demonstrate how Michelle and Sandra's initial teaching sessions introduced students to basic skills; however some students benefitted from a more experiential exposure to MI in the initial stages. In this research, simulation supplemented both MI training and client encounters to successfully enhance student learning. The review sessions at two weeks or at midterm were effective to support students' developing skills through simulation or role play. The students' varying experiences suggest that initial skill development could be tailored by instructors identifying – at the outset - students who may struggle with learning MI. This type of tailoring may be essential to helping students successfully navigate deeper into the labyrinth, moving beyond basic skills and towards using MI to connect meaningfully with their clients.

Domain 2: Connecting meaningfully with clients. This domain describes the students' journey towards meaningful client connections through key aspects in the culture that include practicing MI techniques, adopting a relational style, receiving feedback on motivational skills and client engagement. Client focused care is a key feature of nursing practice (CNA 2008; CARNA, 2013), yet some research suggests nursing students attend to completing procedures and tasks over establishing a client connection (Scott, 2013; Skaalvik, Normann and Henriksen, 2010; Suikkala and Leino-Kilpi, 2005) and it is speculated the reasons lie in undergraduate nursing students lacking adequate preparation to incorporate a client focus into clinical work (Chant, Jenkinson, Randle and Russell, 2002McCarthy et al., 2008). This domain illustrates how

- through embracing both spirit and style of motivational interviewing - the students re-orient themselves towards engaging with clients and recognize the importance of meaningful connections.

Practice, practice, practice. The opportunity for students to work with clients in clinical practice with clients is central to nursing education (NEPAB, 2005) because it supports experiential learning, skill development, problem solving and professional socialization (Hartigan-Rogers, Cobbett, Amriault & Muise-Davis, 2007; Terry, 2013). Michelle emphasized the importance of practicing motivational techniques with clients and ensured the students were matched to less complex clients during their initial stages of skill development. Michelle explained,

> the real learning comes with practicing, but the right client to practice with in a one-on-one encounter is important – so that guinea pig is a client or person who is really patient for student's first encounter because the student's MI is following a pretty linear process for first few sessions until s/he finds their own way and style. (Michelle)

Service users take on a variety of roles in clinical settings from establishing course outcomes to evaluating clinicians (Hartigan-Rogers et. al, 2007; Terry, 2013). While the clients did not define course content or assess students for this clinical placement, they were actively engaged as service users to work with students, provide feedback on the health center program, and share comments about student performance. As a result, clients viewed themselves as having an active role in developing the students' skills. Elizabeth saw herself contributing to their professional formation, "I want to see them succeed in what they do, I'm inspired by their attitude and want to be part of their success" (Elizabeth). Robert saw a role to improve the students' skills, "I enjoy helping the students learn. You know, I might try and throw them the

odd curve-ball just to give them some practice with handling someone a bit more challenging". Mike expressed his pride in being a part of a practice innovation, "you know, this is cutting edge stuff they are learning so I'm really happy to be the person they try it out on" (Mike). Tony emphasized the value of practice with real people,

> anybody can study a book and try it out in a classroom but to get the practice with public interaction on someone like me – well it's totally different. With [the student] I saw how she was kind of nervous at first – I was her first client - but she got better from the time we started the conversation to when we got to the end. (Tony)

The students identified how practicing in a few client encounters increased their comfort with using motivational skills. After my fourth session observing Dalton and Fallon they noted the session flowed more smoothly and the conversation felt more natural than in previous appointments – they said they felt more comfortable and confident overall. Consistently, students and instructors indicated that basic proficiency in motivational skills emerged over four to five client sessions. Self-reported confidence in their skills was a consistent student observation. When students said they felt confident, and similarly when instructors identified students as confident, there was a convergence of basic motivational skills with an orientation to the client as a person. While the program's clients provided opportunities to practice skills, the feedback from instructors played a significant role in helping students to adapt the skills to fit their unique style.

Moving beyond 'being the expert'. At this point in the labyrinth, students cannot distinguish the larger pattern of using motivational skills as part of a collaborative approach to care because they are occupied with developing their skills in the client encounters. In their first client visits I noticed the students encountered a paradox – to be proficient in motivational

interviewing was more than skills; the students had to adopt a relational way of being and let go of an expert stance. When learning to engage in meaningful client connections, nursing students un-learn a paternalistic approach to client care and reorient themselves to a relational way of being (Grilo, Santos, Rita & Gomes, A. 2014; Scott, S., 2008, Tapp, 2000). Sandra and Michelle both noted how students brought an assumption about being an expert in charge of client care. Sandra observed how students struggled with letting go of an expert stance, "the students come in thinking they've got all this education and so they should be the person in control, be the person telling the client what to do" (Sandra). Scholars caution nurses about positioning themselves as experts relative to clients because this sustains a power imbalance and contributes to a pathologizing discourse (Gottlieb Feeley, 2006; Tapp, 2000). I noticed how some students struggled to make this shift because they believed being an expert conferred credibility and authority. Helen wrote about this shift in her journal

> to this point in our student career, client education has always been health care provider directed – but this doesn't work as client vows to make unreasonable changes (but changes that are reasonable to the health provider) – then gets discouraged – then this discouragement is reinforced by the health care provider once again making [the client] abide by the vow. (Helen)

Turning away from an expert stance shifts both conversation's direction and the student's role in that conversation. Sandra commented how students become disoriented when they let go of the expert stance,

> well, we really flip their world upside down right at the get-go because MI is about connecting with a person and their being in control and an expert in themselves; you're

> not the one in control, you're not the expert – you have expertise. It really takes a bit of practice with clients before the students can wrap their heads around this shift. (Sandra)

Michelle noted that motivational interviewing required students to make both philosophical and practical shifts in their practice, "yes, they [the students] can get they aren't the expert but then they have to behave different and that's a whole other shift. So they need opportunity to put this into practice" (Michelle). Miller and Rollnick (2013) describe this shift as embracing both the spirit and style of motivational interviewing. One student vividly described her initial discomfort with putting expertise in the background and relational skills in the foreground,

> for those first few, oh man- I was just sweating bullets. Like this client is going to think I'm a total fraud if I'm not giving out information. So I was going through the motivational – you know like the interviewing skills - and remembering the stuff [about risk reduction] but not blurting it out and trying to paying attention to the client. I remember thinking, oh gosh – this person probably thinks I don't know what I'm doing because I wasn't sure I knew what I was doing. (Isabella)

I observed Laura during her fourth client session transition from telling the client what to do and towards asking open ended questions. During her debriefing she recognized the difference in her approach, "that session was the game changer – I felt like I started to focus on the whole picture, no person, rather than just like fixating on or fixing a problem kind of thing". (Laura).

Sandra noted there were rare exceptions to students adopting a relational stance when learning motivational skills, "there is the odd student who won't go there – they are more comfortable with being in charge. They'll actually start arguing with clients about who is right and then I'm pushing water uphill to change the student's mindset "(Sandra). Michelle

concurred, “sometimes this does not fit with who they are as people or see themselves as a nurse. I give lots of feedback to help the student get insight and eventually get the edge off of that attitude” (Michelle).

> Interestingly, the clients had observations about the students as experts, Tony commented if I could advise ‘em, like remember none of us ever stop learning. If someone comes at me and thinks they’ve got all the answers or it’s boom, boom, boom this is what they want me to do well pardon my language - I call that [expletive] I don’t want the answer out of the textbook because I’m not a textbook. (Tony)

One client, Lily, suggested that being a professional meant *not* [emphasis added] having all the answers. “I get that they don’t know everything – I don’t expect anyone to. She was very professional and honest and I trusted that because a lot of people would make you feel bad or try and fake it through” (Lily). Hilary commented on a student balancing of expertise and professionalism,

> I appreciated how [the student] was gentle, not like she had to let me know how smart she was. She wasn’t arrogant, saying ‘oh this is what I’m going to do for you’. So I knew she was intelligent because she didn’t have to tell me she was intelligent. (Hilary)

When nurses move away from an expert stance they disrupt power imbalances and open the potential for a collaborative partnership (Gottlieb & Feeley, 2006). In this research, the cultural feature of moving beyond the expert reflects the initial shaping of the intention to become a collaborative partner. However, stepping back from being an expert and embracing a partnership approach did not present as a synchronized move. In these early stages of learning, the instructors used extensive feedback to support students’ proficiency with motivational skills and ability to engage with clients.

Feedback. Like many clinical instructors in undergraduate nursing programs, Michelle and Sandra accompanied students as they provided client care and provided student feedback on clinical performance. The performance feedback occurred during the debrief session following the appointment or, in some cases, during the client appointment if the student appeared stumped with how to proceed. Overall, students identified feedback as very helpful and Megan's experience of feedback was quite typical.

> What really made the difference for all of us, well I should speak for myself - was feedback. I think that was when I saw – no, I experienced how transformative this might be for me. Because the [instructor] gave it so specific to me and really used it to build me up – like I was on the feeling end – the receiving end - of motivational coaching from her to help me get there. (Megan)

Feedback is broadly understood as sharing observations about performance or behaviors to enhance clinical growth, increase theory-practice connections and, ultimately, improve client care (Clynes & Raftery, 2008; Gigante, Dell & Sharkey, 2011; Glover, 2000; Ridlon & Cottrell, 2012). As is often the case with supervising students in the clinical setting, instructors provide formative and summative performance evaluation. For this research, the students made observations about the role and value of formative feedback that occurred during and/or immediately following their client encounters.

When providing feedback while the student is working with a client, the instructor has to negotiate a delicate balance between standing back to observe and stepping in to help (Dahlke, Baumbusch, Afflect & Kwon, 2012; Lofmark, Thorkildsen, Raholm & Natvig, 2012). Each day, Michelle and Sandra asked the students how they wanted to receive feedback. Frequently the students requested feedback in the debrief session but appreciated their instructor speaking up

during the session if something was missed. Aisha commented "it was good to know [the instructor] had my back, like at first if I wasn't doing things well or if I forgot something she would jump in, but that got less as I got better" (Aisha). Michelle noted, "they don't want me jumping in if they've forgotten or missed something - they like me to hang back until [the student] turns to me and asks for help or asks if I have anything to add". As an example of getting the timing just right, one student described an experience where the instructor stepped in too soon,

> [The instructor] just jumped in and asked the client a question and showing me what I should be doing and if she'd just waited I was getting around to doing it but in my own way. So the whole focus changed with that interruption and the client just started talking with her and ignored me – I felt like a fifth wheel. (Eileen)

Feedback, particularly if it is an interruption, should be timed relative to the clinical events and the student's readiness to learn so that students have time to make adaptations or corrections (Clynes & Raftery, 2008; McAllister, Tower & Walker, 2007). The student's self-reflection combined with timely instructor feedback creates a powerful learning opportunity (Glover, 2000; Nottingham & Henning, 2014; Plakht, Shiyovich, Nusbaum & Raizer, 2013). Reece describes his experience of timing and feedback for correction,

> I wasn't doing so well with goal setting because I was telling what goals they had to make [laughing] and well it got me nowhere. Sandra got me talking and I came up with some things I would change. Then she said, 'now go in again and do it' – like a cheerleader for me. Well, just like that I was in with the next client doing [goal setting] better. I appreciated that she got me to figure it out I because this motivational talking

> isn't black and white – there's no one way of doing it. I really liked that she was passionate and understanding enough to know she had to get me back in there. (Reece)

Reece's example was like many I observed during debriefing sessions, where the instructor asked the student to self-reflect and then would add to the reflection with reinforcement or guidance. Feedback that amplified the student's self-reflection improved self-confidence and supported self-awareness for taking action on subsequent performance. Michelle had specific observations on how students transitioned in self-reflection skills.

> Initially it's hard for them to pin point areas, because they say everything's bad. By encouraging them in the areas that they did well - this helps them gain confidence and helps with their ability to be specific. Once they have a few client sessions under their belts and done feedback with me or the mentor, then [the students] see what's gone well and where they do things differently. (Michelle)

Dalton noted increasing congruence between his and the instructor's/mentor's assessment, "I needed a lot of guidance at first and then later on they would catch the odd thing – but after a while the instructor and the mentor pretty much just reinforced my feedback" (Dalton).

For most cases, students had good experiences of their feedback. Notable exceptions were debriefing sessions where I noticed students were quite critical of their experience; however the extent of negative self-assessment did not correspond to their performance. Rather, these students perceived they were not performing well because of their discomfort with the relational stance that underpins motivational interviewing and requires flexibility during the client encounter. Helen explained,

> I always feel disorganized because I like to plan, to make a list of what I'm going to tell the client. But it's frustrating because when I'm doing the motivational stuff I can't get

> through my list – the client's doing all the talking! My instructor keeps saying it's going okay but I feel incompetent. (Helen).

A function of feedback is to help students find coherence between theory and practice (Glover, 2000) and to personalize theory for their unique practice style (Nottingham & Henning, 2014). Elaine describes her internal dialogue of the tension between theory, practice and feedback,

> It's just a different way of saying things and for me and it's hard to get into the frame of mind to be this way – like I catch myself telling the client 'oh you need to do this and this' then I'm thinking no, I'm supposed to ask the client 'what do you think you could do here'. So [instructor] tells me it's okay but it doesn't feel okay. (Elaine).

I noticed Helen and Elaine had timely feedback, but lacked specificity in terms of identifying what was working well. At one point, following an observation of a clinical encounter, Helen asked me for feedback. I suggested she identify one specific area of strength and I validated her with my observations of that same quality. Then, I gave targeted feedback on how she could leverage this strength to be both organized and flexible during the client encounter. Both Helen and Elaine challenged me to re-visit both process and content of feedback. I observed several students using a sandwich technique for their feedback, however I also noticed some students put an overwhelming and consistent emphasis on negative performance despite supportive feedback from instructors of peers. A "feedback sandwich" is when the observer provides constructive comments in the middle of (sandwiched between) two positive affirmations. While this process is commonly used, its value is questionable because the process diffuses critical feedback and the content lacks precise guidance needed to sustain or correct behavior (Parkes, Abercrombie & McCarty, 2013; Plakht et al. 2013). Heather

commented on her experience of the ambiguity of feedback, “one of the biggest things is mixing the pros and cons because I only hear the negative so it killed my confidence and I just heard what I did wrong and not how I could change”. This may be an important area for instructors to develop awareness in students regarding negative self-assessment and provide guidance on how to identify areas of strength.

Several students recognized their instructor used motivational techniques to reinforce the areas of proficiency and suggest opportunities for development. The instructor’s ability to model motivational skills while providing guidance on how to enhance their performance both enhances skill development and makes theory-practice connections visible (Grealish, 2000; Miller & Rollnick, 2013). Students develop self-awareness when they initiate their feedback with a self-assessment. Instructor feedback should build on the student assessment with high quality and specific guidance to what is expected to remain consistent and what could change. In addition to modelling skill in using motivational interviewing, instructors need to be proficient in providing feedback to support students to integrate this relational approach into their clinical practice. Most importantly, feedback played an important role in orienting students towards a relational approach to client encounters that requires flexibility and creativity.

Meeting clients where they are at. The literature on service user involvement in nurse education highlights that clients are committed to enriching the students’ education with the aim to help them become compassionate nurses who provide a personalized approach to care (Griffiths et al., 2012; Terry, 2013). When I asked clients what was different in their encounters with the student nurses compared to a typical health provider, the client participants quickly identified how students performed much the same role, but worked very hard to connect with them as a person. Hilary commented on how her experience of the students was much different

than other experiences with health providers, "I really think [the student] was trying to get to know me, to convey her interest and then she explained things so they were meaningful for me" (Hilary). Diane gave a rich description of differences.

