

DEVELOPMENT AND EVALUATION OF A PAIN ASSESSMENT TRAINING
PROGRAM FOR LONG-TERM CARE STAFF

A Thesis

Submitted to the Faculty of Graduate Studies and Research

In Partial Fulfillment of the Requirements

For the Degree of

Master of Arts

In

Clinical Psychology

University of Regina

By

Michelle Marie Gagnon

Regina, Saskatchewan

July, 2012

© 2012: M.M. Gagnon

UNIVERSITY OF REGINA
FACULTY OF GRADUATE STUDIES AND RESEARCH
SUPERVISORY AND EXAMINING COMMITTEE

Michelle Gagnon, candidate for the degree of Master of Arts in Clinical Psychology, has presented a thesis titled, ***Development and Evaluation of a Pain Assessment Training Program for Long-Term Care Staff***, in an oral examination held on July 20, 2012. The following committee members have found the thesis acceptable in form and content, and that the candidate demonstrated satisfactory knowledge of the subject material.

External Examiner: Dr. Ann-Marie Urban, Faculty of Nursing

Supervisor: Dr. Thomas Hadjistavropoulos, Department of Psychology

Committee Member: Dr. Heather Price, Department of Psychology

Committee Member: Dr. William Smythe, Department of Psychology

Chair of Defense: Dr. Larena Hoerber,
Faculty of Kinesiology & Health Studies

Abstract

Pain underassessment among older adults living in long-term care has been recognized as an ethical concern and an area requiring further attention. It is estimated that up to 80% of older adults in long-term care suffer from pain (Charlton, 2005). Several researchers have identified discrepancies in the quality of pain assessment and management provided to individuals with and without dementia. Inadequate pain education for staff at the formal training level and through continuing education programs is a possible factor contributing to this problem (Watt-Watson et al., 2004). This study was designed to address the dearth of education through the development and evaluation of a training video on pain assessment in long-term care. Nurses and care aides evaluated the training video, which focused on the use of self-report and observational pain assessment measures in long-term care for individuals with dementia. Individual difference variables, such as maladaptive beliefs about the nature of pain in old age and beliefs about reduced patient personhood in individuals with dementia, were examined to determine if these variables influenced participants' evaluation of the video. Overall, evaluations of the video were positive. Nurses saw more value in the content than care aides. Pain assessment knowledge increased after watching the video, and this increase was maintained over one month. Individuals with stronger beliefs that pain is primarily "organic" in nature perceived more value in the video content. Differences in the pain beliefs held by nurses and care aides emerged, with nurses holding stronger beliefs about the "psychological" nature of pain. Focus group and individual interviews were conducted to understand video evaluations and to identify barriers or facilitators influencing the implementation of the practices. Despite seeing value in the video

content, most participants indicated that the video did not result in changes to practices. Barriers identified as influencing the implementation of the practices included lack of time, overwhelming workload, and resistance to change. Identified facilitators to the implementation of practices included being provided with standardized and user-friendly tools, seeing the benefits prior to implementation, and continued management support throughout training and implementation. Implications and directions for future research are discussed.

Acknowledgement

This project would not have been possible without the support of several individuals. I would like to thank Dr. Thomas Hadjistavropoulos, my supervisor, for his continued support, guidance, and sense of humour throughout this research process. I greatly appreciate the opportunity to work with such a well-respected researcher from whom I am constantly learning how to become a successful clinician and researcher. I would also like to thank my committee members, Dr. Heather Price and Dr. William Smythe, for their valuable feedback and guidance throughout the preparation of this thesis. As well, thank you to Dr. Thomas Hadjistavropoulos, the Canadian Institutes of Health Research, and the Faculty of Graduate Studies and Research for their financial support throughout the completion of my Master's degree.

Many thanks are extended to the participants and the managers of the Sunrise Health Region and the Five Hills Health Region, with special appreciation extended to Cynthia Hanson, Bev Pacey, and Norine Seida for their efforts in participant recruitment and organization of the training sessions. I would also like to thank my labmates, especially Sarah Chan, Eleni Gardikiotis, and Dr. Jaime Williams, for their research advice, support, and assistance throughout all the phases of this project. Thank you also to Kerry Spice and Scott Wilson for their support, patience, and kindness over the past two years.

Finally, thank to Lindsay, Bethany, Myriah, Dylan, and Danaka. Without your friendship and support, I know this would have been a much less enjoyable experience. Your individual strengths and knowledge were invaluable and always seems to come when most needed.

Dedication

I would like to dedicate this thesis to my parents and my brother. Mom, thanks for putting up with me. Your support, your mind-clearing walks, and your email check-ins are appreciated much more than I show. Papa, merci pour tout ton aide, tes bonnes suggestions, et tes livraisons d'épicerie. Tu es un modèle exceptionnel qui m'a démontré comment travailler avec ténacité et intégrité. Marc, thanks for believing I can do (almost) anything. You are a lesson in resilience.

