

Evaluation of a Dementia Education Program for Family Medicine Residents

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Background: Dementia diagnosis and management is increasing in importance in the training of future family physicians. This research evaluated the effects of a dementia education program on family medicine residents' knowledge, attitudes and confidence with respect to dementia assessment and management. A questionnaire was developed and validated for these purposes. Additionally, a focus group was conducted with family physicians to generate recommendations for improving dementia education in family medicine residency programs.

Methods: The questionnaire consisted of a knowledge-based component, a component ascertaining preferences working with various age groups, and an attitudinal/comfort component. Test-retest reliability was assessed, in addition to validity by way of cognitive interviews. A content validity matrix was also completed.

Family medicine residents participating in the dementia education program were asked to complete the questionnaire at baseline, interim and following program completion. Willing residents also participated in program feedback interviews. After approximately three months, residents completed the questionnaire for long-term follow-up. Differences in scores were examined between the participants and a comparison group of family medicine residents without program exposure. Qualitative data from the feedback interviews and the focus group were transcribed and analyzed for common themes.

Results: Each questionnaire component demonstrated high internal consistency (Cronbach's α : 0.83-0.91) and high intraclass correlation coefficients (0.74-0.91). Residents who had participated in the program scored significantly higher on the knowledge component compared to residents who did not, in addition to reporting greater comfort. Qualitative data indicated that residents found the program to be a valuable part of their residency education. Focus group

results indicate that family physicians recommend the provision of early positive experiences facilitated by mentors, through a competency-based curriculum.

Discussion: The developed questionnaire is a reliable measure for assessing dementia knowledge, attitudes and confidence. Results from the dementia education program show that it is effective in improving family medicine residents' knowledge on dementia diagnosis and management, as well as in increasing comfort levels. Qualitative data from feedback interviews indicate strong endorsement of the program by its participants. Recommendations generated from the focus group were found to be relevant to dementia education and potentially more broadly to geriatric education.

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Dedication

I would like to dedicate this thesis to my family and to my fiancé, Martin. Without their love and support, I would not have gotten to the point I am at today.

A special note to my father: remember John, it's quality over quantity.

To Martin, thank you for keeping me motivated as I worked towards my goals. But perhaps most importantly, thank you for reminding me to stop and smell the roses every once in a while!

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Chapter 1 Introduction and Overview

1.1. Introduction

In 2008, an estimated 480 600 Canadians lived with Alzheimer disease or a related dementia (Alzheimer Society of Canada, 2010). As the Canadian population ages, it is expected that by 2038, the prevalence of dementia will rise to 1.125 million people, or 2.8% of the total Canadian population (Alzheimer Society of Canada, 2010). Currently the projected incidence of dementia is 103 700 cases per year, however by 2038 it is projected to increase to 257 800 cases per year (Alzheimer Society of Canada, 2010). It is clear that dementia is an issue which affects many Canadians and will continue to affect an increasing number in the near future. Moreover, the need for effective assessment and management of these individuals through primary care will be even more pronounced. Thus, there is a current need to equip future primary care physicians with the necessary knowledge and skills to address the needs of this growing population.

The high prevalence and incidence of dementia among Canadians translates into high economic costs as well. The total economic burden of dementia, including direct costs, indirect costs, and unpaid caregiver costs was estimated at close to \$15 billion in 2008 (Alzheimer Society of Canada, 2010). It is projected that in a ten year span (2018), the total direct costs alone will be approximately \$19 billion in 2018 dollars (Alzheimer Society of Canada, 2010). By 2038, total direct costs are estimated at \$92 billion and the total economic burden is projected to be over \$152 billion in 2038 dollars (Alzheimer Society of Canada, 2010). Older data from the Canadian Study of Health and Ageing also demonstrated an association between dementia severity and cost (Hux et al. 1998). It was estimated that the cost per patient with mild disease compared to severe disease increased almost four-fold (Hux et al., 1998). This once again underscores the importance of early and effective intervention through primary care, not only for

the health benefits to patients but also to our society as a whole. Additionally, this accentuates the need for well-equipped primary care providers.

In Ontario, initiatives are already in place to improve the primary care received by individuals with dementia. This research has involved two of these initiatives: the McMaster University-affiliated Centre for Family Medicine Memory Clinic and the Alzheimer Disease and Related Dementias: Physician Training Strategy.

1.1.1. Centre for Family Medicine Memory Clinic

The Centre for Family Medicine Family Health Team (CFFM FHT) in Kitchener has developed a memory clinic model that has received recognition from the Ontario College of Family Physicians and is currently being replicated in other family health teams (FHTs). The primary goal of the clinic is to enhance the care that family physicians can provide to their patients with respect to dementia at the primary care level (Lee, 2009). The clinic aims to provide comprehensive, interdisciplinary care in order to prolong an individual's independent living and quality of life. The CFFM FHT offers a training program to assist and empower family physicians and FHTs in developing a greater degree of comfort and skill in managing cognitive problems. The five-day training program consists of two days of a case-based workshop, a day of observation and clinical training at the memory clinic, and two days of on-site mentoring at the memory clinic. The CFFM FHT has expanded this program by offering a modified version to McMaster University family medicine residents who are completing their residency at the Kitchener-Waterloo satellite campus. The evaluation of the dementia education program constitutes a central and significant part of this research. Both the education program itself as well as its evaluation will be described in detail.

1.1.2. Alzheimer Disease and Related Dementias: Physician Training Strategy

The Ontario Ministry of Health and Long Term Care has provided the Ontario College of Family Physicians with a grant directed towards the development of comprehensive multi-faceted programs on Alzheimer Disease and Related Dementias (ADRD) for medical students, family medicine residents, and practicing family physicians. This is part of the Ontario government's commitment to improving the quality of life for individuals with ADRD and their family members. Seven education strategies have been developed and several endeavours have been undertaken as part of the implementation of these strategies. One of these endeavours was the Primary Care Dementia Exchange (PCDE), organized by the Ontario College of Family Physicians and the Alzheimer Knowledge Exchange. The PCDE brought together family physicians from across Ontario who were identified as leaders in dementia care for a one-day face-to-face meeting, followed by two teleconferences. This initiative allowed for discussions with practicing family physicians in order to identify important aspects and components of dementia medical education. Additional detail regarding the PCDE and a focus group which was conducted in this context will be discussed.

1.2. Overview

This thesis will begin with a discussion of recent literature as it relates to dementia and its associated challenges in primary care, including general challenges in assessment and management of dementia, challenges as a result of primary care structure, and challenges related to knowledge, resources, and training. Documented physician and medical resident attitudes and comfort levels regarding dementia diagnosis and management will also be discussed, in addition to outlining education and training programs and related challenges for family physicians, family

medicine residents, and medical students. The study rationale will present the objectives of this research along with related hypotheses and potential implications of this research.

This thesis will then continue with a detailed discussion of each of the three main components of this research: development and validation of the questionnaire used for the evaluation; evaluation of the dementia education program; and the PCDE family physician focus group. Each of these components will be discussed with regard to relevant literature, methodology, results, and a discussion of findings as well as strengths and considerations pertaining to that component. This will be followed with a general discussion of the results of this research, highlighting key findings in addition to discussing overall study strengths and limitations. Lastly, final conclusions and recommendations will be presented, including avenues for further research building upon this work.

This research aimed to determine whether the knowledge, attitudes, and confidence of McMaster University family medicine residents at the Kitchener-Waterloo satellite site could be improved with respect to assessment and management of dementia among older adults through an education program which included application of learned knowledge in a clinical setting. Input from practicing family physicians identified as leaders in dementia care was also sought. This research adds to the current limited literature on dementia medical education. Presently, few educational interventions and evaluations of such interventions exist with regard to dementia and family medicine residents. The literature is largely focused on family physicians or medical students in general and educational interventions tend to focus broadly on geriatrics. Studies pertaining to the education of medical students, family physicians, and residents will be presented as they relate to this research and aid in demonstrating the value of this research to the field of dementia and primary care education.

Chapter 2 Literature Review

2.1. Dementia and Primary Care

The Canadian Consensus Conference on Dementia recommended that family physicians play a prominent role in dementia care (Yaffe, Orzeck, & Barylak, 2008). This is fitting in that the majority of older adults receive their care from family physicians (Callahan et al., 2006). However, the current organization of primary care has been found to be non-conducive to the management of chronic diseases such as dementia. Primary care practice generally focuses on urgent and acute care needs of patients, resulting in more attention paid to notions of curing (Banazak, Wills, & Collins, 1998). With such a heavy focus on acute issues as the norm, it may be difficult for family physicians to differentiate their approaches to acute cases versus chronic cases (Banazak et al., 1998). This may also be one of the many reasons why dementia is often under-diagnosed. For example, it has been demonstrated that less than 25% of cases of Alzheimer disease in Canada are diagnosed and managed (Feldman et al., 2008).

The challenges and obstacles faced by family physicians with respect to dementia diagnosis and management are numerous. Firstly, patients with dementia often have multiple co-morbidities (Yaffe et al., 2008). This complicates diagnosis as early symptoms of dementia may be confused with other illnesses. This also complicates management as family physicians must be knowledgeable and cognizant of pharmacological interactions if prescribing medications. A recent study found that family physicians prescribe the majority of psychoactive medications to older adults (Callahan et al., 2006), however fewer than 10% of older adults with dementia are prescribed appropriate pharmacotherapy (Boustani, Sachs, & Callahan, 2007). This emphasizes the need for effective education and training in this area for family physicians.

A second challenge for family physicians is insufficient time (Borson, Scanlan, Watanabe, Tu, & Lessig, 2006; Boustani et al., 2007). Dementia is a complex illness requiring comprehensive care and planning. This cannot be achieved in the traditional settings of 15 minute primary care visits. Furthermore, family physicians must also consider the needs of the patient as well as the needs of family members or caregivers (Yaffe et al., 2008). This not only increases the family physician's time demands, but potentially complicates visits as the family physician must aim to strike a balance between maintaining the autonomy of the patient (provided they still have adequate capacity) and informing and providing support to family members or caregivers.

It has also been documented that family physicians have poor access to dementia expertise and community resources (Boustani et al., 2007). Communication has also been shown to be inadequate between varying care providers (Borson et al., 2006). As a result, if a family physician lacks sufficient knowledge and skills with regard to dementia diagnosis and management, it may be difficult for the physician to find the necessary help and to coordinate care. Consequently, the patient may be left with inadequate care.

Family physicians also face challenges in the assessment and management of dementia in terms of their own knowledge and confidence levels. It has been acknowledged that family physicians have a lack of familiarity with the early symptoms of dementia (Cahill, Clark, Walsh, O'Connell, & Lawlor, 2006). There is often difficulty differentiating normal ageing-related changes with the subtle symptoms of early dementia. Furthermore, it has been shown that family physicians lack knowledge with respect to effective use of appropriate screening methods (Borson et al., 2006). This exacerbates the problem of under-detection. In terms of confidence, patients with dementia are often viewed as complex and this perceived complexity can result in a

decrease of family physicians' confidence levels (Borson et al., 2006). Moreover, it has been documented that family physicians have a lack of confidence with respect to the diagnosis of dementia (Cahill et al., 2006).

These above-stated challenges have recently been specifically demonstrated to be applicable to Canadian family physicians (Pimlott et al., 2009). Four focus groups were conducted with 18 family physicians practicing in academic centres in Calgary, Ottawa, and Toronto, with the aim of exploring the challenges faced related to dementia in primary care. Five major themes emerged which are consistent with challenges previously identified in the literature. The first of the themes was diagnostic uncertainty. The family physicians expressed that this uncertainty was further exacerbated by limited access to specialists. The second theme was the complexity of dementia. It was expressed by the family physicians that they might not have the clinical acumen to recognize dementia early or to screen for it. They also stated that they seldom saw patients solely for dementia-related issues and as a result screening for it would put a further strain on already limited time. One family physician stated: "Do you go ahead and start looking for trouble, when you don't have time for it? I mean you're not sure you can make a difference on what trouble is coming anyway." (p. 509.e3, Pimlott et al., 2009)

The previous theme tied in with the third theme of time as a paradox. Time was seen by family physicians to be both a barrier and an enabler. It was a barrier as patients often presented with multiple co-morbidities which could not be dealt with in a typical visit. Time was also seen as an enabler by the family physicians because it allowed them to break down the assessment into multiple visits rather than one comprehensive assessment, which was more manageable for the physicians themselves. The final two themes that emerged were the importance of family and the development of familiarity with patients. Family can once again act as an enabler, aiding

in the provision of care, or as a barrier by downplaying symptoms or providing challenging points of view. Developing familiarity with patients increases the probability of family physicians noticing subtle changes in patients. As a means of overcoming some of these challenges, a shift to coordinated care with greater integration of other professionals was recommended. Improving family physicians' confidence and attitudes towards dementia assessment and management may also aid in overcoming these challenges. Family physicians' attitudes and confidence will be explored further in the following section.

2.2. Family Physicians' Attitudes and Confidence Towards Assessment and Management of Individuals with Dementia

Family physicians' attitudes and confidence levels can play a large role in the assessment and management of individuals with dementia. It has been demonstrated that a family physician's diagnostic accuracy with respect to dementia is strongly associated with his or her diagnostic confidence (van Hout, Vernooij-Dassen, & Stalman, 2007). A recent study conducted in the Netherlands asked family physicians to follow a national dementia guideline to identify patients with dementia (van Hout et al., 2007). This guideline is based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria and is the standard in the Netherlands. Family physicians were also permitted to use other tools such as the Mini-Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975). The results of the study demonstrated that of the 64 family physicians who participated, only 58% had diagnostic confidence in individuals who were later confirmed to have dementia. The family physicians also only had 30% diagnostic confidence in diagnoses of no dementia. One of the key factors identified as mitigating a diagnosis of dementia was the presence of depression. This once again underscores the effect that comorbidities have on the assessment and management of patients

with dementia. Furthermore, diagnostic uncertainty is a problem because numerous benefits have been associated with earlier diagnosis, including reduced anxiety and greater participation in daily activities (Milne, Woolford, Mason, & Hatzidimitriadou, 2000) and early referral for caregiver support (Mittelman, 1996).

The ‘myths of diagnosis’, as they have been referred to, tie in significantly with family physicians’ attitudes towards early diagnosis (Milne et al., 2000). These myths include that there is little benefit even with an early diagnosis, a large potential for misdiagnosis, and emotional damage to the patient or caregiver. These false beliefs can play a role in practice. A study conducted by a group of researchers from the United Kingdom examined the attitudes of 182 family physicians (Milne et al., 2000). One quarter of respondents did not consider it important to look for early warning signs of dementia in older adults, while half of respondents did and the remaining quarter was neutral. Two thirds agreed that there could be negative consequences of making an early diagnosis, however over half also agreed that there could be negative consequences of *not* making an early diagnosis. When the researchers combined the attitudinal measures used, it was found that overall only 40% of family physicians had a positive view on early diagnosis, 40% had neutral views, and 20% held negative views. Further training was cited as necessary to dispel the myths associated with diagnosis as well as to improve the attitudes of family physicians towards assessment and management.

Attitudes toward making diagnoses of dementia are also related to difficulties family physicians have in communicating these diagnoses (Kaduszkiewicz, Bachmann, & van den Bussche, 2008). A study conducted in Germany examined the attitudes of both family physicians and specialists (psychiatrists and neurologists) in terms of disclosure of dementia diagnoses (Kaduszkiewicz et al., 2008). Thirty family physicians were interviewed, in addition

to 211 family physicians and 96 specialists responding to a mail-in questionnaire. In the interviews, family physicians admitted to often not fully disclosing the diagnosis of dementia. Reasons for this were fear of inflicting damage to the patient (40% of interviewees), holding the opinion that disclosure carried no benefit to the patient (20% of interviewees), fear of ruining the physician-patient relationship (20% of interviewees), feeling that the patient would not understand the diagnosis anyway (20% of interviewees), and uncertainty about the course of disease (20% of interviewees). Furthermore, 21 out of the 30 interviewees described ways to avoid using words such as ‘Alzheimer’ or ‘dementia’. This included using phrases such as “normal aging process” or “circulatory disturbances of the brain,” in addition to attributing symptoms to other diseases and encouraging patients to seek further diagnosis. Only five of the interviewees expressed strong support for full disclosure to patients. Conversely, in the mail-in questionnaire, 70% of family physicians agreed with full disclosure. However, part of this may be a result of a social desirability phenomenon. Moreover, 47% of surveyed family physicians stated that they avoid the term ‘Alzheimer’ while 44% avoided use of the term ‘dementia’. This group also stated that they inform the relative of the patient to a greater extent than the patient themselves and do not tend to avoid those terms with relatives. Fifty percent of family physicians surveyed stated that they would be interested in increased training with respect to dementia, particularly with regard to communication with patients.

A desire for increased training with respect to dementia has been found to be common among family physicians. A study conducted in Sweden also examined family physician attitudes and found that 71% of the 153 family physicians surveyed wanted to increase their knowledge of dementia (Olafsdottir, Foldevi, & Marcusson, 2001). This is in spite of four months of mandatory geriatrics training required in Sweden for all family physicians. Similar to

the results of the previously described study, this study also found that family physicians were hesitant to discuss dementia and its consequences with the patient. Only 57% stated that they would always or often discuss the diagnosis and consequences with the patient. Increased training may increase the comfort of family physicians, thus decreasing the levels of non-disclosure, improving physician-patient communication, and benefitting the patient overall.

As previously noted, these studies largely pertain to the attitudes and confidence of practicing family physicians. This study was the first to examine the knowledge, attitudes and confidence of family medicine residents specifically with respect to dementia assessment and management. Moreover, it can be reasonably concluded that the attitudes and generally low comfort of family physicians stem, at least partly, from gaps in dementia and geriatrics education in their medical training. Thus, by evaluating and making recommendations for improvement of the training received by family medicine residents through programs such as the CFFM dementia education program, it may be possible to decrease negative attitudes and low comfort toward assessments and management of dementia later on in the residents' careers. The educational needs and programs that have been developed towards this goal are presented in the following section.

2.3. Educational Needs and Programs

A survey was conducted at the annual meetings of the American College of Physicians and the American Academy of Family Physicians (Robinson, Barry, Renick, Bergen, & Stratos, 2001). The results demonstrated that amongst geriatric topics, dementia ranked first as the topic of most interest to family physicians as well as the topic on which family physicians felt their peers required more education. Recognizing, evaluating, and treating dementia was ranked only 9th of 18 topics in terms of family physician confidence. Family physicians with a larger

proportion of seniors in their practices reported greater confidence in geriatric topics though were equal to other family physicians in their desire to learn more. Interestingly, family physicians who had more recently graduated from medical school were less confident in their performance in geriatric medicine. The recent graduates were also more desirous to learn. This survey exhibits the need and desire for educational intervention among family physicians.

The need for increased dementia education amongst family medicine residents was demonstrated by a 2003 study (Biernat, Simpson, Duthie, Bragg, & London, 2003). The investigators examined the residents' self-assessment skills that could serve as a means for identifying potential further areas of instruction. Residents participated in a standardized patient interview which was taped and reviewed by two assessors based on a dementia interview checklist, in addition to the residents' self-assessment also based on the checklist. It was found that residents generally over-estimated their expression of behaviours they 'should' be displaying. For several behaviours, the differences between residents' and assessors' scores were quite marked. For example, in 90% of the self-assessments the residents felt that they had asked the patient about use of over-the-counter medications. It was found by the assessors that this in fact was only the case in 38% of the assessments. Other topic areas showing notable differences between resident and assessor scores were asking questions pertaining to safety issues, use of a standardized exam which included memory, orientation, recall, and registration, use of a standardized tool for depression evaluation, and functional assessment. Thus, several potential areas for increased educational focus were identified.

Other studies have found that family physicians are not entirely satisfied with the training they have received in medical school and residency training programs. A survey of the members of the Minnesota Psychiatric Society and a random sample of the Minnesota Academy of Family

Physicians examined prescribing practices for dementia, major depression, and panic disorder (Tinsley, Shadid, Li, Offord, & Agerter, 1998). It also examined the satisfaction levels of psychiatrists and family physicians with regard to training received in medical school, residency, and Continuing Medical Education (CME) courses on the prescribing of psychotropic medications.

Only 14% of psychiatrists and 14% of family physicians were very satisfied with the training received in medical school, while 25% of psychiatrists and 18% of family physicians were somewhat dissatisfied or very dissatisfied. With respect to training received in residency, only 17% of family physicians were very satisfied while 50% of psychiatrists were very satisfied. 17% of family physicians were somewhat dissatisfied or very dissatisfied with training received in residency while only 6% of psychiatrists were somewhat dissatisfied or very dissatisfied. Finally, with regard to CME courses, only approximately one quarter of family physicians felt very satisfied with training while just over half of psychiatrists felt very satisfied. These findings suggest that medical school and residency training programs are not meeting the educational needs of students and residents with regard to pharmacotherapy and dementia, major depression, and panic disorder. The dementia education program that was evaluated in this study included a particular focus on pharmacotherapy and medication safety. Through the use of the study's outcome measures, changes in residents' knowledge of dementia and pharmacotherapy were determined.

The University of Oklahoma attempted to meet the educational needs of medical students through the development of a geriatric medicine clerkship (Struck, Bernard, & Teasdale, 2005). The mandatory clerkship replaced a four week elective block in the third program year. The students rotated through various inpatient sites including a memory clinic. The clerkship also

involved a combination of formal lectures and problem-based learning. The impact of clerkship was assessed in three areas: knowledge, skills, and attitudes through use of a pre/post test; a student satisfaction survey; and written comments. Students attended three weekly sessions. The first was an interactive lecture that was followed by a question period. The second was a journal club while the third session consisted of a problem-based learning case that was longitudinal in nature, allowing students to build on knowledge from week to week.

The students completed a 33-question test taken from a sample bank of 100 questions both prior to and following the clerkship, serving as a measure of pre and post knowledge. The specific questions were not available and therefore none of these questions were used in the research conducted for this thesis. Skills development was determined through faculty observation as well as self-assessment. Students showed significant improvement in knowledge. A Likert-like survey captured students' satisfaction ratings. 73% of students agreed or strongly agreed that the clerkship experience was positive. 63% agreed that this was an important component of their medical education, though only 14% of students had agreed or strongly agreed that they had an interest in geriatric medicine as a career.

Though this clerkship had an overall positive effect, it is not without its limitations. The development of the clerkship program took several years. This process in itself was quite resource-intensive and the study investigators stated that not all medical schools may have the resources to develop such a program. Furthermore, the administration of the program requires many resources in terms of program facilitators and clinical supervisors. As an added obstacle, the administration initially received great opposition from medical students upset about the replacement of their elective block. This warranted the exploration of programs such as the CFFM's dementia education program. While the program required resources to develop, the

replication and implementation of at least the first two components of the program elsewhere is relatively more feasible. Furthermore, this program was targeted specifically towards the family medicine resident population who were likely to find the information relevant.

Similarly, an earlier study was conducted examining the effects of an intensive one-week elective course in dementia on third year medicine students (Goldstein, MaLossi, Kim, & Young, 1999). The course included aspects of clinical problem solving and attempted to teach students about all facets of dementia. This included everything from differential diagnosis, to epidemiology, to environmental and pharmacological modalities, to caregiving issues, and even legal aspects. Following approximately six years of program administration, investigators mailed out a questionnaire to students who had taken the course as well as students who had opted not to. The questionnaire focused largely on self-perceived knowledge and confidence. It was found that the two groups did not differ in post-graduate geriatrics training despite the elective; however individuals who had taken the course were more likely to be in specialties in which they would encounter increased numbers of older adults as patients. Individuals in this group also deemed themselves to be more knowledgeable, more confident in diagnosing and assessing dementia, more aware of community resources available to them, and more familiar with issues of caregiver burden. Though this study is limited through the self-selection of a small group of participants, it does demonstrate to an extent the effect that a course in dementia may have on medical students. As an added limitation, the study examined self-perceived knowledge as a main outcome. It is not known whether this is reflective of the former students' actual knowledge. This thesis project differed from the above-described study in that the effects of the dementia education program on knowledge were determined through objective questions, similar to a test format. Moreover, both quantitative and qualitative measures were utilized to

examine effects on knowledge, attitudes, and confidence, rather than solely a quantitative measure as employed in the above-stated study (Goldstein, MaLossi, Kim, & Young, 1999).

Most recently, a competency-based undergraduate medical curriculum targeting geriatric syndromes was documented at the University of Miami (van Zuilen et al., 2010). The curriculum aimed to initially focus on three ‘geriatric syndromes’: falls, dementia, and delirium. A four-year longitudinal program was developed which began with exposing first year medical students to well elderly living in the community. By the fourth year of medical school, students conduct visits with frail elderly and participate in a two-week clinical rotation in geriatrics. Twenty-five learning objectives were identified related specifically to dementia, while 22 objectives were related to falls and 14 to delirium. Students were assessed on these learning objectives by completing 13 (nine online, four preceptor-led) competency assessments at 11 points in time. The study does not indicate medical students’ success in meeting the competency requirements. It does indicate however that the required levels of competency were modified and revised by faculty as the program developed. Moreover, the faculty involved with administration of the program expressed that the assessment on these syndromes alone was quite resource-intensive. It was deemed not to be feasible to continue this level of programming and assessment with other ‘geriatric syndromes’. This once again underscores the need to identify programs which strike a balance between feasibility of implementation and the provision of quality education to students.

There have also been several studies conducted examining ways in which to improve geriatric knowledge of residents from various specialties as well as facilitators and barriers of educational programs amongst residents. A study conducted in 2008 examined an immersion training program for chief residents (Levine et al., 2008). Chief residents play an important role

in the training of other residents and medical students. It was hoped that by better educating chief residents, knowledge pertaining to geriatric principles of care could be passed on to other residents and students. The main goals were to foster coordination of care of older adults between disciplines as well as to increase knowledge of geriatric principles so that the chief residents would incorporate these into teaching. The training included an interactive surgical case, mini-lectures on geriatrics topics, seminars to enhance teaching and leadership skills, and one-on-one mentoring to develop a project on geriatric care or education. Scores on an objective knowledge test increased significantly before to immediately following program completion. Self-reported knowledge and confidence in teaching geriatrics was also found to increase significantly. However, it is not clear whether this knowledge was in turn disseminated to medical students and residents through teaching by the chief residents. Conversely, the CFFM's dementia education program was delivered directly to all residents, thus relatively broadening the reach of potential effects of the program. Another study on the topic involved a systematic review to determine 'best practices' for the integration of geriatric education into internal medicine residency programs (Thomas et al., 2003). It was found that the most successful programs had clinical experiences which involved modelling of geriatric care in one or more settings, patient care across sites or transitions of care, and interdisciplinary teamwork.

Though the current literature on educational and training programs provides evidence of improvement of knowledge and in some cases confidence of medical students and residents on geriatrics topics, very few of these examine dementia in particular. Thus, though students and residents received training in geriatrics, it is not clear whether adequate knowledge was gained in the complex area of dementia diagnosis and management through these programs. Furthermore, many of these programs required significant resources and did not focus on the realm of primary

care. Moreover, almost none of these programs have undergone a comprehensive evaluation. Therefore, it is once again worth repeating, that there was a need to examine educational programs specifically aimed at dementia which propose an efficient way of improving the knowledge, attitudes, and confidence of future primary care providers.

Chapter 3 Rationale and Objectives

3.1. Rationale

This study is the first to evaluate an educational dementia program for family medicine residents and to do so using an explicitly mixed methods design. The primary purpose of this research was to evaluate the effectiveness of a dementia education program with respect to the knowledge, attitudes, and confidence of family medicine residents in the assessment and management of dementia in primary care. In order to conduct the evaluation, a measure of knowledge, attitudes, and confidence was both developed and validated. These processes constituted a significant component of the study and once again, this study was the first to develop, validate, and administer a tool which objectively measured knowledge in addition to confidence and attitudes specifically related to dementia. A secondary purpose of the study was to solicit and evaluate family medicine residents' feedback and level of satisfaction with the education program for future program planning. Thirdly, the PCDE focus group was conducted for the purposes of obtaining input and recommendations from practicing family physicians regarding the improvement of dementia education. Lastly, this evaluation and the dissemination of its results contribute to the current limited literature pertaining to the education and training of family medicine residents in the realm of dementia.

3.2. Objectives and Hypotheses

Given the previously stated purposes, the research was comprised of several specific objectives and hypotheses:

- i) To develop and test a measure of knowledge, attitude, and confidence with respect to the assessment and management of patients with dementia.

- ii) To measure change in the knowledge, attitudes, and confidence of family medicine residents following a dementia training program, using the developed measure.