> When I see my family doctor there is no encouragement or comfort – it's like this is what you came in for and here are the results. I felt like the student nurse here, she was really listening to me and responding to me – like making comments that were really related to me – not vague stuff. She just took that two or three extra minutes to look at me, lean forward and that just let me know that yeah, you know, she connects with me as a person and not as somebody that's going to be gone in a few minutes. (Diane)

Diane's response, while evocative, was not isolated as several clients remarked on their experience of connection. Diane's account is meaningful because it illustrated some prominent features from the scholarly literature on therapeutic communication. One, the description validated relational engagement as both a nursing and client value (McMahon & Christopher, 2011; Morse, Bottorff, Anderson, O'Brien & Solberg, 1992; White-Williams, 2012). Two, the student's engagement level was appropriate to the needs of the encounter (Bail, 2007; Morse et al., 1992). Three, the student demonstrated both empathic insight and an ability to communicate this insight in a genuine manner (Fleischer, Berg, Zimmerman, Wuste & Behrens, 2009; Morse, Bottorff, Anderson, O'Brien & Solberg, 1992; Warmington, 2011). Four, the expression of meeting a client 'where they are at' makes a claim on the student to be present to the person, not the problem or diagnosis, in front of them. This claim asserts such strength over the student, as described in Diane's example above, that it was noticed by the client.

Sandra described the moment when students recognized the impact of their relational style on the client encounter.

> I call it one of the 'light bulb moments' for MI when the student recognizes how their skills are levelling out power in the relationship and their client is really responding – the connection is really happening. The students know their communication made that difference and it makes the student want to keep doing it because it feels good for them and they see they value for the client. (Sandra)

Gottlieb and Feeley (2006) define collaborative partnership as the "pursuit of person-centered goals through a dynamic process that requires the activity participation and agreement of all partners" (p. 8). Diane's account has characteristics of a the first phase of a collaborative partnership approach - exploring and getting to know each other - where there is sharing of power and expertise, uniting around person-centered goals and engaging in an inclusive process that facilitates nurse-client participation (Gottlieb & Feeley, 2006). A collaborative approach is identified as important to client autonomy, health literacy, provider relationships and effective health system performance (Gottlieb & Feeley, 2006; Ferguson, Ward, Card, Sheppard & McMurtry, 2013). Sandra's example shows the reciprocal influence of a meaningful connection. As students moved deeper in this spiral of the labyrinth, instances emerged that suggested the spirit and style of motivational interviewing can be a pathway to a collaborative partnership.

The process of meaningfully connecting with clients presents as a turning point in the client's interest to engage with the student as well as the student's ability to appreciate the both the wholeness and uniqueness of the client. Morse et al. (1992) identified that empathic insight takes in the nurse's ability to tune in to and emotionally connect with a client to convey an authentic understanding of the client's experience. Charlotte identified her shift in connecting with clients "I went from telling clients to probing, listening and reflecting. It's funny, my instructor's feedback was 'oh Charlotte, you just went all nurse on that client' and I knew it was

different – no I was different" [Charlotte]. Grace described her experience of tuning in, "I learned how to listen for cues to help me connect and I learned not to throw my words away, but to choose them carefully, to show the client I was there with them – that I got them". (Grace). Things changed for Laura when she recognized that motivational interviewing was not a technique to give information, but to engage clients in a conversation about health. "I see using MI helped me to build a trusting relationship first, and if the client is ready for more we can move on with what they find to be most important" (Laura). Morse et al. (1992) observed that empathic engagement is on a continuum and nurses need to discern the appropriate level of engagement and match their approach to the client's needs. Isabella described the modifications she made to her approach, attempting to engage with the client rather than giving information.

> I was with a client and it was like 'talk to the hand' – just wanted the results and go. That's okay, but I thought oh, keep trying to get him talking more so I listened and waited. I asked if I could share something that might influence his numbers and hooked it to some things he'd said were important and I saw him perk up. Then I said to him 'so where do you want us to take this from here?' – got him to take the lead – well, this person went from disinterested to let's get down to business. (Isabella)

It is noteworthy how Isabella asked permission to share information. Making this request demonstrates the quality of respect that inheres motivational interviewing (Miller & Rose, 2009; Miller & Rollnick, 2013). In this democratic gesture, Isabella turned away from privileging biomedical knowledge and demonstrated interest to be an affiliate in problem solving. Isabella's and Laura's examples show how connecting with clients was both a source of professional satisfaction and feedback on how students performed their relational work using motivational interviewing.

Meeting the clients 'where they are at' included discernment of subtle conversational cues, application of motivational interviewing skills and demonstration of emotive engagement.

This domain highlights some important aspects of bringing students into a relational style of communication as a nexus to collaborative partnership. Tracing the path into the second spiral is disorienting and tortuous as students subordinate their agenda based on outcomes to the process of meeting clients 'where they are at'. Through practicing motivational interviewing, students learn insightful engagement while clients find meaning in forming future clinicians. The instructors skillfully used feedback to surface opportunities for growth and celebrate areas of proficiency. The regular use of high quality feedback in a timely manner developed the students' skills in accurate self-reflection and behavior correction. The students and clients noticed engagement both in its presence and absence. As students used their motivational skills to attune to the client, they moved beyond a detached, expert stance and towards empathic insight. This area of the labyrinth is where students experienced a profound awareness of the person before them and developed the ability to connect meaningfully with a client. The gestures that constitute 'meeting clients where they are at' opened up the possibilities for a collaborative partnership.

Domain 3: Navigating toward a collaborative partnership. The third spiral represents a journey into more intricate terrain where students experience an expansion of their formation to engage in collaborative practice. In this domain, the students bring forward the synergies of practice, feedback, expertise and engagement. As students gained experience with motivational interviewing, they encountered more complex situations which required them to demonstrate critical thinking. When the students used motivational interviewing, they synthesized knowledge of theory and person to tailor information to meet clients' needs and expanded their practice into a collaborative partnership with clients.

Getting comfortable. Several students distinguished between practice and experience. Merriam-Webster's dictionary defines practice as repeating a performance to gain proficiency, and experience as forming knowledge through practice (2003). Laura commented on this distinction in her journal, "I had experience when I had done [MI] enough and felt like I made it my own" (Laura). Similarly, Petra indicated she had experience once she practiced MI sufficiently "to feel comfortable in my own skin" and Eileen noted "I saw myself as experienced when I was using MI and being comfortable working outside of the box with a client". For Fallon, Dalton, Reece and Aisha all stated that experience meant they felt confident using MI for problem solving with clients. Isabella described a turning point similar to what most students identified at mid point in the clinical rotation.

> It was after about 5 weeks – I wasn't just regurgitating anymore, something just turned and that's when I kind of noticed like [the client] would ask about something and I'd be able to answer or if I couldn't answer I was comfortable enough to just keep the conversation going and we'd figure it out together. (Isabella)

The students' observations highlight practice as foundational to experience and reflect a constructivist approach to client care that is organic, iterative and individual (Brandon & All, 2010). When students describe instances of collaborating with clients and thinking outside the box they are learning to refine their application of theory through experience in different practical situations. The experience students describe with MI supports the clinical reasoning and decision making that move nurses along a trajectory from novice to expert (Benner, 1984). In this domain, the students provide a glimpse of how experience using MI in their encounters with clients may contribute to their moving from novice nurse to advanced beginner.

Ford and Profetto-McGrath (1994) developed a critical thinking model that aligns with the nursing program where this research was undertaken – one that is based on transformational and inclusive values. Heather described how her instructor (Michelle) seemed like a companion in the client encounters and this created a safe space where Heather became comfortable and experienced in working with clients. Both Michelle and Sandra positioned themselves as facilitators of student learning to support the students to acquire experience using MI in a way that was comfortable for the student. The instructors were attuned to the student's subtle transition to becoming experienced. Sandra shared her observation.

> I find that experience means they've got the skills down and they are really looking at themselves and where they are in that relationship. They are using MI and being professional and humble and that's the turning point. I can pinpoint when it happens and I can tell the student feels comfortable. [The student] sits taller in the chair and the conversation just flows and the student is in there working and the client is totally responding – the client - is working right along – together. (Sandra)

Sandra described a turning point when the student is working together with the client and demonstrated a humble, but professional, stance. This demonstrates how – with experience – students feel comfortable enough with their role to adopt a collaborative approach where they assimilate theirs and the client's ways of knowing to create a coherent understanding of the whole picture. Experience is a feature of critical thinking, and this domain gives a nuanced view of how experience using motivational interviewing influenced students' critical thinking.

Critical thinking and creating possibility. The clinical setting is an ideal place to develop critical thinking skills because direct client care supports application and transfer of knowledge from an abstract theoretical level to a unique situation (Brandon & All, 2010; Brunt, 2005;

Naber, Hall & Schadler, 2014; Paul, 2014). Working with clients in a clinical environment requires clinical reasoning, acceptance of multiple ways of knowing and assimilation of large amounts of information (Marchigiano, Eduljee & Harvey, 2011). John Dewey described reflective thinking as having practical knowledge and reasoning skills and this concept was refined to include a disposition towards using these skills to solve complex problems (Glaser, 1941). Paul and Scriven described critical thinking as "an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered from or generated by observation, experience, reflection, reasoning or communication, as a guide to belief and action" (1987, para. 3). The following example illustrates several aspects of critical thinking, specifically Rhianna's knowledge of vascular health, skill in motivational interviewing and disposition towards action.

> I had this one client and his doctor told him the lab results from his annual were normal and not to worry. So the client looks at the results I've got – which are pretty much normal – and says to me, 'they're still normal, my doctor wasn't worried so why should I bother?' Well, normal - that's not saying anything meaningful for that person. Normal is not the same for every person and I think we owe people more than telling them they are normal. So the client and I started talking about what normal meant for him – personally. I could see the wheels start turning as he understood those numbers and he got very interested in doing something about stress and activity and food. (Rhianna)

In this example Rhianna is moving beyond situational problem solving as a product of critical thinking and towards individual capacity building through critical thinking as an action oriented process.

In this research context, the students leveraged their experience with MI as well as critical thinking to understand not only the immediate health decision making context but also the broader features shaping those decisions. Similar features of critical thinking observed in this research context reflect those described by Ford and Profetto-McGrath (1994) and include knowledge, critical reflection and action. This model situates critical thinking within a learning context oriented towards critical consciousness raising that aims to challenge structural factors impeding health (Ford & Profetto-McGrath, 1994). Rhianna's example above presents critical thinking as an action oriented process to redress a power imbalance between the client and the primary care physician. She demonstrated knowledge of a power imbalance created when the physician was positioned as the custodian of knowledge about normality and agent for the client's health. Rhianna demonstrated critical reflection in her observation that "we owe clients more than telling them they are normal" (Rhianna) and she acted to disrupt the status quo of clinician as expert. Through using motivational interviewing and critical reflection, Rhianna drew the client into a conversation, interpreted the normal values, explored the personal meaning of laboratory results and kindled a spark of interest to make a change. Faith described her experience with nursing students seeing her as something more than *normal* [emphasis added] and how this helped her understand her health.

> At the doctor, he talks at me but [the students] talk with me. So they really get to the things I've been worrying about by getting me talking, asking how things are with work and my life. At the doctor they take the bloodwork after the appointment so I get nothing – maybe just a phone call that things are normal. Well here the students were personal, not 'oh, you're normal or you're not normal'. They helped me to get what is my normal, so I know how to keep things that way and if things are maybe a bit off then I can do

> something – not wait until the doctor gets worried and then it's time for a pill or something. (Faith)

Sandra commented on how the students leverage MI, experience and critical thinking to work collaboratively and create possibilities for change. "With everything these students bring at this point in their education – the knowledge, experience, critical thinking – combined with MI, that just unlocks possibility like never imagined and boy do [the students and clients] light up when that comes together" (Sandra). One client provided a vivid description of seeing possibilities for her health.

> I always feel really stupid because the doctor will tell me this scientific health thing and I can't remember it, it doesn't sink in and I'm embarrassed to ask questions. So [students] they figured me out - described things right at my level and were really sincere about helping me get it. You know, stuff really clicked because as I got talking and thinking I realized so many things I really needed to know but nobody ever took the time to help me with that. For example I get how [product] might not be helping me in the long run and what I can use that's better for me. So I went back to [work area] and said to people 'hey, you've got to get over and see the nursing students because they really help you figure things out'. (Paula)

Paula's statement "figuring me out" conveys how the students applied knowledge and critical reflection to support Paula gain insight and take action for change. Daria recognized how motivational interviewing made her critical thinking visible.

> One time the client brings up the Paleo diet and I had to think what is the Paleo diet all about, ask what is important for this person about dieting, consider how might that influence their vascular risk, commend them on being active in their health, ask about

> shopping and cooking for their family if they want to try this – on and on. So I'm nursing at a different level – critically thinking about the information, following their direction and all that is coming through with motivational coaching. (Daria)

Critical thinking is a key competency of nursing education, a hallmark of professional nursing practice and a process that improves over time (Brunt, 2005; CARNA, 2013; Martin, 2002; Paul, 2014). Students described how motivational interviewing engaged their critical thinking as they identified and considered multiple approaches to respond to an array of client situations. Motivational interviewing also contributed to a collaborative partnership as students used their skills to draw out client perspectives, validate individual autonomy and seek to understand the conditions shaping decision making.

Collaborative partners. During their clinical experience of learning and applying motivational interviewing to support clients with vascular risk reduction, students realized their potential to engage in a collaborative partnership with clients. Laura gave an example of how she changed.

> I used to be pretty blunt with clients and it seemed, to me, like clients were under attack from me - from all of us really - and made to feel inferior, like we were fighting with them to make them do stuff. With motivating I avoid that and work as a partner because people know a lot and I can help build on that and I can learn from clients too. It's just a lot easier to work as partners. (Laura)

As features from the clinical contexts coalesced in the third spiral of the labyrinth, students expanded their practice to enter into collaborative partnership with their clients.

The application of motivational interviewing and critical thinking contributed to the students' ability to zero in on and deliberate about potential goals. Assessment of the importance

a client places on making a change, and clarification of a goal for change, constitutes proficient MI practice (Miller & Rollnick, 2013) and reflects phase two of a collaborative approach to care called zeroing in (Gottlieb & Feeley, 2006). From an instructor's perspective, Sandra helped students refine their understanding of the intersection between what a client is interested in changing and how the conditions surrounding a client shape change.

> I really work with the students to help them look deeper for the reasons why the client made their choices and how they [the client] got into their situation. This helps the student to understand how client choices are dependent on their circumstances because it's not all rainbows and unicorns in our clients' lives. Any conversation about change or goals or whatever has to work through and take in the client's situation. (Sandra)

Rhianna commented on the conversation's breadth and specificity, "I'm not making idle chit chat – this is goal oriented. I'm getting to know as much as I can about the client and listening for possible things they are worried about and interested or able to work on" (Rhianna). Shelly described the range of experiences she encountered identifying and refining goals, or zeroing in.

> When I mentioned goals, some people look at me like I've got two heads. So I would say 'let's talk about making a promise to yourself about your health, what could that look like?' Some people know exactly where they want to go – I had one client who decided she was switching to brown rice to lower the triglycerides – super targeted. Some people are a bit overwhelmed or they are going to change absolutely everything but are not specific about how. So we'll work together – it's a lot of back and forth to find something small, specific, do-able, that they are excited about and their life situation allows. (Shelly)

Shelly and Rhianna's examples highlight the synergies among motivational interviewing, critical thinking and collaborative partnerships. In this research, the application of MI skill and spirit enabled students to develop egalitarian relationships with clients, identify opportunities to work on health issues, tailor an action plan, anticipate potential barriers to goals and deliberate on lessons learned.

Setting goals with clients can heighten tension between present and future states. This tension may create energy or induce friction about change. Similar to the "working out phase" of a collaborative partnership (Gottlieb & Feeley, 2006), motivational interviewing theory identifies the problem solving phase as strategic to helping clients work through ambivalence and consider alternatives (Miller & Rose, 2009). Paula described how the students helped her with goal setting.

> Of course I've got goals, who doesn't, but I don't do anything with my goals. But when the students asked me about my goals and asked those important questions to pin something down to what I could do, how I would do, something simple, well that was really useful. I walked out of there and I'm doing those goals. (Paula)

Delaney, Fallon and Isabella used the phrase *zoned out* [italics added] to describe how they knew a client was not open to working through goal setting. "I know that glazed, zoned out, look means I've pushed my agenda, my take on their goal and I have to back off and apologize, refocus on them and get them interested again" [Delaney]. In backing off, Delaney recognizes the client's autonomy and re-orients the conversation to understand the conditions shaping the client's decision making. Tanya described her experience of supporting clients to consider alternatives and commit themselves to a plan.