Table of Contents

| | |
|---|-----|
| Abstract | i |
| Acknowledgement | iii |
| Dedication | iv |
| Table of Contents | v |
| List of Figures | xi |
| List of Appendices | xii |
| Introduction and Literature Review | 1 |
| Overview | 1 |
| Education and Training on Pain..... | 3 |
| Educational programs during initial professional training..... | 5 |
| Continuing education programs..... | 8 |
| Barriers and challenges to effective continuing education programs. | 11 |
| Pain | 15 |
| Theories of pain and implications for pain assessment and management. | 16 |
| Gate Control Theory of Pain and the neuromatrix model of pain. | 17 |
| Biopsychosocial models of pain. | 20 |
| Pain in Older Adults..... | 22 |
| Pain in Older Adults with Dementia..... | 24 |
| The presentation of pain in older adults with dementia..... | 28 |
| Communications model of pain. | 29 |

| | |
|---|----|
| The Underassessment and Undermanagement of Pain in Older Adults in Long-Term Care | 31 |
| Barriers to effective pain assessment and management in older adults.... | 33 |
| Individual beliefs and attitudes about pain and aging..... | 34 |
| Dementia and personhood..... | 37 |
| Guidelines and Methods for Assessing Pain in Long-Term Care..... | 42 |
| Self-report methods of pain assessment..... | 43 |
| Observational/behavioural pain assessment. | 46 |
| The PACSLAC. | 49 |
| Purpose..... | 51 |
| Method | 54 |
| Participants..... | 54 |
| Materials and Measures | 54 |
| Pain assessment training video. | 54 |
| Demographic Information Sheet..... | 56 |
| Pain Beliefs Questionnaire..... | 56 |
| Personhood in Dementia Questionnaire..... | 57 |
| Knowledge Test. | 58 |
| Video Evaluation Questionnaire..... | 58 |
| Follow-up Questionnaire. | 59 |
| Procedure | 59 |
| Data Analysis | 61 |
| Quantitative analyses. | 61 |

| | |
|--|-----|
| Qualitative analyses. | 64 |
| Quantitative Results | 65 |
| Data Cleaning and Preparation | 65 |
| Factor Analysis of the VEQ and FQ..... | 67 |
| Demographic Results | 72 |
| Overall Video Evaluation and Group Differences | 75 |
| Group differences between nurses and care aides. | 75 |
| Examination of Overall Learning | 77 |
| Role of Beliefs in Video Evaluation | 77 |
| Long-term perception of utility of practices and implementation. | 79 |
| Role of beliefs on implementation..... | 83 |
| Exploratory Analyses..... | 86 |
| Discussion of Quantitative Results | 88 |
| Qualitative Results | 95 |
| Analysis of Narrative Responses on VEQ..... | 96 |
| Results and Discussion of Focus Group and Individual Interviews | 106 |
| Content Area 1: Current status of pain and pain assessment in long-term care..... | 108 |
| Content area 2: Training in pain assessment..... | 121 |
| Content area 3: Video evaluation and utility. | 123 |
| Content area 4: Barriers, facilitators, and process of change..... | 129 |
| Integrative discussion of qualitative findings. | 138 |
| Model of successful change in pain assessment practices. | 140 |

| | |
|--------------------------------------|-----|
| General Discussion | 146 |
| Strengths and Limitations | 149 |
| Directions for Future Research | 150 |
| References..... | 152 |

List of Tables

| | |
|---|----|
| Table 1: Rotated Pattern Matrix for Video Evaluation Questionnaire Items | 68 |
| Table 2: Rotated Structure Matrix for Video Evaluation Questionnaire Items | 70 |
| Table 3: Demographic Characteristics of the Full Sample | 73 |
| Table 4: Prior Training in Pain Assessment and Pain Assessment in Older Adults with Dementia for Total Sample, Nurses, and Care Aides | 74 |
| Table 5: Descriptive Results of the VEQ Scales and Subscales | 76 |
| Table 6: Post-hoc Comparisons of Pre-video, Post-video, and Follow-up Knowledge Test Mean Scores | 78 |
| Table 7: Correlation Matrix for Variables Used in Regression Equations Predicting the Video Evaluation Questionnaire's General and Specific Content Quality Subscales | 80 |
| Table 8: Regression Analysis Examining the Unique Variance Accounted for by the Predictors of Demographics and Beliefs for the Specific Content Quality Regression Model | 82 |
| Table 9: Mean Scores on the Follow-up Questionnaire for Full Sample, Nurses, and Care Aides | 84 |
| Table 10: Correlation Matrix for Variables Used in Regressions Equations Predicting the Follow-up Questionnaire | 85 |
| Table 11: Exploratory Between-subjects MANOVA Results of Differences between Nurses and Care Aides on the Pain Beliefs Questionnaire Subscales and the Personhood in Dementia Questionnaire | 87 |
| Table 12: Exploratory Between-subjects MANOVA Results Comparing Nurse and | 89 |

Care Aide Responses on Select Questions of the Video Evaluation
Questionnaire

| | |
|--|-----|
| Table 13: Frequency of Identified Helpful and Unhelpful Aspect of the Training Video | 98 |
| Table 14: Identified Barriers to Implementing the Practices Described in the Training Video | 102 |
| Table 15: Summary of Participants' Confidence and Willingness to Use the Pain Assessment Practices Described in the Video | 105 |

List of Figures

Figure 1: Model of successful change in pain assessment practices

141

List of Appendices

| | |
|--|-----|
| Appendix A: Guidelines for Assessing Pain in Seniors with Limited Ability to Communicate | 179 |
| Appendix B: University of Regina Research Ethics Approval | 181 |
| Appendix C: Consent Form for Long-Term Care Staff | 182 |
| Appendix D: Nurse/Care Aide Demographic Information Sheet | 186 |
| Appendix E: Knowledge Test | 187 |
| Appendix F: Video Evaluation Questionnaire | 191 |
| Appendix G: Follow-up Questionnaire | 198 |
| Appendix H: Moderator Guide | 201 |
| Appendix I: List of Content Areas and Themes | 202 |

Introduction and Literature Review

Overview

Adults aged 65 and over comprise 13.7% of the Canadian population (Statistics Canada, 2006). This number is expected to grow rapidly. Population projections indicate that between 23% and 25% of Canadians will be aged 65 and over by the year 2036 (Statistics Canada, 2006). Among individuals over 65 years, chronic conditions accompanied by pain are common.