Hypotheses: Following completion of the program, family medicine residents will demonstrate:

- a) improvement in scores on questions pertaining to knowledge of dementia diagnosis, assessment, and management
 - b) increased self-confidence and comfort with regard to dementia diagnosis, assessment and management
 - c) more positive attitudes towards the management of patients with dementia
- iii) To solicit participant feedback on the training program through a satisfaction survey following training.

Hypothesis: Following completion of the program, family medicine residents will have expressed the relevance and usefulness of the program to their clinical rotations.

- iv) To gain qualitative insight into participants' responses through individual interviews. Interviews will be transcribed and analyzed.

- v) To solicit input from practicing family physicians regarding strategies for improving dementia education.

Hypothesis: The family physicians will identify strategies for the modification of curricula as well as for encouraging resident and student interest in dementia.

Given its purpose and objectives, this research has numerous implications. Firstly and most directly, it will aid in educational program planning for future family medicine residents at the McMaster University Kitchener-Waterloo satellite campus. This was achieved through providing a measure of the effectiveness of the program in providing residents with the necessary

knowledge, skills, and confidence to assess and manage dementia. This research also resulted in feedback as to what went well and what areas of the educational training program could use improvement in future implementations. Analysis and discussion of the evaluation's results will present potential implications for the expansion of the program beyond the Kitchener-Waterloo site to all McMaster University family medicine residents. Furthermore, the program as a model for other medical schools in terms of effective dementia education in family medicine residency programs will also be examined. There may also be implications on undergraduate medical education following modification and further evaluation of the program. Thus, this research has the potential for broad implications in the education and training of medical professionals with regard to dementia assessment and management.

Secondly, this research has future clinical implications. One of the goals of this research was to evaluate and identify a potentially effective educational method through which the assessment and management of individuals with dementia may be improved. By doing so, the health and quality of life of these individuals may be improved as they progress through the stages of the disease. Lastly, the results of this research can be used to improve the efficiency and effectiveness of health professionals in the health care system. By better equipping future family physicians with the necessary knowledge and skills with regard to dementia assessment and management, they will be better able to effectively handle the increased caseload of patients with dementia in the near future.

Chapter 4 Questionnaire Development and Validation

4.1. Introduction

The development and validation of a questionnaire for use in the evaluation of the dementia education program constituted a significant part of this research. Self-completed questionnaires have been widely administered to medical students assessing knowledge, attitudes, and/or confidence on a variety of topics (Celenza, Jelinek, Jacobs, Kruk, Graydon, & Murray, 2001; Sathishkumar, Thomas, Tharion, Neelakantan, & Vyas, 2007; Cape, Hannah, & Sellman, 2006; Roberts, Lawson, Newble, Self, & Chan, 2005; Dakum, Ramyil, Agbo, Ogwuche, Makama, & Kidmas, 2007). Such a questionnaire has not yet been documented pertaining to dementia assessment and management. Completion of the questionnaire development and testing fulfilled the first research objective.

The questionnaire was developed to assess family medicine residents' knowledge, attitudes, as well as confidence and comfort with regard to assessment and management of individuals with dementia. The knowledge component was included to provide an objective measure of the residents' understanding of key components of dementia diagnosis and management. The inclusion of attitudinal as well as comfort and confidence components was to provide for an assessment of family medicine residents' beliefs surrounding management of patients with dementia in practice in addition to providing insight as to how residents might behave in practice. The questionnaire was developed in consultation with the dementia education program instructor. Modifications were made to the questionnaire following its initial testing amongst a group of family medicine residents. The modified questionnaire was once again examined in a second group of family medicine residents. The development of the questionnaire, its validation, as well as the results and discussion will now be presented.

4.2. Methods

Several methodologies were employed in this component of the research. The following presents the processes adhered to for the selection of questionnaire items and its development, the recruitment of participants for questionnaire validation, and the assessment of the questionnaire. Figure 1 below depicts the procedure for this component of the research project.

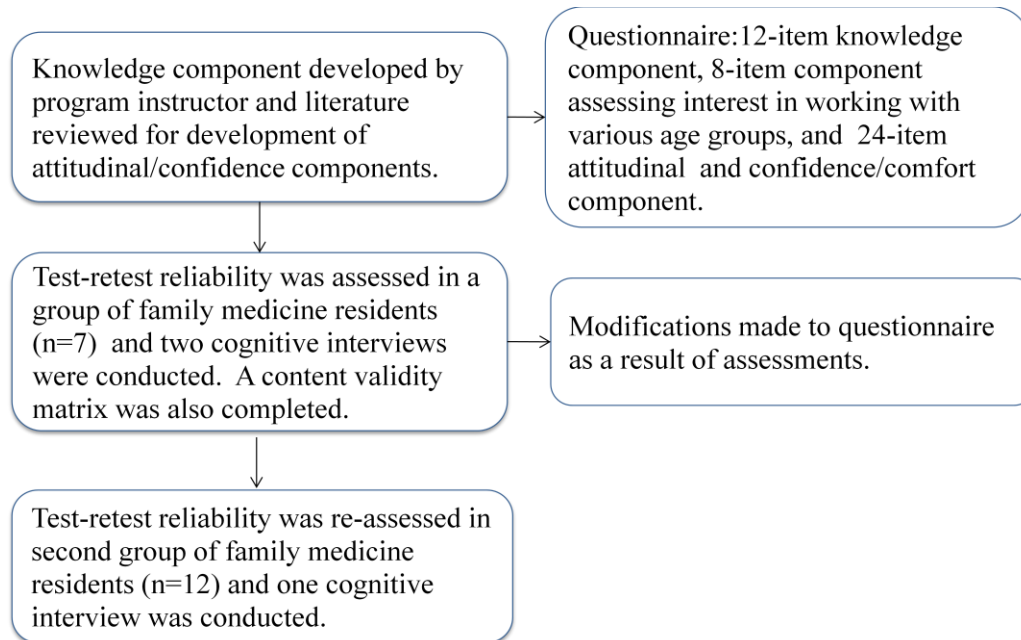


Figure 1: Flowchart depicting procedure for questionnaire development and assessment.

4.2.1. Questionnaire Development

As previously stated the questionnaire was designed to assess knowledge, attitudes, and comfort/confidence. It was developed in an online format in order to facilitate user convenience and took approximately ten minutes for residents to complete. The knowledge component of the questionnaire was largely developed by the dementia education program instructor, who is also an assistant clinical professor in the Department of Family Medicine at McMaster University and the director of the CFFM FHT. Based on the McMaster University Department of Family

Medicine Postgraduate Residency Care of the Elderly Objectives (McMaster University, 2008), topic areas related to dementia were identified that are deemed essential knowledge for graduating family medicine residents (see Appendix 1 for objectives). These topics included pharmacotherapy, cognitive assessment, and assessment of driving safety and reporting requirements. These questions constitute the first component of the questionnaire and are detailed in Appendix 2, where the initial developed questionnaire may be found. Eleven multiple choice questions were developed. Each question had four to five response options and each question prompt indicated to residents whether to select one response option or all that apply. One additional multiple choice question was included as a control. For questions for which residents were to select only one response option, one point was given for the correct answer choice and no points were given for an incorrect choice. For questions which residents were prompted to select all answer options that apply, one point was given for each correct answer choice and one point was deducted for each incorrect answer choice. This was to ensure that residents would not be able to achieve a perfect score on these questions simply by selecting all answer choices.

In order to develop the attitudinal as well as comfort and confidence components, current literature was examined (Byszewski, Graham, Amos, Man-Son-Hing, Dalziel, Marshall, et al. 2003; van Hout, Vernooij-Dassen, Bakker, Blom, & Grol, 2000; Kaduszkiewicz, Bachmann, & van den Bussche, 2008; Karani, Callahan, & Thomas, 2004). The majority of existing questionnaires, surveys, and scales were largely geared toward family physicians. A list of potentially relevant questions was generated. Pertinent questions were identified and modified accordingly to ensure they were applicable to family medicine residents. Additionally, the program instructor once again provided input regarding modifications and the suitability of

questions along with developing further questions to include in the questionnaire. The attitudinal and comfort and confidence items were structured as a statement to which residents would state their level of agreement on a 7-point Likert scale (1=strongly disagree, 4=neutral, 7=strongly agree). Attitudinal topics explored preconceived beliefs about dementia, feelings towards working with other health professionals, and feelings towards working with geriatric populations, among others. Confidence related topics focused on exploring the residents' comfort levels pertaining to diagnosis, use of various screening tools, differentiating between types of dementia, communicating diagnosis to patients and family members, prescribing appropriate pharmacotherapy, and making referrals. The final developed questionnaire consisted of six questions collecting demographic and background information, such as age, gender, previous dementia education experience, as well as the 12 knowledge-based questions, one 8-part item on general attitudes towards working with various age groups, and 24 items that addressed the attitudinal as well as comfort and confidence aspects. This questionnaire is found in Appendix 2.

4.2.2. Participant Recruitment

Family medicine residents identified as not participating in the dementia education program were recruited to participate in assessing the test-retest reliability of the questionnaire. These individuals were also invited to participate in cognitive interviews. The process for assessment of test-retest reliability and the conduct of the cognitive interviews will be described further in the following section. Participants completing the test-retest reliability assessment received a \$20 gift card to Chapters. Participants completing a cognitive interview received an additional \$20 gift card to Chapters. Participants were recruited with the aid of the CFFM site program assistant through email (see Appendix 3 for Recruitment Email, Appendix 4 for

Information Letter included as an attachment to the email, and Appendix 5 for the Interview Consent Form).

As test-retest reliability was to be assessed using an intra-class correlation coefficient, the following calculation was used to determine the required sample size using the approach of Kraemer & Theimann (1987): $\Delta = \frac{(\rho - \rho_0)}{(1 - \rho\rho_0)}$ where ρ is the estimate of a correlation deemed to be important and ρ_0 is the value specified in the null hypothesis. The null hypothesis in the case of this study is one of no correlation, or $\rho_0 = 0$. As recommended by Streiner (1993), the level of correlation deemed to be important (ρ) is set at 0.8. Thus, $\Delta = \frac{(0.8 - 0)}{[1 - (0.8)(0)]} = 0.8$. Using the table found in Appendix 6 of Kraemer and Thiemann, a two-tailed test ($\alpha = 0.05$) with 90% power ($\beta = 0.10$) yields a required sample size of 10.

A total of seven residents from the Kitchener-Waterloo satellite campus were able to be recruited to participate in the initial test-retest of the questionnaire. Given that recruitment necessarily occurred from mid to late June, this coincided with the final two weeks of the potential participants' family medicine residency program. This made achieving the required sample size increasingly difficult. Two of the seven residents participated in cognitive interviews to identify any potential misinterpretation in the questionnaire.

4.2.3. Questionnaire Assessment

Assessment of the questionnaire with respect to its test-retest reliability and its validity occurred in two phases. The first phase involved assessing the initially formulated questionnaire. Modifications were made to the questionnaire based on the results of this phase. The second phase involved assessing the modified questionnaire in a second group of family medicine residents to confirm the reliability and validity of the modified questionnaire.

As previously stated, seven residents were recruited from the Kitchener-Waterloo satellite campus to participate in the first phase of assessment. Participants completed the online version of the questionnaire found in Appendix 2 and were prompted to complete it for a second time after a period of close to one week had elapsed. This was to provide a measure of test-retest reliability. Statistical analyses were conducted using PASW Statistics 17. Intraclass correlation coefficients were calculated along with Cronbach's α statistics for each main component of the questionnaire. Kappa statistics and weighted Kappa statistics were calculated to assess agreement on each questionnaire item.

Individual cognitive interviews were also completed by the student investigator with two participants. The interviews took place in private in the residents' lounge. Interviews were scheduled at participants' suggested times to ensure it were most convenient. Both participants completed their interviews after their workday. Interviews were recorded and transcribed verbatim. The cognitive interviews took between 24 and 30 minutes to complete. Cognitive interviewing has previously been used as a means of obtaining qualitative data on the validity of a questionnaire or scale (Godderis, Adair, & Brager, 2009), (Rosal, Carbone, & Goins, 2003), (Shaw, M.J. et al. 2001). If questions are not interpreted as intended, this may challenge the validity of the obtained data.

Cognitive interviewing was developed in the 1980s as a method of evaluating sources of response error in surveys (Willis, 2005). This methodology focuses on the questions themselves and the cognitive processes participants use in order to answer them. Cognitive interviewing allows determination of participants' comprehension of the questions, including question intent and meaning of terms, as well as the types of information the participant needs to recall and recall strategies. It can also determine the decision process by participants, including motivation

for choosing a particular response, as well as the response process, which is the participant matching his or her answer to one of the given responses in the questionnaire.

Two techniques are mainly used to conduct a cognitive interview. The first is the “think aloud” technique (Willis, 2005). In this technique, the participant is asked to verbalize his or her thought process, with little interjection from the interviewer aside from prompting the participant to continue “thinking aloud” when he or she pauses. This allows for a more open-ended format to the interview, minimal interviewer training is required, and less bias is introduced by the interviewer in comparison with the other technique, as the “think aloud” technique is based largely on participant responses. Conversely, there may be bias introduced by the participant in the processes verbalized due to the often unfamiliar act of using the “think aloud” technique. Furthermore, participants often stray from the task, largely due to unfamiliarity with using this technique and on occasion resistance to it. The second technique is verbal probing (Willis, 2005). After the interviewer asks the question and the participant responds, the participant is ‘probed’ by the interviewer to further explain the response. This may include recall probes, paraphrasing probes, comprehension probes, specific probes and general probes. This technique allows the interviewer to control the interview and participants generally are more familiar with this type of technique. However, this technique may introduce bias from the interviewer with probes given and is also somewhat artificial, in that the interviewer interjects in the participant’s thought process. Overall, both techniques allow for the determination of questionnaire problems with respect to structure or comprehension/interpretation, recall, decision, and response processes. Due its aforementioned strengths and limited weaknesses, the “think aloud” technique was selected for this research. Participants’ responses were analyzed to determine interpretation errors which were common among verbalized responses and response processes. The common

problems identified were remedied through modification of the questionnaire as will be discussed further.

Finally, the content validity of the initial questionnaire was assessed through the construction and completion of a content validity matrix. This has been cited as the best way to check content validity (Streiner, 1993). Domains that the questionnaire should assess were identified in consultation with the program instructor. The student investigator first developed a list of domains based on the objectives of the research. The program instructor reviewed and added to the domains based on the program objectives. The student investigator completed the matrix to verify that all domains are covered. The domains are found in Table 1 in the following section.

Following analysis of test-retest data, interview data, and the content validity matrix, modifications were made to the questionnaire. A second group of family medicine residents was recruited to participate in assessment of the modified questionnaire. Given that the Kitchener-Waterloo satellite campus had an insufficient number of residents to recruit from for the second phase of the assessment, family medicine residents from the main McMaster University campus were recruited. The CFFM site program assistant once again aided in recruitment by forwarding recruitment emails to administrative contacts at the main campus. Twelve residents were recruited and completed this phase of assessment.

As with the prior group, participants were asked to complete the questionnaire online and prompted to complete it for a second time after approximately one week in order to determine test-retest reliability. Data from repeat administrations of the questionnaire were analyzed as in the previous phase using PASW Statistics 17. One participant, who was not involved previously in the interviews, completed a cognitive interview at this stage. The interview was conducted by

the student investigator and took place in the evening at a quiet coffee shop in the hospital, at the request of the participant. This interview took approximately 19 minutes to complete and was recorded as well as transcribed verbatim. Data obtained from the cognitive interview were analyzed for any sources of error in interpretation.

4.3. Results

Several modifications were made to the questionnaire following its administration to the first participant group, completion of the first set of cognitive interviews, and the completion of the content validity matrix, which occurred prior to administering the questionnaire to the second group. In the cognitive interviews, participants expressed confusion as to what constituted previous training in geriatrics and dementia in the background information portion of the questionnaire. One participant stated: “I’m not sure what you guys are looking for in terms of specific teaching... is this something separate or does that include part of your medical training.” These questions were modified to specify that this included both mandatory training as part of residents’ medical education as well as any additional training they may have undergone. Additionally, it was determined that the wording of one attitudinal question [Appendix 2: Question 2) u): I find liaising with allied health care professionals onerous] expressed an extreme viewpoint and the wording was consequently altered to make it moderate and acceptable, which would also allow for improved differentiation of participants’ responses with respect to this attitude.

Completion of the content validity matrix also resulted in modifications to the questionnaire. In completing the content validity matrix, it was identified that two domains were not assessed by any of the items on the questionnaire (Appendix 7 for the completed content validity matrix). Two items were added to the attitudinal and comfort/confidence component of

the questionnaire which addressed comfort communicating a diagnosis to patients with mild cognitive impairment or dementia and desire to manage patients with cognitive impairment in practice. Following the addition of these two questions, each domain is addressed by at least one item, with the majority of domains addressed by two to four items. Table 1 presents the domains of the content validity matrix as well as the questions which satisfy each respective domain. No changes were made to the knowledge component of the questionnaire or the 8-part item on general attitudes towards working with various age groups. See Appendix 8 for the resulting modified questionnaire. The two additional items which were added as a result of the content validity matrix are items 2)e) and 2)g) in the attitudinal component. These items were inserted in the questionnaire near items of a similar nature or topic. As a result, items numbers on the initial questionnaire do not correspond with item numbers on the final modified version. See Appendix 9 for details regarding corresponding item numbers.

Table 1: Content validity matrix domains and questionnaire items addressing each domain

Domain	Questionnaire Item
Appropriate use of medications (knowledge)	Knowledge component: Items 1, 2, 4
Appropriate use of medications (confidence)	Attitudinal component: Item q)
Differentiating between normal ageing, MCI, and dementia (knowledge)	Knowledge component: Item 3
Differentiating between normal ageing, MCI, and dementia (confidence)	Attitudinal component: Item k)
Appropriate use and interpretation of common cognitive tests (knowledge)	Knowledge component: Items 3, 9
Appropriate use and interpretation of common cognitive tests (confidence)	Attitudinal component: Items l), m), n), o)
Appropriate management of driving issues with patients with dementia (knowledge)	Knowledge component: Item 6

Appropriate management of driving issues with patients with dementia (confidence)	Attitudinal component: Items x), y)
Attitudes toward working with allied health professionals	Attitudinal component: Items w)
Referral practices for patients with MCI or dementia	Attitudinal component: Items r), s), t), u)
Level of comfort working with older adults	Attitudinal component: Item b)
Level of interest in working with older adults	Preference working with various age groups component Attitudinal component: Item a)
Attitudes toward working with older adults	Attitudinal component: Item f)
Comfort communicating with patients/families with cognitive impairment	Attitudinal component: Items c), z)
Comfort communicating diagnosis to patients with MCI/dementia	Attitudinal component: Item d)
Comfort managing comorbidities in older adults	Attitudinal component: Items e), i), j)
Ability to differentiate between the most common types of dementia	Knowledge component: Items 5, 10, 11
Appropriate investigations in patients with cognitive impairment	Knowledge component: Item 3 Attitudinal component: Item p)
Desire to manage patients with cognitive impairment	Attitudinal component: Item i)
Management of patients with dementia (knowledge)	Knowledge component: Items 8, 12
Management of patients with dementia (confidence)	Attitudinal component: Items h), v)

Table 2 presents descriptive information on the two groups of participating family medicine residents. As previously stated, the sampling population was limited due to the small size of the residency program.

Table 2: Characteristics of each participant group

	Kitchener-Waterloo Group (n=7)	McMaster Group (n=12)
Mean Age in Years (Standard Error)	30.6 (1.9)	31.8 (1.5)
Gender Distribution (Number of individuals)	71% Female (5) 29% Male (2)	58% Female (7) 42% Male (5)
Mean Time Between Test and Retest in Days (Standard Error)	8.1 (2.9)	9.2 (0.7)
School at which undergraduate MD completed	McMaster University: 4 University of Ottawa: 1 University of Toronto: 1 International: 1	International: 4 University of Western Ontario: 3 McMaster University: 2 University of Toronto: 2 University of Ottawa: 1
Undergraduate MD training in geriatrics (Y:N)	5 : 2	4 : 5 (3 unavailable)
Undergraduate MD training in dementia (Y:N)	4 : 3	3 : 7 (2 unavailable)
Personal experiences with dementia (Y:N)	1 : 6	7 : 4 (1 unavailable)

Table 3 presents the intraclass correlation coefficients and Cronbach's α statistics for each of the three components of the final questionnaire. Analyses were conducted separately for each component due to the differences in scoring and scaling between each component. As previously stated, the knowledge component and component on attitudes towards working with various age groups did not sustain any modifications. Consequently, in order to increase power in analyses, data from both participant groups were combined for each of these two components.

The intraclass correlation coefficients for the components were moderate to high (ICCs of 0.74-0.91), while all three components possessed high internal consistency as demonstrated by their respective Cronbach's α .

Table 3: Intraclass correlation coefficients and Cronbach's α statistics for each questionnaire component

	Intraclass Correlation Coefficient (95% Confidence Interval)	Cronbach's α
Knowledge Component [n=19]	0.89 (0.75-0.96)	0.83
Attitudes Towards Working with Various Age Groups Component [n=19]	0.91 (0.79-0.97)	0.91
Attitudinal and Comfort/Confidence Component [n=12]	0.74 (0.32-0.92)	0.90

Table 4 presents Kappa statistics for each questionnaire item along with its associated standard error and 95% confidence interval for the final version of the questionnaire. Due to the relatively small sample size, in some cases the standard error and/or confidence interval could not be calculated. In these cases, 'nc' has been entered in the table cell. In the case of question t) on the attitudinal and comfort/confidence component, the Kappa statistic could not be calculated because observed concordance was smaller than mean-chance concordance.

Kappa statistics can be expressed in terms of strength of agreement in accordance with accepted standards proposed by Landis and Koch (1977). Kappa statistics of 0.81-1.00 constitute almost perfect agreement; 0.61-0.80 constitutes substantial agreement; 0.41-0.60 constitutes moderate agreement; 0.21-0.40 constitutes fair agreement; and finally 0.00-0.20 constitutes slight agreement. Kappa statistics less than zero are deemed to demonstrate poor strength of agreement.

Most knowledge component items demonstrated substantial agreement with two items demonstrating moderate agreement and only three items demonstrating fair agreement. Considerably substantial and almost perfect agreement was shown among items in the component concerning general attitudes towards working with various age groups, with one item demonstrating only moderate agreement. The attitudinal and comfort and confidence component showed the greatest variation with regard to agreement. Though most items demonstrated almost perfect, substantial, or moderate agreement, a few items demonstrated fair or slight agreement. Although these few individual items demonstrated low agreement, the overall reliability of the attitudinal and comfort and confidence component was reasonably substantial as demonstrated by an intraclass correlation coefficient of 0.74 and a high internal consistency (Cronbach's alpha: 0.90).

Table 4: Kappa statistics, standard errors and 95% confidence intervals for each questionnaire item

Note: "nc" indicates that a standard error or confidence interval could not be calculated

	Kappa Statistic	Standard Error	95% Confidence Interval
Knowledge Component (n=19)			
1. Strategies that can be used to enhance medication adherence in cognitively impaired patients include (check all that apply): a) MedsChek program b) weekly dosettes c) once daily dosing d) self-reporting e) involvement of caregiver	0.78	0.38	0.03-1
2. The following medications should be avoided if possible in cognitively impaired patients (check all that apply): a) lorazepam	0.71	0.17	0.37-1

<ul style="list-style-type: none"> b) ASA c) dimenhydrinate d) amitriptyline e) ditropan 			
<p>3. The best way of differentiating mild cognitive impairment from dementia is by (check one):</p> <ul style="list-style-type: none"> a) CT scan b) MRI c) functional abilities assessment d) MMSE e) assessment of ability to understand proverbs 	0.79	1.25	0-1
<p>4. Treatment with cholinesterase inhibitors is indicated in (check all that apply):</p> <ul style="list-style-type: none"> a) Alzheimer's dementia b) Mixed dementia c) Lewy Body dementia d) Mild cognitive impairment e) primary prevention in patients at high risk for dementia 	0.56	0.54	0-1
<p>5. Visual hallucinations are characteristic of (check one):</p> <ul style="list-style-type: none"> a) Alzheimer's dementia b) Vascular dementia c) Frontotemporal dementia d) Lewy Body dementia e) Mild cognitive impairment 	0.34	0.35	0-1
<p>6. In a patient with cognitive impairment, the following should be considerations in assessing fitness to drive (check all that apply):</p> <ul style="list-style-type: none"> a) visuospatial function b) executive function c) Trails B test d) degree of cognitive impairment e) ability to pass Ministry of Transport drivers assessment required every 2 years after age 80 	0.37	0.19	0-0.74
<p>7. Which of the following are indications for a computed tomography cranial scan in</p>	0.72	0.60	0-1

<p>the investigation of dementia?</p> <p>a) Age under 60 years</p> <p>b) History of carcinoma from sites that metastasize to the brain</p> <p>c) Dementia present for at least 2 years</p> <p>d) Recent head trauma</p>			
<p>8. Dementia occurs:</p> <p>a) Only in people over 60 years of age</p> <p>b) In 2-5% of people over age 65</p> <p>c) More often in men than in women</p> <p>d) In 80% of people over age 85</p>	0.45	0.21	0.04-0.86
<p>9. Which of the following would not be considered to reflect a deficit in executive function?</p> <p>a) Interpreting the proverb, “People who live in glass houses should not throw stones” to mean, “People don’t want their windows broken.”</p> <p>b) Failing to recognize objects or people</p> <p>c) Difficulty planning how to carry out a sequence of actions</p> <p>d) Trouble stopping oneself from engaging in a behaviour</p>	0.62	0.20	0.22-1
<p>10. A 75-year-old man presents with gradual onset of cognitive impairment, which is fluctuating, together with falls, visual hallucinations, and Parkinsonism. What is the most likely diagnosis?</p> <p>a) Normal pressure hydrocephalus</p> <p>b) Alzheimers disease</p> <p>c) Lewy body dementia</p> <p>d) Vascular dementia</p>	0.64	0.35	0-1
<p>11. Which of the following does not characterize Frontotemporal Dementia?</p> <p>a) Typically onsets at 45 – 65 years but can onset up to age 85</p> <p>b) Family history in 20-40 % of cases</p> <p>c) Early onset of executive dysfunction</p> <p>d) Early onset of significant short term memory loss</p>	0.25	0.23	0-0.69

12. A 78-year-old nursing home resident has mild dementia associated with Alzheimer's disease. She is disoriented to time and place but knows family members and regular nurse aides by name. This patient's capacity to make decisions regarding her health care is best determined by: a) Mental status test b) Her ability to understand treatment options c) Probate court decision d) Psychiatric examination e) Don't know	0.64	0.35	0-1
Preference Working with Various Age Groups (n=19)			
1. Please rank your preference for working with each of the following groups categorized by age range on the following 7-point scale: 1 = not at all, 4 = neutral, 7 = would really enjoy			
a) Infants (0-2)	0.84	nc	nc
b) Children (3-12)	0.90	nc	nc
c) Adolescents (13-17)	0.76	nc	nc
d) Young adults (18-25)	0.83	0.53	0-1
e) Adults (25-45)	0.55	0.74	0-1
f) Middle aged (45-65)	0.79	0.17	0.46-1
g) Old (65-75)	0.80	nc	nc
h) Old-old (75+)	0.86	nc	nc
Attitudinal and Comfort/Confidence Component (n=12)			
2. Please indicate your answer using the following 7-point scale: 1 = strongly disagree, 4 = neutral, 7 = strongly agree			
a) I expect that more than 50% of my future practice will involve older patients.	0.77	nc	nc
b) I feel comfortable working with older patients.	0.69	0.20	0.29-1
c) I feel comfortable speaking with older patients and their families.	0.79	0.61	0-1

d) I feel comfortable communicating a diagnosis of dementia to a patient.	0.83	0.21	0.42-1
e) I feel confident in my approach to older patients with multiple complex comorbid conditions.	0.77	nc	nc
f) If I had the choice, I would rather see younger patients than elderly ones.	0.69	0.38	0-1
g) I am interested in managing patients with cognitive impairment in my future practice.	0.01	nc	nc
h) I feel confident managing dementia in older patients.	0.43	0.36	0-1
i) I feel confident managing delirium in older patients.	0.85	nc	nc
j) I feel confident managing depression in older patients.	0.80	0.34	0.14-1
k) I can differentiate between different types of dementia.	0.56	0.40	0-1
l) I can administer a MMSE.	0.53	1.91	0-1
m) I can interpret a MMSE.	0.54	0.49	0-1
n) I can administer a MOCA.	0.70	0.10	0.51-0.90
o) I can interpret a MOCA.	0.62	0.30	0.03-1
p) In suspicion of cognitive impairment, I would regularly use cognitive tests.	0.52	0.53	0-1
q) I am confident in my ability to prescribe appropriate pharmacotherapy, if necessary, when managing patients with dementia.	0.90	nc	nc
r) I am likely to refer patients with mild cognitive impairment to a Memory Clinic.	0.52	0.33	0-1
s) I am likely to refer patients with mild cognitive impairment to community	0.34	nc	nc

services.			
t) I am likely to refer patients with dementia to a Memory Clinic.	Kappa could not be calculated because the observed concordance is smaller than mean chance concordance.		
u) I am likely to refer patients with dementia to community services.	0.04	nc	nc
v) Much can be done to improve the quality of life of individuals with dementia.	0.39	nc	nc
w) I am comfortable liaising with allied health care professionals.	0.52	0.58	0-1
x) I am confident in my ability to assess the driving risk of patients with cognitive loss.	0.85	nc	nc
y) I know what to do when I suspect there may be significant risk in driving.	0.81	nc	nc
z) I am confident in my ability to tell patients they are unsafe to drive.	0.71	0.28	0.16-1

4.4. Discussion

The questionnaire was found to have a fairly high degree of internal consistency and test-retest reliability, with the exception of a few items. Three items in particular warrant further discussion. Items g) and u) on the attitudinal and comfort/confidence component demonstrated very poor agreement while agreement on item t) could not be calculated due to smaller observed agreement than chance agreement. Item g) referred to residents' interest in managing patients with cognitive impairment in future practice. On reflection, it is possible that this item had the potential for two different interpretations: whether residents were interested in managing a future practice population which included a proportion of patients with cognitive impairment; or whether residents would be interested in cases of cognitive impairment in their future practice.