> We are not here to move mountains, you know – so drilling down is really the key. I mean I could come up with a hundred goals for each client and they'll talk themselves right out of doing anything that I come up with. So [client and student] have to keep working to drill down to the little juicy thing that really matters to this person and I keep asking about what and how, possible challenges and solutions, and just let them talk themselves in to doing something. (Tanya)

The students reviewed past attempts with change as a strategy to help clients learn from past attempts at change. Gottlieb and Feeley (2006) described the circular process of reviewing to help clients gain insight about past efforts and build capacity for future goals. This review can have powerful effects as described by Diane.

> I've always had issues with weight. It's a real sensitive issue and [the student] brought it all back when she asked what I'd done in the past about weight. But the way she asked, she wasn't judging me – she was curious to know how things went and trying to really understand. [The student] just loosened a brick in the wall of my issue with weight. I could talk about things that were painful, where I thought I had failed. But it taught me something about my past - I didn't feel judged and I left feeling lighter. (Diane)

The student applies MI to draw out the client's perspective and uses critical thinking skills to process theoretical, contextual and client knowledge. Three features described in the domains - providing constructive feedback, surfacing power imbalances and teaching critical thinking - are recognized as strategic to promoting transformation (McAllister, M., Tower, & Walker, 2007). The experience of using motivational interviewing and critical thinking skills brought students and clients to a collaborative partnership and towards the eye of the labyrinth where they experienced personal transformation.

The eye of the labyrinth: Transformation as a cultural theme. The labyrinth's center reflects a culmination of the student and client journeys as well as the overarching cultural theme of transformation. For students, transformation took place through recurring metamorphoses experienced through each of the labyrinth's cycles. For clients, there was a separate but parallel change. The clients' experiences were distinguished by a recurring pattern of change talk. The experience of learning and applying motivational interviewing in the clinical setting raised both attitude and skill to move students from doing to and towards being with clients in a collaborative partnership. A collaborative partnership opened possibilities for clients to likewise explore new ways of being related to their health.

With learning MI, students adopted a way of being that enhanced client connection, collaboration and ultimately the student's personal transformation. Transformation is a deep, structural shift in thinking, feeling and acting (McAllister, Tower & Walker, 2007; O'Sullivan, Morrell & O'Connor, 2002). Students talked about how they changed. "I can't get away from the whole experience, it was not just doing MI – it was how it changed me as a nurse and now it follows me and is the way I nurse" (Rhianna). Michelle discussed how the transformation extended beyond the clinical experience and 'leaked out' into students' practice.

> It's funny, they'll [the students] come to clinical with examples of how things are going much better for them in other areas – like their undergrad jobs. I often hear them say "oh Michelle, this has really changed my nursing! I'm not fighting with clients to get them to do things – it feels like I can use MI to be more supportive". Sometimes I hear about how the conversations go better in their personal lives, like with their parents or spouses about smoking cessation. Overall, they notice how their communication really creates a lot less friction than it used to. (Michelle)

Rielle described how the experience made her more authentic, "I can be real with clients and show them that I don't have all the answers and they will still trust me and see me as a professional" (Rielle). Petra described learning and using MI as validating "this resonated for me – this is why I got into nursing – but until this clinical experience with MI, I just didn't have the skills to be like this with clients" (Petra). Similarly, Aisha benefitted from the experience with MI to transform her practice "this is where all these pieces from my nursing education came together in my clinical practice. Everything I've learned to this point just funnelled through as I was using MI and working with clients as a partner" (Aisha). The transformation was difficult for Helen, "I'm super meticulous – super organized. So for me, this giving up control with clients – well, I had to have a little break down before I finally got it" (Helen). Eileen confronted her doubts and learned to trust clients, "I was a bit cynical about motivating and this would leak out with client. I realized when I'm sensitive and curious that I start to believe in them and they believe in themselves. I'm a whole lot less doubtful" (Eileen). Similar to features identified in this research, authors identify strategies to facilitate transformation such as teaching critical thinking, shifting power imbalances, providing constructive feedback and demonstrating collaboration (Chambers, Thiekotter & Chambers, 2013; McAllister et al., 2007; O'Sullivan et al. 2002).

I completed the research interviews with client participants one to two weeks following the health center appointment. In many cases, I observed the change talk during the appointment and made a mental note to pay attention to whether clients followed through with their goals. When I analyzed the interviews I noticed interviews a consistent pattern where change talk from the student encounter translated into changes in health behaviors following the clinic visit.

Clients worked through their ambivalence and became more committed when they heard themselves talking about the advantages and disadvantages of change (Miller & Rollnick, 2013; Miller & Rose, 2009). Sabrina described the impact of talking about change "I thought things would fade, but I think it's because we talked so much about the goal - things popped up as I went about my activities, like I started reading labels in the grocery store and I even bought kale" (Sabrina). Thomas described changing his food identity, "the biggest thing was I'm a butter and bacon person, or I should say I was a butter and bacon person. I really took it to heart and bought [products] instead" (Thomas). In the reviewing phase of a collaborative partnership, students discussed the client's past attempts at change. Lily described the impact of reviewing her change history, "I used my slipping backwards on my goals to keep moving forwards because it triggered me work out how I could fit in an exercise tape" (Lily). Change talk is identified as a powerful predictor of future behavior and a process to build client efficacy with subsequent health decision making (Brobeck, Odencrants, Bergh & Hildingh, 2014; Hettema, Steele & Miller, 2005). Clients experienced transformation as they internalized their change talk and integrated their insights to modify health patterns outside of the appointment. This cultural theme is significant because it articulates the impact of the processes that shape change for both students and their clients. The overarching theme of transformation through a culture of learning and applying motivational interviewing reflects the culmination of interconnected features from the three domains. At the center of the labyrinth, students and clients recognize they are different for their experience.

In summary, nursing students experience deep learning through applying motivational interviewing theory in a clinical setting. The experience both transforms their practice and the clients they care for. Students expanded the boundaries of their practice to engage meaningfully

with their clients through targeted feedback to guide their skill, attitude and style. Using motivational interviewing in a collaborative partnership helped the students to shift from habitual practice of ‘doing to’ clients toward a different way of ‘being with’ clients. The choices clients make about health are complex and shaped by context. This modest research endeavour demonstrates how students applied motivational interviewing to dismantle normative power structures, enliven the clinic encounter, tailor health messaging, create authentic partnerships with clients and transform the horizon of their professional practice.

CHAPTER V

Implications, Recommendations, Limitations, Knowledge Sharing

A discussion about health behavior change is a central feature of many clinician-client encounters and it is expected that health professionals, including nursing students, will become proficient with supporting clients to adopt health promoting behaviors (Horrocks & Johnson, 2014; Lenz, 2009). The predominant focus of MI research is on measuring its effects relative to health management behaviors, with a smaller field of inquiry on teaching MI to licensed health professionals in practice. Few studies have examined MI through a nursing lens or considered the unique process of teaching undergraduate students MI or including multiple perspectives of those involved with MI in a clinical setting. The results presented here are meaningful because they describe salient features of learning and applying MI from the perspectives of all participants in the cultural field: instructors, students and clients. The parent authors of MI recently described how MI unfolds in clinical practice through four processes: engaging, focusing, evoking and planning (Miller & Rollnick, 2013). While the current research identified similar processes, it situated the processes in undergraduate nursing clinical education and located them in the nursing literature. Three major implications emerged from the researchas well as recommendations for nursing education and scholarship.

Implications

This research presents three implications for whether, how and why MI has a place in nursing practice. First, while clinicians may learn MI their proficiency levels are inconsistent with regards to evoking change talk or making an action plan (Jansink et al., 2013; Janskink et al., 2010; Madson et al., 2009; Noordman et al., 2012a; Soderlund et al., 2011). Results of the current research provide a different view; MI can be taught to undergraduate nursing students and they do develop proficiency to identify, work through and plan goals in support of clients

taking action on health. Second, there are inconsistencies in how clinicians learn and are prepared to use MI in practice. This research outlined how demonstration, role play, simulation and feedback reinforced theory and embedded motivational interviewing into collaborative practice. Third, although the questions guiding the current research did not specifically assess the impact of MI on client health behavior change, the findings demonstrated a transformative aspect of change talk as part of collaborative partnership. Specifically, change talk during the student-client encounters subsequently influenced clients' health promoting behaviors. Change talk distinguishes MI from other approaches such as cognitive behavioral therapy or solution focused therapy and change talk is identified as a powerful predictor of future action (Miller & Rose, 2009; Miller & Rollnick, 2013). This serendipitous finding validates the importance of change talk during client encounters. Motivational interviewing is one approach to support clients making health behavior changes. The implications from the current research points to how MI spirit and style align with nursing practice to support a collaborative approach to client care. Specific recommendations are targeted to nursing education and research.

Recommendations

Much of the focus on health promotion is on supporting behavior change to reduce risk for chronic as persons with chronic illness often use more health services than their well counterparts (Jacobs, et al. 2004). A person who is motivated, validated and activated is an enduring resource for health promoting behaviors and chronic disease self-management (Brobeck et al., 2014; Butler et al., 2013; Dube, O'Donnell, & Novack, 2000; Rollnick, Miller and Butler, 2008). A nursing student may graduate with a limited repertoire of attributes to meaningfully engage clients in health promotion or self-management beyond didactic and expert-centered approaches to client education. Motivational interviewing presents as a

promising approach to prepare nursing students to work collaboratively with clients across a wide spectrum of activities from health promotion to self-management. This research provides some recommendations for educators interested in teaching motivational interviewing and scholars motivated to expand nursing knowledge.

Nursing education. Students benefitted from learning MI in the third year of their program and as part of a community placement with opportunities to both practice skills and gain experience working with real clients. For the initial MI sessions with clients, the clinical instructors should select persons who are inclined to work with students and experienced in talking about their health or a family member's health concerns. In giving careful attention to the client's background, instructors can strategically increase the complexity of issues the students meet in their clinical experience (Suikkala & Leino-Kilpi, 2009).

Motivational interviewing – taken up as a collaborative partnership – sits at the intersection of many features. The features include a high degree of interaction, an interest in the client as a person, an orientation to client partnership and an ability to tailor support to the client's needs. These conditions are best suited to a clinical placement at a time in the student's program when they have sufficient knowledge, skill and experience to exercise critical thinking. Students mentioned the best timing for learning MI was in the third year of their program as they were proficient with basic communication skills and comfortable in their knowledge to support client problem solving. Critical thinking enables nurses to identify and weigh multiple approaches to a given situation, consider alternative outcomes and provide a reasoned response in the client's interest (Brunt, 2005). Critical thinking improves with time (Martin, 2002), therefore instructors should teach motivational interviewing when students can engage in critical

thinking and have close supervision by a qualified instructor to support integration of critical thinking into motivational interviewing.

The theoretical content of motivational interviewing can be supplemented with a demonstration of MI by a skilled provider followed by student demonstrations in a high-fidelity simulation session. Miller and Rollnick (2013) recommend involving a skilled provider so students can see or experience the spirit and style of MI in action. Both instructors in this research accompanied students as they used MI and provided feedback immediately following the client encounter unless the student invited feedback during the client interview. Clinical accompaniment is a negotiated balance where the instructor remains student centered while supporting the student to be client focused (Beukes & Nolte, 2013; Dahlke et al., 2012). To do this, an instructor discusses in advance how the student would like support and then identifies that his/her primary focus is to provide support to the student as they provide nursing care to their clients. The instructor supplements client care when invited or if client safety is compromised. Verbal feedback should occur immediately after the client encounter; an instructor who interrupts to give correction potentially creates disruption (Beukes & Nolte, 2013). A feedback session is an opportunity to engage the student in self-reflection and target specific areas for reinforcement and modification. To support a student's formation as a collaborative partner, the feedback would address both motivational interviewing skill and collaborative attributes. Feedback that is relevant to the student, linked to behavior and associated with the collaborative process is easiest for students to assimilate (Parkes et al., 2013; Plank et al., 2014). Students identified feedback as instrumental in their formation as proficient nurses in collaborative practice.

At the center of the student-client collaborative relationship is a spirit that resists an expert stance and brings expertise in the application of skills and knowledge in a creative, personalized manner. In this research, there appeared to be something reinforcing the students' view of clinicians as expert and this neither served the aims of conversations about health behavior change nor the purposes of the nurse-client relationship. This observation may be isolated to the present research context, at the same time educators are advised to be aware that students may assume an expert role as part of their professional identity and MI practice. To identify the juxtaposition between personal and professional values, it is important to create opportunities for students to personally reflect on themselves in the context of theory, experience and practice (Nairn, Chambers, Thompson, McGarry & Kristian, 2012). The current research recommends critical reflection during the student feedback sessions to highlight the impact of an expert stance on client engagement and guide the student to see the positive influence of a collaborative approach. In such a challenging circumstance, the instructor role includes: situating nurse's expert knowledge as a part of critical thinking; validating student efforts to apply knowledge in critical thinking; providing feedback on the impact of student's behavior; and accumulating sufficient clinical exposures for the student to adopt a partnership stance in practice.

Nursing research. MI represents both a spirit and style that is quite complex to assess in the context of pre-licensure nursing practice. Focused ethnography provided an account of the context and process for nursing students learning and applying motivational interviewing in a community experience. The question of how MI fits in undergraduate nursing education is incomplete and the findings from this research provide some guidance for future inquiry.

In this research, student proficiency with MI was established through student accounts and client anecdotes. Further research is needed to substantiate student proficiency. A research question such as 'how well do students perform motivational interviewing in a 13 week clinical placement' is an important next step and could be addressed using an instrument such as the motivational interviewing treatment fidelity scale. There is benefit to using another validated tool, such as a self-efficacy measure, to correlate anecdotal reports of proficiency with a quantitative measurement. To identify turning points in self-efficacy with MI, the self-efficacy measure would be assessed at three points: prior to learning MI, at mid-term following practice with the skill and upon completion of the community placement. The purpose of assessing self-efficacy at three different points is to assess if the turning points identified in this research - learning, connecting and collaborating - are linked to self-efficacy or correlate with experience performing MI.

More challenging questions are the impact of MI by nursing students on clients' health promotion behaviors and the enduring use of MI once students enter practice. Because impact of MI is often linked to action, the client's intermediate moves towards change, such as thinking or planning, are overlooked. A possible approach to assessing the impact of MI is to engage clients to complete a structured self-report of change thinking and health behaviors to try and substantiate a connection between change talk and action. The students were enthusiastic about using MI in their future practice and it would be worthwhile to identify whether this occurs and what supports or challenges the ongoing use of MI. An understanding of new graduates' usage following the community placement could help instructors proactively prepare students to meet potential challenges.

Limitations of the Research

As with most qualitative studies, the intent of this research was not to produce data that are generalizable in a traditional empirical sense, but to gain a deeper understanding of how culture influences the students' interaction with and experience of learning and using motivational interviewing. Therefore the results aim to identify processes that underlie the teaching and learning of motivational interviewing in a clinical setting. A limitation is the specificity of the culture in a focused ethnography that brings MI almost too close for everything about it and undergraduate nursing students' experience to be fully understood. In the following sections, I address limitations typical to ethnographic work and inherent in this research including: discerning cultural relevance; getting an authentic account; and generalizing beyond the cultural field (Knoblauch, 2005; Roper & Shapira, 2000; Spradley, 1979).

"***Is this what you're looking for?" [participants] Getting an authentic account.*** The ethnography's authenticity requires transparency on the part of participants and it is possible that the culture I was shown is the version participants wanted me to see. Participants were aware of their involvement in a research study and my presence doing observations. A limitation of the research comes from the risk of participants hiding cultural features, tailoring responses or performing differently because of their awareness of the study and an observer's presence in the field (Germain, 2001; Scott-Jones & Watt, 2010; Spradley, 1979). In the early weeks of the observations, participants would ask if I was getting what I, as the investigator, was 'looking for'. I took the opportunity to clarify that my purpose was to describe a culture and not seek a specific answer. In an attempt to identify discrepant cases, I completed data collection with two separate groups in two different academic terms. The extended time in the field did not produce evidence of participants performing for the researcher; rather it surfaced similar cultural themes across the different groups that strengthened my confidence in the ethnography's authenticity.