Charlton (2005) estimated that 50% of seniors living in the community and 80% of seniors living in long-term care facilities experience chronic pain. Health professionals agree that the undertreatment of pain in the older adults is a growing ethical concern (Ferrell et al., 2000). In particular, pain management in long-term care facilities has been highlighted as an area needing further consideration, as many individuals in long-term care are living with pain (Teno, Weitzen, Wetle, & Mor, 2001; Won et al., 2004). The high prevalence of dementia or cognitive impairment in long-term care makes pain assessment more challenging as individuals may not be able to communicate their pain to long-term care staff.

While researchers have shown that a high proportion of individuals in long-term care experience pain, these persons are not receiving systematic pain evaluation and management on a regular basis (Martin, Williams, Hadjistavropoulos, Hadjistavropoulos, & MacLean, 2005; Reynolds, Hanson, DeVellis, Henderson, & Steinhauser, 2008; Williams, Zimmerman, Sloane, & Reed, 2005). As well, examination of analgesic prescriptions indicates that the pain of individuals with cognitive impairments is less

effectively treated than that of individuals without cognitive impairments (Horgas & Tsai, 1998; Morrison & Siu, 2000).

Education is one possible avenue for improving pain assessment and management practices among long-term care staff; however, training available to current and future long-term care staff is very limited. Very few initial training programs (e.g. nursing programs, medical schools) have curricular units devoted to pain (Watt-Watson et al., 2004) and few continuing education programs focusing on both pain and older adults with dementia are available to long-term care staff. In cases where continuing education opportunities have been offered to professionals, barriers that create obstacles in the translation of knowledge into practice have been identified, such as lack of time (e.g. Stolee et al., 2009; Twycross, 2002) and lack of staff support (Francke, Lemmens, Abu-Saad, & Grypdonk, 1997). Based on these findings, research indicates that, even when education is provided, it does not always result in improved practices.

The primary purpose of this study was to develop and evaluate a training video for pain assessment in older adults. This format was chosen given the ease with which information can be disseminated through a video, the cost effectiveness of implementing such a program, the continuing availability of the video for review purposes, and the short time required to watch the video. As such, this format addresses many of the barriers to education that have been identified in past research.

As well, this study examines individual factors that may be acting as a barrier to improving care. Beliefs about the nature of pain in aging and staff perceptions of patient personhood in dementia have been identified as potential factors influencing effective practices (Malloy & Hadjistavropoulos, 2004; Zwakhalen, Hamers, Peijnenburg, &

Berger, 2007). If beliefs and misconceptions are found to be influencing overall evaluation of training and willingness to implement evidence-based practices, such information could allow for the development of more effective training programs.

In order to achieve the two purposes of this study, a training video entitled “Pain assessment in long-term care: A training video for long-term care staff” was developed and training sessions during which the video was shown were held. Beliefs about pain and personhood were assessed, and participants were asked to evaluate the video and its utility. In addition, focus groups and individual interviews were held with a subset of nurses and care aides¹ in order to understand their opinion of the video, the impact of the video on their practices, and barriers that may have interfered with their capacity to implement the practices outlined in the video. Effectiveness of the training, implications for future training, and implications for implementation of effective practices in long-term care facilities are discussed.

Education and Training on Pain

Researchers have established evidence-based methods of pain assessment that can be used effectively among long-term care (LTC) patients (Hadjistavropoulos & Fine, 2006; Herr, 2010; Zwakhalen, Hamers, Abu-Saad, & Berger, 2006). While available, these methods are not being implemented by staff members in LTC facilities (Ferrell, Ferrell, & Rivera, 1995). LTC nurses have been found to hold insufficient knowledge in the areas of pain assessment and treatment (Cason, Jones, Brock, Maeses, & Milligan, 1999; McCaffery & Ferrell, 1997), which is likely a factor involved in the inadequate pain

¹ As the position title varies among facilities, the term “care aide” is used throughout to represent any unregulated care provider (e.g., special care aide, continuing care aide, etc.).

management in LTC. Increased education and training in the area of pain has the potential of addressing some of these issues.

Several researchers have found that both practicing nurses and nursing students have not received adequate levels of pain education. In a large-scale survey of more than 3,000 nurses and nursing students with varying levels of education (e.g., LPN, BSN, MSN), McCaffery and Robinson (2002) established that fewer than 50% of respondents achieved a score of 80% or higher on a pain knowledge questionnaire and that only 3.9% of respondents answered all 30 items of the survey correctly. This questionnaire focused on assessing and treating pain in patients. The cut off of 80% was determined by the researchers and participants as being the minimum score needed to provide safe and effective nursing care to patients. Similarly, Chiu and colleagues (2003) found that 150 students in their final year of nursing in universities in the Philippines and in Australia achieved a mean score of 38.6% on a 23-item pain knowledge questionnaire focusing on basic aspects of pain mechanisms and treatment principles (Chiu, Trinca, Lim, & Tuazon, 2003). Most of the students surveyed admitted that their knowledge of pain management was limited. Together these findings not only suggest that nursing students are leaving programs with incomplete knowledge and that nurses who are already on the job have insufficient knowledge, but also suggest a lack of knowledge of basic aspects of pain and pain management, which may lead to the use of dangerous or ineffective practices.