Consequently, this item should be removed from the questionnaire in future administrations or modified accordingly and retested prior to future use.

Items t) and u) pertained to residents' referral of patients with dementia to a memory clinic and community services, respectively. These items were similar in nature to items r) and s) which pertained to referral of patients with mild cognitive impairment to a memory clinic and community services. Items r) and s) demonstrated moderate and fair agreement, thus the poor agreement on items t) and u) was surprising. Upon further examination of participants' responses on other questionnaire items, it is possible that small changes in residents' confidence with managing patients with dementia on the two administrations of the questionnaire may have influenced residents' likeliness to refer to clinics and services. It has been documented that confidence in managing patients with dementia is associated with physicians' knowledge of available services and referral options (Milne, Woolford, Mason, & Hatzidimitriadou, 2000; Goldstein, MaLossi, Kim, & Young, 1999). Family physicians who deemed themselves to be more knowledgeable and more confident in diagnosing and assessing dementia also deemed themselves more aware of community resources available to them (Goldstein, MaLossi, Kim, & Young, 1999). Participants' responses to the questionnaire indicate that in seven of 12 cases, confidence increased slightly between administrations. In all but two of these seven cases, residents also expressed an increased likeliness to refer patients with dementia. Conversely, the remaining two cases expressed a decreased likeliness to refer patients, possibly indicating that they felt more capable of managing patients on their own due to self-reported increased confidence. Thus the poor agreement demonstrated by items t) and u) may be a reflection of a slight change in confidence experienced by participating residents.

As stated above, this research was limited by the small sample size of the participant group in the initial phase of questionnaire assessment. However, given that the knowledge component and component assessing attitudes toward working with various age groups was not modified, this made it possible to pool the data between the groups when assessing the final version of the questionnaire. This allowed the analyses to be sufficiently powered.

Considerable reliability and consistency was demonstrated by questionnaire items with the exception of the few items noted above. Following deletion or possibly further modification of these items, this questionnaire can provide an even more useful measure of knowledge, attitudes as well as comfort and confidence pertaining to dementia diagnosis and management. Though the questionnaire was designed for this dementia education program in particular, its uses may extend beyond the program. Questionnaire items are non-specific to the program and are easily transferable for use in other programs. Furthermore, only minor modifications would be necessary should one wish to use this questionnaire with other groups of health professionals. This questionnaire, which focuses on evaluation in dementia education, also addresses an area in which little research has been done to date.

The results of this research indicate that this questionnaire is a reliable measure for use in evaluating educational programs directed at enhancing the dementia knowledge, attitudes, comfort and confidence of family medicine residents and possibly other health professionals. Given the overall strength of the questionnaire, it was possible to confidently employ it as one of the central measures in the evaluation of the dementia education program.

Chapter 5 Evaluation of the Dementia Education Program

5.1. Introduction

As previously discussed in Section 2.3, there have been few dementia education programs documented. Most of the educational programs presented in the literature have focused broadly on geriatrics without providing specifics as to how much of the focus was on dementia. In most cases, little information, if any, was provided about how much participants learned regarding each topic covered by the geriatrics programs, including dementia. Moreover, many of these programs are targeted at undergraduate medical students. This research provides an evaluation of a dementia education program targeted specifically at family medicine residents. Though it has its limitations as will be discussed, it does begin to fill these gaps in the literature.

The dementia education program is modified from the CFFM FHT Memory Clinic training program as previously stated. The education program consists of lecture- and classroom-based components as well as a clinical practice component. The lecture component was comprised of one academic half-day (AHD). The objectives of the AHD as identified by the program instructor were to:

- Describe a clinical reasoning approach and office-based assessment tools for the assessment of patients with suspected cognitive impairment
- Differentiate between normal aging, mild cognitive impairment (MCI), and dementia and distinguish among the types of dementias
- Describe a rational approach to investigation and treatment of dementia
- Discuss management of driving concerns

Topics related to these objectives were presented in a PowerPoint presentation. Residents received three handouts: one consisting of the presentation slides; another which was a summary

document of the presentation; and finally a copy of the Montreal Cognitive Assessment (MoCA) including instructions for its administration and scoring (Nasreddine, Phillips, Bedirian, Charbonneau, Whitehead, Collin, et al. 2005). The summary document is included in Appendix 10. The AHD took place at the CFFM site but was also made available via videoconference to family medicine residents at McMaster's Hamilton and Brampton sites. For residents unable to attend the session or the videoconference, a recording of the session was also made available. Also present at the AHD were University of Waterloo School of Pharmacy co-op students as well as Wilfred Laurier University social work interns.

The classroom-based component of the program was a half-day workshop made available only to family medicine residents from the Kitchener-Waterloo CFFM site. This component was interactive and allowed residents to apply what they had learned in the AHD to anonymized cases from the CFFM Memory Clinic. Prior to working through cases, the program instructor asked residents what they considered to be "the muddiest points" from the AHD. These points were clarified as residents worked through the cases. An example of one of the cases is provided in Appendix 11. Residents worked through four cases in small groups. There were three groups of four and one group of five, with a mix of both first year and second year residents in each group. Additionally, two of the memory clinic nurses as well as a clinical pharmacist and a retired family physician rotated through each group.

The final component allowed residents to apply skills they had learned in the previous two sessions in a clinical setting. Working in an inter-professional team with a Wilfred Laurier University social work intern and a University of Waterloo School of Pharmacy co-op student, each resident had the opportunity to assess two patients in a one-day session at the CFFM Memory Clinic, a Williamsburg Memory Clinic site (Kitchener, Ontario), or a Wellesley

Memory Clinic site (Wellesley, Ontario). Due to the operating schedules of the memory clinics and the rotation schedules of the residents, it was not possible for all residents to complete the clinic component of the education program at the same time following the previous sessions. Residents completed the memory clinic day as early as two days after the case-based workshop and as late as four months after the workshop. This was an unavoidable limitation of the program design. However, this did provide the potential for the exploration of long-term effects in the analyses of residents' scores on the questionnaire.

The evaluation of the dementia education program included multiple components and administrations of measures. The processes followed for the evaluation, as well as presentation and discussion of its results will be presented in the remaining sections of this chapter.

5.2. Methods

As previously stated, the evaluation included many components. The overall design of the evaluation will be discussed in addition to the methodology for participant recruitment, administration of study measures, and the statistical as well as qualitative analyses conducted.

5.2.1. Research Design

The research design chosen for this evaluation was a mixed methods study design. A mixed methods design involves collecting and analyzing both quantitative and qualitative data in a single study. Quantitative and qualitative methods can be developed in a synergistic manner which may allow for more detailed information to be gathered. The quantitative and qualitative methods employed in this research aimed to complement one another, in order to better inform the evaluation. The specific mixed methods strategy which was applied in this research was a concurrent triangulation strategy (Creswell, 2003). In this strategy, quantitative and qualitative data are collected concurrently. This strategy also places equal importance on the quantitative

and qualitative data. The data from quantitative and qualitative measures are integrated in the interpretation phase of the study, following analysis. Resulting interpretations may either explain a lack of convergence of findings or strengthen the convergence of findings. In this way, this methodology allows for triangulation of data. Advantages of this research strategy included its relative familiarity among researchers, the potential for well-supported and validated conclusions, and a shorter data collection period due to the concurrent collection of data as opposed to sequential collection (Creswell, 2003). With respect to limitations, there may be difficulty in comparing the findings from analyses based on two different forms of data, as well as in resolving discrepancies in the findings (Creswell, 2003).

The evaluation of the dementia training program was also designed with Kirkpatrick's framework for evaluation of training programs in mind (Kirkpatrick, 1994). Kirkpatrick developed a four level model of evaluation. The first level of evaluation is focused on reactions of participants to the training program, with the goal of determining if it was liked and deemed relevant to practice by participants. As Kirkpatrick states, though "a positive reaction does not guarantee learning, a negative reaction almost certainly reduces its possibility" (p. 26, Kirkpatrick, 1994). In the case of this research, this level of evaluation was attained through a participant feedback survey following the workshop component of the training program.

The second level examines learning in particular. Evaluation at this level is focused on determining whether participants have progressed either in knowledge, attitudes, or skills. Pre-test and post-test measures are a useful methodology to conduct evaluation at this level. In this research, participants' knowledge, attitudes, and confidence scores were assessed and recorded prior to the start of the education program, at one point in the education program, and following the program's completion. This fulfilled the second level of Kirkpatrick's model.

The third and fourth levels of Kirkpatrick's evaluation model are more difficult to attain. The third level of evaluation focuses on assessing whether there has been transfer of learned knowledge, skills, and attitudes into the everyday environment of the training program participant. Questions on the developed questionnaire attempted to get at decisions residents would make in practice, such as making referrals, though it was not possible to observe residents once they begin their practice as family physicians. Confidence scores may also provide some indication of potential impact on practice, as confidence is an indication of self-efficacy which has been found to be predictive of behaviour (van Hout et al., 2007; Bandura, 1977). The fourth level examines whether positive results, such as improved quality of care for individuals with dementia in the case of this study, have been achieved as a consequence of the training program. Evaluation on these two levels of the model would require longer term follow-up than is possible given the timeline of this research. Consequently, this research does provide the basis for further future evaluation, provided the program is considered effective based on results obtained with respect to levels one and two as will be discussed.

5.2.2. Participant Recruitment

Family medicine residents from the Michael G. DeGroote School of Medicine (McMaster University) Kitchener-Waterloo satellite campus were recruited to participate in this research. The family medicine residents were participating in the previously described dementia education program. Nineteen residents were eligible to participate in the program however not all residents participated and it is unclear how many completed all aspects of it. Participants were recruited once again with the aid of the CFFM site program assistant through email (see Appendix 12 for Recruitment Email and Appendix 13 for the Information Letter included as an attachment to the email). It was anticipated that participation in the evaluation of the dementia education program

would not be an onerous addition to the residents' workloads, however this appears to have been an incorrect assumption. A total of five participants completed the questionnaire prior to the start of the program and of these, three completed the questionnaire at interim. Of the three residents, only two completed the questionnaire as a post-test soon after their memory clinic day. This is in spite of several reminder emails which were sent to residents to solicit participation (see Appendix 14 for reminder emails). Given the low response rates, the program instructor suggested administering a hard-copy version of the questionnaire at a session the residents were required to attend which occurred one week to 4 months (depending on the residents' memory clinic rotation) after completion of the dementia education program. Fifteen residents completed the hard-copy version of the questionnaire, including the five residents who completed the initial pre-test. The method in which this data as well as the available pre-test and post-test data were analyzed will later be discussed.

5.2.3. Procedure

The flowchart found below in Figure 2 depicts the procedure for this evaluation component of the research project. Consent was obtained from all participants prior to the start of the program.

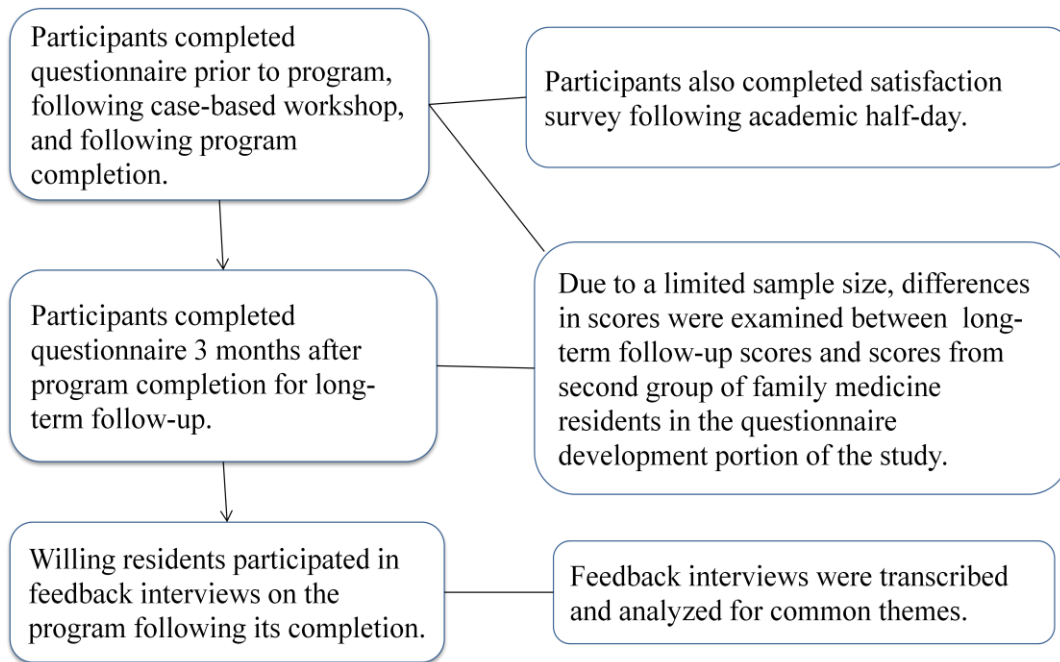


Figure 2: Flowchart depicting evaluation procedure.

Prior to the start of the dementia education program, participating family medicine residents were asked to complete the online questionnaire to provide a baseline measure. Five residents completed the questionnaire prior to the AHD. Two residents opened the survey and entered code names but did not complete it. Code names consisted of the first three letters of their mother’s maiden name followed by the last two digits of their home phone number and the two digits representing the month of their birth (ex. Str6708). The code names served to link participants’ responses between questionnaire administrations while maintaining anonymity. Seven residents were expected to attend the AHD. The remaining 12 residents at the satellite campus had the option to watch the recording online. Though it was recommended they do so, this was not enforced. This session was also videoconferenced to residents at the Hamilton and Brampton sites. Immediately following the AHD session, the residents, pharmacy co-op students, and social work interns attending the session completed a hard copy feedback questionnaire (see Appendix 15 for questionnaire). The feedback questionnaire was based on a

form initially developed by investigators in the Faculty of Medicine at the University of Ottawa for the purposes of evaluating CME presentations (Wood, Marks, & Jabbour, 2005). The investigators pilot-tested a 20-item workshop evaluation form and following a factor-analysis modified the evaluation form. Following two additional rounds of pilot-testing, the evaluation form was finalized. The finalized evaluation form, consisting of nine items and two open-ended questions, was tested to determine its reliability and content validity. It was determined that there was a moderately high correlation between items and that response rates were high for all items. The investigators found that even with as few as eight evaluations per presentation, the form still gave an acceptable reliability of 0.80. Thus, despite the small sample size of this research, this questionnaire would still demonstrate appropriate reliability. The questionnaire included three items pertaining to the presenter, three pertaining to the presentation, two pertaining to content, and one global rating item. Additionally, two open-ended questions were included. This form was used with the permission of its developers. Four additional questions were added to the questionnaire pertaining to effects of the session on dementia knowledge, comfort, and usability for future practice to complement other measures in this research.

Following completion of the half-day workshop, all residents were once again asked to complete the online questionnaire. Nineteen residents attended the half-day workshop. Three of the five residents from baseline completed this interim measure, while the remaining two entered their code names but did not complete the questionnaire. An additional two residents, who had not completed the baseline assessment, completed the questionnaire at this point. This resulted in a total of five complete assessments at interim. All residents were prompted to complete the questionnaire for a final time within a few days of completing their clinical experience in the memory clinic. Two of the original five residents who had baseline assessments completed the

questionnaire at this point. Additionally, two residents who had not completed either the baseline or interim assessment, completed the questionnaire following their memory clinic experience. One of the original five residents was able to be reached five months after his memory clinic date in order to complete a post-test.

In addition to being prompted to complete the questionnaire following the memory clinic, residents were also invited to participate in an individual interview. The aim of the interview was to expand on topics covered in the questionnaire in terms of their perceived effects of the program, and to solicit feedback on the perceived relevance and usefulness of the training program as well as suggestions on what aspects worked well and which could use improvement (see Appendix 16 for interview guide). A total of five residents completed these interviews. It is not possible to determine whether or not these residents also completed the questionnaire as this would have removed anonymity.

As previously stated, given the low response rates the program instructor suggested administering a hard-copy version of the questionnaire to residents at a mandatory, unrelated session. Fifteen residents completed the hard-copy version of the questionnaire, including the five residents who completed the initial pre-test. The following section will discuss the methodology employed to analyze these data.

5.2.4. Statistical Analyses

Descriptive statistics (ex. mean age) were analyzed and reported for all groups of participants. The responses to the feedback questionnaire administered at the AHD were used to create summary data. Changes were made to the previously proposed method of statistical analysis for pre-test/post-test data. It was initially proposed that repeated measures ANOVA would be used to determine if significant differences exist between pre-test and interim, interim

and post-test, and pre-test and post-test scores as this would provide a more powerful statistical analysis. However, given the small number of individuals who completed the interim assessments, it is not possible to complete these analyses. Alternatively, statistical analyses were conducted using a paired t-test between pre-test scores of the five participating residents and their scores from the hard copy administration of the questionnaire which can serve as a long-term follow-up.

As previously stated, 15 residents completed the hard copy administration of the questionnaire. It was ascertained that the scores from the Hamilton McMaster group who participated in the test-retest of the questionnaire could serve as a comparison group, as these residents did not participate in the dementia education program. Given that these residents completed the questionnaire twice, data from the first completion were used, as this would minimize testing effects which could have been associated with the second completion. One potential concern was that this group of residents did not complete a baseline assessment. However, theoretically the results of this group should be similar to those of the pre-test for the Kitchener-Waterloo group. This was confirmed using an unpaired t-test. This made it possible to then conduct analyses between the Hamilton McMaster group and the Kitchener-Waterloo group using an unpaired t-test.

5.2.5. Qualitative Analyses

As previously mentioned, the interviews with the dementia education program participants were recorded and transcribed. The transcripts were analyzed in a manner consistent with the methods recommended by Creswell (2003) for the analysis of qualitative data. The transcripts were first coded into emerging categories. The coded data were organized into themes. An attempt was made to interconnect themes where possible in order to create an

overall and inclusive description of the data. The data were interpreted with the aim of identifying effects on residents' knowledge, attitudes, and confidence as well as successful aspects of the dementia training program and recommendations to improve its future operation. A concurrent triangulation strategy was employed (Creswell, 2003). Consequently, in the interpretation stage, resulting data from the quantitative and qualitative analyses were compared. The aim of this comparison was to identify results that were supported by both analyses, as well as to identify potential differences in results and reasons for observed dissimilarities. In this manner, the quantitative and qualitative results informed the final conclusions of this research. The results and conclusions will be discussed further in the following sections.

5.3. Results

The results section presents both the quantitative and qualitative results of the evaluation of the dementia education program. Results from the feedback questionnaire administered at the AHD will first be presented, followed by the pre-test post-test results of the Kitchener-Waterloo residents as well as comparisons with the Hamilton site residents. Finally, this section will conclude with the presentation of results from interviews with residents following the memory clinic experience.

5.3.1. Feedback Questionnaire

A total of six family medicine residents, six pharmacy co-op students, and four social work interns completed the feedback questionnaire on the AHD. The following summary data indicate that ratings within each category were fairly consistent amongst each group of the participants. High scores were given by all groups in the presenter-related categories, with minimums of 5 to 6 and maximum scores of 7. Presentation-related scores were also high in all groups with minimums of 5 to 6 and maximum scores of 7. The mean scores between

participant groups were also fairly consistent in the presenter-related and presentation-related categories. The content-related categories demonstrate the greatest difference in scores between participant groups. All family medicine residents found the content to be relevant to practice, with every resident giving a score of 7 in this category. Residents' scores in terms of volume and complexity of information ranged from 6 to 7, which is also very high. Pharmacy students found the volume and complexity of information acceptable with scores in the range of 5 to 7, however they did not find the material as relevant to their practice as demonstrated by a lower mean score than the other groups and a range of 4 to 7.

In terms of the additional items added to the feedback questionnaire specifically regarding dementia, all participants across the groups strongly agreed that the session increased their knowledge, All participants in each group also agreed or strongly agreed that the session increased their comfort managing patients with dementia or cognitive impairment and that it was useful to future practice. Specifically, all of the pharmacy students strongly agreed (range 7 to 7) that the session had increased their interest in working with individuals with dementia and cognitive impairment. Family medicine residents and social work interns also indicated that the session increased their interest, with responses falling in the 6 to 7 range.

Table 5: Mean, standard deviation (SD), minimum, and maximum scores on feedback questionnaire by participant group

Category	Family Medicine Resident (n=6)	Pharmacy Student (n=6)	Social Work Intern (n=4)
[Rating system: 1- Unacceptable; 2- Could use improvement; 3 – Fair; 4 – Good; 5 – Very good; 6 – Excellent; 7 – Outstanding]			
The Presenter			
Enthusiasm	Mean: 6.33 SD: 0.82 Min: 5 Max: 7	Mean: 6.33 SD: 0.82 Min: 5 Max: 7	Mean: 6.25 SD: 0.50 Min: 6 Max: 7
Apparent knowledge of the topic	Mean: 6.83	Mean: 6.83	Mean: 6.75

	SD: 0.41 Min: 6 Max: 7	SD: 0.41 Min: 6 Max: 7	SD: 0.50 Min: 6 Max: 7
The Presentation			
Information was presented in an organized manner	Mean: 6.83 SD: 0.41 Min: 6 Max: 7	Mean: 6.33 SD: 0.52 Min: 6 Max: 7	Mean: 6.50 SD: 0.577 Min: 6 Max: 7
Related information presented to practical problems	Mean: 6.83 SD: 0.41 Min: 6 Max: 7	Mean: 6.50 SD: 0.55 Min: 6 Max: 7	Mean: 6.25 SD: 0.96 Min: 5 Max: 7
Quality of audiovisual aids	Mean: 6.67 SD: 0.52 Min: 6 Max: 7	Mean: 6.00 SD: 0.63 Min: 5 Max: 7	Mean: 6.00 SD: 0.82 Min: 5 Max: 7
The Content			
Volume and complexity of the information presented was appropriate	Mean: 6.67 SD: 0.52 Min: 6 Max: 7	Mean: 5.67 SD: 0.82 Min: 5 Max: 7	Mean: 6.25 SD: 0.50 Min: 6 Max: 7
Content was relevant to your practice	Mean: 7.00 SD: 0.00 Min: 7 Max: 7	Mean: 5.50 SD: 1.0 Min: 4 Max: 7	Mean: 6.75 SD: 0.50 Min: 6 Max: 7
Overall, how would you rate your session?			
	Mean: 6.67 SD: 0.52 Min: 6 Max: 7	Mean: 6.10 SD: 0.74 Min: 5 Max: 7	Mean: 6.25 SD: 0.50 Min: 6 Max: 7
Additional Questions: (1- Strongly Disagree; 4 – Neutral; 7 – Strongly Agree)			
This session has increased my knowledge with regard to dementia and cognitive impairment.	Mean: 6.50 SD: 0.55 Min: 6 Max: 7	Mean: 6.80 SD: 0.45 Min: 6 Max: 7	Mean: 6.50 SD: 0.58 Min: 6 Max: 7
This session has increased my comfort with respect to managing patients with dementia and cognitive impairment.	Mean: 6.67 SD: 0.52 Min: 6 Max: 7	Mean: 5.60 SD: 0.55 Min: 5 Max: 6	Mean: 6.25 SD: 0.50 Min: 6 Max: 7
I found this session to be useful for my future practice.	Mean: 6.83 SD: 0.41 Min: 6 Max: 7	Mean: 6.60 SD: 0.55 Min: 6 Max: 7	Mean: 6.25 SD: 0.96 Min: 5 Max: 7
This session has increased my interest in working with individuals with dementia and	Mean: 6.33 SD: 0.52 Min: 6	Mean: 7.00 SD: 0.00 Min: 7	Mean: 6.75 SD: 0.50 Min: 6

cognitive impairment.	Max: 7	Max: 7	Max: 7
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Two open-ended questions were also asked on the feedback questionnaire: ‘What two aspects of this presentation did you like most?’ and, ‘What two aspects of this presentation would you suggest be changed in the future?’ Several common themes emerged. Among family medicine residents, it was evident that the residents most appreciated the approach to assessing cognitive decline that was presented as well as information on differentiating types of dementia. In terms of aspects that the family medicine residents suggested be changed, residents indicated that they would have liked to work through case studies. However, these comments preceded the case-based workshop that took place approximately two weeks after this session. Thus it is safe to suggest that these concerns were addressed by the dementia education program. As an additional aspect which would be changed, residents largely cited audiovisual issues that occurred at the start of the videoconference. This is a result of technical difficulties and not a reflection on the program, but nevertheless an area for improvement.

Amongst the pharmacy students, the aspects which were found to be most liked included the use of examples of diagnostic tests and the broad overview of the topic provided. In terms of suggestions, most pharmacy students indicated that they had none while a couple once again cited audiovisual issues. Finally, the social work interns were varied in aspects they liked most. These ranged from information on cognitive issues and treatment options, to progression from topic to topic, to use of examples. With regard to suggestions, most of the social work interns did not provide any with the exception of one individual who suggested more in-depth information about the types of dementias as well as working through the MoCA in the session.

5.3.2. Dementia Education Program Pre-test Post-test Results

As previously stated, response rates for this component of the evaluation were low. Given that an insufficient number of participants completed pre, interim, and post-test analyses, analyses were conducted using pre-test scores from the five available participants and those individuals' post-test scores from the hard copy administration of the questionnaire. Descriptive data on the participants are presented below. In terms of where the residents completed their undergraduate medical training, all residents had completed it at a different university (McMaster University, Northern Ontario School of Medicine, Queen's University, University of Toronto, and University of Western Ontario). Participants ranged in age from 24 to 31 with a mean age of 27.2 years.

Table 6: Gender, training and dementia experiences of pre-test post-test participants

	Number of Participants (n=5)	
Gender	Female: 3	Male: 2
Undergraduate MD training in Geriatrics	Yes: 2 (Duration: 1 week; 2 weeks)	No: 3
Undergraduate MD training in Dementia	Yes: 3 (Duration: 1 day; 2 weeks; 6 weeks*)	No: 2
Personal experiences with Dementia	Yes: 1	No: 4

* This response is likely an error; given the individual specified that they received no geriatrics training, it is unlikely he or she received 6 weeks of solely dementia training.

Despite the small sample size, several significant differences were found with respect to pre-test and post-test scores. With regard to the knowledge component of the questionnaire, no significant differences were found between scores on individual items. However, the change in total knowledge score was statistically significant ($p=0.003$). No significant differences were found on the second component of the questionnaire that measured participants' preferences

working with various age groups. Several significant changes in the participants' comfort and confidence were identified. These are presented in the table below.