Did you use my stuff? [participants] Discerning what is relevant to the culture.

Motivational interviewing in clinical practice is complex. In the presentation of a coherent description, it is possible that important aspects were overlooked due to a personal bias for the identified salient features. The students were interested to see their contributions in the dissertation and pressed me to have specific materials included. I brought my own bias through my own experience using this MI. Clients valued the program and wanted the research to prove its benefits. It is compelling to have the culture's constituents invested in the contribution of their unique perspective; however it is the ethnographers challenge to distinguish substantive elements that tell the whole story of the culture (Spradley, 1979). The discernment of relevant features was aided by the abundance of data, the saturation of themes within the data and the consistent agreement across data sources. In re-visiting the data, I identified parallel aspects between my analysis and nursing theory. I used the literature to annotate the cultural features and make them more distinct. When I shared the results with a few participants, they located themselves in the culture even if their favorite quote or story was not included. This verification by participants suggested that I had identified relevant aspects of the culture and used appropriate material to demonstrate the shared meanings.

So what? Relevance beyond the cultural field. The culture was observed over two, thirteen week academic semesters with different student groups. Students gained proficiency, by theirs' and the instructors' accounts, using MI for conversations about health promoting behaviors within the context of a community health placement at a small university in western Canada. This research would be strengthened with the addition of another setting and a different group of nursing students at a similar point in their studies. I did not take the opportunity to broaden the cultural field within this research project due to logistics and time constraints;

however this is a reasonable consideration for a subsequent focused ethnography. The research findings are specific to the cultural field because how these participants organized their culture may be quite different when MI is taught by different instructors or applied in alternate clinical placements. The findings, however, provide a thick enough description to help clinical instructors be better prepared when supporting nursing students to learn and apply MI.

Motivational interviewing is one of a constellation of communication approaches to support clients with behavior change; therefore the findings on how students use this particular approach are not generalizable to other communication interventions. The research findings overall may lack the generalizability of other methods, however this study provides information that is rich in the context of motivational interviewing. The state of the science on students using MI is in development and this research is a modest contribution towards an emerging understanding of how undergraduate nursing students might be supported to learn and apply motivational interviewing as part of a collaborative approach to care.

Knowledge Sharing

Knowledge transfer (KT) makes research results accessible and facilitates research implementation (Graham & Tetroe, 2007; Wallin, 2009). Because this research has potential to enhance nursing student skill in clinical practice the KT is organized around three types of activities: diffusion, dissemination and implementation. Diffusion is regarded as a passive KT activity characterized by peer-mediated strategies such as publication in scholarly journals and presentations at academic conferences (Graham V Tetroe, 2007). Potential publications include one paper on teaching nursing students motivational interviewing and another paper on clients' engaging in change talk during student-mediated MI encounters. A national conference on nursing education is a possible venue to share the research results with nurse-educator colleagues. Dissemination is a KT activity where research findings are synthesized and

customized for uptake by targeted communities of practice (Wallin, 2009). Within a national network of community health nurses is a small group of educators who provide clinical teaching to undergraduate nursing students in community settings. To reach this community of practice, I plan a webinar to enhance clinical instructors' ability to teach motivational interviewing to undergraduate nursing students. The webinar will be supplemented with online resources; both webinar and liquid resources can be hosted on the national network's website. An adjunct strategy to the webinar is an interactive, on-site workshop and a toolkit of resources. Despite intense efforts on the part of scholars and the best intentions of end-users, the uptake of research is inconsistent (Graham and Tetroe, 2007). In the spirit of MI, Hettema et al. (2014) recommended a parallel implementation activity using a motivational approach to promote end-user uptake of MI in practice. Implementation as a KT activity is very similar to MI where opportunities and barriers to change (in this case adopting MI) are discussed and the community of practice strategizes a plan for how they can implement MI with relevant goals customized to their unique environment. The implementation strategies will be incorporated into both the webinar and workshop dissemination activities. The KT activities are structured to contribute to research on teaching motivational interviewing as well as the practice of working collaboratively with clients to improve health outcomes.

Conclusions

What I have learned is that improving undergraduate nursing students' skill in motivational interviewing can enhance their ability to engage in collaborative partnerships with clients. This study confirmed that students can learn and apply MI to evoke problem solving around health promoting behaviors and support clients to set meaningful goals. This research identified important features for nurse educators to attend to if they incorporate MI into a clinical experience. The content of MI skill teaching should include theoretical foundations of MI,

demonstration of MI by a skilled clinician, high fidelity simulation for skill development and practice with real clients in a clinical environment. The spirit of MI is a process of formation where students require targeted feedback on their ability to connect meaningfully with the client and work collaboratively as partners. The process of learning and applying motivational interviewing has reciprocal benefits for students and clients. The exposure to MI as part of a collaborative partnership in undergraduate education is an opportunity to embed this relational style into routine nursing care that seems to elude licensed clinicians in practice. Furthermore, motivational interviewing, as part of a collaborative partnership, contributes to meaningful nurse-client encounters that develop client capacity for day-to-day problem solving.

While a focused ethnography requires personal authority, I attempted to offer the clearest and most transparent account of meaning making to expose fallacies or pitfalls that might have arisen during the study. Through linking the study findings to existing theories and accumulated research I endeavored to enhance the focused ethnography's representatives and bring forward a high quality scholarly account with a sharp focus on the students' labyrinthine experiences. The current research allows for deeper insight into how undergraduate nursing students use MI to navigate towards a collaborative partnership. The accounts provided in the current research are only temporarily fixed until new processes surface to stimulate further meaning making on this complex phenomenon.

References

Advisory Committee on Population Health. (2002). Advancing integrated prevention strategies in Canada: An approach to reducing the burden of chronic diseases. Ottawa, Ontario: Health Canada.

Alam, R., Sturt, J., Lall, R., & Winkley, K. (2009). An updated meta-analysis to assess the effectiveness of psychological interventions delivered by psychological specialists and generalist clinicians on glycemic control and on psychological status. *Patient Education and Counseling, 75*(1), 25-36. doi: 10.1016/j.pec.2008.08.026

Anderson, R., Funnell, M., & Hernandez, C. (2005). Choosing and using theories in diabetes education research. *The Diabetes Educator, 31*(9), 513-520. doi: 10.1177/0145721705278947

Aponte, J., & Egues, A. (2010). A school of nursing-wellness centre partnership: Creating collaborative practice experiences for undergraduate US senior nursing students. *Holistic Nursing Practice, 24*(3), 158-167. doi: 10.1097/HNP.0b013e3181dd475a

Aponte, J., & Nickitas, D. (2007). Community as client: Reaching an underserved urban community and meeting unmet primary health care needs. *Journal of Community Health Nursing, 24*(3), 177-190. doi: 10.1080/07370010701429611

Armstrong, M. J., Mottershead, T., Ronksley, P., Sigal, R., Campbell, T., & Hemmelgarn, B. (2011). Motivational interviewing to improve weight loss in overweight and/or obese patients: A systematic review and meta-analysis of randomized controlled trials. *Obesity Reviews, 12*(9), 709-723. doi: 10.1111/j.1467-789X.2011.00892.x.

Arnold, J. M., Liu, P., Demers, C., Dorian, P., Giannetti, N., Haddad, H., . . . White, M. (2006). Canadian Cardiovascular Society consensus conference recommendations on heart failure 2006: Diagnosis and management. *Canadian Journal of Cardiology, 22*(1), 23-45.

Arthur, D. (1999). Assessing nursing students' basic communication and interviewing skills: The development and testing of a rating scale. *Journal of Advanced Nursing, 29*(3), 658-666.

Aycock, D., & Currie, E. (2013). Minimizing risks for nursing students recruited for health and educational research. *Nurse Educator, 38*(2), 56-60. doi: 10.1097/NNE.0b013e318289c3a

Bail, K. (2007). Engaging nurses in patient care: Clinical reflection by a student nurse. *Contemporary Nurse, 25*(1-2), 156-162.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall Inc.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology Health and Medicine, 52*(1), 1-26.

Baranson, S., Zimmerman, L., & Young, L. (2012). An integrative review of interventions promoting self-care of patients with heart failure. *Journal of Clinical Nursing, 21*(3/4), 448-475. doi: 10.1111/j.1365-2702.2011.03907

Barwick, M., Bennett, L., Johnson, S., McGowan, J., & Moore, J. (2012). Training health and mental health professionals in motivational interviewing: A systematic review. *Children and Youth Services Review, 34*(9), 1786 - 1795. doi: doi:10.1016/j.childyouth.2012.05.012

Basch, C. (1987). Focus group interview: An underutilized research technique for improving theory and practice in health education. *Health Education Quarterly, 14*(4), 411-448. doi: 10.1177/109019818701400404

Benady, S. (2012). The human and economic burden of COPD: A leading cause of hospital admissions in Canada. Ottawa, Ontario: Canadian Thoracic Society.

Benner, P. (1984). *From novice to expert*. Menlo Park, CA: Addison-Wesley

Berg, B., & Lune, H. (2012). *Qualitative research methods for the social sciences* (8th ed.). Upper Saddle River, NJ: Pearson.

Berwick, D. (2009). What 'patient-centered' should mean: Confessions of an extremist. *Health Affairs, 28*(4), 555-565. doi: 10.1377/hlthaff.28.4.w555

Beukes, S., & Nolte, A. (2013). Guidelines for value-sensitive clinical accompaniement in community health nursing. Journal of Nursing Management, 21(2), 304-314. doi: doi:10.1111/j.1365-2834.2012.01404.x

Bodenheimer, T., Lorig, K., Holman, H., & Grumback, K. (2002). Patient self management of chronic disease in primary care. *Journal of the American Medical Association, 288*(19), 2467-2475.

Bourbeau, J., & van der Palen, J. (2009). Promoting effective self-management programmes to improve COPD. *European Respiratory Journal, 33*(3), 461-463. doi: 10.1183/09031936.00001309

Boyde, M., Turner, C., Thompson, D., & Stewart, S. (2011). Educational interventions for patients with heart failure: A systematic review of randomized controlled trials. *Journal of Cardiovascular Nursing, 26*(4), E27-E35. doi: 10.1097/JCN.0b013e3181ee5fb2

Boyle, J. S. (1994). Styles of ethnography. In J. M. Morse (Ed.), *Critical issues in qualitative research methods,* (pp. 159-185). Thousand Oaks, CA: Sage Publications.

Brandon, A. & All, A. (2010) Constructivism theory analysis and application to curricula. *Nursing Education Perspectives, 31*(2), 89-92

Braungart, M., & Braungart, R. (2008). Applying learning theories to healthcare practice. In S. Bastable (Ed.), *The nurse as educator: Principles of teaching and learning for nursing* (3rd ed., pp. 51-90). Mississauga, ON: Jones and Bartlett.

Bredie, S., Touwels, A., Wollersheim, H., & Schippers, G. (2011). Effectiveness of nurse based motivational interviewing for smoking cessation in high risk cardiovascular outpatients: A randomized trial. *European Journal of Cardiovascular Nursing, 10*(3), 174-179. doi: 10.1016/j.ejcnurse.2010.06.003

Brobeck, E., Bergh, H., Odencrants, S., & Hildingh, C. (2011). Primary healthcare nurses' experiences with motivational interviewing in health promotion practice. *Journal of Clinical Nursing, 20*(23-24), 3322-3330. doi: 10.1111/j.1365-2702.2011.03874

Brobeck, E., Odencrants, S., Bergh, H., & Hildingh, C. (2014). Patients' experiences of lifestyle discussions based on motivational interviewing: A qualitative study. *BMC Nursing, 13*, 1-7.

Brunt, B. (2005). Critical thinking in nursing: An integrated review. T*he Journal of Continuing Education in Nursing, 36*(2), 60-67.

Burke, B., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology, 71*(5), 843-861. doi: 10.1037/0022-006X.71.5.843

Butler, C., Simpson, S., Hood, K., Cohen, D., Pickles, T., Spanou, C., . . . Rollnick, S. (2013). Training practitioners to deliver opportunistic multiple behavior change counselling in primary care: A cluster randomised trial. *British Medical Journal, 346*, 1-25. doi: 10.1136/bmj.f1191

Canadian Diabetes Association (CDA) Clinical Practice Guidelines Expert Committee. (2013). Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. *Canadian Journal of Diabetes, 37*(suppl 1), S1-S212.

Canadian Institutes for Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada (Tri-Council). (2010). *Tri-council policy statement: Ethical conduct for research involving humans* (2nd ed.). Ottawa: Ontario.

Canadian Nurses Association. (2008). *Code of Ethics for Registered Nurses*. Ottawa, Ontario: Canadian Nurses Association.

Carpenter, J., & Bell, S. (2002). What do nurses know about teaching patients? *Journal for nurses in staff development, 18*(3), 157-161.

Carper, B. (1978). Fundamental patterns of knowing in nursing. *Advances in Nursing Science, 1*(1), 13-24.

Carter, M., Kelly, R., Montgomery, M., & Chesire, M. (2013). An innovative approach to health promotion experiences in community health nursing: A university collaborative partnership. *Journal of Nursing Education, 52*(2), 108-111. doi: 10.3928/01484834-20130121-04

Casey, D., Murphy, K., Cooney, A., Mee, L., & Dowling, M. (2011). Developing a structured education programme for clients with COPD. *British Journal of Community Nursing,16*(5), 231-237.

Chair, S. Y., Chan, S. W.-C., Thompson, D., Leung, K.-P., Ng, S. K.-C., & Choi, K. C. (2012). Short term effect of motivational interviewing on clinical and psychological outcomes and health related quality of life in cardiac rehabilitation patients with poor motivation in

Hong Kong: A randomized controlled trial. *European Journal of Preventive Cardiology, 19*(6), 1383-1392. doi: 10.1177/1741826711425428

Chalmers, K., Seguire, M., & Brown, J. (2003). Health promotion and tobacco control: Student nurses' perspectives. *Journal of Nursing Education, 42*(3), 106-113.

Chambers, D., Thiekotter, A., & Chambers, L. (2013). Preparing student nurses for contemporary practice: The case for discovery learning. *Journal of Nursing Education and Practice, 3*(9), 106-114.

Chant, S., Jenkinson, T., Randle, J. & Russell, G. (2002). Communication skills: Some problems in nursing education and practice. *Journal of Clinical Nursing, 11*(1), 12- 21

Chilton, R., Pires-Yfantouda, R., & Wylie, M. (2012). A systematic review of motivational interviewing within musculoskeletal health. *Psychology Health and Medicine, 17*(4), 392-407. doi: dx.doi.org/10.1080/13548506.2011.635661

Clynes, M., & Raftery, S. (2008). Feedback: An essential element of student learning in clinical practice. *Nurse Education in Practice, 8*(6), 405-411.

College and Association of Registered Nurses of Alberta (CARNA). (2013). Entry-to-Practice Competencies for the Registered Nurses Profession. Edmonton, Alberta: College and Association of Registered Nurses of Alberta.

Cooper, H. C., Booth, K., & Gill, G. (2003). Patients' perspectives on diabetes health care education. *Health Education Research, 18*(2), 191-206. doi: 10.1093/her/18.2.191

Coster, S., & Norman, I. (2009). Cochrane reviews of educational and self-management interventions to guide nursing practice: A review. *International Journal of Nursing Studies, 46*(4), 508-529.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Croffoot, C., Krust Bray, K., Black, M., & Koerber, A. (2010). Evaluating the effects of coaching to improve motivational interviewing skills of dental hygiene students. *The Journal of Dental Hygiene, 84*(2), 57-65.

Cruz, E., & Higginbottom, G. (2013). The use of focused ethnography in nursing research. *Nurse Researcher, 20*(4), 36-43.

Cutler, R., & Fishbain, D. (2005). Are alcoholism treatments effective: The Project MATCH data. *BMC Public Health, 5*, E1-11. doi: doi:10.1186/1471-2458-5-75

Czart, M. (2014). Using 3D standardized patients to teach motivational interviewing: A pilot study. *Journal of Virtual Worlds Research, 7*(2), 1-24.