Education and training can be offered at various points over the course of an individual's career. Training in pain-related topics can be incorporated into program curricula of initial training programs so that students gain the necessary knowledge and skills as they are working towards their professional degrees. Training can also take place

through in-services and continuing education programs once nurses and care aides have entered the work force.

While research evidence has demonstrated that pain curricula can significantly improve pain knowledge in students in health-related programs (Poyhia, Niemi-Murola, & Kalso, 2005; Watt-Watson et al., 2004), program and curriculum reviews of various healthcare professions indicate that pain is a topic rarely covered comprehensively during training (Watt-Watson et al., 2009). Professionals already working in the field also report insufficient knowledge about pain assessment and pain management (Cason et al., 1999; McCaffery & Ferrell, 1997), even though continuing education programs in pain demonstrate an improvement in pain assessment and management in various settings (Innis, Bikaunieks, Petryshen, Zellermeier, & Ciccarella, 2004; Sterman, Gauker, & Krieger, 2003) and could be used as a potential avenue to address this lack of knowledge.

Educational programs during initial professional training. Researchers have suggested that there is inadequate training in pain during initial academic and professional training in most healthcare fields. Recently Watt-Watson and colleagues (2009) reviewing pain curricula in health science faculties in Canadian universities found a need for increased pain content (Watt-Watson et al., 2009). Specifically, these researchers surveyed students at 10 major universities in Canada with health sciences programs, including dentistry, medicine, nursing, occupational therapy, pharmacy, physical therapy, and veterinary medicine. Only 32.5% of health sciences programs required mandatory formal pain content. For the remaining 67.5% of programs, respondents were unable to specify hours dedicated to pain. Rather, pain content in these programs was considered to be integrated throughout the program. Of the programs with

mandatory training, important issues for effective practice such as pain assessment and measurement, false beliefs and barriers, monitoring, and policy/guidelines, were among the least addressed (Watt-Watson et al., 2009). While these findings are cause for concern, even more disconcerting is that, across all health science faculties, the only program where all respondents reported having mandatory formal training in pain was veterinary medicine. Furthermore, veterinary medicine had –by far– more total hours devoted to pain content than programs focusing on humans.

Other researchers have found low levels of formal pain training in health-related university programs. Ogle, McElroy, and Mavis (2008) examined program curricula during postgraduate residency and fellowships by surveying program directors in the United States. Of the 188 program directors who responded, 57% percent reported having formal pain management training in their curricula. Of these, only 39% indicated that the training was a requirement while 43% of programs offered no formal training. Nevertheless, 85% of program directors rated the level of pain management training offered by their program as either excellent or adequate (Ogle et al., 2008). This is problematic; if there is no perceived need for improved pain training by program directors, then program curricula will likely remain unchanged, making it difficult to implement more pain-related training during initial education.

Nurses believe that most of their pain-related knowledge is obtained at nursing school (Cason et al., 1999; Clarke et al., 1996). Given that initial training appears to be the main time for training in this area, inadequate knowledge levels about pain at graduation are cause for concern. Several researchers have assessed students' knowledge about pain during or after completion of their training program and have found

knowledge levels in this area to be below ideal (e.g. Chiu et al., 2003; Plaisance & Logan, 2006; Strong, Tooth, & Unruh, 1999; Weiner, Turner, Hennon, Perera, & Hartmann, 2005). In addition to low knowledge levels, students themselves have reported that they do not believe they have adequate levels of pain knowledge (Chiu et al., 2003). With specific reference to pain assessment, Löfmark, Gustavsson, and Wikblad (2003) found that two thirds of a sample of nursing students in a Swedish university nursing program were unable to complete a systematic pain assessment.

Given that most pain-related initial training, education, and knowledge levels at graduation remain inadequate, professionals entering the workforce need access to additional pain training opportunities in order to ensure adequate pain-related practices. Researchers (Scott et al., 2009; Watt-Watson et al., 2004) have suggested that integrating pain education into undergraduate and initial training could be an avenue that would lead to better pain-related practices. While program curricula changes are a possible avenue for increasing pain knowledge in future professionals, not all programs offer these opportunities. Furthermore, while programs may offer minimal pain-related training, it is unlikely that the focus of this training is on pain issues in older adults.

Successfully encouraging large numbers of students to gain knowledge about pain in older adults without mandatory training is unlikely. Researchers have reported that relatively few trainees are interested in working with older adults (Bernardini Zambrini, Moraru, Kalache, & Macias Nunez, 2008; Michielutte & Diseker, 1985). For example, in a study of students in health-related fields in Spain, it was found that only 12% of nursing students and 36% of physiotherapy students had considered specializing in work with older adults (Bernardini Zambrini et al., 2008). This view spans across fields and is likely

leads to insufficient knowledge about issues specific to care in older adults. Researchers investigating knowledge levels of students in healthcare fields about aging have found it to be insufficient (Damron-Rodriguez, Kramer, & Gallagher-Thompson, 1998; Kaempfer, Wellman, & Himburg, 2002). This is, in part, due to the small portion of the curriculum devoted to this area.

When taken together, the lack of training in pain and the limited interest in working with older adults make the likelihood of having nursing curricula devoted to pain assessment and pain management in older adults very small. Additionally, while the need to increase education in this area has been recognized, curricula are shaped by academic, accrediting, and professional regulatory bodies. At this time, there are minimal or no pain-related entry-to-practice competencies required for Canadian health science students (Watt-Watson et al., 2009). As such, the most likely or accessible avenue for increasing knowledge of the nature of pain in older adults is through continuing education programs.