Table 7: Questionnaire items demonstrating significant differences in pre-test post-test scores

Questionnaire Item	Mean Change	Standard Error of the Mean	95% Confidence Interval	Significance value
2) d) I feel comfortable communicating a diagnosis of dementia to a patient.	2.40	0.87	-0.20 – 4.82	0.051
2) e) I feel confident in my approach to older patients with multiple complex comorbid conditions.	1.40	0.51	-0.02 – 2.82	0.052
2) h) I feel confident managing dementia in older patients.	2.40	0.75	0.42 – 4.48	0.033
2) i) I feel confident managing delirium in older patients.	1.40	0.25	0.72 – 2.08	0.005
2) k) I can differentiate between different types of dementia.	2.80	0.86	0.41 – 5.19	0.031
2) m) I can interpret a MMSE.	1.20	0.20	0.65 – 1.76	0.004
2) q) I am confident in my ability to prescribe appropriate pharmacotherapy, if necessary, when managing patients with dementia.	2.20	0.58	0.58 – 3.82	0.020
2) x) I am confident in my ability to assess the driving risk of patients with cognitive loss.	3.60	0.51	2.18 – 5.02	0.002
2) z) I am confident in my ability to tell patients they are unsafe to drive.	2.80	0.86	0.41 – 5.19	0.031

Note: all changes in score are in the positive direction.

As previously stated, analyses were also conducted comparing scores from the 15 Kitchener-Waterloo residents on the hard-copy administration of the questionnaire with the scores of the 12 Hamilton site residents. With regard to demographics, the groups were found to be similar with the exception of program participation and age ($p=0.02$).

Table 8: Characteristics of the Kitchener-Waterloo and Hamilton residents

		Kitchener-Waterloo Residents (n=15)	Hamilton Residents (n=12)
Mean age in years (Standard error)		27.8 (0.52)	31.8 (1.50)
Gender distribution (Number of individuals)		Female: 8 Male: 7	Female : 7 Male : 5
School at which undergraduate MD completed		McMaster University: 6 International: 3 University of Western Ontario: 2 Dalhousie University: 1 Northern Ontario School of Medicine: 1 Queen’s University: 1 University of Toronto: 1	International: 4 University of Western Ontario: 3 McMaster University: 2 University of Toronto: 2 University of Ottawa: 1
Undergraduate MD training in geriatrics (Y:N)		10 : 5	4 : 5 (3 unavailable)
Undergraduate MD training in dementia (Y:N)		9 : 6	3 : 7 (2 unavailable)
Personal experiences with dementia (Y:N)		7 : 8	7 : 4 (1 unavailable)
Participation in components of dementia education program	Academic Half-Day (Y:N)	13 : 2	0 : 12
	Case-based Workshop (Y:N)	11 : 4	0 : 12
	Memory Clinic	14 : 1	0 : 12

Several significant differences were found in scores on questionnaire items. Unlike pre-test post-test knowledge scores in the Kitchener-Waterloo group, there were significant differences between individual knowledge items as well as total knowledge score. These items are presented below.

Table 9: Knowledge-based questionnaire items demonstrating significant differences in scores between Kitchener-Waterloo and Hamilton residents

Knowledge-Based Questionnaire Item	Mean Difference	SE of the Difference	95% Confidence Interval	Significance value
2. The following medications should be avoided if possible in cognitively impaired patients (check all that apply): a) lorazepam b) ASA c) dimenhydrinate d) amitriptyline e) ditropan	0.93	0.28	-0.25 – 0.92	0.037
3. The best way of differentiating mild cognitive impairment from dementia is by (check one): a) CT scan b) MRI c) functional abilities assessment d) MMSE e) assessment of ability to understand proverbs	0.44	0.18	0.07 – 0.81	0.022
6. In a patient with cognitive impairment, the following should be considerations in assessing fitness to drive (check all that apply): a) visuospatial function b) executive function c) Trails B test d) degree of cognitive impairment e) ability to pass Ministry of Transport drivers assessment required every 2 years after age 80	1.68	0.31	1.04 – 2.32	<0.001
Total Knowledge Score	4.54	1.04	2.38 – 6.69	<0.001

Note: all differences in score are in the positive direction.

As with pre-test and post-test analyses, no significant differences were found on the second component of the questionnaire which measured participants' preferences working with

various age groups. However several significant differences were identified between participants' scores on the attitudinal and comfort/confidence component. These are presented in the table below.

Table 10: Questionnaire items demonstrating significant differences in scores between Kitchener-Waterloo and Hamilton residents

Questionnaire Item	Mean Difference	SE of the Difference	95% Confidence Interval	Significance value
2) h) I feel confident managing dementia in older patients.	1.08	0.45	0.15 – 2.01	0.025
2) k) I can differentiate between different types of dementia.	1.30	0.58	0.10 – 2.49	0.035
2) q) I am confident in my ability to prescribe appropriate pharmacotherapy, if necessary, when managing patients with dementia.	1.17	0.46	0.23 – 2.11	0.017
2) r) I am likely to refer patients with mild cognitive impairment to a Memory Clinic.	1.27	0.49	0.26 – 2.29	0.016
2) t) I am likely to refer patients with dementia to a Memory Clinic.	1.27	0.37	0.50 – 2.05	0.003

Note: all differences in score are in the positive direction.

5.3.3. Results from Dementia Education Program Feedback Interviews

Five residents participated in feedback interviews on the dementia education program. Four of these interviews were conducted within two weeks of the participant's completion of his or her memory clinic experience. The fifth interview occurred approximately one month after the memory clinic experience due to the participant's schedule. Following the previously outlined analysis of the interview transcripts, nine common themes were identified.

Sequence and organization of program was conducive to learning

All five participants commented on finding the organization of the program, as well as the sequence of its components, to be conducive to learning about dementia diagnosis and management. One participant expressed this common sentiment in detail:

I like the stepwise approach, I like that it was you know the kind of the textbook type of information that we needed, the practical information that we needed, outlining the goals of the program in the academic half-day, then we went into the paper type cases where we actually got to go through things in a team setting again, make mistakes, get feedback, etc. We got to apply what we previously learned in the academic half-day, and then we got to go into the clinic example having already built that comfort level from book knowledge point of view to I guess simulation point of view and then into that setting.

Other participants confirmed:

I think they all complemented each other so well, that it was, each component was a natural progression into the next and you know one component solidified a previous component very well.

I think unfortunately, after most teaching sessions, you don't remember what you've been taught. This reinforces what you've learned, and you know, you're able to apply it right away as we were. And yes, you remember it down the road. And for an issue as important as this, that should be done.

I think it's well laid out. I hope they continue it in the same structure for years to come.

Memory clinic component identified as important

Four of the five participants expressed that they found the memory clinic component of the dementia education to be valuable. Moreover, several of these participants expressed that they would like to have additional opportunities to apply what they have learned in the memory clinic.

I definitely think that the clinical component of being in the memory clinic for a day helps solidify things more so than just having a lecture. So if there's one thing you'd have to keep, it would probably be the practical component.

I think actually getting into the Memory Clinic and doing a couple assessments was most valuable.

I think it would be useful to have a little more exposure. So like the one experience was great, but even going back two or three times to that clinic would be useful.

I'd like to see us do a couple of memory clinics actually because doing one memory clinic is great, you get to see two patients and their families. But to really solidify things and see a variety of presentations, it would be nice to see have two or three memory clinics.

Interprofessional experience was greatly valued

The dementia education program was designed to include an interdisciplinary aspect which was found to be greatly valued by the participants. One participant provided an example of how she found it beneficial to work with one of the allied health professionals:

She (patient) was having problems with her stomach and she thought it was related to the medication that she was taking. So then the pharmacy student was able to jump in right away and able to give their take. And you know, we know a lot about medications but we don't necessarily know all of the side effects and interactions, so that was a really great experience and I learned from them and I think they also learned from me. And from what I've seen that's how medicine supposed to be practiced and it's often not practiced like that anywhere, it's just too much rush rush in the clinic. *And I just when I left there that day I thought this is what I went into medicine for, to have an experience like that.*

The participants also expressed that the interprofessional aspect was a learning experience which they could take beyond the program:

Working in an interdisciplinary team is key because you're doing that a lot in rotations as well, whether it's paediatrics, internal medicine, geriatrics, that's an approach that's becoming more common.

The use of a multi, interdisciplinary team. I mean that I think you can take that and apply it to other areas of medicine. You know I found it really neat to be in the room with a patient and you know, one of my patients there was some maybe abuse issues and safety concerns and social work popped in and said I can do this and pharmacy said I can do this. I just really like how well it can actually work and I think that team approach can be brought to any area of family medicine.

Dementia assessment and management is an undertrained area

All five of the participants commented that they felt that dementia assessment and management was an area that was not sufficiently covered both in undergraduate medical education and residency training.

It's going to be a huge problem that we face when we get into practice. Apart, I think in general, most medical students and residents don't get enough training in this area... I think really, it's necessary for us to have this much exposure to this important area.

I don't think we get enough exposure to in our undergrad medical education.

I think that that's a topic that's poorly taught in medical school and not a topic that I thought I had a handle on at all.

I think if you didn't have something to address this, it's the kind of thing you could get away with never really understanding and just sort of talking about dementia as a big blob without ever having a good understanding of the components within that, like the different types and so forth.

It touched on it, but just not you know, you just kind of defined what it was, memorized it for the LMCC but it's not something that's really taught that well. It's just one of the few things of the million things that you're taught. I've never really felt like I had a handle on that at all.

Improved knowledge

Each of the participants expressed that they felt that their knowledge regarding dementia assessment and management had improved as a result of the program. Although various areas of improved knowledge were mentioned, the topic areas of pharmacotherapy and driving-related issues were particularly brought up as ones in which the participants felt that they both struggled the most and learned the most.

I don't even think before I knew what MCI was. I mean what dementia was and I knew just basic important things to remember about each type so that I could pass the licensing exam. But I don't think anyone's ever talked to me about the concept of MCI, dementia.

It's just a comfort with the diagnosis, what the implications are of the diagnosis, and then just in terms of practical pharmacotherapy. Knowing what drugs to use

when, how to titrate them, how to switch between drugs. It's been important for all of these.

One of the most practical things I learned about was driving, which I really had no idea about beforehand.

I've never learned anything about assessment of driving and now I definitely feel comfortable that I could do that in practice.

Some sense of what to do about driving and the case of dementia, I think I have a better sense of that from the session but I haven't had to use that particularly. But when and if that time comes, I think I would feel at least more comfortable being able to make that call. Some of the different medications to avoid or not to use in terms of their anti-cholinergic effect, I think that was valuable to get into as well.

I think maybe the most valuable thing actually is the things to avoid. All those medications to look for that could be contributing to a dementia.

Increased confidence with regard to dementia assessment and management

In addition to feeling that the program improved their knowledge, participants also expressed that they felt increased confidence with regard to dementia assessment and management. However, this was coupled with sentiments that despite the program, they did not feel completely comfortable yet and would like further training.

It's better, I feel a bit more confident but to be honest just one day in memory clinic isn't enough to make feel comfortable to see patients and be absolutely confident in their diagnoses...Even though it's an organized approach that we have, it still takes a lot of experience to accurately diagnose these patients and then therefore accurately manage them. So my confidence is much better than before I started when I didn't even really have an organized approach to MCI and dementia.

I think before I avoided it because it was not something I was comfortable with at all. But definitely opened my eyes to the possibility and it's not as scary as what I thought it would be.

I think I'd feel more confidence with it. I mean as an R1 I still don't necessarily feel confident, especially in someone who had a lot of other complicated comorbidities going on all the time. But in sort of a more simple case, I could probably feel pretty confident with my management.

Certainly increased but I think I would still like to do it a little more.

Minor effect on interest in managing older patients

Most of the participants commented that the program had a minor effect on their interest in managing older patients. In some cases this was due to an already high interest in older populations, while in others it was that the program had not affected their interest significantly.

I've always been interested managing the elderly and older patients. I was interested in managing elderly and older patients before this program started. I know don't know if that's changed to a greater extent. But I just think I'll be more comfortable managing them.

I'd say I was always pretty interested in managing older patients. So probably not much.

I guess indirectly it has increased my interest in dealing with an older population because MCI and dementia is so common in that age group... So if you understand that more, I guess indirectly you're more interested in working with them, more comfortable working with them.

In many ways I really like older patients, sometimes they can present bigger challenges and maybe you don't look forward to them as much. But I think in general I like the geriatric component of family medicine. So I think it's probably about the same.

One participant expressed in detail her frustrations working with older patients as a result of the structure of primary care and how this has affected her interest level.

Older patients are really hard to deal with you know and I really enjoy it and they're complex and I like that. But in family medicine you have a ten minute appointment to deal with so many things. So often now when I go into a room sometimes I'm kind of like uhhhh (*sighs*). They stress me out because I just don't have enough time to deal with them. But if I could deal with older patients in a setting like this I think it would be absolutely wonderful for physicians and patients. But right now, when I see an older patient and I know I have ten minutes to deal with all these problems because they're older and of course they have multiple problems, it makes me really stressed actually. And I probably would, if I were to pick patients for a practice right now, I probably would want to pick younger patients because I'm able to handle them, they usually come in with less problems and it makes things run more smoothly. You know I really enjoy working with older people but it's just the way things are set up right now that you know, I only book 10 minutes and these people have multiple problems and I don't feel like I'm doing a good job if I don't deal with them. So I do deal with all their

problems and then your office is running 45 minutes behind which is not really fair to your other patients. So that's a big problem I find with dealing with the older patients and that's my only I guess reason why I kind of avoid it."

Managing patients with dementia in practice appears more manageable

When asked about interest in managing patients with dementia in practice, participants appeared to have experienced more of an effect compared to interest in working with older populations in general. This was largely due to finding the assessment and management of patients with dementia to more manageable following the dementia education program.

I think...knowing that if you kind of take a team approach and use your allied health professionals it's manageable, whereas before it was this ominous all encompassing area, pathophysiology and psychosocial issues, like everything, it just seemed too much to deal with certainly in a 10 minute appointment.

I think it has increased my interest in being involved with MCI and dementia patients because by having a more organized approach and feeling more comfortable diagnosing and managing them, you're more willing to be involved and try managing patients. Less of a sort of unknown black box diagnosing.

I think it might have made me a bit more interested in it. I don't know that it's necessarily going to be something that I will have as my little niche or anything like that. I think simply having more confidence makes you look forward to it more in a future practice.

Well I always knew I was going to have those patients, I always knew I was going to look after those patients. I can do that now with more confidence and I probably can handle more patients that have those types of issues.

Endorsed expansion of program to other McMaster University sites as well as other medical programs

All participants unanimously endorsed the expansion of the dementia education program to McMaster's other medical program sites. Moreover, the participants also felt that the program could serve as an example for medical education programs at other universities.

I'd just like to reinforce that it was a very good program and that I think McMaster should think about incorporating it into their curriculum for all residents. And I mean not just McMaster, I think all family medicine residency programs should think about incorporating this program.

I think it should be a mandatory part of the curriculum.

Truthfully it's their loss that they're not getting it. (referring to the fact that residents at McMaster's other sites do not receive the full program)

I think this is a great way to learn something specific like an approach to dementia and working in a memory clinic. Not everything has to be taught this way, I mean diagnosing hypertension isn't the same multidisciplinary, or doesn't involve the family, doesn't take as long, so those kinds of things you don't need to have a program like this. But with the memory clinic I think it's a difficult problem in primary care to approach and so many family doctors are uncomfortable with it that this allows you to become more comfortable. So sure, all universities I'm sure, could benefit.

I hope that it continues and that we actually are able to have more continuation with the memory clinic...I just hope that it spreads and that this kind of model is adopted by other schools too to teach about dementia and MCI.

I think that, even the second teaching session would be much easier to facilitate without the giant logistics of developing a whole new clinic. Even that I think would be valuable. I think it's a topic that's important and there's going to be a lot of geriatrics in all of our practices going forward.

Yeah, not say it's the only way to learn dementia. There's other ways to do it. But I think it's a very well put together and informative way to learn about dementia. And you know if other people were looking for suggestions on how to teach their dementia education component, this I think would be a good way to do it.

5.4. Discussion

In the previous section, the results were presented separately for the feedback questionnaire, questionnaire score comparisons, and the feedback interviews. However, the results are discussed collectively so as to better inform conclusions based on data obtained through both quantitative and qualitative methodologies.

The feedback questionnaire, as previously described, assessed participants' satisfaction with the AHD component of the program. One of the questionnaire items assessed whether the participants' felt that the session had increased their knowledge on dementia assessment and management. The mean score for family medicine residents on this item was 6.5 (on a 7-point

scale) with a range of 6-7. This high score is consistent with findings on the developed questionnaire, on which total knowledge scores by participants showed statistically significant improvement over baseline scores and compared to non-participants. The feedback questionnaire also asked participants to comment on suggestions for improving the session in the future. As stated, a common theme among participants was that they would have like to have had the opportunity to apply what they had learned to cases. The already planned case-based workshop addressed these suggestions, however this may also explain why the theme regarding satisfaction with the sequence and organization of the program emerged in the education program feedback interviews. The program's organization fit with the participants' expectations and desired learning format, which may have aided in eliciting the positive response from participants to the program. Somewhat conversely, pharmacy students participating in the AHD indicated that they did not find the session as relevant compared to the other participating groups (though scores were still fairly high for this component). This is particularly interesting because pharmacotherapy was presented as a key topic in the session. It is likely that different aspects of pharmacotherapy are relevant to pharmacy students compared to the family medicine residents. While the session focused on starting/stopping medications, dosages, and switching medications, pharmacy students might find information on medication mechanisms and side-effects more relevant.

Results from quantitative data obtained through the developed questionnaire and those from the feedback interviews appear to be convergent. Though the sample size was a significant limiting factor in pre-test post-test analyses, the results are consistent with qualitative findings which can indicate some evidence of an effect of the program. For example, the difference in total score on the knowledge component of the questionnaire greatly improved from baseline to

long-term follow-up. Though these analyses were insufficiently powered, comments by participants in the follow-up interviews indicate that the participants' strongly felt that knowledge was improved. However, it should be noted that in the case of the interviews, improvement in knowledge was self-reported and subjective, whereas the questionnaire was an objective measure. Therefore, this interpretation should be taken with caution.

Comparisons between baseline and long-term follow-up scores resulted in more items from the attitudinal and comfort/confidence components demonstrating statistical significance than comparisons between the Kitchener-Waterloo residents and Hamilton residents. Items that were notable in the baseline and long-term follow-up comparison that did not appear in the other comparison are items related to confidence with communicating diagnoses of dementia, managing dementia and delirium, and confidence in approach to managing multiple comorbidities in elderly patients. Data provided in the feedback interviews are consistent with these items. However, it should be once again noted that these analyses were underpowered.

As has been demonstrated, the evaluation of this program is significantly limited by the small sample size. Baseline and long-term follow-up comparisons are interpreted with this in mind, though the results of these comparisons may serve as a basis for supporting further evaluation of the program, which shows promise. Given this limitation, alternative analyses were conducted with sufficient power and several results were found to be significant.

In addition to total knowledge score, which demonstrated a large and significant difference between groups, scores on three knowledge-based items were also significantly higher in the Kitchener-Waterloo group. One of these items was related to driving while another to medications. Interestingly, participants in the feedback interviews specifically mentioned driving-related issues and pharmacotherapy as two key areas where they felt their knowledge had

improved. Related to the comfort and confidence component of the questionnaire, participants demonstrated statistically significant improvements in their reported confidence managing dementia and in prescribing appropriate pharmacotherapy. These findings are once again consistent with what was expressed by participants in the feedback interviews. A significant difference also existed with regard to referrals to memory clinics, with participants from Kitchener-Waterloo being more likely to do so. This indicates that it is likely that exposure to a memory clinic through the program has made the participants more aware of memory clinics, how they can be useful, and how they can benefit from such clinics. Moreover, the memory clinic in particular was brought up by the Kitchener-Waterloo participants in the feedback interviews as a component of the program which they found to be valuable and in which they desired additional experiences.

Much in line with the shift to interprofessional care teams in health care, the interprofessional aspect of the program was also found to be valuable for the residents. When asked what they could take away from the program, most often participants responded by describing the interprofessional experience, which they found to be applicable to other areas of medicine outside of the realm of dementia and geriatrics. One participant provided a detailed example, finishing with a very strong statement that these are the types of experiences she went into medicine for. This quotation which was presented earlier demonstrates the extent to which this was a largely positive experience for participants.

The feedback interviews also confirmed findings from the literature review, which indicated that dementia is often an undertrained area for undergraduate medical students and residents. A quotation by one of the residents expressing that she just memorized what she had to in order to pass the licensing exam is very telling. It further emphasizes the need for a

program such as the dementia education program, as well as underscores the need for additional attention to dementia and geriatric medical education.

Interestingly, the program appeared to have little effect on participants' interests in working with the elderly and individuals with dementia. This was demonstrated both by the questionnaire, on which no items related to interest demonstrated significant differences, as well as by comments made by participants in the feedback interview. In two instances this was a result of participants indicating that they had already had a high level of interest in the feedback interview. One participant expressed in great detail the frustration she experiences with the structure of primary care and how this in turn affects her interest in managing elderly patients. This is once again in line with what was identified in the literature (Pimlott et al., 2009). Moreover, comments by this participant as well as others in the feedback interview provide some indication of the stigma that still exists surrounding elderly patients and patients with dementia, in spite of seeing first-hand how manageable it can be. The topic of stigma related to elderly patients among medical students and residents was also brought up in the physician focus group which is presented in the following chapter. Several suggestions were generated to combat stigma, including exposure early in training to healthy older adults. These topics will be discussed in greater detail in Chapter 6.

Finally, expansion of the program beyond the Kitchener-Waterloo satellite site should be considered. Though baseline and long-term follow-up comparisons are underpowered to detect differences, the results from the alternate comparisons conducted are promising. Recruitment of participants for baseline assessment was hampered by the short time frame prior to commencement of the program. Beginning this phase of the study farther in advance of the program or developing a study involving a control group can build on the promising results of

this research and provide sufficiently powered support for its expansion. Qualitative data do indicate strong endorsement of expansion of the program by its participants and the dissemination of the program model. While the logistics of developing a memory clinic in locations where one does not exist are burdensome and not feasible in many cases as one participant pointed out, the first two components of the program were still deemed to be very useful on their own by participants. These components are relatively simple to implement and at the minimum should be considered in cases where memory clinics are not available.

Chapter 6 Primary Care Dementia Exchange Focus Group

6.1. Introduction

The final component of this research consisted of a focus group conducted with family physicians for the purposes of informing improvements and recommendations on dementia education. Physician involvement and input in curriculum development and medical education has been frequently documented in the literature as one of the key aspects of planning processes. This has been demonstrated in a variety of medical specialties. For example, at the University of Utah and Boston College, physician focus groups were conducted to improve the curriculum with regard to underserved paediatric populations (Hobson et al., 2005). Similarly, family physicians in the United States of America developed an oral health curriculum for family medicine residents and undergraduate medical students to address “an area of documented physician knowledge deficit” (Douglass et al., 2007). Physicians have also been consulted with regard to improving recruitment of medical students and residents in medical specialties. For instance, in the United States of America, a working group of physicians was developed to make recommendations on promoting cultural diversity in emergency medicine programs and recruiting a more diverse group of students to this specialty (Heron, Lovell, Wang, Bowman, 2009). Therefore, it is fitting that family physicians be consulted in the development of recommendations for dementia education and training at the undergraduate and post-graduate levels. As previously stated, this was accomplished by way of a focus group conducted at the Primary Care Dementia Exchange (PCDE).

The PCDE was a partnership project between The Ontario College of Family Physicians, Alzheimer Knowledge Exchange, and the Canadian Dementia Knowledge Translation Network. The purpose of the PCDE was to provide a platform for the discussion of dementia care

practices, innovations, resources, procedures, policies, etc. that would be included in the development of a “promising models of care” summary document. It assisted in connecting people, knowledge and resources in primary care that would assist with the transfer of knowledge to practice, ultimately improving patient care. Fifteen family practices in Ontario were identified as leaders in dementia care or promising models of care. Two representatives from each practice were invited to participate in the PCDE. The PCDE consisted of one face-to-face meeting in Toronto and two teleconferences. The family physician focus group took place over the lunch hour of the face-to-face meeting. The focus group is discussed in detail in the following section.

6.2. Methods

Figure 3 below depicts the procedure for this component of the research project.

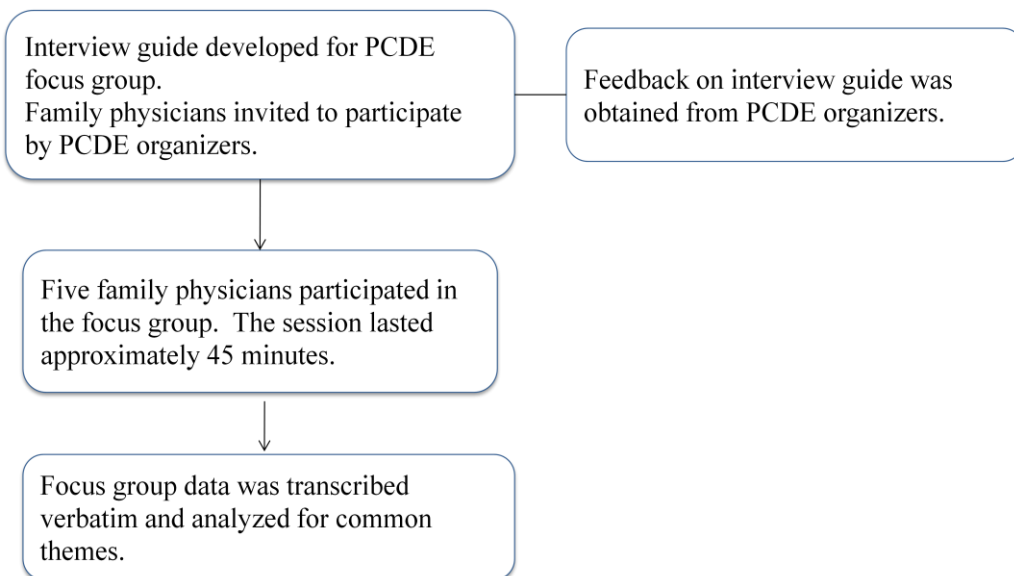


Figure 3: Flowchart depicting PCDE focus group procedure.

All five family physicians participating in the PCDE were invited and agreed to participate in the focus group. Due to inclement weather as well as geographic location, four of

the five family physicians participated via teleconference. Consent was obtained from all participants and witnessed by the PCDE organizers. The focus group was conducted by the student investigator in a meeting room at the Ontario College of Family Physicians. Though it took place over the lunch hour of a relatively firmly scheduled day, the pace of the discussions was comfortable and not rushed.

An interview guide was developed prior to the focus group which addressed several topics related to the training the physicians had received in residency, their satisfaction with regard to this training, as well as what they would have preferred in their training. This interview guide can be found in Appendix 17. As the focus group progressed, it emerged that the participants had a significant amount of comments regarding changes to make to current dementia training, rather than commenting on what they would have liked to have seen in their own education. This thread of discussion was followed, as it was more relevant to the overall purpose of this study. Furthermore, some of the participants had undergone their training a significant time ago and consequently their satisfaction and recommendations for training received at that time were not necessarily applicable to current dementia and geriatrics training. The resulting modified questions which were asked are presented in Appendix 18.

The focus group lasted approximately 45 minutes and was audio-recorded. The recording was transcribed verbatim. An executive summary was developed outlining participants' responses to the focus group questions and distributed to participants via email in order to perform a member check (see Appendix 19 for executive summary). The member check gave participants the opportunity to clarify any points which they felt may have been misinterpreted or to add to what was said in the focus group. No clarifications or replies were received. Following this, the transcripts were analyzed in the same manner as feedback

interviews in the dementia education program evaluation and consistent with the methodology outlined by Creswell (2003). The transcripts were first coded into emerging categories. The coded data were organized into themes. An attempt was made to interconnect themes where possible in order to create an overall and inclusive description of the data. The data were interpreted with the aim of identifying challenges in dementia training, what is currently working well, and recommendations for improving dementia training for family medicine residents and undergraduate medical students in the future. The results and conclusions will be discussed further in the following sections.

6.3. Results

In the group of family physicians, there were three female family physicians and two male family physicians. All of the family physicians had completed their medical training in Ontario, with the exception of one who had completed his training in British Columbia. Years in practice among the family physicians ranged from 5 to 29. It should be noted however that the individual with 29 years of practice is an outlier, as the rest of the family physicians had completed their training within the past 5 to 20 years. The locations of the physicians' practices included urban as well as rural and remote areas of Ontario.

Based on analysis of the five family physicians' comments during the PCDE focus group, six common themes emerged.

Stigma associated with dementia and older adults

Stigma and stereotyping against older adults was an underlying common thread in many of the comments made by the physicians, but was also specifically discussed by the family physicians. When asked what the biggest challenge in learning about dementia assessment and management was, one physician immediately and firmly replied "Stigma." Other physicians

echoed the effect that discrimination against older adults can have in the training of family physicians.