Dahlke, S., Baumbusch, J., Afflect, F., & Kwon, J. (2012). The clinical instructor role in nursing education: A structured literature review. *Journal of Nursing Education, 51*(12), 692-696.

Darkwah, V., Ross, C., Williams, B., & Madill, H. (2011). Undergraduate nursing student self-efficacy in patient education in a context-based learning program. *Journal of Nursing Education, 50*(10), 209-212.

Deakin, T., McShane, C., Cade, J., & Williams, R. (2005). Group based training for self-management strategies in people with type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews,* (2). doi: 10.1002/14651858.CD003417.pub2

Dellasega, C., Anel-Tiangco, R., & Gabbay, R. (2012). How patients with type 2 diabetes mellitus respond to motivational interviewing. *Diabetes Research and Clinical Practice, 95*(1), 37-41. doi: 10.1016/j.diabres.2011.08.011

Disler, R., Gallagher, R., & Davidson, P. (2012). Factors influencing self-management in chronic obstructive pulmonary disease: An intergrative review. *International Journal of Nursing Studies, 49*(2), 230-242. doi: 10.1016/j.ijnurstu.2011.11.005

Doane, G., & Varcoe, C. (2005). *Family nursing as relational inquiry: Developing health promoting practice.* Philadelphia, PA: Lippincott, Williams and Wilkins.

Dube, C., O'Donnell, J., & Novack, D. (2000). Communication skills for preventive interventions. *Academic Medicine, 75*(7Suppl), S45-54.

Duke, S., Colagiuri, S., & Colagiuri, R. (2009). Individual patient education for people with type 2 diabetes mellitus. *The Cochrane Library,* (1). doi: 10.1002/14651858.CD005268.pub2.

Effing, T., Monninkhof, E., van der Valk, P., Zielhuis, G., Hyaden Walters, E., van der Palen, J., & Zwerink, M. (2007). Self-management education for patients with chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews,* (4). doi: 10.1002/14651858.CD002990.pub2

Egger, M., Davey Smith, G. & Altman, D. (Eds.). (2001). *Systematic reviews in health care: Meta analysis in context*. London: BMJ Publishing.

Emmons, K., & Rollnick, S. (2001). Motivational interviewing in health care settings: Opportunities and limitations. *American Journal of Preventive Medicine, 20*(1), 68-74. doi: 10.1016/S0749-3797(00)00254-3

Erickson, F. (2011). A history of qualitative inquiry in social and educational research. In N. K. Denzin & Y. Lincoln (Eds.), *The SAGE handbook of qualitative research.* (4th ed.). Thousand Oaks, CA: Sage Publishers.

Everett, B., Davidson, P., Sheerin, N., Salamonson, Y., & DiGiacomo, M. (2008). Pragmatic insights into a nurse-delivered motivational interviewing intervention in the outpatient cardiac rehabilitation setting. *Journal of Cardiopulmonary Rehabilitation and Prevention, 28*(1), 61-64. doi: 10.1097/01.HCR.0000311511.23849.35

Ferguson, L., Ward, H., Card, S., Sheppard, S., & McMurtry, J. (2013). Putting the 'patient' back into patient-centred care: An education perspective. Nurse Education in Practice, 13(4), 283-287.

Festinger, L. (1962). Cognitive dissonance. *Scientific American* **207** (4): 93–107. doi: 10.1038/scientificamerican1062-93.

Finlay, L. (2002). Negotiating the swamp: The opportunity and challenge of reflexivity in research practice. *Qualitative Research, 2*(2), 209-230.

Fischer, H., Eisert, S., Everhart, R., Durfee, M., Moore, S., Soria, S., . . . Estacio, R. (2012). Nurse-run, telephone based outreach to improve lipids in people with diabetes. *American Journal of Managed Care, 18*(2), 77-84.

Fleischer, S., Berg, A., Zimmermann, M., Wuste, K., & Behrens, J. (2009). Nurse-patient interaction and communication: A systematic literature review. *Journal of Public Health, 17*(5), 339-353.

Ford, J. S. and Profetto-McGrath, J. (1994). A model for critical thinking within the context of curriculum as praxis. *Journal of Nursing Education, 33*(8), 331-344.

Freeman, T. (2006). "Best" practice in focus group research: Making sense of different views. *Journal of Advanced Nursing, 56*(5), 506-518.

Germain, C. P. (2001). Ethnography the method. In P. L. Munhall (Ed.), *Nursing research a qualitative perspective* (pp. 277-306). Toronto, Ontario: Jones and Bartlett.

Gigante, J., Dell, M. & Sharkey, A. (2011). Getting beyond ‘good job’: How to give effective feedback. *Pediatrics, 127*(2), 205-207, doi: 10.1542/peds.2010-3351

Glaser, E. (1941). *An experiment in the development of critical thinking*. New York, NY: Columbia University

Glover, P. (2000). Feedback: I listened, reflected and utilized. Third year nursing students' perceptions and use of feedback in the clinical setting. *International Journal of Nursing Practice, 6*(5), 247-252.

Goggin, K., Hawes, S., Duval, E., Spresser, C., Martinez, D., Lynam, I., . . . Catley, D. (2010). A motivational interviewing course for pharmacy students. *American Journal of Pharmaceutical Education, 74*(4), Article 70.

Goldenberg, D., Andrusyszyn, M. A., & Iwasiw, C. (2005). The effect of classroom simulation on nursing students' self-efficacy related to health teaching. *Journal of Nursing Education, 44*(7), 310-314.

Gottlieb, L., & Feeley, N. (2006). *The collaborative partnership approach to care: A delicate balance*. Toronto, ON: Elsevier Canada.

Gottlieb, L., & Rowat, K. (1987). The McGill model of nursing: A practice-derived model. *Advances in Nursing Science, 9*(4), 51-61.

Graham, I., & Tetroe, J. (2007). How to translate health research knowledge into effective healthcare action. *Healthcare Quarterly, 10*(3), 20-23.

Grealish, L. (2000). The skills of coach are an essential element in clinical learning. *The Journal of Nursing Education, 39*(5), 231-233.

Green, T., Haley, E., Eliasziw, M., & Hoyte, K. (2007). Education in stroke prevention: Efficacy of an educational counselling intervention to increase knowledge in stroke survivors. *Canadian Journal of Neuroscience Nursing, 29*(2), 13-20.

Griffiths, J., Speed, S., Horne, M., & Keeley, P. (2012). 'A caring, professional attitude: What services users and carers seek in graduate nurses and the challenge for educators. *Nurse Education Today, 32*(2), 121-127.

Grilo, A., Santos, M., Rita, J., & Gomes, A. (2014). Assessment of nursing students and nurses' orientation towards patient-centeredness. *Nurse Education Today, 34*(1), 35-39. doi: doi:10.1016/j.nedt.2013.02.022

Hahn, C. (2008). *Doing qualitative research using your computer: A practical guide*. Thousand Oaks, CA: Sage.

Hartigan-Rogers, J., Cobbett, S., Amirault, M. & Muise-Davis, E. (2007). Nursing graduates' perceptions of their undergraduate clinical placement. *International Journal of Nursing Education Scholarship, 4*(1), Article 9.

Heckman, C., Egleston, B., & Hofmann, M. (2010). Efficacy of motivational interviewing for smoking cessation: A systematic review and meta-analysis. *Tobacco Control, 19*(5), 410-416. doi: 10.1136/tc.2009.033175

Hegarty, J., Walsh, E., Condon, C., & Sweeney, J. (2009). The undergraduate education of nurses: Looking to the future. *International Journal of Nursing Education Scholarship, 6*(1), 1-11.

Heinrich, E., Schaper, N., & deVries, N. (2010). Self-management interventions for type 2 diabetes: A systematic review. *European Diabetes Nursing, 7*(2), 9-30. doi: DOI: 10.1002/edn.160

Heinz, S. (2008). *Celtic Symbols*. New York, New York: Sterling.

Hettema, J., Steele, J., & Miller, W. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1*(1), 91-111. doi: 10.1145/annurev.clinpsy.1.102803.143833

Hettema, J., Ernst, D., Roberts-Williams, J., & Miller, K. (2014). Parallel processes: Using motivational interviewing as an implementation coaching strategy. *Journal of Behavioral Health Services and Research, 41*(3), 324-337.

Higginbottom, G. (2004). Sampling issues in qualitative research. *Nurse Researcher, 12*(1), 7-19.

Higginbottom, G., Pillay, J., & Boadu, N. (2013). Guidance on performing focused ethnographies with an emphasis on healthcare research. *The Qualitative Report, 14*(Article17), 1-16.

Holt, M., & Warne, T. (2007). The educational and practice tensions in preparing pre-registration nurses to become future health promotors: A small scale explorative study. *Nurse Education in Practice, 7*(6), 373-380. doi: http://0-dx.doi.org.darius.uleth.ca/10.1016/j.nepr.2006.11.009

Hornberger, C., & Edwards, L. (2004). Survey of tobacco cessation curricula in Kansas nursing programs. *Nurse Educator, 29*(5), 212-216.

Horrocks, C., & Johnson, S. (2014). A socially situated approach to inform ways to improve health and well-being. *Sociology of Health & Illness, 36*(2), S75-S86

Hoving, C., Visser, A., Dolan Mullen, P., & van den Borne, B. (2010). A history of patient education by health professionals in Europe and North America: From authority to shared decision making education. *Patient Education and Counseling, 78*(3), 275-281.

Hunt, J. (2011). Motivational interviewing and people with diabetes. *European Diabetes Nursing, 8*(2), 68-73. doi: 10.1002/edn.180

Hurley, J., Gerkin, R., Fahy, B., & Robbins, R. (2012). Meta-analysis of self-management education for patients with chronic obstructive pulmonary disease. *Southwest Journal of Pulmonary and Critical Care, 4*, 194-202.

Ismail, K., Winkley, K., & Rabe-Hesketh, S. (2004). Systematic review and meta-analysis of randomised controlled trials of psychological interventions to improve glycemic control in patients with type 2 diabetes. *The Lancet, 363*(9421), 1589-1597. doi: 10.1016/S0140-6736(04)16202-8

Jaarsma, T., Nikolova-Simons, M., & van der Wal, M. (2012). Nurses' strategies to address self-care aspects related to medication adherence and symptom recognition in hear failure patients: An in depth look. *Heart and Lung: The Journal of Acute and Critical Care, 41*(6), 583-593. doi: 10.1016/j.hrtlng.2012.03.003

Jacobs, P., Klarenbach, P., Ohinmaa, S., Golmohammadi, K., Demeter, S., & Schopflocher, D. (2004). *Chronic disease in Alberta: Cost of treatment and investment in prevention.* Edmonton, Alberta: University of Alberta.

Jackson, C. (2012). Reforming health care to transform an ineffective system. *Holistic Nursing Practice, 26*(6), 4.

Jansink, R., Braspenning, J., van-der-Weijden, T., Elwyn, G., & Grol, R. (2010). Primary care nurses struggle with lifestyle counseling in diabetes care: A qualitative analysis. *BMC Family Practice, 11*, 41-47. doi: 10.1186/1471-2296-11-41

Jansink, R., Braspenning, J., Laurant, M., Keizer, E., Elwyn, G., & van der Weijden, T. (2013). Minimal improvement of nurses' motivational interviewing skills in routine diabetes care one year after training: a cluster randomized trial. *BMC Family Practice, 14*(44), 1-9.

Jones, A. (2007). Putting practice into teaching. *Journal of Clinical Nursing, 16*(12), 2297-2307.

Jones, H., Berard, L., MacNeill, G., Whitham, D., & Yu, C. (2013). Canadian Diabetes Association 2013 glinical practice guidelines for the prevention and management of diabetes in Canada: Self-management education. *Canadian Journal of Diabetes, 37* (Sl1), S26-S30.

Jonsdottir, H. (2013). Self-management programmes for people living with chronic obstructive pulmonary disease: A call for a reconceptualisation. *Journal of Clinical Nursing, 22*(5-6), 621-637. doi: 10.1111/jocn.12100

Jusko Friedman, A., Cosby, R., Boyko, S., Hatton-Bauer, J., & Turnbull, G. (2011). Effective teaching strategies and methods of delivery for patient education: A systematic review and practice guideline recommendations. *Journal of Cancer Education, 26*(1), 12-21. doi: 10.1007/s13187-010-0183-x

Kern, H. (2002). *Through the labyrinth: Designs and meanings of 5,000 years*. New York, New York: Prestel.

Kingshuk, P., Eastwood, S., Michie, S., Farmer, A., Barnard, M., Peacock, R., . . . Inniss, J. (2013). Computer-based diabetes self-management interventions for adults with type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews, 3*. doi: 10.1002/14651858.CD008776.pub2

Knoblauch, H. (2005). Focused ethnography. *Forum: Qualitative Social Research, 6*(3), Art. 44.

Knowles, M. (1989). *The making of an adult educator.* San Francisco: Jossey-Bass.

Kreindler, S. (2008). Lifting the burden of chronic disease: What's worked, what hasn't, what next (pp. 1-36). Winnipeg, Manitboa: Winnipeg Regional Health Authority.

Krueger, R., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th ed.). Thousand Oaks, CA: Sage Publications Inc.

Lambert, S., & Loiselle, C. (2008). Combining individual interviews and focus groups to enhance data richness. *Journal of Advanced Nursing, 62*(2), 228-237. doi: 10.1111/j.1365-2648.2007.04559.x

Langford, R., & Young, A. (2013). *Making a difference with nursing research*. Upper Saddle River, NJ: Pearson Education Inc.

Langham, G., & Schutt, M. (2012). Service learning to promote social transformation in nursing students. In A. Morris & D. Faulk (Eds.), *Transformative learning in nursing: A guide for nurse educators*. New York, New York: Springer Publishing.

Lawn, S., & Schoo, A. (2010). Supporting self-management of chronic health conditions: Common approaches. *Patient Education and Counseling, 80*(2), 205-211. doi: 10.1061/j.pec.2009.10.006

Lenz, B. (2009). Nursing students' response to tobacco cessation curricula in Minnesota baccalaureate nursing programs. *Journal of Nursing Education, 48*(10), 566-573. doi: 10.3928/01484834-20090716-03

Leonhardt, C., Keller, S., Chenot, J. F., Luckmann, J., Basler, H.-D., Wegscheider, K., . . . Becker, A. (2008). TTM based motivational counselling does not increase physical activity of low back pain patients in a primary care setting - a cluster randomized controlled trial. *Patient Education and Counseling, 70*(1), 50-60. doi: 10.1016/j.pec.2007.09.018

Lindner, H., Menzies, D., Kelly, J., Taylor, S., & Shearer, M. (2003). Coaching for behavior change in chronic disease: A review of the literature and implications for coaching as a self-management intervention. *Australian Journal of Primary Health, 9*(2-3), 177-185.

Little, M. (2006). Preparing nursing students to be health educators: Personal knowing through performance and feedback workshops. *Journal of Nursing Education, 45*(3), 5.

Lofmark, A., Thorkildsen, K., Raholm, M., & Natvig, G. (2012). Nursing students' satisfaction with supervision from preceptors and teachers during clinical practice. *Nurse Education in Practice, 12*(3), 164-169.

Lonegren, S. (2007). *Labyrinths: Ancient myths and modern uses* (4th ed.). New York, New York: Sterling.

Loveman, E., Frampton, G., & Clegg, A. (2008). The clinical effectiveness of diabetes education models for type 2 diabetes: A systematic review. *Health Technology Assessment, 12*(9), 1-150.

Lozano, P., McPhillips, H., Hartzler, B., Robertson, A., Runkle, C., Scholz, K., & Kieckhefer, G. (2010). Randomized trial of teaching brief motivational interviewing to pediatric trainees. *Archives of Pediatric and Adolescent Medicine, 164*(6), 561-566.

Lundahl, B., Kunz, C., Brownell, C., Tollefson, D., & Burke, B. (2010). A meta-analysis of motivational interviewing: Twenty-five years of empirical studies. *Research on Social Work and Practice, 20*(2), 137-160. doi: 10.1177/1049731509347850

MacQueen, G. (2005). *The spirituality of mazes and labyrinths.* Kelowna, B.C.: Northstone Books.