Continuing education programs. Given that pain education is inadequate in initial training programs, continuing education presents an avenue for healthcare professionals to gain knowledge about effective pain practices. The Canadian Nurses Association (CNA) has encouraged continuing education and, according to their 2004 policy statement, “individual nurses have the primary responsibility for ensuring that their competencies are relevant and up-to-date.” The CNA has also recognized that continuing education is a shared responsibility among individual nurses, professional nursing organizations, employers, educational institutions, and governments (Canadian Nurses Association, 2004).

An effective education program should result in changes in behaviour (Quinn, 2000). Continuing education programs have demonstrated efficacy in improving pain assessment and management practices among various groups of healthcare professionals. For instance, in a one-day workshop on chronic pain among medical residents, Chen et al. (2007) found that participants demonstrated increased pain assessment and pain management knowledge and skills, as well as an increase in their comfort level in the area of chronic pain. Moreover, the residents reported the intention to use the knowledge gained in the workshop to change their methods and practices with regard to chronic pain.

Continuing education program implementation has also been researched in programs designed specifically for nurses. Several positive outcomes have been reported in pain-focused continuing education programs implemented among nurses, including increased pain-related knowledge (Ghandehari et al., in press), increased pain assessment ability, and increased nurse documentation of patient pain in the patient files (De Rond, de Wit, van Dam, & Muller, 2000; De Rond, de Wit, van Dam, van Campen et al., 2000). In addition to benefits observed among healthcare professionals, pain-related continuing education programs have also been found to increase patient satisfaction and reduce patient pain (Innis et al., 2004; Long et al., 2010).

Nonetheless, these benefits have not been found in all continuing education programs for nurses in long-term care. Jones and colleagues (2004) implemented a program aimed to improve knowledge and attitudes about pain in nursing homes in the United States. In their program, which was implemented in six nursing homes, the researchers employed a multifaceted approach involving four 30-minute educational

sessions, a resource binder, educational videos, and other materials. Prior to the continuing education program, baseline knowledge tests demonstrated knowledge deficits among staff members. Post-intervention, some, but not all, of the nursing home staff had a significant increase in knowledge levels. Jones et al. attributed these differences to attendance and staff turnover. Staff members in homes that mandated staff attendance at the sessions and that had fewer staffing changes throughout the study demonstrated a greater increase in knowledge. These limitations highlight some of the barriers that often accompany the successful implementation of continuing education programs.

In an attempt to address several of the methodological issues that arose in Jones et al.'s (2004), study including high staff turnover rates, inconsistent participant completion of pre- and post-intervention questionnaires, and differential exposure to the continuing education program, Ghandehari et al. (in press) implemented a similar continuing education program in long-term care facilities in Canada. Nursing staff and care aides attended interactive three-hour education sessions that addressed pain-related knowledge gaps such as medication management. In contrast to Jones et al.'s findings, participants in this study were uniformly found to have an increase in pain-related knowledge, and this knowledge was found to be sustained over a two-week follow-up period.

Despite Ghandehari et al.'s (in press) improved methodology and positive outcomes, as well as the positive outcomes demonstrated through the implementation of many other continuing education programs (e.g., De Rond, de Wit, van Dam, & Muller, 2000; Innis et al., 2004), the time-intensive nature of such training can be problematic. Although continuing education programs may increase knowledge and demonstrate positive outcomes for both staff and patients in long-term care settings, feasibility of

implementation and overall utility must be taken into consideration. Long-term care staff struggle with several challenges, such as insufficient number of available personnel available for staff replacement, that impede their ability to attend training. The video training format used in the current study was chosen with the aim of addressing several of the many barriers faced by long-term care staff who wish to receive further training.

Barriers and challenges to effective continuing education programs. In a survey of 159 nurses in the United States, Harper (2000) found that 96% of nurses agreed that continuing education is necessary to maintain clinical competence. When asked about their motivation for attending continuing education sessions, the three most frequently cited reasons for participating in voluntary continuing education were (a) that the topic was relevant to practice, (b) a desire to remain current, and (c) self-improvement. The findings from this study indicate that nurses believe that continuing education is important and have a desire to further their education. Nonetheless, although many nurses appear willing to pursue continuing education opportunities, many are met with barriers that interfere with their ability to attend training or to implement what they have learned.

Many researchers have identified lack of administrative support as a major challenge to the effectiveness of continuing education programs (Jones et al., 2004; Stolee et al., 2005; Stolee et al., 2009). In interviews with long-term care nurses concerning barriers to effective implementation of continuing education programs, Stolee and colleagues (2005; 2009) found that nurses highlighted administrative and organizational support as being a key barrier. Participants identified management as a factor influencing the implementation of a continuing education program in long-term

care indicating that, if management did not support the initiative, implementation was very difficult (Stolee et al., 2009).

Other challenges to the success of continuing education programs arise from lack of managerial support, such as finding staff replacements, receiving compensation for hours spent at training, and receiving time off to attend sessions (Jones et al., 2005; Stolee et al., 2005; Stolee et al., 2009). Researchers have found staffing and compensation concerns to be influenced by the degree of administrative support extended to staff in the pursuit of continuing education opportunities. In hospitals and long-term care settings where staff members feel supported by their managers and managers make it possible for staff members to attend education sessions (e.g. through staff replacement or compensation for hours spent at the program), continuing education programs have been found to be more successful. Staff members have been shown to hold more positive attitudes towards programs and their practical applications and programs have been shown to be much more successful (Francke, Lemmens, Abu-Saad, & Grypdonk, 1997; Long, in press). Conversely, in settings where managers do not encourage or facilitate attendance, participation rates in continuing education programs are lower and staff members hold more negative attitudes towards programs and their practical application (Francke et al., 1997). Similarly, researchers have found that staff members in nursing homes where training is mandated and staff replacement is facilitated report more benefits from continuing education programs than staff members in nursing homes where this support is not provided (Jones et al., 2004).