When I went through, basically what we learned was how not to like old people. Essentially that was an acute care environment where there was such a discrimination and a stigma against them that it reinforced our negative attitudes. So I just, the setting, the experience, it speaks also the need that we really do need to identify that if residents are going to learn, that they have an experience across all sectors that are positive experiences instead of reinforcing negative attitudes.

One physician expressed a way that her geriatric team is attempting to combat the stereotypes associated with dementia and the elderly:

We're encouraging them that if they've made a referral to our team in the hospital or from their office that they come out with us and do those referrals so they can see that person and where they are living. And I think that's the key because otherwise, all the medical students see these very complex people who there isn't a lot you can do for and it's not a valued person in our hospital sector. All we hear about is the pressures on ALC and people who are senior who shouldn't be in the hospital and are holding up a bed. And that's just not a way to educate people that this is a population that really deserves a lot of care.

Another physician expressed how it is not only the students or residents who struggle with this area:

It can be an overwhelming complex situation for a resident, particularly early on. And it could be overwhelming for the staff physician as well who may not know the kinds of things that are available or the approaches to take to help somebody with dementia.

This comment relates to the following theme of the role that mentorship plays in the lives of students and residents as well as the need to develop positive mentors.

The development and role of mentors

All participants described positive mentors that they had in their undergraduate MD or residency training and the influential role that this played in developing their interests in

geriatrics and dementia. One participant also provided an example of a recent situation where she had felt she had provided positive mentorship.

I had a fourth year medical student with me yesterday and it was our house call day. She had just come off an internal medicine rotation in Ottawa. And she said she could not believe the patients we saw at home and how much fun it was and how much care one could provide. And she said to us after she is strongly considering family medicine after spending just one day with us. And I was blown away by this individual who had really kind of hummed and hawed about what she was going to do. You make it really fun and enjoyable and show that it can be done.

Others confirmed:

I think a lot of it is the mentorship and who you're in contact with. So if in your training you come across people who enjoy working with seniors, then you're going to have a much more positive experience. And that certainly is what I found.

I was actually accepted into the ophthalmology program and was going to become an ophthalmologist and then found that to my shock, found it incredibly boring and was looking for something else to do with my life. And I set up an elective with a community based family doctor here in Toronto who did community care, primarily older people and nursing home care. And that opened my eyes to the wonderful complex world of taking care of older people. So it was the relationship, and then mentorship from Dr. X who was a geriatrician and again, I would just emphasize the role of mentors and role models.

Participants also stressed the importance of developing and equipping mentors with the skills necessary to facilitate such positive experiences for students. One family physician commented:

If you can provide the teacher with some specific tools, so that they can feel more comfortable so that then on the list that things that come out of the morning, instead of teaching about hypertension, instead of teaching about diabetes, they may be willing to focus on dementia, where the resident could learn more because the teacher has something to offer, and it could simply be tools, it could be a template or a resource.

Importance of early exposure to positive experiences

All participants overwhelmingly expressed the significant role that early exposure to positive experiences with the elderly and individuals with dementia can play:

One of the key identifiers of individuals who are likely to proceed into residencies where care of the elderly is a high proportion of care was the early linkage with old but healthy people. So going out into the community, linking up in first year with some senior, and longitudinally being able to follow them or watch them as time progress through their medical school.

You can develop the most extensive curriculum but if they're not exposed and exposed early enough to physicians who have really got it and who really love doing the work they are doing is really hard to just teach it.

I think it's critical for residents to have a chance to follow their own patients with dementia so that they have a relationship with a patient and a family that is followed over the 2 year period. And have a chance to see how interventions can really make a difference. Because it's a disease where interventions are sometimes very slow to take effect. And you need to see things not work and regroup and try again and something works afterwards.

One physician provided a detailed descriptive example of how the same patient can be viewed in very different manners and the importance of exposing students and residents to the positive views that they may not see as often:

I did some clinical rotations with community-based physicians who were doing family practice. And a lot of the electives, because I was really struggling whether I wanted to do geriatric medicine or care of the elderly family practice, so I tried to expose myself to the different practices and specialities. But what I found, one of the most striking things, and we're working on it up here, is I went out with a colleague of mine, and she has a couple of just wonderful seniors that she was providing primary care to and did home visits. And I did home visits with her. And really just a wealth of knowledge in these people who are in their 90s and have lived these lives and dealing with multiple complex disease and instabilities. And I remember I was on the medical inpatient unit and one of these dear folks came in through the front door of the tertiary care hospital and she now was in the hospital gown and didn't have her hair done, didn't have her make-up, didn't have her nails done and it was dramatic. And I wish I had photos to show how different that person was and how different the structures around her treated her, once she was labelled you know "LOL SOB" – little old lady short of breath which I would cringe whenever anybody would say that. So what we're trying to do up here with our geriatric team is when we have the medical students, we're getting them out in the community so they can see these folks.

Provide exposure to broader experiences with older adults

Family physicians emphasized the need to provide students and residents with exposure to older adults outside of the typical acute care settings. Long-term care and home visits in the community were particularly discussed as avenues for providing this exposure.

We have a looming crisis in long-term care with a large majority of physicians nearing retirement. And I think again, long-term care is kind of a black box to a lot of residents and medical students. And I think once they get in they realize it's not a scary place and I think again, if you can have an exposure to residents and to physicians who are providing quality care in long term care, we really have a potential workforce out there of folks who may be willing to do this.

The other thing is 80% of folks being admitted to long term care now have a dementia so it's a clinical environment where the residents certainly can see a lot of dementia and a lot of the stages of dementia. So certainly is an area that probably, or not probably, it is, underutilized as a training site.

I think we also can look broader, it doesn't have to be everything associated with a training program, it's that experience in a community. And we have third year medical students right now who are coming out and doing home visits with us. And invariably what they say is wow, that's a lot of fun, that's interesting, that's great.

Provide interprofessional experiences

Interprofessional experiences were identified by the physicians as experiences which they greatly enjoyed throughout their own training, as well as experiences which should be emphasized in medical education.

I think the other piece which we haven't quite talked about is the interprofessional practice. I think there's a lot of satisfaction from that and I think that's something that certainly I found during my training that I enjoyed about those rotations that I was doing geriatrics. Those team rounds were really productive experiences and you didn't get that on other rotations. You could look at the benefits of that interprofessional practice piece which is so integral to our practice.

What has really empowered me has to do with interdisciplinary access... I don't think we have focused on this what the potential learning environment for the students is and that might be a direction for us to grow in. So exposure to the interdisciplinary teams and taking a second look at where the education opportunities are.

Development of a competency-based curriculum and evaluation

The importance of developing a curriculum specific to geriatrics and dementia in both undergraduate and residency education was brought up and discussed by the family physicians. This was expressed as being central to improving medical education in this area.

Having some sort of core clerkship rotation specifically related to geriatrics in undergraduate education. So that it was clearly labelled as this is care of the elderly right now folks, pay attention. Not just an old person who happens to have delirium while you're doing your surgical rotation.”

One of the family physicians provided an example of how this may be accomplished:

Designing the curriculum, so that it has specifically competency-based curricula. So that, as part of those competencies are the introduction of the tools that will make it easier to manage people who have dementia. And breaking it up into quarterly bits, so that the first 6 months of residency you might learn how to do a MoCA and in the 2nd 6 months you might learn how to do a FAST or a functional ability staging, and then after that might be trying to give someone a diagnosis of dementia. And then finally managing some of the medications. So you can divide it up progressively from the simplest to the most complex tasks I think can be helpful.

Finally, it was emphasized that evaluation of dementia knowledge and skills can be important in ensuring residents are adequately equipped in this subject area.

I would add dementia has to be part of any evaluation of residents, whether it's OSCE-based or any other formal exit. That's sort of one of the major drivers for residents, it's the evaluation that they have to have. So if the carrot is the exposure to people who are loving their work and challenge and all of that, the stick is that you have to know it for an evaluation that is coming anyway.

6.4. Discussion

The participants in the PCDE focus group provided recommendations, which in several cases were supported by detailed examples or strong statements. For example, when discussing discrimination against the elderly, one participant expressed that essentially what she learned was “how not to like old people.” Others confirmed that stigma and stereotyping continues to

exist. Such statements indicate that this is an area requiring attention and one which must be addressed if we wish to see change in students and residents interests in managing older adults or individuals with dementia. Stigma has also been previously documented as a significant obstacle negatively affecting the practice of family physicians (Cahill et al., 2006). Therefore, it is important to intervene at the point of training before stigma begins to affect physician behaviour in practice.

The family physicians recognized the importance of mentors, which can be one way in which to combat the stereotypes associated with older adults. Mentors in dementia and geriatric education can provide students and residents with the positive experiences also recommended by the family physicians. However, it should be noted that based on previously described reporting in the literature, this is a topic area that most family physicians are uncomfortable with. Therefore, efforts would also have to be made to develop mentors through CME courses or other avenues of training. This is particularly important as mentorship has been demonstrated to improve residents' interest and engagement in areas of medical specialty (Vaporciyan, Reed, Erikson, Dill, Carpenter, Guleserian, et al., 2009; Suliburk, Kao, Kozar, & Mercer, 2008).

Family physicians also endorsed the use of training sites outside of traditional primary care, such as home and long-term care visits. While it is a unique idea supported by personal examples, this option is once again dependent on the availability of the relatively few family physicians that make home visits and long-term care visits. Therefore, this is another issue that would need to be addressed first in order to help facilitate the recommendations. It should be noted that participants were often unanimous regarding suggestions and often endorsed each other's comments.

Several of the themes that emerged and comments which were expressed in the PCDE focus group relate directly to the dementia education program under evaluation. The dementia education program curriculum was developed based on competencies, as recommended independently in the PCDE focus group. The program was based on the McMaster University Department of Family Medicine Postgraduate Residency Care of the Elderly Objectives (McMaster University, 2008) and encouraged skill development by the residents on dementia-related topics. In particular, the program aimed to develop the residents' competencies and skills with regard: to assessment and differentiation of types of dementia as well as between the dementia, delirium, depression continuum; pharmacotherapy, including the types of medications, dosages, medications to avoid, and changing medication treatment plans; and driving-related issues such as how to assess fitness to drive and reporting requirements. The thorough development of this competency-based dementia curriculum likely played a significant role in the success of program participants, as outlined in the previous chapter.

The dementia education program design was also consistent with other recommendations made by the PCDE focus group participants. The program provided an interprofessional experience, which the program participants confirmed as valuable. Furthermore, the program participants had exposure to a mentor who was comfortable with the topic area, who welcomed and appreciated the residents' interests and participation. These factors facilitated the positive experiences that residents reported. Though these experiences were not early in training in all cases, the experiences still made the residents aware that this was a manageable area of practice with the proper knowledge and skills as well as the support of allied health professionals.

While the focus of the PCDE discussions surrounded dementia, much of these recommendations can be applied to geriatric education at the post-graduate (residency) and

undergraduate levels as well. Competency-based curricula can be developed not only related to dementia, but more broadly with regard to geriatrics. As was suggested by a participant, one option is a core clerkship rotation can be included at the undergraduate level which can include an evaluation at its completion. At the post-graduate level, academic half-days or case-based workshops similar to that of the dementia education program may be developed for a variety of geriatrics topics. Such developments are partly dependent on the availability of instructors and mentors. While the dementia education program provided mentorship at the post-graduate level specific to dementia, it is important that such mentorship be available at the undergraduate level as well in order to provide early exposure as recommended by the focus group participants. Early positive experiences may also serve to diminish some of the stigma associated with geriatrics which was cited as a challenge to learning. While it is possible that experiences may be negative as well, if these are paired with a knowledgeable mentor, it may be possible to demonstrate to the student that even complex situations can be manageable. Other recommendations made in the PCDE focus group would also apply to geriatric education in general, including providing students or residents with experiences outside of clinic or hospital settings such as making home or long-term care visits. Such visits can provide the opportunity to learn about a variety of geriatric topics aside from dementia, as it is unlikely that patients would have a single morbidity. Finally, interprofessional experiences, which were also strongly recommended, are also relevant to the broader realm of geriatric education. The management of older adults with multiple co-morbidities often involves multiple health care professionals and makes it possible to provide students and residents with exposure to team-based approaches. Thus, though the PCDE focus group was conducted specifically with regard to dementia, several

of the recommendations are applicable to geriatric education at undergraduate and post-graduate levels.

This final component of the thesis research included several strengths and limitations in its design and conduct. With regard to strengths, the participants in the PCDE group were knowledgeable with regard to the subject area. They had been identified as leaders in promising models of dementia care and dementia education. All had experience as mentors and instructors. Furthermore, the number of participants was of an adequate size for focus groups and the participants represented a wide geographical area in Ontario, with practices varying in size and urban/rural location. As a result, a variety of perspectives may have been expressed.

While participants were identified knowledgeable leaders in the field, this may also be interpreted as a limitation. Several of the participants had expressed that they had always had an interest in geriatrics and sought out learning opportunities. Thus it is possible that there are additional challenges which individuals without this interest may have faced and identified with regard to dementia and geriatric education. Also, the comments made by participants may be specific to Ontario, as participants were trained in Ontario and currently practice in Ontario. However, geriatric education is a topic area that is generally under-recognized and thus comments and recommendations from the focus group may be beneficial and of interest to other provinces, though not necessarily directly applicable. Finally, in some instances, participants were required to recall information from their training several years prior. Therefore, it is possible that comments related to past training may be subject to recall bias. However, as previously stated, discussions of past training and experiences was relatively minimal in the focus group discussions and many of the resulting recommendations are based on the participants' current experiences and observations.

Chapter 7 Discussion and Conclusions

7.1. Discussion of Overall Results

The main purpose of this study was to evaluate a dementia education program for family medicine residents with respect to its effects on knowledge, attitudes, and confidence with regard to dementia assessment and management. As such, this research began with the development of a questionnaire to assess these aspects of the program. The resulting questionnaire was found to be reliable. Most items were found to be clear in interpretation by participants with the exception of the items collecting information on participants' previous training in dementia and geriatrics at the start of the questionnaire, as well as the few items discussed which demonstrated low agreement. The difficulty encountered by participants in identifying previous training in dementia and geriatrics is likely related to a comment made by one of the PCDE focus group participants, in which he suggested that the geriatric curriculum be explicitly defined and "not just an old person who happens to have delirium while you're doing your surgical rotation." Pending such changes to geriatric curricula, this questionnaire item can be clarified further perhaps by providing examples of what constitutes training in geriatrics as well as training in dementia. With regard to the questionnaire items that demonstrated low agreement, it is recommended that these be removed or potentially modified as previously described to ensure improved clarity. Modification would require re-testing of these items to ensure that in fact the changes made are those intended.

The evaluation of the dementia education program constituted a significant part of this research and the results can be interpreted as positive overall. The program was found to increase participants' knowledge, particularly on the topics of pharmacotherapy, identifying and differentiating the types of dementia, as well as driving-related issues. This is particularly

important as the topics of pharmacotherapy and driving-related issues have been identified in the literature as areas in which family physicians express considerable difficulty (Boustani, et al., 2007; Pimlott, Siegel, Persaud, Slaughter, Cohen, Hollingworth, et al., 2006). As stated previously, these specific topics are consistent with those identified by participants in the feedback interviews. Furthermore, these are the topic areas specifically identified as a focus of the program by the instructor. Therefore, the program demonstrated positive results in desired areas and provides an indication of success with regard to improving family medicine residents' knowledge. Similarly, participants' confidence was also improved as a result of the program in these areas. Once again, this was consistent between related questionnaire items and feedback interviews. It should be noted, however, that though participants expressed increased confidence, their statements were qualified by adding that they did not yet feel entirely confident. Thus, this provides an indication that there is still significant room for improvement as well as for additional learning opportunities. Based on comments in the feedback interviews, it appears that this can best be achieved through providing program participants with additional opportunities to apply what they had learned in the clinic setting so as to gain more experience and comfort.

The evaluation of the dementia education program also assessed participants' attitudes. Interestingly, the program appeared to have minimal effect on participants' interests in working with older populations as well as individuals with dementia. This was reflective of comments made in feedback interviews, whereby participants expressed that though they felt that these were patients they felt more comfortable with and would not necessarily avoid in the future, it did not particularly increase their interests. This finding relates to suggestions regarding the importance of early exposure made by family physicians in the PCDE focus group. The

importance of early and positive exposure in geriatric medical training has also been documented in the literature (Barry, 1994). The positive exposure was provided at the start of many participants' residency programs, however it is likely that by this point most residents' interests are already well-formed. It has been documented that interests and decisions with regard to career direction are determined by the end of the third year of undergraduate medical training (Kowal, 1994). Therefore, perhaps the incorporation of such experiences even earlier at the undergraduate MD level would demonstrate larger effects on interest in medical students. If this were the case, it would be anticipated that at the residency level more participants would express that their interest increased minimally because of an already significant interest level, rather than a consistently lower level of interest.

The organization of the program was well-received by its participants. It was a competency-based curriculum, in line with the recommendation for education programs in the PCDE focus group. The support for the development and implementation of competency-based curricula in medical education is also increasing. In the United States of America, accrediting agencies such as the National Board of Medical Examiners, the Accreditation Council for Graduate Medical Education, American Board of Medical Specialties, and the Federation of State Medical Boards, are endorsing competency-based curricula in the training of medical students and residents, with the aim of decreasing costs while improving quality of care delivered to patients (Grande, 2009).

The participants had overwhelmingly positive comments both in the feedback questionnaire following the AHD as well as in the feedback interviews following completion of the memory clinic experience. The memory clinic experience was greatly valued by participants and invariably, the participants expressed interest in gaining further experience in the memory

clinic. The PCDE focus group participants discussed the need to provide medical students and residents with broader experiences with older adults beyond traditional acute care settings. Though the focus group participants only cited long-term care and home visits in particular, the memory clinic can also be viewed as one such setting as it certainly provides students and residents with experiences unique from those in traditional primary care. It should be considered in addition to the other settings proposed by the focus group participants.

An additional common thread between the program evaluation and the PCDE focus group was the importance of interprofessional experiences. Program participants found this to be a beneficial aspect of the program, as many expressed that of all of the things that they learned through the program, working in an interprofessional team was something that they could carry with them into other medical areas. Interprofessional approaches go beyond the realm of dementia and geriatrics. Therefore, in this respect, the effects of the program can be interpreted as broader than anticipated. The PCDE focus group participants also stressed the importance of interprofessional approaches as a necessity in dementia and geriatric curricula. Given the positive feedback from residents on this aspect as well as recommendations by leaders in dementia care, this is an aspect of the program which should be maintained. Moreover, interprofessional experiences should be considered and incorporated when developing dementia and geriatric curricula beyond this program. This recommendation is consistent with the literature which has documented the importance of interprofessional experiences in medical education and the high levels of trainee satisfaction (Lindblom, Scheja, Torell, Astrand, & Fellander-Tsai, 2007; Hylin, Nyholm, Mattiasson, & Ponzer, 2007).

Mentorship may have been one of the important factors in the success of the dementia education program. The instructor's comfort with the topic area as well as the guidance she

provided to residents as they participated in the memory clinic likely demonstrated to them that this is a manageable topic area. The PCDE focus group participants cited the importance of mentorship in dementia and geriatric curricula. Given the previously described literature on the topic of family physicians' knowledge and comfort (Robinson et al., 2001; Tinsley et al. 1998; van Hout et al. 2007), mentors in dementia geriatric care in family medicine (or even geriatric medicine) may be limited. Therefore, some attention should be devoted to the development of mentors through continuing medical education courses or programs such as the CFFM FHT's memory clinic training program for family health teams.

Perhaps one of the most significant findings of this research is the unanimous endorsement of the program by its participants. The comments expressed by the residents were overwhelmingly strong in favour of the expansion of this program to other family medicine residents at McMaster University and beyond. Given the logistical difficulties of developing memory clinics, participants acknowledged the benefits of providing even only the AHD and case-based workshop components to other family medicine residents. The results of quantitative analyses indicate positive results that warrant consideration of this endorsement. While the suggestion of adoption of this model by other medical schools may be slightly premature given the limited available data, promising results were demonstrated. Resulting recommendations will be presented further in the conclusions section of this chapter, following discussion of the strengths and limitations of this research.

7.2. Strengths and Limitations

This research had several strengths as well as limitations. Beginning with strengths, one of the major strengths was the employed methodology to triangulate the quantitative results with results from the qualitative component. Due to the limited sample size of this research, it was

difficult to make definitive conclusions. However, qualitative analyses indicated results consistent with quantitative findings. This allowed for conclusions to be made with greater confidence than would have been possible without the qualitative aspect of this study. Given the resulting consistency of data following triangulation, the conclusions can be used for preliminary recommendations.

An additional strength in the design of this research was the input obtained from both trainees (family medicine residents) and physicians with experience in dementia and geriatric education. While trainees provided information regarding what they found to be valuable to their education as well as what they would like to see improved, the physicians were able to draw on their expertise to make recommendations. Obtaining both of these perspectives was beneficial in that it resulted in the identification of common recommendations. This is useful for future program development as it can guide development through focusing on areas found to be relevant and important by trainees and instructors, thereby increasing the chances of its successful implementation and adoption.

Thirdly, this research and the subsequent dissemination of its results will serve to contribute to an area of the literature that is currently lacking attention. As previously stated, to the best of my knowledge, there were no previous studies which reported on dementia education programs for family medicine residents or residents in general. Most reported studies had a more broad focus on geriatrics and it was difficult to assess how much of an effect was seen specifically related to dementia. Furthermore, of the studies which are reported, even fewer have consisted of a mixed methods design. This research has contributed to an under-researched area of the literature and did so using a design which allowed for determination of effects through both quantitative assessments, as well as the collection and analysis of rich, qualitative data. As

stated prior, this approach helped to inform resulting conclusions better and consequently made it possible to contribute to a current gap in the literature.

Finally, an additional strength of this research was the time between participants' completion of the program and the completion of the long-term follow-up questionnaire. It was initially thought in the proposal for this research that a lag between completion of the program and the questionnaire would be a limitation as it may minimize the measured effect. While minimization of the effect may be true, this lag in time is in fact much more representative of how the residents use their knowledge in the real world. As one resident pointed out, he does not often learn about a topic one day and see a patient with that exact condition the following day. It may be months in some cases and he is required to recall what he learned earlier. The same concept applies to dementia. Therefore, the results which were obtained are likely in fact much more representative of what the residents truly retained from the program and reflective of the attitudes they might hold in future practice, rather than immediately after the program.

There were also several limitations of this research and its design. The first which should be considered is the possibility of a testing effect. The residents at the Kitchener-Waterloo site may have felt more compelled than the Hamilton site residents to complete the questionnaire to the best of their abilities or to look up answers, given that they had a relationship with the program instructor. However, every effort was made to remind residents that the instructor would have no knowledge of their individual results and they were encouraged to complete the questionnaire as honestly as possible. Furthermore, the differences between the groups were found to be so largely significant, particularly with regard to total knowledge score, that even in the presence of a testing effect, it is likely that the results were still significant in favour of the Kitchener-Waterloo site residents.

The most significant limitation of this research was the sample size. The sample size was not sufficient to conduct the initially planned for pre-test, interim, and post-test analyses. Alternatively, comparisons were conducted between the Hamilton site and Kitchener-Waterloo site. Since these analyses were not planned for, it was not possible to obtain data on the Hamilton site participants prior to the start of the program in Kitchener-Waterloo. However, comparisons were conducted to ensure that the Hamilton site participants were similar to the Kitchener-Waterloo participants at baseline. Sample size was also of concern when assessing the reliability of the questionnaire. However, analyses were modified as previously described to ensure sufficient power.

The sample size limitation is closely tied to and perhaps a consequence of the limitation of the timing of the program. The assessment of the questionnaire occurred as the residents were in their final week to two weeks of their residency program. It was a very busy time for residents which made recruitment increasingly difficult. Similarly, the collection of baseline data for the program occurred within the first few days of the start of the residency program for most of the participants. These transitional times put a significant strain on residents' schedules and made them less likely to have time to participate in a research study. The administration of the questionnaire for long-term follow-up in the Kitchener-Waterloo site group was conducted using a hard-copy version of the questionnaire as a session which the residents were required to attend. The completion rate was quite high at approximately 75%. Therefore, though it was initially thought that making the questionnaire available online would be more convenient for the residents, in actuality the participation rate may have been better using a hard copy. It has been cited that response rates for online surveys can be even lower than mail-in surveys (Solomon, 2001). Moreover, it has been demonstrated in the literature that hard copy surveys can allow the

researcher to space out questionnaire items so that they do not appear overwhelming to respondents (Beebe, Stoner, Anderson, & Williams, 2007). In the online questionnaire set-up, all of the comfort and attitudinal questions, a total of 34 items, were included on the same web page. It was anticipated that only having to complete a single screen of questions would appear less burdensome, however this literature indicates that this may not have been the case. While it may not always be possible to coordinate the session schedule with research to allow for hard copy administration, should this research be continued in the future, it is recommended that assessments are completed in this manner so as to increase the participation rate.

7.3. Conclusions

This research resulted in several conclusions. With regard to the first component of the research, a questionnaire was developed which can be employed for reliable assessment of family medicine residents' knowledge, attitudes, and confidence related to the diagnosis and management of patients with dementia. As stated, a few items demonstrated poor reliability and these should either be removed in future use of the questionnaire, or modified. Modification would necessitate evaluation of these items to ensure that appropriate changes were made. Additionally, should modifications be made to the dementia education program in the future, such as topic areas covered, it may be necessary to modify the questionnaire accordingly (e.g. adding additional knowledge questions). As it currently exists, the questionnaire is generic enough for use in assessment of dementia knowledge, attitudes, and confidence beyond the evaluated dementia education program.

The evaluation of the dementia education program demonstrated improvement in terms of residents' knowledge and confidence, though minimal effects were seen with regard to attitudes toward patients with dementia and older adults. Future improvement and modifications

to the program may focus on developing this aspect of the program. The feedback obtained from participating residents, both through the feedback survey and feedback interviews, was incredibly positive. It demonstrated that the program was greatly enjoyed by its participants, as they expressed their support for its continuation as well as expansion.

The results of the final component of this research, the PCDE focus group, were consistent with many of the findings in the previous component. Recommendations made by the family physicians for improving dementia education were consistent with aspects of the dementia education program which were valued by its participants, such as interprofessional experiences, experiences outside of traditional primary care, and the importance of mentorship. The PCDE focus group discussions also generated recommendations that are applicable more broadly to geriatrics and thus the results of these discussions are applicable beyond solely the evaluated dementia education program. Therefore these results may be of interest more widely to geriatric educators and medical programs.

As stated, the results of the quantitative and qualitative components of this research project were convergent. It should also be noted that several of the findings are consistent with previous findings in the literature. The specific topic areas of pharmacotherapy and driving-related issues were identified as areas in which knowledge had improved. In the literature, these areas have been documented as troublesome for family physicians (Boustani et al., 2007; Pimlott et al., 2006). This increases the importance of focusing on these areas in the training of future family physicians. Additionally, the feedback interviews and focus group identified interprofessional experiences, mentorship, and early exposure as important aspects of dementia education. These aspects are congruent with those found to be important in geriatric education,

as well as more broadly in medical education (Lindblom et al., 2007; Hylin et al., 2007; Vaporciyan et al., 2009; Suliburk et al., 2008; Barry, 1994).

Overall, the dementia education program demonstrated benefit with regard to the knowledge and confidence of family medicine residents. It was well-received and highly recommended by the program participants. Despite the limitations, the several strengths of this study make it possible to conclude that the results of the evaluation are positive and warrant continuation as well as further evaluation of the program.

Given these positive yet somewhat preliminary results, this research also builds the case for further avenues of research. As it is likely that the program will not be expanded as of yet in its subsequent administration, this provides the opportunity to conduct more rigorous comparisons between a control group at the Hamilton site and an intervention group at the Kitchener-Waterloo site. As the questionnaire needed for such an evaluation is already developed, greater attention could be paid to recruitment to ensure adequate sample sizes for the evaluation. Moreover, hard-copy administrations could be scheduled in advance to increase the participation rate. Additional components could be included in the evaluation, including an assessment of the views of other allied health professionals involved in the program, given the program's focus on an interprofessional approach. This would provide added insight into the effects of the program on other health professional trainees and may also be of interest to the administrators of their programs.

In describing the design of this research, it was stated that Kirkpatrick's framework for evaluation of training programs was kept in mind. This evaluation focused on level one and level two. Further research could be done in the long-term which would evaluate the effects of the program on level 3, focusing on residents' behaviour and application of learned material in

practice. This could be coupled with evaluation on level 4 which would assess whether patient outcomes were affected in any way as a result of the residents' training in the program.