Madson, M., Loignon, A., & Lane, C. (2009). Training in motivational interviewing: A systematic review. *Journal of Substance Abuse Treatment, 36*(1), 101-109. doi: 10.1016/j.jsat.2008.05.005

Maissi, E., Ridge, K., Treasure, J., Chalder, T., Roche, S., Bartlett, J., . . . Ismail, K. (2011). Nurse-led psychological interventions to improve diabetes control: Assessing competencies. *Patient Education and Counseling, 84*(2), e37-43. doi: 10.1016/j.pec.2010.07.036

Marchigiano, G., Eduljee, N., & Harvey, K. (2011). Developing critical thinking skills from clinical assignments: A pilot study on nursing students' self-reported perceptions. *Journal of Nursing Management, 19*(1), 143-152. doi: 10.1111/j.1365-2834.2010.01191.x

Martin, C. (2002). The theory of critical thinking of nursing. *Nursing Education Perspectives, 23*(5), 243-247.

Martino, S., Haeseler, F., Belitsky, R., Pantalon, M., & Fortin, A. (2007). Teaching brief motivational interviewing to year three medical students. *Medical Education, 41*(2), 160-167. doi: 10.1111/j.1365-2929.2006.02673.x

Martins, R., & MacNeil, D. (2009). Review of motivational interviewing in promoting health behaviors. *Clinical Psychology Review, 29*(4), 283-293. doi: 10.1016/j.cpr.2009.02.001

Matinolli, H., Kyngas, H., & Kaarliainen, M. (2012). The effectiveness of motivational interviewing as a form of care for adults with type 2 diabetes: A descriptive review. *Journal of Nursing Education and Practice, 2*(2), 151-161. doi: dx.doi.org/10.5430.jnep.v2n2p151

McAllister, M., Tower, M., & Walker, R. (2007). Gentle interruptions: Transformative approaches to clinical teaching. *Journal of Nursing Education, 46*(7), 304-314.

McCarthy, B., O'Donovan, M. & Twomey, A. (2008). Person-centered communication: Design, implementation and evaluation of a communication skills module for under graduate nursing students – An Irish context. *Contemporary Nurse, 27*(2), 207-222.

McMahon, M., & Christopher, K. (2011). Toward a mid-range theory of nursing presence. *Nursing Forum, 46*(2), 71-82. doi: 10.1111/j.1744-6198.2011.00215.x

Merriam-Webster. (2003). Merriam-Webster's Collegiate Dictionary (11th ed.). Springfield, Mass.: Merriam-Webster Inc.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood, a comprehensive guide* (3rd ed.). San Francisco, CA: Jossey-Bass.

Miller, A. (1985). The relationship between nursing theory and nursing practice. *Journal of Advanced Nursing, 10*(5), 417-424.

Miller, S., & Beech, B. (2009). Rural healthcare providers question the practicality of motivational interviewing and report varied physical activity counseling experience. *Patient Education and Counseling, 76*(2), 279-282. doi: 10.1016/j.pec.2008.12.022

Miller, W., & Rollnick, S. (2013). *Motivational interviewing* (3rd ed.). New York: NY: The Guilford Press.

Miller, W., & Rose, G. (2009). Toward a theory of motivational interviewing. *American Psychologist, 64*(6), 10.

Minet, L., Lonvig, E., Henriksen, J., & Wagner, L. (2011). The experience of living with diabetes following a self-management program based on motivational interviewing. *Qualitative Health Research, 21*(8), 1115-1126. doi: 10.1177/1049732311405066

Mol, A. (2008). *The logic of care: Health and the problem of patient choice*. New York, NY: Routledge.

Montgomery-Dossey, B., & Keegan, L. (Eds.). (2013). *Holistic Nursing: A Handbook for Practice* (6th ed.). Burlington, MA: Jones & Bartlett Learning.

Mooney, B., Timmins, F., Byrne, G., & Corroon, A.M. (2011). Nursing students' attitudes to health promotion: Implications for teaching practice. *Nurse Education Today, 31*(8), 841-849.

Morse, J. M. (2001). Determining sample size in qualitative research. *Qualitative Health Research, 10*(1), 3-5.

Morse, J. (2007). Does health research warrant the modification of qualitative methods? *Qualitative Health Research, 17*(7), 863-865. doi: 10.1177/1049732307306186

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods, 1*(2), 13 - 22.

Morse, J. M., Bottorff, J., Anderson, G., O'Brien, B., & Solberg, S. (1992). Beyond empahty: Expanding expressions of caring. *Journal of Advanced Nursing, 17*(7), 809-821.

Morse, J. M., & Richards, L. (2002). *Read me first: A user's guide to qualitative research.* Thousand Oaks, CA: Sage.

Moyers, T., Martin, T., Manuel, J., Hendrickson, S., & Miller, W. (2005). Assessing competence in the use of motivational interviewing. *Journal of Substance Abuse Treatment, 28*(1), 19-26. doi: 10.1016/j.jsat.2004.11.001

Moyers, T., Martin, T., Manuel, J., Miller, W., & Ernst, D. (2010). Revised global scales: Motivational interviewing treatment integrity 3.1.1 (MITI 3.1.1). Retrieved from

Muecke, M. A. (1994). On the evaluation of ethnographies. In J. Morse (Ed.), *Critical issues in qualitative research methods*, (pp. 187-199). Thousand Oaks, CA: Sage Publications.

Mulhall, A. (2003). In the field: Notes on observation in qualitative research. *Journal of Advanced Nursing, 41*(3), 306-313.

Myers, R. (2010). Promoting healthy behaviors: How do we get the message across. *International Journal of Nursing Studies, 47*(10), 500-512.

Naber, J., Hall, J. & Schadler, C. (2014). Narrative thematic analysis of baccalaureate nursing students' reflections: Critical thinking in the clinical education context. *Journal of Nursing Education, 53*(6), S90 – 99.

Nadai, E., & Maeder, C. (2005). Fuzzy fields. Multi-sited ethnography in sociological research. *Forum: Qualitative Social Research, 6*(3). Retrieved July 16, 2013 from: https://www.alexandria.unisg.ch/publications/31370.

Nairn, S., Chambers, D., Thompson, S., McGarry, J., & Kristian, C. (2012). Reflexivity and habitus: Opportunities and constraints on transformative learning. *Nursing Philosophy, 13*(3), 189-201.

Nasmith, L., Ballem, P., Baxter, R., Bergman, H., Colin-Thome, D., Herbert, C., . . . Zimmerman, B. (2010). *Transforming care for Canadians with chronic health conditions: Put people first, expect the best, manage for results*. Ottawa, Ontario: Canadian Academy of Health Sciences.

Nicholls, D. (2009). Qualitative research: Part three - Methods. *International Journal of Therapy and Rehabilitation, 16*(12), 638-647.

Noordman, J., van der Weijden, T., & van Dulmen, S. (2012a). Communication-related behavior change techniques used in face to face lifestyle interventions in primary care: A systematic review of the literature. *Patient Education and Counseling, 89*(2), 227-244. doi: 10.1016/j.pec.2012.07.006

Noordman, J., van der Lee, I., Nielen, M., Vlek, H., van der Weijden, T., & van Dulmen, S. (2012b). Do trained nurses apply motivational interviewing techniques in primary care consultations? *Journal of Clinical Medicine Research, 4*(6), 393-401. doi: 10.4021.jocmr1120w

Norris, S., Lau, J., Smith, J., Schmid, C., & Engelgau, M. (2002). Self management education for adults with type 2 diabetes: A meta-analysis of the effect on glycemic control. *Diabetes Care, 25*(7), 1159-1181. doi: 10.2337/diacare.25.7.1159

Nottingham, S., & Henning, J. (2014). Feedback in clinical education: Clinical instructor and student perceptions of and influences on feedback. *Journal of Athletic Training, 49*(1), 58-67.

Nursing Education Program Approval Board (NEPAB). (2005). *Standards for Alberta nursing education programs leading to initial entry to practice as a registered nurse*. Edmonton, Alberta:

Ockford, E., Shaw, R., Willars, J., & Dixon-Woods, M. (2008). Education and self-management for people newly diagnosed with type 2 diabetes: A qualitative study of patients' views. *Chronic Illness, 4*(1), 28-37. doi: 10.1177/1742395307086673

O'Donnell, D., Hernandez, P., Kaplan, A., Aaron, S., Bourbeau, J., Marciniuk, D., . . . Voduc, N. (2008). Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease - 2008 update - highlights for primary care. *Canadian Respiratory Journal, 15*(supplement A), 1A-8A.

Olsen, J., & Nesbitt, B. (2010). Health coaching to improve healthy lifestyle behaviors: An integrative review. *American Journal of Health Promotion, 25*(1), e1-e12.

O'Sullivan, E., Morrell, A., & O'Connor, M. (Eds.). (2002). *Expanding the boundaries of transformative learning: Essays on theory and praxis*. New York, NY: Palgrave Press.

Paradis, V., Cossette, S., Frasure-Smith, N., Heppell, S., & Guertin, M. (2010). The efficacy of a motivational nursing intervention based on the stages of change on self-care in heart failure patients. *Journal of Cardiovascular Nursing, 25*(2), 130-141. doi: 10.1097/JCN.0b013e3181c52497

Parkes, J., Abercrombie, S., & McCarty, T. (2013). Feedback sandwiches affect perceptions but not performance. *Advances in Health Sciences Education, 18*(3), 397-407.

Paul, S. (2014) Assessment of critical thinking: A Delphi study. *Nurse Education Today, 34*(11), 1357-1360

Paul, R., & Scriven, M. (1987). *Defining critical thinking*. Retrieved March 6, 2015 from http://www.criticalthinking.org/pages/defi ning-critical-thinking/766

Perry, C., & Butterworth, S. (2011). Committment strength in motivational interviewing and movement in exercise stage of change in women. *Journal of the American Academy of Nurse Practitioners, 23*(9), 509-514. doi: 10.1111/j.1745-7599.2011.00637.x

Plakht, Y., Shiyovich, A., Nusbaum, L., & Raizer, H. (2013). The association of positive and negative feedback with clinical performance, self-evaluation and practice contribution of nursing students. *Nurse Education Today, 33*(10), 1264-1268.

Plank, D., Dixon, H., & Ward, G. (2014). Student voices about the role feedback plays in the enhancement of their learning. *Australian Journal of Teacher Education, 39*(9), Article 7. doi: http://dx.doi.org/10.14221/ajte.2014v39n9.8

Plews, C. (2005). Expert patient programme: Managing patients with long-term conditions. *British Journal of Nursing, 14*, 1086-1089.

Polit, D., & Tatano Beck, C. (2008). *Nursing research: Generating and assessing evidence for nursing practice*. Philadelphia, PA: Lippincott Williams & Wilkins.

Prochaska, J., Butterworth, S., Redding, C., Burden, V., Perrisn, N., Leo, M., . . . Prochaska, J. (2008). Initial efficacy of MI, TTM tailoring and HRI's with multiple behaviors for employee health promotion. *Preventive Medicine, 46*(3), 226-231.

Redman, B. (2011). When is patient self-management of chronic disease futile? *Chronic Illness, 7*(3), 181-184. doi: 10.1177/1742395311416138

Registered Nurses Association of Ontario (RNAO). (2012). Best Practice Guidelines on Facilitating Client Learning. Toronto, Ontario: Registered Nurses Association of Ontario.

Resnicow, K., Dilorio, C., Soet, J., Borrelle, B., Hecht, J., & Ernst, D. (2002). Motivational interviewing in health promotion: It sounds like something is changing. *Health Psychology, 21*(5), 444-451. doi: 10.1037/0278-6133.21.5.444

Resnicow, K., Jackson, A., Blissett, D., Wang, T., McCarty, F., & Rahotep, S. (2005). Results of the healthy body healthy spirit trial. *Health Psychology, 24*(4), 339-348.

Ridley, R. (2009). Assuring ethical treatment of students as research participants. *Journal of Nursing Education, 48*(10), 527-541. doi: 10.3928/0148434-2009610-08

Ridlon, T. & Cottrell, D. (2012). The value of clinical feedback. *Critical Care Nursing, 7*(6), 44-46.

Riegel, B., Dickson, V., Hoke, L., McMahon, J., Reis, B., & Sayers, S. (2006). A motivational counseling approach to improving heart failure self-care: mechanisms of effectiveness. *Journal of Cardiovascular Nursing, 21*(3), 232-241.

Robinson, S. (2013). The relevancy of ethnography to nursing research. *Nusing Science Quarterly, 26*(1), 14-19. doi: 10.1177/0894318412466742

Rogers, C. (1961). *On becoming a person: A therapist's view of psychotherapy*. New York: New York: Houghton Mifflin Company.

Rollnick, S., & Heather, N. (1992). Negotiating behaviour change in medical settings: The development of brief motivational interviewing. *Journal of Mental Health, 1*(1), 13.

Rollnick, S., Miller, W., & Butler, C. (2008). *Motivational interviewing in health care: Helping patients change behavior*. New York: NY: The Guilford Press.

Roper, J. M., & Shapira, J. (2000). *Ethnography in nursing research*. Thousand Oaks, CA: Sage Publications.

Rothman, D. (2001). Origins and consequences of patient autonomy: A 25 year retrospective. *Health Care Analysis, 9*(3), 255-264.

Rubak, S., Sandboek, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: A systematic review and meta-analysis. *British Journal of General Practice, 55*(513), 305-312.

Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing and Health, 18*(2), 179-183.

Sargent, G., Forrest, L., & Parker, R. (2012). Nurse delivered lifestyle intervetnions in primary health care to treat chronic disease risk factors associated with obesity: A systematic review. *Obesity Reviews, 13*(12), 1148-1171. doi: 10.1111/j.1467-789X.2012.01029

Scheckel, M., Emery, N., & Nosek, C. (2010). Addressing health literacy: The experiences of undergraduate nursing students. *Journal of Clinical Nursing, 19*(5-6), 794-803.

Scheckel, M., & Hedrick Erickson, J. (2009). Decentering resources: A phenomenological study of interpretive pedagogies in patient education. *Journal of Professional Nursing, 25*(1), 57-65.

Schlundt, D., Quesenberry, L., Pichert, J. W., Lorenz, R. A., & Boswell, E. J. (1994). Evaluation of a training program for improving adherence promotion skills. *Patient Education and Counselling, 24*(2), 165-173.

Schumacher, K. and Meleis, A. (1994). Transitions: A central concept in nursing. *Journal of Nursing Scholarship, 26(2),* 119-127.

Schwandt, T. A. (2007). *The Sage Dictionary of Qualitative Inquiry* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Schwerin, J. (2004). The timeless caring connection. *Nursing Administration Quarterly, 28*(4), 265-270.

Scott, S. (2008). 'New professionalism': Shifting relationships between nursing education and nursing practice. *Nurse Education Today, 28*(2), 240-245. doi:10.1016/j.nedt.2007.04.004

Scott-Jones, J., & Watt, S. (Eds.). (2010). *Ethnography in social science practice.* New York, NY: Routledge.

Seymour, C., & Cannon, S. (2010). Student facilitated health promotion intervention for chronic disease self-management in a risk elders. *Journal of Allied Health, 39*(2), 120-127.

Skaalvik, M., Normann, K. & Henriksen, N. (2010). Student experiences in learning person-centered care with Alzheimer's disease as perceived by nursing students and supervising nurses. *Journal of Clinical Nursing, 19*(17-18), 2639-2648.

Soderlund, L. L., Madson, M., Rubak, S., & Nilsen, P. (2011). A systematic review of motivational interviewing training for general health care practitioners. *Patient Education and Counseling, 84*(1), 16-26. doi: 10.1016/j.pec.2010.06.025

Sorrell, J., & Redmond, G. (1995). Interviews in qualitative nursing research: Differing approaches for ethnographic and phenomenological studies. *Journal of Advanced Nursing, 21*(6), 1117-1122. doi: 10.1046/j.1365-2648.1995.21061117.x

Southard, M. E., Bark, L., & Hess, D. (2013). Facilitating change: Motivational interviewing and appreciative inquiry. In B. Dossey & L. Keegan (Eds.), *Holistic nursing: A handbook for practice* (6 ed., pp. 205-218). Burlington, MA: Jones & Bartlett Learning.