Even when participation in continuing education programs is possible, staff are frequently met with challenges in the implementation of the transmitted knowledge.

Nurses are often overburdened with heavy workloads and limited resources (Twycross, 2002), making it arduous to take additional time to implement the methods taught during a continuing education program (Francke et al., 1997; Stolee et al., 2009). Moreover, even when continuing education programs are reported to have positive outcomes, knowledge has been found to decrease progressively unless refresher courses are offered regularly (Guardini, Talamini, Fiorillo, Lirutti, & Palese, 2008).

Lack of mutual support among staff members was also identified by Stolee et al. (2009) as a potential barrier to the success of continuing education programs. Staff in workplaces where others had received the same training had less difficulty implementing the new practices than staff whose colleagues had not received the same information. Furthermore, individuals who felt that they did not have the support of those colleagues who had not attended the training found it difficult to overcome the resistance demonstrated by these colleagues. This study demonstrates the necessity of having a program that can be disseminated to all, or nearly all, staff, so that the shared knowledge base creates consistency of practices and fosters a more supportive work environment.

A further barrier to continuing education in long-term care is a lack of physical and financial resources (Stolee et al., 2005). Facilities that lack financial resources have more difficulty sending staff to training because their elevated workload results in less flexibility to attend programs. In terms of physical resources, many facilities oftentimes do not have the space to hold a training session or the equipment required (overhead projector, screens, etc.) to present the training materials (Stolee et al., 2005).

The nature of the continuing education programs themselves has also been identified as a barrier to the effectiveness of the programs. In their interviews with nurses,

Stolee et al. (2005) learned that nurses sometimes felt overwhelmed by the amount of new information being disseminated during a program. Additionally, nurses felt that the programs did not always take into account varying levels of staff education and were frequently targeted towards the registered staff, which resulted in the exclusion of many front-line workers. Program costs, lack of information about available programs, and lack of continuing education opportunities have been identified as additional program-related barriers (Aoki & Davies, 2002; Harper, 2000; Penz et al., 2007).

Healthcare staff in rural and remote areas encounter a number of additional obstacles. In a survey of rural and remote nurses in Canada, Penz and colleagues (2007) found that rural and remote nurses were faced with isolation from locations that might offer programs, low staffing levels, and limited opportunities, which inhibited their ability to benefit from continuing education programs. As well, the cost of travel was raised as an issue, which relates to the isolation of these programs from areas that would provide the education. While rural and remote nurses had a relatively high level of participation in continuing education activities, 67.1% of the 2838 nurses sampled by Penz et al. (2007) perceived barriers to participation.

Education programs for long-term care staff must address the many barriers that present themselves in this setting, including time and staffing challenges, and must be sufficiently flexible to accommodate the constraints and issues that arise in this setting (Aoki & Davies, 2002; Tryssenaar & Gray, 2004). Developing a training opportunity that can be completed in a short period of time and that does not require staff to leave the facility would help address these barriers. Video-based training is one such opportunity. Such a format may receive increased support from managers and administration as it

requires little to no staff replacement. Staff members could take turns watching the video and, if a situation was to arise for which they were needed, they would have the freedom to pause the video, tend to the situation, and then return to the training. Furthermore, a video can be disseminated to all staff members in a nursing home, which addresses the issues that arise when staff have not all completed the same continuing education training. Video format is cost-effective and permits staff to review either parts or the whole of the material if information is missed or misunderstood or if a refresher is required on a certain topic. Finally, this format is ideal for training in rural and remote areas as it eliminates any need for travel and the barriers associated with being in an isolated community.

Pain

In order to assess pain, an understanding of its nature is important. The International Association for the Study of Pain (IASP) defines pain as an “unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (IASP, 2010). Early conceptualizations limited the pain experience to physical factors. It is only more recently that more multidimensional explanations of pain have emerged.

IASP supplements this definition with two important points. First, pain is a subjective experience and every individual’s experience is different. Second, the inability to communicate one’s pain does not mean that pain is not present and that appropriate pain-relieving treatments are unnecessary. These two points, in conjunction with the recognition of both sensory and emotional aspects of pain, are extremely important for effective pain assessment in a long-term care setting.

Given its subjective nature, pain cannot be inferred by examination of tissue damage. As such, pain assessment in those with limited ability to communicate can be challenging for long-term care staff. Furthermore, since no two people will have the same physical, social, and emotional reactions to their pain, pain assessments need to encompass as many of the possible presentations of pain as possible. In order to understand how pain might present itself in individuals and to be willing to implement proper pain assessment methods, particularly with those who may be unable to communicate their pain, a basic understanding of the nature of pain and the multidimensional experience of pain is important. As such, the focus of the developed and evaluated training video was on pain assessment in seniors with limitations in ability to communicate.

Theories of pain and implications for pain assessment and management. In the 17th century, René Descartes proposed one of the first theories of pain. This theory was based on the concept of a direct, unidirectional relationship, described as pain pathways, between the pain stimulus and the sensation of pain (Descartes, 1649/1967). This process implies a direct, one-to-one correspondence between pain and tissue damage. As such, this theory comes with limitations. Most noticeably, by suggesting that damage to tissue has a direct relationship to the perception of pain, Descartes excluded the possibility of psychological and individual factors influencing the experience of pain. While many healthcare providers have moved away from the idea that pain is solely linked to tissue damage towards a more multidimensional understanding, the conceptualization of pain having a direct correspondence to the extent of tissue damage still exists today (Sloan, Gupta, Zhang, & Walsh, 2008). Such a conceptualization, when

held by nurses and care aides in long-term care, has important implications for pain assessment.