Finally, as previously stated, participants highly endorsed the expansion of this program as well as its dissemination as a model for other schools. However, the logistics of developing a memory clinic likely make it unfeasible for most family medicine residency programs to implement all components of this dementia education program. Therefore, further work can be done to examine how the program could be modified, while maintaining as many of its beneficial components and those found valuable by residents, so as to make it possible for other family medicine residency programs to replicate. Evaluation of the resulting modifications may be necessary to ensure that the program is still demonstrating its positive effects. It may be most feasible to pilot-test the resulting modified program at the McMaster University Hamilton site, where a memory clinic currently does not exist. Following the results of this evaluation, there may be increased support for advocating this model more broadly. Thus, though this evaluation demonstrated positive results and benefits to its participants, further work is encouraged. By furthering research in this area, it is hoped that the quality and effectiveness of dementia education for family medicine residents and health professionals, as well as ultimately patient care and outcomes, can be improved.

References

- Alzheimer Society of Canada. (2010). *Rising tide: The impact of dementia on Canadian society*. Toronto: Alzheimer Society of Canada.
- Banazak, D. A., Wills, C., & Collins, C. (1998). Late-life depression in primary care: Where do we go from here? *Journal of the American Osteopathic Association*, 98(9), 489-497.
- Bandura, A. (1977). Self-efficacy : Toward a unifying theory of behavior change. *Psychological Review*, 84, 191-215.
- Barry, P. P. (1994). Geriatric clinical training in medical schools. *American Journal of Medicine*, 97(4A), 8S-9S.
- Beebe, T. J., Stoner, S. M., Anderson, K. J., & Williams, A. R. (2007). Selected questionnaire size and color combinations were significantly related to mailed survey response rates. *Journal of Clinical Epidemiology*, 60(11), 1184-1189.
- Biernat, K., Simpson, D., Duthie, E., Jr, Bragg, D., & London, R. (2003). Primary care residents self assessment skills in dementia. *Advances in Health Sciences Education*, 8(2), 105-110.
- Borson, S., Scanlan, J. M., Watanabe, J., Tu, S. P., & Lessig, M. (2006). Improving identification of cognitive impairment in primary care. *International Journal of Geriatric Psychiatry*, 21(4), 349-355.

- Boustani, M., Sachs, G., & Callahan, C. M. (2007). Can primary care meet the biopsychosocial needs of older adults with dementia? *Journal of General Internal Medicine*, 22(11), 1625-1627.
- Byszewski, A. M., Graham, I. D., Amos, S., Man-Son-Hing, M., Dalziel, W. B., Marshall, S., et al. (2003). A continuing medical education initiative for Canadian primary care physicians: The driving and dementia toolkit: A pre- and post-evaluation of knowledge, confidence gained, and satisfaction. *Journal of the American Geriatrics Society*, 51(10), 1484-1489.
- Cahill, S., Clark, M., Walsh, C., O'Connell, H., & Lawlor, B. (2006). Dementia in primary care: The first survey of Irish general practitioners. *International Journal of Geriatric Psychiatry*, 21(4), 319-324.
- Callahan, C. M., Boustani, M. A., Unverzagt, F. W., Austrom, M. G., Damush, T. M., Perkins, A. J., et al. (2006). Effectiveness of collaborative care for older adults with alzheimer disease in primary care: A randomized controlled trial. *Journal of the American Medical Association*, 295(18), 2148-2157.
- Cape, G., Hannah, A., & Sellman, D. (2006). A longitudinal evaluation of medical student knowledge, skills and attitudes to alcohol and drugs. *Addiction*, 101(6), 841-849.
- Celenza, A., Jelinek, G. A., Jacobs, I., Kruk, C., Graydon, R., & Murray, L. (2001). Implementation and evaluation of an undergraduate emergency medicine curriculum. *Emergency Medicine*, 13(1), 98-103.

- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks: Sage Publications.
- Dakum, K., Ramyil, V. M., Agbo, S., Ogwuche, E., Makama, B. S., & Kidmas, A. T. (2007). Digital rectal examination for prostate cancer: Attitude and experience of final year medical students. *Nigerian Journal of Clinical Practice*, *10*(1), 5-9.
- Douglass, A. B., Gonsalves, W., Maier, R., Silk, H., Stevens, N., Tysinger, J., et al. (2007). Smiles for life: A national oral health curriculum for family medicine. A model for curriculum development by STFM groups. *Family Medicine*, *39*(2), 88-90.
- Feldman, H. H., Jacova, C., Robillard, A., Garcia, A., Chow, T., Borrie, M., et al. (2008). Diagnosis and treatment of dementia: 2. diagnosis. *Canadian Medical Association Journal*, *178*(7), 825-836.
- Folstein, M.F., Folstein, S.E., & McHugh, P.R. (1975). "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research* *12*(3): 189–98.
- Godderis, R., Adair, C. E., & Brager, N. (2009). Applying new techniques to an old ally: A qualitative validation study of the Edinburgh postnatal depression scale. *Women & Birth: Journal of the Australian College of Midwives*, *22*(1), 17-23.
- Goldstein, M. Z., MaLossi, R. A., Kim, K., & Young, B. (1999). A course in dementia for third-year medical students. *Academic Psychiatry*, *23*, 142-150.

- Grande, J. P. (2009). Training of physicians for the twenty-first century: Role of the basic sciences. *Medical Teacher, 31*(9), 802-806.
- Heron, S. L., Lovell, E. O., Wang, E., & Bowman, S. H. (2009). Promoting diversity in emergency medicine: Summary recommendations from the 2008 council of emergency medicine residency directors (CORD) academic assembly diversity workgroup. *Academic Emergency Medicine, 16*(5), 450-453.
- Hobson, W. L., Avant-Mier, R., Cochella, S., Van Hala, S., Stanford, J., Alder, S. C., et al. (2005). Caring for the underserved: Using patient and physician focus groups to inform curriculum development. *Ambulatory Pediatrics, 5*(2), 90-95.
- Hux, M. J., O'Brien, B. J., Iskedjian, M., Goeree, R., Gagnon, M., & Gauthier, S. (1998). Relation between severity of alzheimer's disease and costs of caring. *Canadian Medical Association Journal, 159*(5), 457-465.
- Hylin, U., Nyholm, H., Mattiasson, A. C., & Ponzer, S. (2007). Interprofessional training in clinical practice on a training ward for healthcare students: A two-year follow-up. *Journal of Interprofessional Care, 21*(3), 277-288.
- Kaduszkiewicz, H., Bachmann, C., & van den Bussche, H. (2008). Telling "the truth" in dementia--do attitude and approach of general practitioners and specialists differ? *Patient Education & Counseling, 70*(2), 220-226.
- Karani, R., Callahan, E. H., & Thomas, D. C. (2002). An unfolding case with a linked OSCE: A curriculum in inpatient geriatric medicine. *Academic Medicine, 77*(9), 938.

- Kirkpatrick, D. L. (1994). *Evaluating training programs: The four levels*. San Francisco: Berrett-Koehler.
- Kowal, J. (1994). "Centers of excellence" and geriatric faculty development. *American Journal of Medicine*, 97(4A), 30S-33S.
- Kraemer, H., & Theimann, S. (1987). *How many subjects?: Statistical power analysis in research*. Newbury Park: Sage Publications.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159-174.
- Lee, L. (2009). *CFFM FHT memory clinic - introduction*. Unpublished manuscript.
- Levine, S. A., Chao, S. H., Brett, B., Jackson, A. H., Burrows, A. B., Goldman, L. N., et al. (2008). Chief resident immersion training in the care of older adults: An innovative interspecialty education and leadership intervention. *Journal of the American Geriatrics Society*, 56(6), 1140-1145.
- Lindblom, P., Scheja, M., Torell, E., Astrand, P., & Fellander-Tsai, L. (2007). Learning orthopaedics: Assessing medical students' experiences of interprofessional training in an orthopaedic clinical education ward. *Journal of Interprofessional Care*, 21(4), 413-423.
- McMaster University - Department of Family Medicine. (2008). *Post-graduate residency program care of the elderly*. Unpublished manuscript.

- Milne, A. J., Woolford, H. H., Mason, J., & Hatzidimitriadou, E. (2000). Early diagnosis of dementia by GPs: An exploratory study of attitudes. *Aging and Mental Health*, 4(4), 292-300.
- Mittelman, M.S., Ferris, S.H., Shulman, E., Steinberg, G., & Levin, B. (1996). A family intervention to delay nursing home placement of patients with Alzheimer disease. A randomized control trial. *Journal of the American Medical Association*, 276, 1725-31.
- Nasreddine, Z. S., Phillips, N. A., Bedirian, V., Charbonneau, S., Whitehead, V., Collin, I., et al. (2005). The Montreal cognitive assessment, MoCA: A brief screening tool for mild cognitive impairment. *Journal of the American Geriatrics Society*, 53, 695-699.
- Olafsdottir, M., Foldevi, M., & Marcusson, J. (2001). Dementia in primary care: Why the low detection rate? *Scandinavian Journal of Primary Health Care*, 19(3), 194-198.
- Pimlott, N. J., Persaud, M., Drummond, N., Cohen, C. A., Silvius, J. L., Seigel, K., et al. (2009). Family physicians and dementia in Canada: Part 2. understanding the challenges of dementia care. *Canadian Family Physician*, 55(5), 508-9.e1-7.
- Pimlott, N. J., Siegel, K., Persaud, M., Slaughter, S., Cohen, C., Hollingworth, G., et al. (2006). Management of dementia by family physicians in academic settings. *Canadian Family Physician*, 52(9), 1108-1109.
- Roberts, C., Lawson, M., Newble, D., Self, A., & Chan, P. (2005). The introduction of large class problem-based learning into an undergraduate medical curriculum: An evaluation. *Medical Teacher*, 27(6), 527-533.

- Robinson, B. E., Barry, P. P., Renick, N., Bergen, M. R., & Stratos, G. A. (2001). Physician confidence and interest in learning more about common geriatric topics: A needs assessment. *Journal of the American Geriatrics Society*, 49(7), 963-967.
- Rosal, M. C., Carbone, E. T., & Goins, K. V. (2003). Use of cognitive interviewing to adapt measurement instruments for low-literate hispanics. *Diabetes Educator*, 29(6), 1006-1017.
- Suliburk, J. W., Kao, L. S., Kozar, R. A., & Mercer, D. W. (2008). Training future surgical scientists: Realities and recommendations. *Annals of Surgery*, 247(5), 741-749.
- Sathishkumar, S., Thomas, N., Tharion, E., Neelakantan, N., & Vyas, R. (2007). Attitude of medical students towards early clinical exposure in learning endocrine physiology. *BMC Medical Education*, 7, 30.
- Shaw, M. J., Talley, N. J., Beebe, T. J., Rockwood, T., Carlsson, R., Adlis, S., et al. (2001). Initial validation of a diagnostic questionnaire for gastroesophageal reflux disease. *American Journal of Gastroenterology*, 96(1), 52-57.
- Solomon, D.J. (2001). Conducting web-based surveys. *Practical Assessment, Research and Evaluation*; 7: 19.
- Streiner, D. L. (1993). A checklist for evaluating the usefulness of rating scales. *Canadian Journal of Psychiatry*, 38, 140.
- Struck, B. D., Bernard, M. A., & Teasdale, T. A. (2005). Effect of a mandatory geriatric medicine clerkship on third-year students. *Journal of the American Geriatrics Society*, 53(11), 2007-2011.

- Thomas, D. C., Leipzig, R. M., Smith, L. G., Dunn, K., Sullivan, G., & Callahan, E. (2003). Improving geriatrics training in internal medicine residency programs: Best practices and sustainable solutions. *Annals of Internal Medicine*, *139*(7), 628-634.
- Tinsley, J. A., Shadid, G. E., Li, H., Offord, K. P., & Agerter, D. C. (1998). A survey of family physicians and psychiatrists: Psychotropic prescribing practices and educational needs. *General Hospital Psychiatry*, *20*(6), 360-367.
- van Hout, H. P., Vernooij-Dassen, M. J., & Stalman, W. A. (2007). Diagnosing dementia with confidence by GPs. *Family Practice*, *24*(6), 616-621.
- van Hout, H. P., Vernooij-Dassen, M. J., Bakker, K., Blom, M., & Grol, R. (2000). General practitioners on dementia: Tasks, practices and obstacles. *Patient Education & Counseling*, *39*(2-3), 219-225.
- van Zuilen, M. H., Mintzer, M. J., Milanez, M. N., Kaiser, R. M., Rodriguez, O., Paniagua, M. A., et al. (2008). A competency-based medical student curriculum targeting key geriatric syndromes. *Gerontology & Geriatrics Education*, *28*(3), 29-45.
- Vaporciyan, A. A., Reed, C. E., Erikson, C., Dill, M. J., Carpenter, A. J., Guleserian, K. J., et al. (2009). Factors affecting interest in cardiothoracic surgery: Survey of north american general surgery residents. *Annals of Thoracic Surgery*, *87*(5), 1351-1359.
- Willis, G. B. (2005). *Cognitive interviewing: A tool for improving questionnaire design*. Thousand Oaks: Sage Publications.

Wood, T. J., Marks, M., & Jabbour, M. (2005). The development and testing of a participant questionnaire to assess continuing medical education presentations. *Medical Education, 39*, 568-572.

Yaffe, M. J., Orzeck, P., & Barylak, L. (2008). Family physicians' perspectives on care of dementia patients and family caregivers. *Canadian Family Physician, 54*(7), 1008-1015.



Department of Family Medicine – McMaster University Postgraduate Residency Program Care of the Elderly

GOALS

Our primary goal in the residency program is to assist the learners in our program as they achieve their full potential in becoming fully competent family physicians.

The learning in our program is always guided by the four principles of Family Medicine as stated by the College of Family Physicians of Canada.

- 1 The family physician is an effective clinician
- 2 The patient-physician relationship is central to the role of the family physician
- 3 The family physician is a resource to a defined patient population
- 4 Family medicine is a community based discipline

OBJECTIVES

The objectives for care of the elderly will be described as they relate to the four principles of Family Medicine. These objectives will be met on the Geriatric rotation, the inpatient internal medicine experience, the outpatient Family Medicine experience and the Long Term Care experience. See also Goals and Objectives for Care of Adults and Palliative Care, which are addressed in separate sections.

1. The Family Physician is an Effective Clinician

The resident will:

- 1.1 Develop an understanding of the aging process and the implications of the biological changes associated with aging, the concepts of successful aging and the importance of a comprehensive approach to care.

Specific Knowledge and Skills

- 1.1.1 Have knowledge of the physiologic changes associated with aging.
- 1.1.2 Understand the relationship between laboratory values and aging and correctly interpret data in this context.
- 1.1.3 Understand the developmental challenges faced by the older person (eg. dealing with loss, coping with chronic disease).
- 1.1.4 Focus on key determinants of health and their interrelationships in the elderly (eg. biological, psychological, socioeconomic).

- 1.2 Recognize the central role and the function that plays in the health status of the elderly.

Specific Knowledge and Skills

- 1.2.1 Use a functional approach to history taking and treatment planning.
- 1.2.2 Understand that illness has functional impact in elderly patients.
- 1.2.3 Recognize that diagnoses often correlate poorly with function.
- 1.2.4 Recognize that functional impairment may be a first sign of illness.
- 1.2.5 Understand the concepts of Basic Activities of Daily Living (BADL's) and Instrumental Activities of Daily Living (IADL's).
- 1.2.6 Be capable of utilizing functional assessment tools such as the Katz ADL Index and be capable of incorporating this information into a thorough geriatric assessment.
- 1.2.7 Appropriately seek out interprofessional team contributions and incorporate these into a thorough functional assessment.
- 1.2.8 Understand the role, scope and limitations of rehabilitation and behavioural therapy.

Appendix 1

- 1.3 Clearly understand the key issues in drug therapy for the elderly and demonstrate this through appropriate use of medications in this population. **Specific Knowledge and Skills**
- 1.3.1 Develop an understanding of the pharmacodynamic and pharmacokinetic properties of commonly used medications in the elderly (eg; antidepressants, beta blockers, oral hypoglycemics, NSAID's, diuretics).
 - 1.3.2 Use a safe approach to drug dosing in the elderly, including required adjustments in renal impairment.
 - 1.3.3 Recognize the importance of drug monitoring, as well as strategies for enhancing treatment adherence.
 - 1.3.4 Recognize polypharmacy in the elderly and learn to effectively monitor for hazardous drugdrug interactions as well as adverse drug reactions.
 - 1.3.5 Have the ability to safely stop commonly used drugs and monitor for signs of withdrawal (eg; SSRI's, benzodiazepines).
 - 1.3.6 Choose drugs within a class that offer the best balance between therapeutic benefit and adverse effects
 - 1.3.7 Use nonpharmacological alternatives to drug therapy in the elderly wherever appropriate.
- 1.4 Acquire and demonstrate competence in incorporating clinical skills particularly relevant to the care of the elderly patient. **Specific Knowledge and Skills**
- Assessment of Required Level of Care**
- 1.4.1 Understand the placement criteria for different levels of institutional care.
 - 1.4.2 Be aware of the local access procedure for institutional care and the average wait times for placement.
- Cognitive Assessment**
- 1.4.3 Recognize signs of declining cognitive function in elderly individuals, such as poor hygiene, memory complaints from patients or their family members and difficulty with IADL's such as banking and meal preparation.
 - 1.4.2 Utilize the following cognitive assessment tools in appropriate situations and recognize their limitations in assessing cognition:
 - 1.4.2.1 The minicog brief assessment tool
 - 1.4.2.2 The Folstein MiniMental Status Examination (MMSE)
 - 1.4.2.3 The Montreal Cognitive Assessment Tool (MOCA)
- Competency Assessment**
- 1.4.3 Know the fundamental aspects of a competency assessment (eg. medical competence, financial competence, housing competence).
 - 1.4.4 Be aware of the laws pertaining to competence (eg. POA, Public Guardian and Trusteeship, the Mental Health Act).
 - 1.4.5 Identify impaired and intact decision making abilities as some may be retained in a given individual.
- History Taking**
- 1.4.5 Assess functional status of the elderly patient, including BADL's, IADL's and complete review of systems.
 - 1.4.6 Encourage elderly patients to bring their medications to the office, including any over the counter drug use.
 - 1.4.7 Ask about social supports (eg. spouse, family, friends, group activities).
 - 1.4.8 Obtain corroborative history from relatives and friends, as appropriate, during the assessment of the elderly patient.
- Physical Examination**
- 1.4.9 Accurately assess the following physical findings:
 - 1.4.9.1 Postural blood pressure readings.
 - 1.4.9.2 Abnormalities of heart rate and rhythm.
 - 1.4.9.3 Cardiac murmurs
 - 1.4.9.4 Gait, posture and balance
 - 1.4.9.5 Examination of the feet for signs of skin breakdown, pulses, edema, nail care and hygiene.
 - 1.4.9.6 Examination of the ears for cerumen and decreased hearing ability
 - 1.4.9.7 Assessment for fecal impaction.
 - 1.4.9.8 Assessments of visual acuity
- Interviewing Techniques**

Appendix 1

- 1.4.10 Recognize communication barriers (eg. hearing, vision, language, culture, cognition).
- 1.4.11 Modify their speaking voice in a manner appropriate to each clinical encounter (eg. volume, speed, pitch).
- 1.4.12 Consider environmental modification as necessary during interviews with elderly patients (eg. background noise, hearing aids, lighting).
- 1.4.13 Explore the expectations of the elderly patient during an officebased interview so that goals may be set and future visits can be planned accordingly.

Nutritional Assessment

- 1.4.14 Recognize the importance of weight measurement in cases of suspected malnutrition, failure to thrive and monitoring treatment in congestive heart failure.
 - 1.4.15 Identify clinical indicators of malnutrition, such as weight loss, anemia, hypoalbuminemia, malabsorption states and functional status.
 - 1.4.16 Identify risk factors for malnutrition, such as drugs, disease, depression, dental problems, economic crisis and social isolation, so that preventative strategies can be initiated early in the care of the elderly patient.
- 1.5 Demonstrate a knowledgeable approach to the assessment and management of common medical conditions in the geriatric population. Those listed below are more specific to the geriatric population. Please also see Goals and Objectives for Care of Adults.

Content

- 1.5.1 Use an evidence-based approach to the assessment and management of falls.
- 1.5.2 Develop an effective approach to the diagnosis of urinary incontinence including an understanding of how to identify different types of incontinence from each other (stress, urge, mixed) and the unique treatment approach required for each.
- 1.5.3 Learn to recognize and effectively treat depression in the elderly by utilizing screening tools such as the Geriatric Depression Scale.
- 1.5.4 Learn to effectively diagnose and treat elderly patients with different types of dementia, including Alzheimer's Disease, Lewy Body Dementia, FrontoTemporal Dementia and Vascular Dementia.
- 1.5.5 Assess the driving safety of individuals with dementia and report any concerns to the appropriate governing body (eg. Ministry of Transportation).
- 1.5.6 Be able to recognize altered levels of consciousness in elderly individuals and generate a differential diagnosis and management plan for suspected delirium.

2. The patient/physician relationship is central to the role of the family physician.

The resident will:

- 2.1 Develop and demonstrate appropriate attitudes towards the elderly and the provision of their care.

Specific Knowledge and Skills

- 2.1.1 Become aware of their attitudes towards the elderly and aging.
 - 2.1.2 Search for and identify different values among elderly patients.
 - 2.1.3 Develop a positive outlook toward potential for improvements in quality of life and function in the elderly.
 - 2.1.4 Have sensitivity towards quality of life issues and an understanding that quality of life is often of more importance than quantity in some elderly patients.
 - 2.1.5 Respect other health professionals and family members as integral parts of the care team for elderly patients.
- 2.2 Be familiar with the role and impact of the family or caregiver on the care of the elderly and be able to effectively recognize and manage problems that caregivers might encounter.

Specific Knowledge and Skills

- 2.2.1 Recognize the importance of corroborative information in providing effective care for elderly patients. (see 1.4.8)
- 2.2.2 Develop an understanding of family dynamics (roles, conflict, role reversal) and their impact on the care provided to elderly patients.
- 2.2.3 Learn to recognize signs of caregiver stress and fully assess caregiver needs.
- 2.2.4 Manage and participate in family care conferences to see the value of information sharing, assessment of family supports and the opportunity to provide education and comfort to families in need.
- 2.2.5 Be able to identify signs of elder abuse and neglect and understand the importance of reporting these findings to the appropriate authorities.

3. The family physician is a resource to a defined practice population.

The resident will:

3.1 Demonstrate an understanding of the key issues in health maintenance of the elder and be able to apply these in clinical practice.

Specific Knowledge and Skills

Health Promotion

3.1.1 Understand the central role of the family physician in educating regarding health promotion and disease prevention.

3.1.2 Effectively counsel elderly patients about lifestyle factors that promote healthy living, such as smoking cessation, moderation of alcohol consumption, eating a balanced diet, aerobic and resistance exercise and optimizing socialization opportunities.

3.1.3 Be knowledgeable in the evidencebased principles of prevention and early detection as detailed by the Periodic Health Exam Task Forces in Canada and the U.S.

3.1.4 Adapt the periodic health exam recommendations to suit a given patients personal health goals, age, sex, comorbid medical illness and family history.

Anticipatory Guidance

3.1.5 Discuss the issue of wills, advanced directives, powers of attorney, health insurance, life insurance and retirement issues.

3.1.6 Be aware of community resources that will help elderly patients plan for their own future in a way that allows maintenance of independence, autonomy and personal dignity.

4. Family Medicine is a community-based discipline.

The resident will:

4.1 Understand and develop an effective framework for collaborative care of the elderly.

Specific Knowledge and Skills

4.1.1 Have knowledge of community resources and how to best access them for elderly patients.

4.1.2 Understand team function, dynamics and their role within the health care team.

4.1.3 Work effectively with communitybased disciplines in the care of elderly patients

4.1.4 Model principles of effective office organization to support a collaborative system of care. This will include clinical notekeeping which facilitates successful communication amongst team members regarding the ongoing care of complex patients.

4.2 Demonstrate a rational approach to management within the longterm care (LTC) home.

Specific Knowledge and Skills

4.2.1 Understand and develop goals of care planning for patients living in LTC.

4.2.2 Have knowledge of Ministry of Health standards for provision of care in nursing homes (eg. Annual physicals, family care conferences, quarterly medication reviews, restraint policies).

4.2.3 Recognize the role of the family physician as part of an interprofessional team in LTC.

4.3 Provide care for the elderly in a variety of settings, including home, longterm care homes, ER, hospital, office and outpatient clinics.

Appendix 2

Dementia Education Program Questionnaire (Initial version)

Screen 1

This questionnaire includes knowledge-based questions pertaining to topics covered in the dementia education program, as well as questions relating to your attitudes and confidence in assessing and managing patients with dementia. Dr. L. Lee will not have knowledge of your participation and will not have access to de-identified data until you are finished your residency at the CFFM and involvement with the dementia training program. Consequently, please answer honestly and do not use any aids in generating your responses. You may decline to answer any questions that you do not wish to answer and you can withdraw your participation at any time by not submitting your responses. Should you have any questions, please contact Jeanette Prorok by email (jcprorok@uwaterloo.ca) or telephone (226-868-7067).

If you wish to receive a copy of the results of the study, please enter your email. You will receive the results by June 1st, 2010. Note: your email will not be used to identify you with your responses.

Screen 2

Please enter the first three letters of your mother's maiden name, followed by the last two digits of your home phone number and the two digits of the month you were born. (Ex. Str6708). This will be used solely for the purpose of linking your first questionnaire with your second and third, allowing for pre-test/post-test analyses. This information cannot and will not be used to identify you.

Screen 3

The following data is being collected solely for obtaining demographic data on the participant group. This information cannot and will not be used to identify you.

Please indicate your age.

Please indicate your gender.

Please indicate the university at which you obtained your medical degree.

Please indicate if you have participated in courses or training in geriatrics in your undergraduate medical curriculum. If so, please indicate the duration of this training.

Please indicate if you have participated in courses or training on the diagnosis and management of dementia in your undergraduate medical curriculum. If so, please indicate the duration of this training.

Please indicate if you have had experiences with individuals with dementia in your personal life.

Appendix 2

Screen 4

The following questions pertain to your knowledge of dementia and its diagnosis and management. Dr. L. Lee will not have knowledge of your participation and will not have access to your de-identified responses.

1. Strategies that can be used to enhance medication adherence in cognitively impaired patients include (check all that apply):

- a) MedsChek program
- b) weekly dosettes
- c) once daily dosing
- d) self-reporting
- e) involvement of caregiver

2. The following medications should be avoided if possible in cognitively impaired patients (check all that apply):

- a) lorazepam
- b) ASA
- c) dimenhydrinate
- d) amitriptyline
- e) ditropan

3. The best way of differentiating mild cognitive impairment from dementia is by (check one):

- a) CT scan
- b) MRI
- c) functional abilities assessment
- d) MMSE
- e) assessment of ability to understand proverbs

4. Treatment with cholinesterase inhibitors is indicated in (check all that apply):

- a) Alzheimer's dementia
- b) Mixed dementia
- c) Lewy Body dementia
- d) Mild cognitive impairment
- e) primary prevention in patients at high risk for dementia

5. Visual hallucinations are characteristic of (check one):

- a) Alzheimer's dementia
- b) Vascular dementia
- c) Frontotemporal dementia

Appendix 2

- d) Lewy Body dementia
- e) Mild cognitive impairment

6. In a patient with cognitive impairment, the following should be considerations in assessing fitness to drive (check all that apply):

- a) visuospatial function
- b) executive function
- c) Trails B test
- d) degree of cognitive impairment
- e) ability to pass Ministry of Transport drivers assessment required every 2 years after age 80

7. Which of the following are indications for a computed tomography cranial scan in the investigation of dementia? (check all that apply)

- a) Age under 60 years
- b) History of carcinoma from sites that metastasize to the brain
- c) Dementia present for at least 2 years
- d) Recent head trauma

8. Dementia occurs (check one):

- a) Only in people over 60 years of age
- b) In 2-5% of people over age 65
- c) More often in men than in women
- d) In 80% of people over age 85

9. Which of the following would not be considered to reflect a deficit in executive function? (check one)

- a) Interpreting the proverb, "People who live in glass houses should not throw stones" to mean, "People don't want their windows broken."
- b) Failing to recognize objects or people
- c) Difficulty planning how to carry out a sequence of actions
- d) Trouble stopping oneself from engaging in a behaviour

10. A 75-year-old man presents with gradual onset of cognitive impairment, which is fluctuating, together with falls, visual hallucinations, and Parkinsonism. What is the most likely diagnosis? (check one)

- a) Normal pressure hydrocephalus
- b) Alzheimers disease
- c) Lewy body dementia
- d) Vascular dementia

Appendix 2

11. Which of the following does not characterize Frontotemporal Dementia? (check one)

- a) Typically onsets at 45 – 65 years but can onset up to age 85
- b) Family history in 20-40 % of cases
- c) Early onset of executive dysfunction
- d) Early onset of significant short term memory loss

12. A 78-year-old nursing home resident has mild dementia associated with Alzheimer's disease. She is disoriented to time and place but knows family members and regular nurse aides by name. This patient's capacity to make decisions regarding her health care is best determined by (check one):

- a) Mental status test
- b) Her ability to understand treatment options
- c) Probate court decision
- d) Psychiatric examination
- e) Don't know

Screen 5

The following questions pertain to your beliefs and comfort with the diagnosis and management of dementia, as well as working with older adults in primary care.