Spence Laschinger, H. (1996). Undergraduate nursing students' health promotion self-efficacy. *Journal of Advanced Nursing, 24*(1), 36-41.

Spence Laschinger, H., & Tresolini, C. (1999). An exploratory study of nursing and medical students' health promotion counselling self-efficacy. *Nurse Education Today, 19*(5), 408-418.

Spradley, J. P. (1979). *The ethnographic interview*. New York, NY: Holt, Rinehart & Winston.

Steinsbekk, A., Rygg, L., Lisulo, M., Rise, M., & Fretheim, A. (2012). Group based diabetes self-management education compared to routine treatment for people with type 2 diabetes mellitus. A systematic review and meta-analysis. *BioMed Central Health Services Research, 12*, 213-232. doi: 10.1186/1472-6963-12-213

Suikkala, A., Leino-Kilpi, H. (2005). Nursing student-patient relationship: Experiences of students and patients. *Nurse Education Today, 25*(5), 344-354.

Tapp, D. (2000). The ethics of relational stance: Resisting the view of "nurse as expert". *Journal of Family Nursing, 6*(1), 69-91.

Taylor, S., Candy, B., Bryar, R., Ramsay, L., Vrijhoef, H., Esmond, G., . . . Griffiths, C. (2005). Effectiveness of innovations in nurse led chronic disease management for patients with chronic obstructive pulmonary disease: A systematic review of evidence. *British Medical Journal, 331*(7515). doi: 10.1136/bmj.38512.664167.8F

Taylor, C., & Lillis, C. (2001). *The art and science of nursing care* (4th ed.). Philadelphia, PA: Lippincott.

Terry, J. (2013). The pursuit of excellence and innovation in service user involvement in nurse education programmes: Report from a travel scholarship. *Nurse Education in Practice, 13*(3), 202-206.

Thompson, D., Sek, C., Chan, S., Astin, F., Davidson, P., & Ski, C. (2011). Motivational interviewing: A useful approach to improving cardiovascular health? *Journal of Clinical Nursing, 20*(9-10), 1236-1244. doi: 10.1111/j.1365-2702.2010.03558.x

Tresolini, C., & Stritter, F. (1994). An analysis of learning experiences contributing to medical students' self-efficacy in conducting patient education for health promotion. *Teaching and Learning in Medicine, 6*(4), 247-254.

Tshiananga, J., Kocher, S., Weber, C., Erny-Albrecht, K., Berndt, K., & Neeser, K. (2012). The effect of nurse-led diabetes self-management education on glycosylated hemoglobin and cardiovascular risk factors: A meta-analysis. *The Diabetes Educator, 38*(1), 108-123. doi: 10.1177/0145721711423978

Vallis, M., Higgins-Bowser, I., Edwards, L., Murray, A., & Scott, L. (2005). The role of diabetes education in maintaining lifestyle changes. *Canadian Journal of Diabetes, 29*(3), 193-202.

van Eijk-Hustings, Y., Daemen, L., Schaper, N., & Vrijhoef, H. (2011). Implementation of motivational interviewing in a diabetes care management initiative in the Netherlands. *Patient Education and Counseling, 84*(1), 10-15. doi: 10.1016/j.pec.2010.06.016

van Loon, M., van der Weijden, T., van Steenkiste, B., Ronda, G., Winkens, B., Severens, J., . . . Grol, R. (2010). Involving patients in cardiovascular risk management with nurse-led clinics: A cluster randomized controlled trial. *Canadian Medical Association Journal, 181*(12), 267-274. doi: 10.1503/cmaj.081591

van Manen, M. (1991). *The tact of teaching: The meaning of pedagogical thoughtfulness*: State University of New York Press, Albany.

Van Wormer, J., & Boucher, J. (2004). Motivational interviewing and diet modification: A review of the evidence. *The Diabetes Educator, 30*(3), 404-419. doi: 10.1177/014572170403000309

Vaughan Dickson, V., & Riegel, B. (2009). Are we teaching what patients need to know? Building skills in heart failure self-care. *Heart and Lung: The Journal of Acute and Critical Care, 38*(3), 253-261. doi: 10.1016/j.hrtlng.2008.12.001

Wallin, L. (2009). Knowledge translation and implementation research in nursing. *International Journal of Nursing Studies, 46*(4), 576-587.

Walters, J., Courtney-Pratt, H., Cameron-Tucker, H., Nelson, M., Robinson, A., Scott, J., . . . Wood-Baker, R. (2012). Engaging general practice nurses in chronic disease self-management support in Australia: Insights from a controlled trial in chronic obstructive pulmonary disease. *Australian Journal of Primary Health, 18*(1), 74-79. doi: http://0-dx.doi.org.darius.uleth.ca/10.1071/PY100&72

Walters, J., Turnock, A., Walters, H., & Wood-Baker, R. (2010). Action plans with limited patient education only for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews*(5). doi: 10.1002/14651858.CD005074.pub3

Warmington, S. (2011). Practising engagement: Infusing communication with empathy and compassion in medical students' clinical encounters. *Health Affairs, 16*(3), 327-342. doi: 10.1177/1363459311416834

Watson, N., & Pulliam, L. (2000). Transgenerational health promotion. *Holistic Nursing Practice, 14*(4), 1-11.

Welch, G., Garb, J., Zagarins, S., Lendel, I., & Gabbay, R. (2010). Nurse diabetes case management interventions and blood glucose control: Results of a meta-analysis. *Diabetes Research and Clinical Practice, 88*(1), 1-6. doi: 10.1016/j.diabres.2009.12.026

Wheeler, E., & Plowfield, L. (2004). Clinical education initiative in the community: Caring for patients with congestive heart failure. *Nursing Education Perspectives, 25*(1), 16-22.

White, L., Gazewood, J., & Mounsey, A. (2007). Teaching students behavior change skills: Description and assessment of a new motivational interviewing curriculum. *Medical Teacher, 29*(4), 67-73.

White, M., Howie-Esquivel, J., & Caldwell, M. (2010). Improving heart failure symptom recognition: A diary analysis. *Journal of Cardiovascular Nursing, 25*(1), 7-12. doi: 10.1097/JCN.0b013e3181b7af9e

Whitehead, D. (2007). Reviewing health promotion in nursing education. *Nurse Education Today, 27*(3), 13.

Whitehead, D., & Russell, G. (2004). How effective are health education programmes: resistance, reactance, rationality and risk? Recommendations for effective practice. *International Journal of Nursing Studies, 41*(2), 10.

White-Williams, H. (2012). *The process of senior nursing student-patient connection: Student and clinical faculty perceptions.* (Doctor of Philosophy), University of Alberta, Edmonton, Alberta.

Wiley, E., Irwin, J., & Morrow, D. (2012). Health care practitioners' perceptions of motivational interviewing training for facilitating behaviour change among patients. *Journal of Allied Health, 41*(3), 131-139.

World Health Organization. (2005). Preventing chronic disease: A vital investment: WHO global report. Geneva, Switzerland: World Health Organization.

World Health Organization. (2011). Global status report on non communicable diseases 2010. In A. Alwan (Ed.). Geneva: World Health Organization.

World-Health-Organization, Canadian-Public-Health-Association, & Health-and-Welfare-Canada. (1986). Ottawa Charter for Health Promotion. Ottawa: Health and Welfare Canada.

Wu, Y., Deng, Y., & Zhang, Y. (2011). Knowledge, attitudes and behaviors of nursing professionals and students in Beijing toward cardiovascular disease risk reduction. *Research in Nursing and Health, 34*(3), 228-241.

Yehle, K., & Plake, K. (2010). Self-efficacy and educational interventions in heart failure: A review of the literature. *Journal of Cardiovascular Nursing, 25*(3), 175-188. doi: 10.1097/JCN.0b013e3181c71e8e

Yonge, O., Anderson, M., Profetto-McGrath, J., Olson, J., Skillen, D., Boman, J., . . . Day, R. (2005). An inventory of nursing education research. *International Journal of Nursing Education Scholarship, 2*(1), 1-11. doi: 10.2202/1548-923X.1095

Zakrisson, A., Engfeldt, P., Hagglund, D., Odencrants, S., Hasselgren, M., Arne, M., & Theander, K. (2011). Nurse-led multidisciplinary programme for patients with COPD in primary health care: A controlled trial. *Primary Care Respiratory Journal, 20*(4), 427-433. doi: 10.104104/pcrj.2011.00060

APPENDIX A

Synthesis Research on Client Education

Author/Date	Sample/Topic	Client Education Intervention		
		Theory[a-m]	Group/Individual	Evaluation
Norris, Lau & Smith, 2002	N=31 Diabetes	NR	group	blood sugar
Deakin et al. 2005	N=11 BP Diabetes	5[c,d,e,f,g]	group	blood sugar, knowledge, weight, MI, lipids ,self-management, self-care
Effing et al. 2007	N=14 COPD	NR	both	hospital admission, quality of life, slef-management, self-care
Lovemann et al. 2008	N=21 Diabetes	NR	both	blood sugar, BMI, BP, weight, self-management, quality of life
Duke et al. 2009	N=9 Diabetes	NR	both	blood sugar, BMI, BP, self mgt self-care, smoking, psych response
Heinrick et al. 2010	N=14 BP Diabetes	NR	both	blood sugar, knowledge, weight, BMI, lipids, self-management, self-care, quality of life, psychological response
Walters et al. 2010	N=5 COPD	NR	individual	hospital admissions, self-care, quality of life
Boyde et al. 2011	N=19 CHF	7[j,k,m]	both	hospital admissions, knowledge, self-management self-care, lipids, psychological response
Hurley et al. 2012	N=12 CHF	NR	individual	hospital admissions, self-mgmnt
Steinsbekk et al. 2012	N=21 Diabetes	NR	group	blood sugar, knowledge, weight, lipids, self-mgmtt, psych response
Baranson et al. 2012	N=19	11[b,f,l]	both	knowledge, self-care, self-management

Note. Sample = # studies. [a]# studies with theory foundation. [b-m] = theories named ([b] Self-Efficacy. [c] Adult Learning. [d] Empowerment. [e] Participatory [f] Health Belief. [g] Trans-theoretical. [h] Personal Sickness. [i] Symptom Management
[j] Health Decision. [k] Roy's Adaptation. [l] Orem's Self-Care Deficit. [m]Behavioral Assessment). NR = not reported.

APPENDIX B

Synthesis Research on Motivational Interviewing Effectiveness

Author/Date	Sample	Clinician Training		Follow Up[c]	Client Intervention
		Preparation[a]	Evaluation[b]		Evaluation
Burke et al., 2003	N=30	n.s.	n.s.	1-36	risk behavior, diet, drug use, smoking, ETOH
Ismail et al., 2004	N=25	n.s.	n.s.	1-25	glycemic control, weight, distress
VanWormer & Boucher, 2004	N=5	n.s.	n.s.	3-5	diet
Rubak et al., 2005	N=72	n.s.	n.s.	3-48	BMI, BP, lipids, ethanol
Hettema et al., 2005	N=72	40	21	0-60	treatment adherence, diet, activity, drug use
Martins & MacNeil, 2009	N=37	n.s.	23	1-12	diet, activity, weight, self efficacy, glucose
Alum et al., 2009 status	N=35	n.s.	n.s.	1-12	glucose, psychological
Lundahl et al., 2010	N=119	n.s.	n.s.	1-60	ETOH, lifestyle, lipid levels, wellness, self care
Thompson et al., 2011	N=13	n.s.	n.s.	3-5	exercise, diet, BMI, self
Armstrong et al., 2011	N=12	n.s.	9	3-18	BMI, weight
Noordman et al., 2012	N=50	16	n.s.	n.s.	diet, BP, weight, lipid levels, self-efficacy
Sargent[d] et al., 2012	N=28	n.s.	n.s.	1-24	diet, BP, weight, lipids activity, self-efficacy
Matinolli et al.,2012	N=5	4	1	3-18	weight, BMI, glucose, BP, activity, satisfaction
Chilton et al., 2012	N=5	3	1	n.s.-3	activity, adherence

Note. Sample = # studies. [a]# of studies with training description. [b] # of studies with post training assessment. [c] post intervention follow up range in months. [d]synthesis of MI exclusively by nurses. n.s = not stated.

APPENDIX C

Primary Research on Motivational Interviewing Effectiveness[a]

Author/Date	Sample	Clinician Training		Client Intervention		
		Preparation[b]	Evaluation	Dose[d]	Follow Up[e]	Evaluation
Green et al., 2007	N= 197	n.s.	n.s.	1	3	stage of change, knowledge
Leonhardt et al., 2008	N=1378	20 hrs	test	1-3	12	stage of change, self-efficacy
van Loon et al., 2009	N=615	16 hrs	feedback	2-6	12	smoking, diet, activity, alcohol use
Paradis et al., 2010	N=30	8 hrs	n.s.	3	1	self-management
Perry & Butterworth 2010	N=20	n.s.	MISC	7	3	stage of change, activity
Bredie et al., 2011	N=88	n.s.	n.s	2-6	3	stage of change, Smoking
Chair et al., 2012	N=146	16 hrs	supervision	4	3	stage of change, BP lipids, satisfaction
Fischer et al., 2012	N=762	10 hrs	n.s	3	20	BP, glucose, lipids

Note. Sample = # participants. [a]interventions performed by nurses. [b]duration of training. [c] post training MI proficiency assessment. [d]# contacts with nurse for MI. [e]post MI follow up in months. n.s. = not specified. MISC = Motivational Interviewing Skill Code (Moyers et al., 2005)

APPENDIX D

Research Ethics Board Approval University of Alberta

UNIVERSITY OF ALBERTA

RESEARCH ETHICS OFFICE

308 Campus Tower
Edmonton, AB, Canada T6G 1K8
Tel: 780.492.0459
Fax: 780.492.9429
www.reo.ualberta.ca

Notification of Approval

Date: February 13, 2014

Study ID: Pro00045243

Principal Investigator: Beverly Williams

Study Title: What are the factors influencing how undergraduate nursing students learn and apply motivational interviewing in communinity health

Approval Expiry Date: February 12, 2015

	Approval Date	Approved Document
Approved Consent Form:	13/02/2014	Consent Student and Former StudentREVISED
	13/02/2014	ConsentClientREVISED
	13/02/2014	Consent InstructorREVISED

Thank you for submitting the above study to the Research Ethics Board 1. Your application has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Research Ethics Board does not encompass authorization to access the staff, students, facilities or resources of local institutions for the purposes of the research.

Sincerely,

William Dunn, PhD

Chair, Research Ethics Board 1

Note: This correspondence includes an electronic signature (validation and approval via an online system).

APPENDIX E

Research Ethics Board Approval University of Lethbridge

CERTIFICATE OF HUMAN PARTICIPANT RESEARCH
University of Lethbridge
Human Subject Research Committee

PRINCIPAL INVESTIGATOR:	Lisa Howard
ADDRESS:	Faculty of Health Sciences University of Lethbridge 4401 University Drive Lethbridge, AB T1K 3M4
PROJECT TITLE:	What are the factors influencing how undergraduate nursing students learn and apply motivational interviewing in community health
INTERNAL FILE:	2014-011
INFORMED CONSENT:	Yes
LENGTH OF APPROVAL:	February 28, 2014 – April 3, 2015

The Human Subject Research Committee, having reviewed the above-named proposal on matters relating to the ethics of human research, approves the procedures proposed and certifies that the treatment of human participants will be in accordance with the Tri-Council Policy Statement, the Health Information Act, and University policy.

Susan Ruby, Ethics Officer
Human Subject Research Committee

February 28, 2014
Date

APPENDIX F

Information Letter to Participants – Student Nurse

Factors influencing the use of motivational interviewing by baccalaureate nursing students in community health clinical practice

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

Introduction:
My name is Lisa Howard. I am a PhD student at the university of Alberta faculty of nursing. I am doing a project on what influences student nurses use of motivational interviewing (MI) during their community health clinical experience. I ask you to take part in this project because I believe you have knowledge to share that would increase my understanding of your experience.

Purpose of the study:
MI is a way of talking with clients to help them make changes for their health. My goal is to look at factors that affect nursing students' learning and applying of MI during the community health clinical experience.