Firstly, if people are unable to communicate their pain, lack of obvious tissue damage may lead to these individuals being left to live with untreated pain. Secondly, given the subjective nature of pain, two patients with the same physical problem may have two very different pain experiences. If one equates tissue damage to pain and limits pain to this one-to-one relationship, these two patients should benefit from the same treatment. This, however, is not the case. Pain experience can vary as a function of a variety of factors, including social context (Hadjistavropoulos et al., 2011).

A second limitation to Descartes' theory is that pain can be felt when there is no injury. For example, chronic back pain often is present without a clear sign of organic damage (Melzack & Katz, 2004). Within the specificity theory, there would be no place for persons with such pain.

Following Descartes, a variety of other theories emerged (e.g. Pattern Theory), but none were sufficiently comprehensive to explain most pain-related phenomenon (Melzack & Katz, 2004; Melzack & Wall, 1965). This changed with the Gate Control Theory of Pain (Melzack & Wall, 1965).

Gate Control Theory of Pain and the neuromatrix model of pain. Countering the notion of one-to-one correspondence between pain and tissue damage, Melzack and Wall (1965) proposed the Gate Control Theory of Pain. The theory recognized both the physiological basis of pain and additional factors that affect the experience.

The Gate Control Theory postulates that, when a stimulus is felt on the skin, three spinal cord systems – cells of the substantia gelatinosa in the dorsal horn, the dorsal

column fibres that project toward the brain, and the central transmission (T) cells in the dorsal horn – are activated. The substantia gelatinosa, a unit of cells that run the length of the spinal cord, works as a gating mechanism that is activated in the dorsal horn of the spine. This gating mechanism allows the transmission of nerve impulses from the peripheral nerve receptors to be transmitted through afferent fibres to the brain.

Two types of fibres, large-diameter myelinated fibres and small-diameter unmyelinated fibres, transmit the initial stimulus to the substantia gelatinosa and the first central transmission centre. Impulses transmitted through the large-diameter fibres inhibit the transmission of sensory input by stimulating inhibitory neurons. The stimulation of the inhibitory neurons prevents the projection neurons from sending a pain signal to the central transmission cells, which would have, in turn, sent a signal to the brain. Stimulating the inhibitory neurons causes the gating mechanism to close and the brain not to interpret the experience as painful. The small-diameter fibres allow projection neurons to send pain messages to the brain. Stimulation of these fibres causes the gate to open, which prompts the brain to interpret the sensation as painful (Asmundson & Wright, 2004; Melzack & Wall, 1965).

In addition, the gating mechanism is affected by nerve impulses descending from the brain. Melzack and Wall proposed that a central control trigger exists within the central nervous system that, through selective brain processes, can exert control over the gating mechanism. Cognitive and affective information descending from the brain influences the gating mechanism and, in turn, modulates the pain experience (Melzack & Wall, 1965). This innovative concept of descending transmissions influencing the pain

experience transformed the previous understanding of pain. Pain is now understood as an experience that can be influenced by what is felt and how the experience is lived.

This theory had a tremendous impact in the field of pain. In terms of pain assessment and management, recognizing the influence of psychological variables in the pain experience has led to important innovations. The theory had been supported through both physiological (Basbaum & Fields, 1984; Humphries, Johnson, & Long, 1996; Julien & Marchand, 2006; Shrivastav & Musley, 2009) and psychological research (Hadjistavropoulos et al., 2011; Hale & Hadjistavropoulos, 1997). Pain assessment now has the potential to be a multidimensional evaluation. While this makes pain assessment more complex and requires more advanced pain assessment measures that incorporate psychological and cognitive components, it also makes it more effective. In turn, pain management no longer needs to be restricted to the treatment of a physical ailment, and cognitive and psychological pain management strategies have the potential to be developed. Moreover, recognition about the subjectivity of the pain experience underscores the challenges of evaluating pain in persons with limited ability to communicate due to dementia. This investigation aims to address this issue with effective healthcare staff education.

The Gate Control Theory, however, did not account for all phenomena. In particular, it did not explain the phenomenon of phantom limb or the presence of pain in paraplegics. To explain these, Melzack (1999) developed the neuromatrix model of pain as a supplement to the theory.

The neuromatrix model of pain suggests that there is an anatomical substrate of the body – the neuromatrix – located in the brain. This neuromatrix is a network of

neurons that form a pattern of loops between the thalamus and the cortex and between the cortex and the limbic system (Melzack & Katz, 2004). According to this model, there is a continuous processing of various input information that produces and interacts with output processes through the neuromatrix. This interaction generates output patterns from the neuromatrix that are sensory, affective, cognitive, and biological.

The continuous stream of information that is being processed is multidimensional and makes a characteristic pattern, the neurosignature. This neurosignature contains information for the whole body and explains why individuals experience phantom limb or why paraplegics feel pain. The neurosignature was created prior to amputation or paralysis and contains information from the parts of the body.

According to Melzack, each person has their own “body-self neuromatrix” (Melzack, 1999). Given the individuality of this system, each individual’s experience will be different. This theory and, more specifically, the concept of the body-self neuromatrix is also consistent with the subjective nature of the pain experience.