1. Please rank your preference for working with each of the following groups categorized by age range on the following 7-point scale:

1 = not at all, 4 = neutral, 7 = would really enjoy

	Not at all			Neutral			Would really enjoy
Infants (0-2)	1	2	3	4	5	6	7
Children (3-12)	1	2	3	4	5	6	7
Adolescents (13-17)	1	2	3	4	5	6	7
Young adults (18-25)	1	2	3	4	5	6	7
Adults (25-45)	1	2	3	4	5	6	7
Middle aged (45-65)	1	2	3	4	5	6	7

Appendix 2

Old (65-75) 1 2 3 4 5 6 7

Old-old (75+) 1 2 3 4 5 6 7

2. Please indicate your answer using the following 7-point scale:

1 = strongly disagree, 4 = neutral, 7 = strongly agree

a) I expect that more than 50% of my future practice will involve older patients. 1 2 3 4 5 6 7

b) I feel comfortable working with older patients. 1 2 3 4 5 6 7

c) I feel comfortable speaking with older patients and their families. 1 2 3 4 5 6 7

d) I feel confident in my approach to older patients with multiple complex comorbid conditions. 1 2 3 4 5 6 7

e) If I had the choice, I would rather see younger patients than elderly ones. 1 2 3 4 5 6 7

f) I feel confident managing dementia in older patients. 1 2 3 4 5 6 7

g) I feel confident managing delirium in older patients. 1 2 3 4 5 6 7

h) I feel confident managing depression in older patients. 1 2 3 4 5 6 7

i) I can differentiate between different types of dementia. 1 2 3 4 5 6 7

j) I can administer a MMSE. 1 2 3 4 5 6 7

k) I can interpret a MMSE. 1 2 3 4 5 6 7

l) I can administer a MOCA. 1 2 3 4 5 6 7

m) I can interpret a MOCA. 1 2 3 4 5 6 7

n) In suspicion of cognitive impairment, I would regularly use cognitive tests. 1 2 3 4 5 6 7

Appendix 2

- o) I am confident in my ability to prescribe appropriate pharmacotherapy, if necessary, when managing patients with dementia. 1 2 3 4 5 6 7
- p) I am likely to refer patients with mild cognitive impairment to a Memory Clinic. 1 2 3 4 5 6 7
- q) I am likely to refer patients with mild cognitive impairment to community services. 1 2 3 4 5 6 7
- r) I am likely to refer patients with dementia to a Memory Clinic. 1 2 3 4 5 6 7
- s) I am likely to refer patients with dementia to community services. 1 2 3 4 5 6 7
- t) Much can be done to improve the quality of life of individuals with dementia. 1 2 3 4 5 6 7
- u) I find liaising with allied health care professionals onerous. 1 2 3 4 5 6 7
- v) I am confident in my ability to assess the driving risk of patients with cognitive loss. 1 2 3 4 5 6 7
- w) I know what to do when I suspect there may be significant risk in driving. 1 2 3 4 5 6 7
- x) I am confident in my ability to tell patients they are unsafe to drive. 1 2 3 4 5 6 7

Screen 7

Thank you

for participating in our questionnaire for the evaluation of the dementia training program for family medicine residents! Your participation is extremely valuable.

If you indicated on the survey that you would like a copy of the results, they will be sent to you by email at the address you provided by June 1st, 2010.

If you have any general comments or questions related to this study, please contact Jeanette Prorok, Dept. of Health Studies and Gerontology, by email at jcprorok@uwaterloo.ca or by telephone at 226-868-7067.

Appendix 2

We would like to assure you that this study has been reviewed by, and received ethics clearance through, the Office of Research Ethics. If you have any concerns regarding your participation in this study, please contact Dr. Susan Sykes, Director, Office of Research Ethics at ssykes@uwaterloo.ca or 519-888-4567 Ext. 36005.

Subject line: WANTED: RESIDENTS TO PARTICIPATE IN SHORT QUESTIONNAIRE OR INTERVIEW - EARN \$20 CHAPTERS GIFT CERTIFICATES!

WANTED: RESIDENTS TO PARTICIPATE IN SHORT QUESTIONNAIRE OR INTERVIEW - EARN \$20 CHAPTERS GIFT CERTIFICATES!

- Complete 2 on-line questionnaires (10-15 minutes each) and/or participate in a 25 minute interview between June 19th – June 26th
- Purpose is to validate a questionnaire to be used in an educational program on dementia for family medicine residents
- This is part of a thesis study for my Masters degree in Health Studies and Gerontology at University of Waterloo. My thesis supervisor is Dr. Paul Stolee and this research is being conducted in collaboration with Dr. Linda Lee of the Centre for Family Medicine
- If you are interested, please contact me by email (jcprorok@uwaterloo.ca) or by telephone (226-868-7067) for more details

Thank you in advance for your consideration of this request!

Jeanette Prorok
MSc. Student, Health Sciences and Gerontology Program
University of Waterloo

University of Waterloo

Date

Dear (***Recipient***):

I am a Master's student in the Department of Health Studies and Gerontology at the University of Waterloo conducting my thesis research under the supervision of Dr. Paul Stolee. I will be conducting an evaluation of your upcoming dementia training program (academic half-day, workshop, and rotation in the Centre for Family Medicine Family Health Team (CFFM FHT) Memory Clinic). The objectives of the research study are to evaluate the program in terms of its effects on residents' knowledge, attitudes, and confidence in the assessment and management of dementia, as well as to obtain feedback on the program so that it can be improved and potentially expanded in the future. Dr. Linda Lee is a collaborator on this project. This message has been sent by Glenda O'Brien, on the behalf of Dr. Lee, Dr. Stolee, and myself (the student investigator). Dr. Lee will not have knowledge your participation and will not have access to data until you are finished your residency at the CFFM and involvement with the dementia training program.

There are two components to this project. In the first component, if you choose to participate, you will be asked to complete a 10-15 minute online questionnaire. This questionnaire includes knowledge-based questions pertaining to topics covered in the dementia training program, as well as questions relating to your attitudes and confidence in assessing and managing patients with dementia. Should you choose to participate, you are asked to please complete this questionnaire prior to the academic half-day on July 8th. You will also be asked to repeat this questionnaire following completion of the academic half-day and workshop, as well as your rotation in the Memory Clinic. In completing the questionnaire, you will be asked to enter the first three letters of your mother's maiden name, followed by the last two digits of your home phone number, and the two digits of the month you were born (ex. Str are the first three letters of my mother's maiden name, 67 are the last two digits of my home phone number, and I was born in August [08]; thus my code name would be Str6708). This will be used solely for the purpose of linking your first questionnaire with your second and third, allowing for pre-test/post-test analyses. This information cannot and will not be used to identify you.

In the second component of the study, I would like to conduct follow-up interviews with those who are willing from the group that has filled out the questionnaire and completed the training program. The interview will elaborate on topics covered in the questionnaire as well as solicit feedback on the dementia training program. Participation in the interview would be completely voluntary and you may decline answering any questions you prefer not to answer. Your involvement in the first component of the study does not obligate

Appendix 4

you to participate in the second part. You will be contacted by Glenda O'Brien on the behalf of the research team following the completion of your rotation in the Memory Clinic to determine if you would be willing to participate.

If you wish to participate in this study, please visit the Study Website at (*website url not available as of yet*). Your consent to participate will be implied by you opening the link and completing the questionnaire.

If you prefer not to complete the questionnaire on the web, please contact Jeanette Prorok either by telephone (226-868-7067) or by email (jcprorok@uwaterloo.ca) and arrangements will be made to provide you another method of participation. Participation in this study is voluntary. You may decline to answer any questions that you do not wish to answer and you can withdraw your participation at any time by not submitting your responses. There are no known or anticipated risks from participating in this study.

It is important for you to know that any information that you provide will be confidential. All of the data will be summarized and no individual could be identified from these summarized results. Furthermore, the web site is programmed to collect responses alone and will not collect any information that could potentially identify you.

The data, with no personal identifiers, collected from this study will be maintained on a password-protected computer database in the Department of Health Studies and Gerontology at the University of Waterloo. As well, the data will be electronically archived after completion of the study and maintained for five years and then confidentially erased.

Should you have any questions about the study, please contact me by email (jcprorok@uwaterloo.ca) or telephone (226-868-7067), or Dr. Paul Stolee by email (stolee@uwaterloo.ca). Further, if you would like to receive a copy of the results of this study, please contact either investigator.

I would like to assure you that this study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. However, the final decision about participation is yours. If you have any comments or concerns resulting from your participation in this study, please feel free to contact Dr. Susan Sykes, Director, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or by email at ssykes@uwaterloo.ca .

Thank you in advance for your co-operation in my research.

Yours sincerely,
Jeanette Prorok
Student Investigator

CONSENT FORM

I have read the information presented in the information letter about a study being conducted by Jeanette Prorok, supervised by Dr. Paul Stolee, of the Department of Health Studies and Gerontology at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at 519-888-4567 ext. 36005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

YES NO

I agree to have my interview audio recorded.

YES NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

YES NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

Appendix 6

5% Level, Two-Tailed Test Continued											
Δ	POWER										
	99	95	90	80	70	60	50	40	30	20	10
0.22	369	261	212	158	125	99	78	60	43	27	11
0.24	308	218	177	133	105	83	66	50	36	23	10
0.26	261	185	150	112	89	71	56	43	31	20	.
0.28	223	159	128	96	76	61	48	37	27	17	.
0.30	193	137	111	83	66	53	42	32	23	15	.
0.32	169	120	97	73	58	46	36	28	21	13	.
0.34	148	105	85	64	51	41	32	25	18	12	.
0.36	131	93	75	57	45	36	29	22	16	11	.
0.38	116	83	67	51	40	32	26	20	15	10	.
0.40	104	74	60	45	36	29	23	18	13	.	.
0.45	80	57	46	35	28	22	18	14	11	.	.
0.50	62	45	36	27	22	18	14	11	.	.	.
0.55	50	35	29	22	18	14	12	.	.	.	.
0.60	40	29	23	18	14	12	10	.	.	.	.
0.65	32	23	19	15	12	10	.	.	.	.	.
0.70	26	19	15	12	10	.	.	.	.	.	.
0.75	21	15	13	10	.	.	.	.	.	.	.
0.80	17	12	10	.	.	.	.	.	.	.	.
0.85	13	10	.	.	.	.	.	.	.	.	.
0.90	10	.	.	.	.	.	.	.	.	.	.

(Kraemer & Theimann, 1987)

Appendix 7

Completed Content Validity Matrix (with 2 missing areas - highlighted)

Questionnaire Item	Domain					
	1. Appropriate use of medications (knowledge)	2. Appropriate use of medications (confidence)	3. Differentiating between normal ageing, MCI, and dementia (knowledge)	4. Differentiating between normal ageing, MCI, and dementia (confidence)	5. Appropriate use and interpretation of common cognitive tests (knowledge)	6. Appropriate use and interpretation of common cognitive tests (confidence)
Knowledge Component						
1	X					
2	X					
3			X		X	
4	X					
5						
6						
7						
8						
9					X	
10						
11						
12						
Attitudinal/Comfort Component						
1a						
1b						
1c						
1d						
1e						
1f						
1g						
1h						
2a						
2b						

Appendix 7

2c						
2d						
2e						
2f						
2g						
2h						
2i				X		
2j						X
2k						X
2l						X
2m						X
2n						
2o		X				
2p						
2q						
2r						
2s						
2t						
2u						
2v						
2w						
2x						

Note: Question item numbers correspond to the initial version of the questionnaire and do not correspond to the modified final version of the questionnaire.

Appendix 7

Questionnaire Item	Domain				
	7. Appropriate management of driving issues with patients with dementia (knowledge)	8. Appropriate management of driving issues with patients with dementia (confidence)	9. Attitudes toward working with allied health professionals	10. Referral practices for patients with MCI or dementia	11. Level of comfort working with older adults
Knowledge Component					
1					
2					
3					
4					
5					
6	X				
7					
8					
9					
10					
11					
12					
Attitudinal/Comfort Component					
1a					
1b					
1c					
1d					
1e					
1f					
1g					
1h					
2a					
2b					X

Appendix 7

2c					
2d					
2e					
2f					
2g					
2h					
2i					
2j					
2k					
2l					
2m					
2n					
2o					
2p				X	
2q				X	
2r				X	
2s				X	
2t					
2u				X	
2v		X			
2w		X			
2x					

Note: Question item numbers correspond to the initial version of the questionnaire and do not correspond to the modified final version of the questionnaire.

Appendix 7

Questionnaire Item	Domain				
	12. Level of interest in working with older adults	13. Attitudes toward working with older adults	14. Comfort communicating with patients/families with cognitive impairment	15. Comfort communicating diagnosis to patients with MCI/Dementia	16. Comfort managing comorbidities in older adults
Knowledge Component					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
Attitudinal/Comfort Component					
1a	X				
1b					
1c					
1d					
1e					
1f					
1g					
1h					
2a	X				
2b					
2c			X		

Appendix 7

2d					X
2e		X			
2f					
2g					X
2h					X
2i					
2j					
2k					
2l					
2m					
2n					
2o					
2p					
2q					
2r					
2s					
2t					
2u					
2v					
2w					
2x			X		

Note: Question item numbers correspond to the initial version of the questionnaire and do not correspond to the modified final version of the questionnaire.

Appendix 7

Questionnaire Item	Domain				
	17. Ability to differentiate between the most common types of dementia	18. Appropriate investigations in patients with cognitive impairment	19. Desire to manage patients with cognitive impairment	20. Management of patients with dementia (knowledge)	21. Management of patients with dementia (confidence)
Knowledge Component					
1					
2					
3		X			
4					
5	X				
6					
7					
8				X	
9					
10	X				
11	X				
12				X	
Attitudinal/Comfort Component					
1a					
1b					
1c					
1d					
1e					
1f					
1g					
1h					
2a					
2b					
2c					
2d					

Appendix 7

2e					
2f					X
2g					
2h					
2i					
2j					
2k					
2l					
2m					
2n		X			
2o					
2p					
2q					
2r					
2s					
2t					
2u					X
2v					
2w					
2x					

Note: Question item numbers correspond to the initial version of the questionnaire and do not correspond to the modified final version of the questionnaire.

Appendix 8

Dementia Education Program Questionnaire (FINAL)

Screen 1

This questionnaire includes knowledge-based questions pertaining to topics covered in the dementia education program, as well as questions relating to your attitudes and confidence in assessing and managing patients with dementia. Dr. L. Lee will not have knowledge of your participation and will not have access to de-identified data until you are finished your residency at the CFFM and involvement with the dementia training program.

Consequently, please answer honestly and do not use any aids in generating your responses. As the questionnaire aims to assess the effects of the dementia program, please do not look up answers to the questionnaire in between administrations. You may decline to answer any questions that you do not wish to answer and you can withdraw your participation at any time by not submitting your responses. Should you have any questions, please contact Jeanette Prorok by email (jcprorok@uwaterloo.ca) or telephone (226-868-7067).

If you wish to receive a copy of the results of the study, please enter your email. You will receive the results by June 1st, 2010. Note: your email will not be used to identify you with your responses.

Screen 2

Please enter the first three letters of your mother's maiden name, followed by the last two digits of your home phone number and the two digits of the month you were born. (Ex. Str6708). This will be used solely for the purpose of linking your first questionnaire with your second and third, allowing for pre-test/post-test analyses. This information cannot and will not be used to identify you.

Screen 3

The following data is being collected solely for obtaining demographic data on the participant group. This information cannot and will not be used to identify you.

Please indicate your age.

Please indicate your gender.

Please indicate the university at which you obtained your medical degree.

Please indicate if you have participated in courses or training in geriatrics in your undergraduate medical curriculum (including mandatory training). If so, please indicate the duration of this training.

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Please indicate if you have participated in courses or training on the diagnosis and management of dementia in your undergraduate medical curriculum (including mandatory training). If so, please indicate the duration of this training.

Please indicate if you have had experiences with individuals with dementia in your personal life.

Screen 4

The following questions pertain to your knowledge of dementia and its diagnosis and management. Dr. L. Lee will not have knowledge of your participation and will not have access to your de-identified responses.

1. Strategies that can be used to enhance medication adherence in cognitively impaired patients include (check all that apply):

- a) MedsChek program
- b) weekly dosettes
- c) once daily dosing
- d) self-reporting
- e) involvement of caregiver

2. The following medications should be avoided if possible in cognitively impaired patients (check all that apply):

- a) lorazepam
- b) ASA
- c) dimenhydrinate
- d) amitriptyline
- e) ditropan

3. The best way of differentiating mild cognitive impairment from dementia is by (check one):

- a) CT scan
- b) MRI
- c) functional abilities assessment
- d) MMSE
- e) assessment of ability to understand proverbs

4. Treatment with cholinesterase inhibitors is indicated in (check all that apply):

- a) Alzheimer's dementia
- b) Mixed dementia
- c) Lewy Body dementia
- d) Mild cognitive impairment
- e) primary prevention in patients at high risk for dementia

Appendix 8

5. Visual hallucinations are characteristic of (check one):

- a) Alzheimer's dementia
- b) Vascular dementia
- c) Frontotemporal dementia
- d) Lewy Body dementia
- e) Mild cognitive impairment

6. In a patient with cognitive impairment, the following should be considerations in assessing fitness to drive (check all that apply):

- a) visuospatial function
- b) executive function
- c) Trails B test
- d) degree of cognitive impairment
- e) ability to pass Ministry of Transport drivers assessment required every 2 years after age 80

7. Which of the following are indications for a computed tomography cranial scan in the investigation of dementia?

- a) Age under 60 years
- b) History of carcinoma from sites that metastasize to the brain
- c) Dementia present for at least 2 years
- d) Recent head trauma

8. Dementia occurs:

- a) Only in people over 60 years of age
- b) In 2-5% of people over age 65
- c) More often in men than in women
- d) In 80% of people over age 85

9. Which of the following would not be considered to reflect a deficit in executive function?

- a) Interpreting the proverb, "People who live in glass houses should not throw stones" to mean, "People don't want their windows broken."
- b) Failing to recognize objects or people
- c) Difficulty planning how to carry out a sequence of actions
- d) Trouble stopping oneself from engaging in a behaviour

10. A 75-year-old man presents with gradual onset of cognitive impairment, which is fluctuating, together with falls, visual hallucinations, and Parkinsonism. What is the most likely diagnosis?

- a) Normal pressure hydrocephalus

Appendix 8

- b) Alzheimers disease
- c) Lewy body dementia
- d) Vascular dementia

11. Which of the following does not characterize Frontotemporal Dementia?

- a) Typically onsets at 45 – 65 years but can onset up to age 85
- b) Family history in 20-40 % of cases
- c) Early onset of executive dysfunction
- d) Early onset of significant short term memory loss

12. A 78-year-old nursing home resident has mild dementia associated with Alzheimer’s disease. She is disoriented to time and place but knows family members and regular nurse aides by name. This patient’s capacity to make decisions regarding her health care is best determined by:

- a) Mental status test
- b) Her ability to understand treatment options
- c) Probate court decision
- d) Psychiatric examination
- e) Don’t know

Screen 5

The following questions pertain to your beliefs and comfort with the diagnosis and management of dementia, as well as working with older adults in primary care.

1. Please rank your preference for working with each of the following groups categorized by age range on the following 7-point scale:

1 = not at all, 4 = neutral, 7 = would really enjoy

	Not at all			Neutral			Would really enjoy
Infants (0-2)	1	2	3	4	5	6	7
Children (3-12)	1	2	3	4	5	6	7
Adolescents (13-17)	1	2	3	4	5	6	7
Young adults (18-25)	1	2	3	4	5	6	7

Appendix 8

Adults (25-45)	1	2	3	4	5	6	7
Middle aged (45-65)	1	2	3	4	5	6	7
Old (65-75)	1	2	3	4	5	6	7
Old-old (75+)	1	2	3	4	5	6	7

2. Please indicate your answer using the following 7-point scale:

1 = strongly disagree, 4 = neutral, 7 = strongly agree

a) I expect that more than 50% of my future practice will involve older patients.	1	2	3	4	5	6	7
b) I feel comfortable working with older patients.	1	2	3	4	5	6	7
c) I feel comfortable speaking with older patients and their families.	1	2	3	4	5	6	7
d) I feel comfortable communicating a diagnosis of dementia to a patient.							
e) I feel confident in my approach to older patients with multiple complex comorbid conditions.	1	2	3	4	5	6	7
f) If I had the choice, I would rather see younger patients than elderly ones.	1	2	3	4	5	6	7
g) I am interested in managing patients with cognitive impairment in my future practice.							
h) I feel confident managing dementia in older patients.	1	2	3	4	5	6	7
i) I feel confident managing delirium in older patients.	1	2	3	4	5	6	7
j) I feel confident managing depression in older patients.	1	2	3	4	5	6	7
k) I can differentiate between different types of dementia.	1	2	3	4	5	6	7

Appendix 8

- | | | | | | | | |
|---|---|---|---|---|---|---|---|
| l) I can administer a MMSE. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| m) I can interpret a MMSE. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| n) I can administer a MOCA. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| o) I can interpret a MOCA. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| p) In suspicion of cognitive impairment, I would regularly use cognitive tests. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| q) I am confident in my ability to prescribe appropriate pharmacotherapy, if necessary, when managing patients with dementia. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| r) I am likely to refer patients with mild cognitive impairment to a Memory Clinic. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| s) I am likely to refer patients with mild cognitive impairment to community services. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| t) I am likely to refer patients with dementia to a Memory Clinic. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| u) I am likely to refer patients with dementia to community services. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| v) Much can be done to improve the quality of life of individuals with dementia. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| w) I am comfortable liaising with allied health care professionals. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| x) I am confident in my ability to assess the driving risk of patients with cognitive loss. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| y) I know what to do when I suspect there may be significant risk in driving. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| z) I am confident in my ability to tell patients they are unsafe to drive. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Thank you

for participating in our questionnaire for the evaluation of the dementia training program for family medicine residents! Your participation is extremely valuable.

If you indicated on the survey that you would like a copy of the results, they will be sent to you by email at the address you provided by June 1st, 2010.

If you have any general comments or questions related to this study, please contact Jeanette Prorok, Dept. of Health Studies and Gerontology, by email at jcprorok@uwaterloo.ca or by telephone at 226-868-7067.

We would like to assure you that this study has been reviewed by, and received ethics clearance through, the Office of Research Ethics. If you have any concerns regarding your participation in this study, please contact Dr. Susan Sykes, Director, Office of Research Ethics at ssykes@uwaterloo.ca or 519-888-4567 Ext. 36005.

Appendix 9

Corresponding Questionnaire Items

Modified Questionnaire	Initial Version of Questionnaire
Knowledge Component	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
Preference Working with Various Age Groups Component	
1a	1a
1b	1b
1c	1c
1d	1d
1e	1e
1f	1f
1g	1g
1h	1h
Attitudinal and Comfort/Confidence Component	
2a	2a
2b	2b
2c	2c
2d	New item
2e	2d
2f	2e
2g	New item
2h	2f
2i	2g
2j	2j
2k	2i
2l	2j
2m	2k
2n	2l
2o	2m
2p	2n

Appendix 9

2q	2o
2r	2p
2s	2q
2t	2r
2u	2s
2v	2t
2w	2u
2x	2v
2y	2w
2z	2x

DIAGNOSIS AND MANGEMENT OF COGNITIVE IMPAIRMENT IN FAMILY PRACTICE

July 2009 – Dr. Linda Lee

OBJECTIVES

- Describe a clinical reasoning approach and office-based assessment tools for the assessment of patients with suspected cognitive impairment
- Differentiate between normal aging, MCI, and dementia and distinguish among the types of dementias
- Describe a rational approach to investigation and treatment of dementia
- Discuss management of driving concerns

APPROACH TO PATIENTS WITH COGNITIVE PROBLEMS

1. Is it Delirium?

Use the Confusion Assessment Method:

(i) acute onset and fluctuating course

+

(ii) inattention

+

(iii) disorganized thinking or (iv) altered level of consciousness

2. Is it Depression? Consider atypical presentations: anxiety, irritability, unexplained physical complaints, worsening of cognition

3. Is it Dementia, MCI, or normal aging?

- Dementia: objective findings of cognitive loss with impairment of ADLs
- MCI: objective findings of cognitive loss without impairment of ADLs
- Normal aging: no objective findings of cognitive loss; normal 3-word recall

4. If it is dementia, what type(s)?

- AD: initial short-term memory loss
- VaD/Mixed: risk factors for cardiovascular disease
- FTD: younger age, behavioral symptoms and/or language impairment

Appendix 10

- DLB: bradykinesia / features of Parkinsonism, fluctuating cognition, visual hallucinations
- 5. How will you manage this?
- 6. Is driving a concern?

SUMMARY OF MANAGEMENT AND DRIVING ISSUES

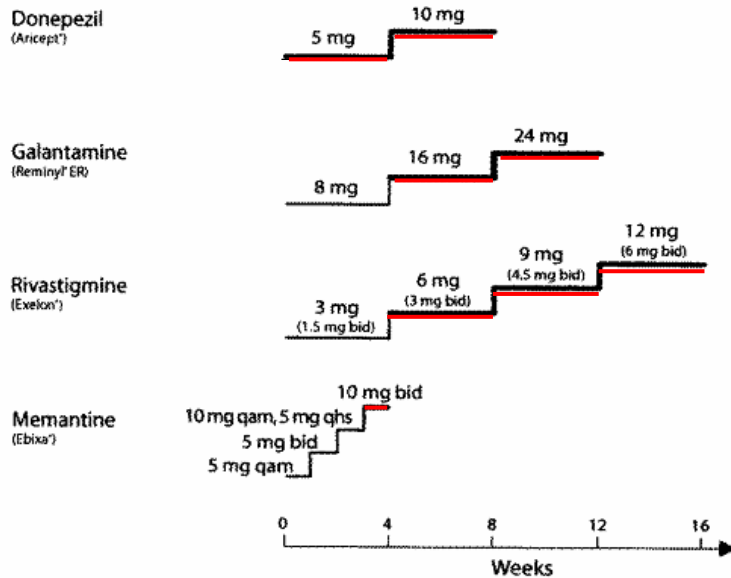
- If symptoms may represent atypical depression, consider a trial of antidepressants– eg. citalopram (Celexa) or venlafaxine (Effexor)
- Aggressive reduction of vascular risk factors – especially hypertension
- Reduce or discontinue drugs that could interfere with cognition:
 - Narcotics
 - Anticholinergics
 - Sedatives
- Trial of cholinesterase inhibitor for all patients with dementia with the exception of Frontotemporal Dementia (use cautiously as may increase aggression)
 - Not for MCI
 - EKG first – contraindications: LBBB, 2nd or 3rd degree heart block, sick sinus syndrome
 - Consider routes of elimination in choice of drug
- Consider reporting to the MOT:
 - FTD, DLB – usually should not be driving
 - Abnormal cognitive tests especially tests of visuospatial or executive function
 - Loss of 2 IADL's or 1 ADL
- Consider referral:
 - FTD
 - DLB
 - Complex case where the diagnosis or management is unclear
 - To support decision not to drive in difficult cases
 - If the patient or family member requests referral

Pharmacotherapy

Name	Selectivity	T _{1/2}	Starting dose	Minimal Effective Dose	Usual dose	Elimination
Donepezil (Aricept)	AChEI	70-80h	5mg qam	5mg qam	10mg qam	Liver
Rivastigmine (Exelon)	AChEI & BuChEI	2h	1.5mg bid	3mg bid	4.5mg bid	Kidney
Galantamine (Reminyl)	AChEI & nicotonic modulator	10h	8mg od	16mg od	16-24mg od	Liver and Kidney
Memantine (Ebixa)	NMDA receptor antagonist	60-100h	5mg qam	10mg bid	10mg bid	Kidney

Sources: Ontario 's Strategy for Alzheimer Disease and Related Dementia: Initiative #2
Dalziel W., ADEPT program, Module 6

Dose titration



Source: Dalziel W., ADEPT program, Module 6

Case #1

July 22nd, 2009
Jeanette Brook

Appendix 11

Harvey Johnson

83 y.o. male with concerns of difficulty over the past year with remembering names and word finding. Driving, with no accidents or close calls.