Procedure:
You are free to decide about being in the study. If you do take part, I will discuss the project with you and then we would sign a consent form. You would join a focus group interview at a time and place convenient for you. If you like, we can do a one-to-one interview. The interview is tape recorded and takes about 1 – 1 ½ hours. The interview looks at the experience of learning and applying MI in community health clinical practice. I may ask you for a second interview. The purpose of this is to clear up points from the first interview or explore key areas in more depth. This can be done in person or over the telephone.

There are times when I will observe students learning and using MI in clinical. If you are willing, you would share your student journal from clinical.

The project findings will be shared through journal papers, workshops and meetings. If you want a summary of the project, please ask me (Lisa) and I will provide one when the project is complete.

Possible benefits:
You may or may not benefit from the study. The project findings will help us to better prepare nursing students to support clients to make changes for health.

Possible risks:
There are no known risks to being in this study.

Confidentiality:
Only the research project team will see the data. You will have a code name during the study. The results are prepared as group data. Your identity will not be shared in any papers or talks. Data are kept in a locked filing cabinet. The data are destroyed five years after the study is complete. For the focus group interview, full privacy is not certain because the other focus group members know what you talked about.

Use of data:
The data are reviewed and put into a major paper, or dissertation, that goes toward a doctoral degree. The major paper will be made available to the University community and the public through the University of Alberta library. As well, the results will be shared at professional meetings and in journal papers. Participants are not identified in the final work because data are reported as group data.

Contact:
If you wish more information or have questions, please contact me:
Lisa Howard
email (lisa.howard@uleth.ca) or telephone (403 329 2005)

For questions about your rights as a participant in the study or how the study is done, you can call the Research Ethics Office at 780 492 2615.

Note: Flesch-Kincaid grade level is 7.6

APPENDIX G

Information Letter to Potential Participants – Instructor

Factors influencing the use of motivational interviewing by baccalaureate nursing students in community health clinical practice

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

Introduction:
My name is Lisa Howard. I am a PhD student at the university of Alberta faculty of nursing. I am doing a project on what influences student nurses use of motivational interviewing (MI) during their community health clinical experience. I ask you to take part in this project because you have experience teaching nursing students to use this approach. I am interested to hear what that experience was like for you.

Purpose of the study:
MI is a way of talking with clients to help them make changes for their health. My goal is to look at factors that affect nursing students' learning and applying of MI during the community health clinical experience.

Procedure:
You are free to decide about being in the study. If you do take part, I will discuss the project with you and then we would sign a consent form. You would have an interview at a time and place convenient for you. The interview is tape recorded and takes about 1 – 1 ½ hours. The interview focusses on your experience of teaching MI in community health clinical practice. I may ask you for a second interview. The purpose of this is to clear up points from the first interview or explore key areas in more depth. This can be done in person or over the telephone. As well, there are times when I will observe students and instructors using MI in clinical.

The project findings will be shared through journal papers, workshops and meetings. If you want a summary of the project, please ask me (Lisa) and I will provide one when the project is complete.

Possible benefits:
You may or may not benefit from the study. The project findings will help us to better prepare nursing students to support clients to make changes for health.

Possible risks:
There are no known risks to being in this study.

Confidentiality:
Only the research project team will see the data. You will have a code name during the study. The results are prepared as group data. Your identity will not be shared in any papers or talks. Data are kept in a locked filing cabinet. The data are destroyed five years after the study is complete.

Use of data:
The data are reviewed and put into a major paper, or dissertation, that goes toward a doctoral degree. The major paper will be made available to the University community and the public through the University of Alberta library. As well, the results will be shared at professional meetings and in journal papers. Participants are not identified in the final work because data are reported as group data.

Contact:
If you wish more information or have questions, please contact me:
Lisa Howard
email (lisa.howard@uleth.ca) or telephone (403 329 2005)

For questions about your rights as a participant in the study or how the study is done, you can call the Research Ethics Office at 780 492 2615.

Note: Flesch-Kincaid grade level is 7.6

APPENDIX H

Information Letter to Potential Participants – Client

Factors influencing the use of motivational interviewing MI) by baccalaureate nursing students in community health clinical practice

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

Introduction:
My name is Lisa Howard. I am a PhD student at the university of Alberta faculty of nursing. I am doing a project on what influences student nurses use of a teaching technique called motivational interviewing (MI). I ask you to take part in this project because during your visit to the health center you had some teaching from nursing students. I am interested to hear what the experience of having this teaching was like for you.

Purpose of the study:
MI is a way of talking with clients to help them make changes for their health. My goal is to look at factors that affect nursing students' learning and applying of MI during the community health clinical experience.

Procedure:
You are free to decide about being in the study. If you do take part, I will discuss the project with you and then we would sign a consent form. You would have an interview at a time and place convenient for you. The interview is tape recorded and takes about 1 – 1 ½ hours. The interview focusses on your experience of having teaching from the nursing students. I may ask you for a second interview. The purpose of this is to clear up points from the first interview or explore key areas in more depth. This can be done in person or over the telephone. As well, there are times when I will observe client, students and instructors in clinical.

The project findings will be shared through journal papers, workshops and meetings. If you want a summary of the project, please ask me (Lisa) and I will provide one when the project is complete.

Possible benefits:
You may or may not benefit from the study. The project findings will help us to better prepare nursing students to support clients to make changes for health. Your being in the study has no effect on your health care or the student's marks.

Possible risks:
There are no known risks to being in this study.

Confidentiality:
Only the research project team will see the data. You will have a code name during the study. The results are prepared as group data. Your identity will not be shared in any papers or talks. Data are kept in a locked filing cabinet. The data are destroyed five years after the study is complete.

Use of data:
The data are reviewed and put into a major paper, or dissertation, that goes toward a doctoral degree. The major paper will be made available to the University community and the public through the University of Alberta library. As well, the results will be shared at professional meetings and in journal papers. Participants are not identified in the final work because data are reported as group data.

Contact:
If you wish more information or have questions, please contact me:
Lisa Howard
email (lisa.howard@uleth.ca) or telephone (403 329 2005)

For questions about your rights as a participant in the study or how the study is done, you can call the Research Ethics Office at 780 492 2615.

Note: Flesch-Kincaid grade level is 7.2

APPENDIX I

Consent Form –Nursing Student

Title of project: Factors influencing the use of motivational interviewing by baccalaureate nursing students in community health clinical practice

Project coordinators:

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

I understand I have been asked to participate in a research study	Yes	No
I have received and read the Information Letter	Yes	No
I understand the benefits and risks involved in participating in this research study	Yes	No
I have been able to discuss and ask questions about this study	Yes	No
I understand that I am free to stop taking part in this study at any time and that I do not have to give a reason	Yes	No
I understand that I am free to refuse to answer any question and that I do not have to give a reason	Yes	No
I understand participating in this study will not directly benefit me in any way	Yes	No
The strategies of confidentiality and protecting my identity were explained to me	Yes	No
I understand I will have access to the information you provide	Yes	No
I understand my name will not be connected with any information I provide and that all identifying information will be removed from the records	Yes	No
This study was explained to me by: _____		

I agree to take part in the study by:

Being interviewed	Yes	No	
Sharing my journal	Yes	No	N/A
Being observed during clinical time	Yes	No	N/A
Giving the researcher permission to look at my information in future studies	Yes	No	

_____ _____ _____
Signature Date Printed Name

I believe the person who has signed this document understands the purpose of this study, their participation within the study and has voluntarily given their consent.

_____ _____
Signature of Investigator or designate Date

APPENDIX J – Consent Form – Instructor

Title of project: Factors influencing the use of motivational interviewing by baccalaureate nursing students in community health clinical practice

Project coordinators:

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

I understand I have been asked to participate in a research study	Yes	No
I have received and read the Information Letter	Yes	No
I understand the benefits and risks involved in participating in this research study	Yes	No
I have been able to discuss and ask questions about this study	Yes	No
I understand that I am free to stop taking part in this study at any time and that I do not have to give a reason	Yes	No
I understand that I am free to refuse to answer any question and that I do not have to give a reason	Yes	No
I understand participating in this study will not directly benefit me in any way	Yes	No
The strategies of confidentiality and protecting my identity were explained to me	Yes	No
I understand I will have access to the information you provide	Yes	No
I understand my name will not be connected with any information I provide and that all identifying information will be removed from the records	Yes	No
This study was explained to me by:_____		

I agree to take part in the study by:

Being interviewed	Yes	No	
Being observed during clinical time	Yes	No	N/A
Giving the researcher permission to look at my information in future studies	Yes	No	

_____ _____ _____
Signature Date Printed Name

I believe the person who has signed this document understands the purpose of this study, their participation within the study and has voluntarily given their consent.

_____ _____
Signature of Investigator or designate Date

APPENDIX K – Consent Form – Client

Title of project: Factors influencing the use of motivational interviewing by baccalaureate nursing students in community health clinical practice

Project coordinators:

Investigator:
Lisa Howard RN, MN
PhD Student, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 403 329 2005
email: lmhoward@ualberta.ca

Co-investigator:
Dr. B. Williams RN, PhD
Professor, Faculty of Nursing
University of Alberta, Edmonton Alberta
Edmonton, Alberta
Telephone: 780 492 8054
email: beverly.williams@ualberta.ca

I understand I have been asked to participate in a research study	Yes	No
I have received and read the Information Letter	Yes	No
I understand the benefits and risks involved in participating in this research study	Yes	No
I have been able to discuss and ask questions about this study	Yes	No
I understand that I am free to stop taking part in this study at any time and that I do not have to give a reason	Yes	No
I understand that I am free to refuse to answer any question and that I do not have to give a reason	Yes	No
I understand participating in this study will not directly benefit me in any way	Yes	No
The strategies of confidentiality and protecting my identity were explained to me	Yes	No
I understand I will have access to the information you provide	Yes	No
I understand my name will not be connected with any information I provide and that all identifying information will be removed from the records	Yes	No
This study was explained to me by: _____		

I agree to take part in the study by:

Being interviewed	Yes	No	
Being observed when a nursing student does my teaching	Yes	No	N/A
Giving the researcher permission to look at my information in future studies	Yes	No	

_____ _____ _____
Signature Date Printed Name

I believe the person who has signed this document understands the purpose of this study, their participation within the study and has voluntarily given their consent.

_____ _____
Signature of Investigator or designate Date

APPENDIX L

Interview Guide – Focus Group Interview Nursing Students

[s] = Structural questions [c]= Contrast questions [d] = Descriptive questions

1. When did you first learn how to do client education? [d] (Probe: How)

2. How were you prepared to engage in motivational interviewing? [d] (Probes: role of previous experience, techniques – ask about simulation!, timing)

3. Who helped you develop your skills? What did they do that was helpful? [s] (Probe: feedback)

4. As you were learning MI, what was not helpful? [c] (Probe: examples, role of feedback)

What does 'having opportunity to practice' MI mean to you? [s]

What is the difference between 'practice' and 'experience'?[c]

5. How has MI influenced your communication with clients? [s] (Probe: overall)

How has using MI influenced your nursing practice?

6. Can you think back to an experience where it went really well and describe that experience and how you knew it went well. If you think about that day when things went really well; what was going on in the clinical setting that day that may have influenced how things went? [s]

7. When did things not go well; what was that like? What did you notice in yourself, in the client? [c]

Ending questions:

[d] If you were teaching students in community health clinical, what would be a change that would improve how we help students learn to use MI? (Probes: things to keep, add)

Other questions or comments?

APPENDIX M

Interview Guide – Instructor

[s] = Structural questions [c]= Contrast questions [d] = Descriptive questions

1. Can you describe the clinical setting and how MI fits with the clinical experience? [d]

   At what point in the program are you teaching this?

2. What is it like teaching students to do this? [d]

   What motivates you to teach this approach?

   What benefits do you see?

3. How do you do the initial teaching? [s]

   How did you decide to teach students this way?

4. How is student skill development supported? Who provides this? [s]

   How do you use to assess performance/give feedback?

5. What is a 'typical' experience you have with student skill development using MI? [s]

   What might be influencing this (something with the student, setting etc)

6. What is an 'atypical' experience you have with student skill development? [c]

   What might be influencing this (student, setting etc)

7. How does the agency partner support in terms of teaching and/or supporting the students? [s]

8. Where in the program (theory/practice), when (year) and how (instructional techniques) do you believe teaching MI would 'best fit'? [s]

   What is the rationale for the suggestion?

9. Is there something we haven't talked about that you think is important to say?

APPENDIX N

Interview Guide – Client

[s] = Structural questions [c]= Contrast questions [d] = Descriptive questions

1. What interested you in coming to the program at the health center? [d]
2. What was it like having the support from the nursing students? [d]
3. How did the experience you had with the nursing student compare with a 'typical' visit with your usual health care provider? [s]

    What was similar?

    What was different?

4. What did the nursing student say/do that personalized the experience for you? [d]

    What impact did this have when they personalized things? [s]

5. Can you describe a memorable moment/insight when something changed about the way you thought about your health or what you understood about your health? [d]

    What did the student nurses say or do that was particularly helpful?

6. What was it like setting goals in the session? [s]
7. How has working with the student nurses influenced how you make choices? about your health? [s]
8. Is there something we haven't talked about that you think is important to say?

APPENDIX O

Sample Coding Sheet

Domain	Categories within domain	Symbols	Symbol Analysis	Domain Interpretation
				Connecting
Engaging with the client as a person	Getting **practice,** 'real' practice in clinical setting to develop skills (different from experience – see collaboration domain)	• Doing MI for real; • "Real clients" • "Right client" • Clients helping students • Open ended • Creating an agenda • Summarizing • Comfort/Natural • Confidence/Flow	Building on existing skills; skill is complex, needs practice; real client stimulates skill; matching clients-students so clients help build student skill Identifying and applying OARS skills consistently; fidelity to MI style; MI as a navigational tool for change Student effort is in staying in the flow with the client; ideas flow back and forth;	Skill level increases with practice; connection increases with skill development; increased skill builds engagement & connection. Developing own style of using skills through practice. Connecting a series of skills into a coherent approach Contrast: linear approach Using skills enough to be able to follow the client's lead; embodied skills
	Letting go of being in an **expert** role; changing from 'being an expert' to 'having expertise'	• Book knowledge • Client knowledge • Trust different kinds of knowledge • Talking and not telling	Urge to privilege theory/expert knowing over client knowing; preoccupied with establishing credibility; learning to trust what clients say/know; ok to 'not know' Connecting skills and knowledge, experts 'tells' so using MI to get person talking	Starting to shift from doing to and towards being with Contrast: losing control, credibility and authority and staying in 'charge' Sharing what student and client know; connecting different ways of knowing
	Giving, getting, acting on **feedback**	• Reflection • Self Awareness • Self Assessment • Peer Assessment • Instructor Feedback • Guide/Accompany	Students start with self reflection; need encouragement, awareness of skills; Instructors need to time feedback close to observation and link recommendations to specific behaviors, act on feedback Instructor practices accompaniment, targeted, specific feedback, 'good' feedback, negotiates how/when occurs	Feedback builds congruence with students doing skills and students noticing clients respond to skills. Student refine self-assess with validation, incorporate feedback into practice Contrast: negative self talk/percept Instructor remains student focussed, support student to be client centered Contrast: instructor interrupts/disrupts
	Seeing client as a **person**; meeting client where they are at	• Recognize the person • Acknowledge client • Connect as a person	Focussing on whole person and not a problem; being accountable to client; Student shows self as client affiliate, student demonstrates genuine behavior	Tailor conversation to the person; ask permission to share information Working together to develop mutual understanding; helping client to understand themselves
	Getting 'me' Engaging the client	• Curious (student) • Listening • Asking questions • Meaningful/personal • Validated • Engaged	Focus on what is important to the client; student interested in client; using skills to draw client out and building relationship Student anticipating important issues, identifying meaningful issues in the encounter. Client doing most of the talking, non verbal behaviors, – leaning forward, nodding, smiling	Student guiding client to talking about ideas, helping client think out loud, working through options Student using client's language, validating statements to heighten client interest; Client taking initiative in conversation and ideas; student and client connecting, synergizing ideas. Contrast: talk to the hand, zoning out