Past medical history: hypertension, hyperlipidemia, stable idiopathic pulmonary fibrosis, hypothyroidism. Former smoker. Drinks 7 oz/week.

Medications: Risuvastatin 10mg OD, Amlodipine 10mg OD, HCT 25mg OD, L-thyroxine 0.1mg OD

Social history: Married, 3 sons. 16 years of education. Former insurance executive. Cares for wife who is disabled with Parkinsons disease.

What is the diagnosis? What will you say to him?
↳ MCI

Family Physician Interpretation Guide

FUNCTIONAL ACTIVITIES QUESTIONNAIRE (FAQ)

Dementia is defined as a change/loss in cognition with an associated loss in function.

Patient's Name _____ Date _____

Rated by _____

Administration and scoring: This questionnaire should be completed by a reliable informant (caregiver). Check off the appropriate responses to help the physician get a sense of the person's ability to function.

	Normal (0)	Has Difficulty but Manageable (1)	Requires Assistance (2)	Dependant (3)
1. Writing cheques, paying bills, balancing a cheque book.	✓			
2. Assembling tax records, business affairs or papers.	✓			
3. Shopping alone for clothes, household necessities or groceries.	✓			
4. Playing a game of skill or working on a hobby.	✓			
5. Heating water, making a cup of coffee, turning off the stove.	✓			
6. Preparing a balanced meal.	✓			
7. Keeping track of current events.	✓			
8. Paying attention to, understanding, and discussing a TV show, book or a magazine.	✓			
9. Remembering appointments, family occasions, holidays, medications	✓			
10. Travelling out of the neighbourhood, driving, arranging to take buses	✓			

Total score

0

*0= could never do the activity but could do it now

*1= never did the activity and would have difficulty now

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THE ASSESSMENT OF COGNITIVE ABILITY MINI-MENTAL STATE EXAMINATION (MMSE)

Patient's # _____ Date Sept 11, 2007

Rated by _____

The MMSE is a brief test designed to assess a patient's cognitive performance in a clinical setting. It assesses orientation, attention, memory, and language.

Severity of Alzheimer's disease can be categorized as follows:
 •Mild: 21-25 •Moderate: 10-20 •Severe: <10

MMSE scores for untreated mild to moderate Alzheimer's patients are projected to decline 2 to 4 points per year.

Mini-Mental State Examination (MMSE)

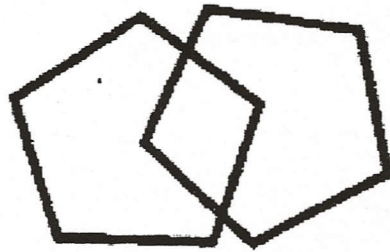
Maximum Score	Score		
5	<u>4</u>	ORIENTATION	
5	<u>3</u>	What is the (year) (season) (date) (day) (month)? Give 1 point for each correct answer. Where are we: (province) (country) (town or city) (hospital) (floor)? Give 1 point for each correct answer.	
3	<u>3</u>	REGISTRATION Name 3 common objects (e.g., "apple," "table," "penny"). Take 1 second to say each. Then ask the patient to repeat all 3 after you have said them. Give 1 point for each correct answer. Then repeat them until he/she learns all 3. Make a maximum of 6 trials. Count trials and record. Trials: <u>1</u>	
5	<u>5</u>	ATTENTION AND CALCULATION Spell "world" backwards. The score is the number of letters in correct order (<u>D L R O W L</u>). [Note: Instead of "world", the following may be used - subtract 7 from 100 and keep subtracting 7 from the result until you tell him/her to stop.]	
3	<u>3</u>	RECALL Ask for the 3 objects repeated under Registration section above. Give 1 point for each correct answer. [Note: Recall cannot be tested if all 3 objects were not remembered during registration.]	
2	<u>2</u>	LANGUAGE Name a "pencil," and a "watch." (2 points)	
1	<u>1</u>	Repeat the following: "No ifs, ands, or buts." (1 point)	
3	<u>3</u>	Follow a 3-stage command: "Take a paper in your right hand, fold it in half, and put it on the floor." (3 points)	
1	<u>1</u>	READ AND OBEY THE FOLLOWING: Close your eyes. (1 point)	
1	<u>1</u>	Write a sentence. (1 point)	
1	<u>1</u>	Copy the following design. (1 point)	

Total Score 29

Assess level of consciousness along a continuum /
 Alert Drowsy Stupor Coma

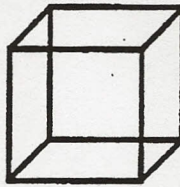
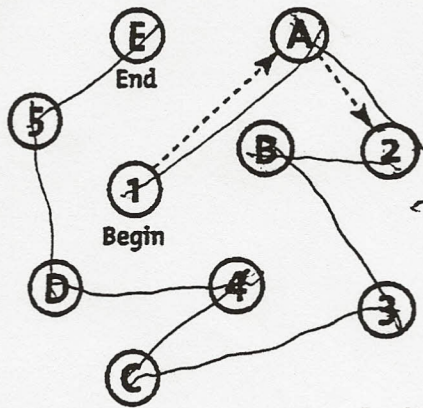
Polstein ME, Politzer SE, Saperugh RL. "Mini-Mental State": A practical method for grading the cognitive state of patients for the clinician. J Psychol Res 1975;12:129-8.
 Folstein MF, Folstein MB. "Mini-Mental State" Examination (MMSE). Psychopharmacol Bull 1983;21:1259-62.

We are in downtown Kitchener

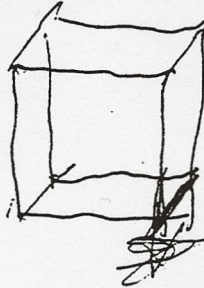


MONTREAL COGNITIVE ASSESSMENT (MOCA)

VISUOSPATIAL / EXECUTIVE



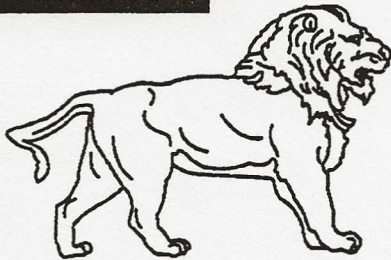
Copy cube



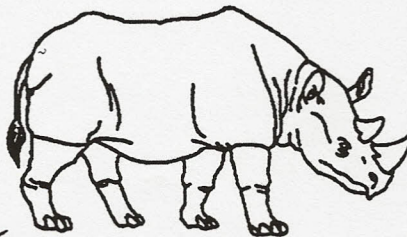
Draw each (3 points)

[✓] Contour [✓] Numbers [✓] Hands 5/5

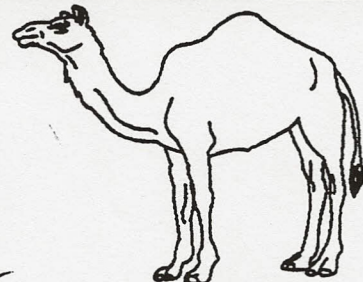
NAMING



[✓]



[✓]



[✓] 3/3

MEMORY

Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED	
1st trial	✓	✓	✓	✓	✓	No points
2nd trial	✗	✓	✓	✓	✓	

ATTENTION

Read list of digits (1 digit/ sec). Subject has to repeat them in the forward order [✓] 2 1 8 5 4
Subject has to repeat them in the backward order [✓] 7 4 2

2/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors

[✓] FBACMNAAJKLBAFAKDEAAAJAMOF AAB

0/1

Serial 7 subtraction starting at 100

[✓] 93 [✓] 86 [✓] 79 [✓] 72 [✓] 65
4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt

3/3

LANGUAGE

Repeat: I only know that John is the one to help today. [✓]
The cat always hid under the couch when dogs were in the room. [✓]

2/2

Fluency / Name maximum number of words in one minute that begin with the letter F [✓] 9 (N ≥ 11 words)

0/1

ABSTRACTION

Similarity between e.g. banana - orange = fruit [✓] train - bicycle [✓] watch - ruler

2/2

DELAYED RECALL

Has to recall words WITH NO CUE	FACE	VELVET	CHURCH	DAISY	RED	Points for UNCUE recall only
	✗	✗	✗	✗	✗	

0/5

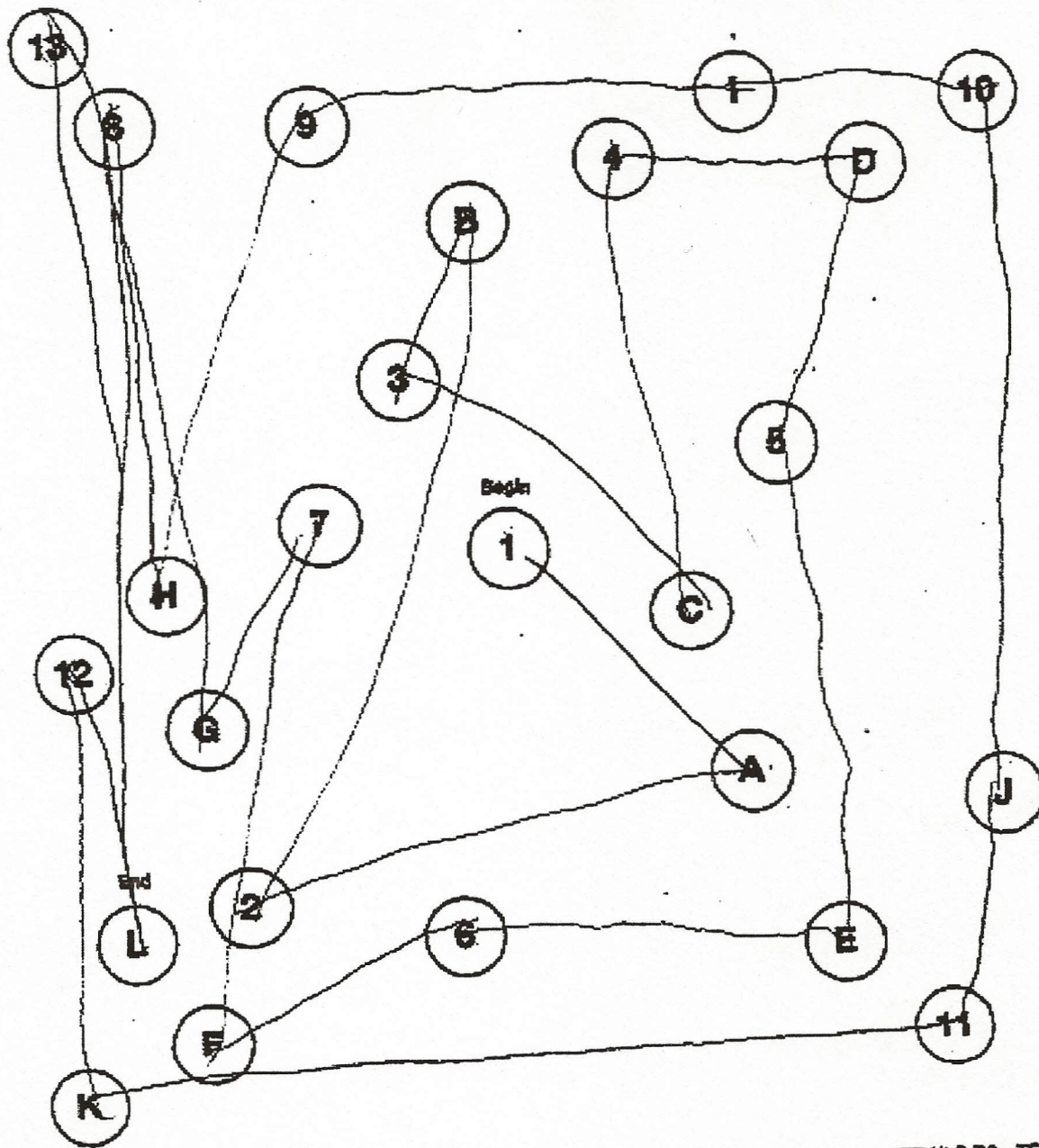
Optional

Category cue	✗	✗	✗	✗	✓
Multiple choice cue	✓	✓	✓	✓	

ORIENTATION

[✓] Date [✓] Month [✓] Year [✓] Day [✓] Place [✓] City

5/6



TRAILS B2-TEST

180 Seconds

S - SLEEP - increase during day or decreased sleep at night/ insomnia or hypersomnia, nearly every day.

"yes +No" Read myself to sleep
Prostate problem. Tend to go back to sleep fairly well.

I - INTERESTS - is markedly decreased interest or pleasure in all or almost all activities most of the day, nearly every day, in activities that used to interest them.

used to garden but not able to due to "run out of steam". Family company keeps busy.

G - GUILT - refers to excessive feelings of worthlessness or inappropriate guilt, (which may even be delusional) nearly every day/ depressed elderly tend to devalue themselves

No

E - ENERGY - commonly presented as fatigue or loss of energy nearly every day / melancholic state/ early morning fatigue.

short on energy (continuous) but comes back.

C - CONCENTRATION/MEMORY - diminished ability to think or concentrate or indecisiveness

Can concentrate if interested

Not terribly forgetful if reasonably important.

A-1. AFFECT - described depressed or irritable mood, nearly everyday No

2. APPETITE - that is a significant weight loss or weight gain when not dieting / more than 5% of body weight / +/- in past month

Adequate. No wt loss or gain

P - PSYCHOMOTOR AGITATION - agitation (anxiety) or retardations (lethargic) nearly every day, observable by others, not merely subjective feelings of the patient

NO

S - SUICIDAL - recurrent thoughts of death-preoccupation/ fear of dying / recurrent suicidal ideation, with or without a specific plan or suicide attempt

No

S - Sexuality - libido / which is markedly decreased in major depression and usually increased in the mania or hypo-mania of a bipolar disorder. Yes. Still show affection

"Just had our 55th"

S - Somatic - with most depressive patients either headaches, stomach ache or backache are experienced / they are consistent with the course of the major depression or could be signs of hypochondriacy or panic disorder and seem to improve with positive response to treatment

Some muscular pain. Compression # L1
Still recovering.

Appendix 12

Good morning!

My name is Jeanette Prorok and I am a MSc. student in the Health Studies and Gerontology Program at the University of Waterloo. My thesis research involves conducting an evaluation of your upcoming dementia education program (Academic half-day, Half-day workshop, and Memory Clinic rotation). This research is being conducted under the supervision of Dr. Paul Stolee and in collaboration with Dr. Linda Lee. A significant portion of the program evaluation will entail examining the effects of the program on residents' knowledge, attitudes, and confidence with respect to assessment and management of dementia.

You are invited to participate in this evaluation by completing an online questionnaire. The questionnaire takes **less than 10 minutes** to complete and can be found at <http://www.askitonline.com/survey/dementia-education-prog-eval/>

If you choose to participate, ***please complete this questionnaire prior to the academic half-day*** (Wednesday July 8th). You will be asked to complete it again following completion of the workshop and once more following your training in the Memory Clinic. By clicking the linking and completing the questionnaire, you are giving your consent to participate. Dr. L. Lee will not have knowledge of your participation and will not have access to de-identified data until you are finished your residency at the CFFM and involvement with the dementia training program.

Attached is a participant information letter with more details about the study. If you have any questions regarding this study or would like additional information, please **do not reply to this email** but instead please contact me at 226-868-7067 or by email at jcprorok@uwaterloo.ca. You can also contact my supervisor, Dr. Paul Stolee by email at stolee@uwaterloo.ca.

Your input is extremely valuable to this process and I thank you for your consideration.

Sincerely,
Jeanette Prorok

University of Waterloo

Dear Participant:

I am a Master's student in the Department of Health Studies and Gerontology at the University of Waterloo conducting my thesis research under the supervision of Dr. Paul Stolee. I will be conducting an evaluation of your upcoming dementia training program (academic half-day, workshop, and rotation in the Centre for Family Medicine Family Health Team (CFFM FHT) Memory Clinic). The objectives of the research study are to evaluate the program in terms of its effects on residents' knowledge, attitudes, and confidence in the assessment and management of dementia, as well as to obtain feedback on the program so that it can be improved and potentially expanded in the future. Dr. Linda Lee is a collaborator on this project. This message has been sent by Glenda O'Brien, on the behalf of Dr. L. Lee, Dr. Stolee, and myself (the student investigator). Dr. L. Lee will not have knowledge of your participation and will not have access to de-identified data until you are finished your residency at the CFFM and involvement with the dementia training program.

There are two components to this project. In the first component, if you choose to participate, you will be asked to complete an online questionnaire that is less than 10 minutes long. This questionnaire includes knowledge-based questions pertaining to topics covered in the dementia training program, as well as questions relating to your attitudes and confidence in assessing and managing patients with dementia. Should you choose to participate, you are asked to please complete this questionnaire prior to the academic half-day on July 8th. You will also be asked to repeat this questionnaire following completion of the academic half-day and workshop, as well as your rotation in the Memory Clinic. In completing the questionnaire, you will be asked to enter the first three letters of your mother's maiden name, followed by the last two digits of your home phone number, and the two digits of the month you were born (ex. Str are the first three letters of my mother's maiden name, 67 are the last two digits of my home phone number, and I was born in August [08]; thus my code name would be Str6708). This will be used solely for the purpose of linking your first questionnaire with your second and third, allowing for pre-test/post-test analyses. This information cannot and will not be used to identify you.

In the second component of the study, I would like to conduct follow-up interviews with those who are willing from the group that has filled out the questionnaire and completed the training program. The interview will elaborate on topics covered in the questionnaire as well as solicit feedback on the dementia training program. Participation in the interview would be completely voluntary and you may decline answering any questions you prefer not to answer. Your involvement in the first component of the study does not obligate you to participate in the second part. You will be contacted by Glenda O'Brien on

the behalf of the research team following the completion of your rotation in the Memory Clinic to determine if you would be willing to participate.

If you wish to participate in this study, please visit the Study Website at <http://www.askitonline.com/survey/dementia-education-prog-eval/> . Your consent to participate will be implied by you opening the link and completing the questionnaire.

If you prefer not to complete the questionnaire on the web, please contact Jeanette Prorok either by telephone (226-868-7067) or by email (jcprorok@uwaterloo.ca) and arrangements will be made to provide you another method of participation. Participation in this study is voluntary. You may decline to answer any questions that you do not wish to answer and you can withdraw your participation at any time by not submitting your responses. There are no known or anticipated risks from participating in this study.

It is important for you to know that any information that you provide will be confidential. All of the data will be summarized and no individual could be identified from these summarized results. Furthermore, the web site is programmed to collect responses alone and will not collect any information that could potentially identify you.

The data, with no personal identifiers, collected from this study will be maintained on a password-protected computer database in the Department of Health Studies and Gerontology at the University of Waterloo. As well, the data will be electronically archived after completion of the study and maintained for five years and then confidentially erased.

Should you have any questions about the study, please contact me by email (jcprorok@uwaterloo.ca) or telephone (226-868-7067), or Dr. Paul Stolee by email (stolee@uwaterloo.ca). Further, if you would like to receive a copy of the results of this study, please contact either investigator.

I would like to assure you that this study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. However, the final decision about participation is yours. If you have any comments or concerns resulting from your participation in this study, please feel free to contact Dr. Susan Sykes, Director, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or by email at ssykes@uwaterloo.ca .

Thank you in advance for your co-operation in my research.

Yours sincerely,
Jeanette Prorok
Student Investigator

REMINDER:

If you would like to participate in the evaluation of your upcoming dementia education program, please complete the survey prior to the Academic Half-Day on Wednesday, July 8th (or prior to viewing video of the AHD). This survey takes *less than 10 minutes* to complete and may be found at

<http://www.askitonline.com/survey/dementia-education-prog-eval/>

If you have any questions regarding this study or would like additional information, please contact me at 226-868-7067 or by email at jcprorok@uwaterloo.ca

Your help and participation is greatly appreciated!

REMINDER:

If you would like to participate in the evaluation of the dementia education program for residents at the CFFM and did not attend the Academic Half-Day (July 8th) please complete the survey prior to viewing the video of the AHD and prior to the half-day workshop on July 22nd. This survey takes *less than 10 minutes* to complete and may be found at

<http://www.askitonline.com/survey/dementia-education-prog-eval/>

If you have any questions regarding this study or would like additional information, please contact me at 226-868-7067 or by email at jcprorok@uwaterloo.ca

Your help and participation is greatly appreciated!

ACADEMIC HALF-DAY EVALUATION

I am a **(circle one)**: Family Medicine Resident Social Work Intern Pharmacy Co-op Student

Please rate the characteristics of this presentation on the scale indicated.

Presenter: Dr. Linda Lee Date: July 8th, 2009	Unacceptable	Could Use Improvement	Fair	Good	Very Good	Excellent	Outstanding
	1	2	3	4	5	6	7
The Presenter							
Enthusiasm							
Apparent knowledge of the topic							
The Presentation							
Information was presented in an organized manner							
Related information presented to practical problems							
Quality of audiovisual aids							
The Content							
Volume and complexity of the information presented was appropriate							
Content was relevant to your practice.							

What two aspects of this presentation did you like the most?

What two aspects of this presentation would you suggest be changed in the future?

Overall, how would you rate this session?

1- Unacceptable 2- Could use improvement 3- Fair 4- Good 5- Very Good 6- Excellent 7- Outstanding

(PLEASE SEE BACK)

Please indicate your answer using the following 7-point scale:
1 = strongly disagree, 4 = neutral, 7 = strongly agree

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| a) This session has increased my knowledge with regard to dementia and cognitive impairment. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b) This session has increased my comfort with respect to managing patients with dementia and cognitive impairment. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c) I found this session to be useful for my future practice. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d) This session has increased my interest in working with individuals with dementia and cognitive impairment. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

If you have any questions regarding this study or would like additional information, please contact Jeanette Prorok at 226-868-7067 or by email at jcprorok@uwaterloo.ca

This study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. If you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes of this office at 1-519-888-4567 ext. 36005 or ssykes@uwaterloo.ca.

Thank you for your interest and assistance with this research.

Post-Clinic Interview Guide

Thank you for agreeing to participate in today's interview. The main purpose of today's interview is to gain feedback on your recently completed dementia training program, so that we can see what aspects of the program are generally felt by residents to be working well and which areas could use improvement. Just to clarify, when I say dementia training program, I am referring to the academic half-day on July 8th, the half-day workshop on the 22nd, and most recently your rotation in the Memory Clinic on _____. Does that sound okay to you?

1. How would you describe your experience with the Dementia Education Program?
2. Now that you have completed the dementia training program:
 - a. What aspects of the program did you find worked well in terms of facilitating your learning? What factors contributed to this?
 - b. What aspects of the program did you feel hindered your learning? Was there anything you were able to do to overcome these hindrances?
3. Based on your experiences in the dementia training program:
 - a. Is there anything you would recommend changing about the program?
 - b. Is there anything about the program you think would be particularly important to keep as it is?
4. Did you find the organization of the program, in terms of lecture components followed by clinical experience, to be conducive to your learning? Do you believe you gained more from one component than the other? If so, which one and why?
5. In your opinion, have you taken anything away from the program that you have found to be useful in your other family medicine rotations?
6. Do you feel that this program would be useful to other family medicine residents at McMaster who currently do not take the program? (Why or why not?) In your opinion, should this program be offered to all family medicine residents? (Why or why not?)
7. Do you feel the program has increased your knowledge on managing patients with MCI and dementia in practice? If so, in what ways? If not, why? (e.g., had this knowledge before)
8. How would you describe your confidence in managing patients with MCI and dementia now compared to before the program? Did one component play a greater role in increasing (or decreasing if applicable) your confidence?

Appendix 16

9. Has this program had any effect on your interest in managing patients with MCI and dementia in your future practice? If so, in what ways?
10. Has this program had any effect on your interest in managing older patients just in general in your future practice? If so, in what ways?
11. Do you have any other comments you'd like to share about the program or any component of it?

Focus Group Question Guide

I would first of all like to thank you for taking the time to participate in today's discussions.

I would just like to draw your attention to the information letter I have handed out to give you a brief description of what our purpose is today as well as to go over the consent form.

So the purpose of this focus group will be to identify gaps in dementia training as well as avenues and recommendations for improving the dementia training provided in family medicine residency programs.

I understand that you all will have differing points of view so please feel free to share any thoughts or comments throughout our discussions today.

To ensure the accuracy of your input, I would like to audio record today's discussions with your permission. The audio recordings will be transcribed and anonymized. Within two weeks you will be sent an anonymized summary via email which will give you the opportunity to clarify any points you feel may have been misinterpreted or give additional feedback. Audio recording today's session will also help facilitate the flow of conversation, rather than have it be hindered through note-taking.

I will just give you a few moments now to review the information letter on your own and complete the consent form before we begin. I will collect the consent form and the information letter is yours to keep in case you have any questions in the future.

Okay, so with that, we will get started with our first question that we can go around the room with.

1. Please describe what sort of training, formal or informal, you received related to managing dementia in your medical education (*if any*).

2. Thinking back to this training, what positive aspects stand out from these experiences?
 - a) What negative aspects stand out from these experiences?

3. What do you feel you benefited from most in your training?
 - a) What do you feel you might have benefited from in your training that you did not receive?

Appendix 17

4. Thinking back to the training you received related to dementia, how prepared did you feel for practice after you had completed it?
 - a) Follow-up: How would you have changed your training in order to prepare you better for practice?

5. What do you feel was your biggest challenge in learning about the diagnosis and management of dementia?
 - a) Follow-up: How do you see this challenge (or these challenges) being overcome in dementia training? (if still applicable)

6. What would you say are the essential components of effective dementia training in medical education?
 - a) Follow-up: Of the components mentioned or any others which may have come to mind, which would you consider most important?

7. The main purpose of our discussions today was to gather how education in the realm of dementia diagnosis and management could be improved for family physicians in training. Is there anything we might have missed in our discussions today or anything you did not get a chance to say that you'd like to share now?

Focus Group Question Guide – Questions Asked

1. Please describe what sort of training, formal or informal, you received related to managing dementia in your medical education (*if any*).
2. Of the training you did receive, what do you feel you benefited from most in your training?
3. What do you feel was your biggest challenge in learning about the diagnosis and management of dementia that either you've experienced or seen in residents?
4. What would you say then are the essential components of effective dementia training in medical education?
5. Is there anything we might have missed in our discussions today or anything you did not get a chance to say that you'd like to share now?

Executive Summary: Family Medicine Education & Training Focus Group

1. Of the residency training you received, what do you feel you benefited from most in your training?
 - Consultation in tertiary care setting where learned the screening tools; very helpful
 - Fast-paced experience in community-based geriatric clinic gave sense of real world
 - 6 months for Care of the Elderly fellowship sufficient; remaining 6 months “icing on the cake” which allowed for other unique training experiences
 - Good mentors and role models are very important in training; If mentors have positive experiences caring for seniors, students often do as well
 - Important to provide these experiences early in training
 - Broader, informal experiences in community also allow for ample learning and training opportunities
 - Interprofessional experiences were productive and enjoyable aspects of training

2. What do you feel was your biggest challenge in learning about the diagnosis and management of dementia that either you’ve experienced or seen in residents?
 - Stigma; it is highly prevalent and negative experiences can reinforce it
 - Can be an overwhelming complex situation, for both the resident and staff physician
 - Faculty are uncomfortable and faculty development/support needed
 - Need for defined, clearly labelled training programs regarding elderly care, rather than scattered bits and pieces
 - a) How would you see those challenges being overcome in residency education?
 - Preceptor program
 - dementiaeducation.ca website provides resources for teachers
 - Designing a progressive competency-based curriculum
 - Dementia needs to be a part of evaluation of residents
 - Provide residents with experiences in long-term care; underutilized training site

3. What would you say are the essential components of effective dementia training in medical education?

- Interdisciplinary access and inter-sectoral collaboration
- Exposure with support; Also ensure residents do receive exposure to dementia in some manner even if their preceptors happen to have young practices
- Allow residents to develop an understanding of the patient in their environment (in a broader context)
- Provide residents with opportunity to follow own patient with dementia over the 2-year period
- Mentorship by individuals with competencies in this area

4. Additional comments:

- Early linkage to healthy but older people is important
- Need for clinical learning units in primary care outside of acute care that is supported and valued
- Provide opportunities for family medicine residents to work alongside geriatric psychiatry residents, geriatric medicine residents, neurology residents, in addition to nurse practitioner students, pharmacy students, etc.
- Develop a shared care environment around dementia
 - Would improve care for patient and provide capacity building for family physicians and residents