Together, the Gate Control Theory and the neuromatrix model have revolutionized how pain is understood, which has a great impact on those who must assess and treat pain. Pain is now conceptualized as a multidimensional, subjective experience influenced by physical, affective, and cognitive factors. As such, this leads to important clinical implications as it necessarily changes the way that pain is assessed and treated.

Biopsychosocial models of pain. The biopsychosocial models of pain expand on the Gate Control Theory. They emphasize the complex and multidimensional nature of pain and the many factors that interact to influence pain, namely, biological,

psychological, cultural, and social factors (Hadjistavropoulos et al., 2011; Turk & Monarch, 2002). Biopsychosocial models of pain management and treatment have important implications as they provide support for a multidisciplinary approach when both assessing and managing pain (e.g., Overmeer, Boersma, & Linton, 2006).

In the biopsychosocial approach, there is a constant reciprocity among biological, psychological, and social factors, which shape the person's pain experience and responses. A biological factor, such as tissue damage, may initiate, maintain, and alter physical problems. At the same time, psychological variables influence one's appraisal and perception of one's own physical experience. Social factors then shape the individual's behavioural responses to their psychological perception of their physical problem (Turk & Monarch, 2002). Several biopsychosocial models of pain have been proposed, including the operant model (Fordyce, 1976; Fordyce, Shelton, & Dundore, 1982), the Glasgow model (Waddell, 1987, 1991, 1992; Waddell, Newton, Henderson, Somerville, & Main, 1993), the biobehavioral model (Turk, Meichenbaum, & Genest, 1983), fear avoidance models (Lethem, Slade, Troup, & Bentley, 1983; Vlaeyen & Linton, 2000; Vlaeyen & Linton, 2012), and the communications model of pain (Hadjistavropoulos et al., 2011).

Throughout the course of disease or impairment, the influence of physical, psychological, and social factors can shift. Variability will exist in the degree to which each of these factors influence a person over time, and how each of these factors will influence different people with the same physical problem (Crook, Weir, & Tunks, 1989; Turk & Monarch, 2002). In an examination of psychosocial factors in back pain, Overmeer and colleagues (2006) surveyed healthcare providers concerning factors that

most influence their patients. The factors most commonly stated were social/environmental factors (including family, social support, and environment) and psychological factors (including emotions, cognitions, and self-esteem), which demonstrate the large influence of variables other than physical. In line with these findings, researchers have found that pain management treatments that focus on psychological variables, such as cognitive-behavioural or psychosocial interventions, can be effective (e.g., Chen, Cole, & Kato, 2004; Morley, Eccleston, & Williams, 1999; Weydert, Ball, & Davis, 2003).

Due to the interplay around pain and social, emotional, physical, and psychological factors, indications of pain can display themselves in any one domain of a person's life. Care providers need to be alert for indications of pain that may present themselves as differences in physical, psychological, social, or emotional aspects of the person's everyday life.

The current study aimed to determine whether misunderstandings about the nature of pain affected the effectiveness of the training video. Participants were asked about the degree to which they believe different factors influence the presence of pain. The importance of assessing pain from a biopsychosocial perspective, particularly in individuals with limited ability to communicate, was emphasized in the video and methods that allow for an assessment of the various domains influenced by the presence of pain were presented.

Pain in Older Adults

Pain is an experience that is common across the lifespan; however, elevated rates of pain have been reported among older adults. Chronic pain has been estimated to be

experienced by up to 50% of seniors living in the community and up to 80% of seniors living in long-term care facilities (Charlton, 2005). Other researchers have found different rates of pain among long-term care residents. For instance, Won and colleagues (2004) reported a prevalence rate in the United States of 48.5%, while Teno and colleagues (2001) reported a rate of 41.2%. Despite some discrepancies that are a function of method used and population studied (Helme & Gibson, 2001), there is consensus that the prevalence is high (Gibson, 2003), and the underassessment of pain that occurs in long-term care has led researchers to argue that the prevalence rates reported in studies underestimate the actual rates of pain (Teno et al., 2001).

Underassessment of pain in long-term care could also be a contributing factor to discrepancies in prevalence studies (Fox, Raina, & Jadad, 1999). Lower reported rates may have been found within long-term care facilities with less stringent pain assessment and management practices, leading to an underestimation of the prevalence of pain within that facility. This possible explanation emphasizes the need for better pain assessment. Improved pain assessment would result in a more accurate representation of the number of residents in long-term care who are living with pain. This would, in turn, allow for a better understanding of the magnitude of the problem at hand. Regardless of the inconsistencies that are present in the literature, researchers have clearly demonstrated that a large number of older persons in long-term care are living in pain.

The type or location of pain reported by older adults draws a complex picture as to the nature of pain in this population. The prevalence of articular joint pain, foot pain, and leg pain increases with age, with foot and leg pain increasing into the ninth decade of life (Bergman et al., 2001; Cook & Thomas, 1994; Gibson & Chambers, 2004; Leveille et

al., 1998; Von Korff, Dworkin, & Le Resche, 1990). Alternatively, there is a peak in the prevalence of headaches, abdominal pain, and chest pain in middle age, followed by a subsequent decrease in pain in these areas during the sixth decade of life (Bergman et al., 2001; Gibson & Chambers, 2004; Leveille et al., 1998; Von Korff et al., 1990). Reports of back pain have brought inconsistent findings, with some researchers reporting an increase in the rates of back pain (Harkins, Price, & Bush, 1994; Von Korff, Dworkin, Le Resche, & Kruger, 1988) while other researchers have found a peak in late-middle age, with a decrease in old age (Andersson, Ejlertsson, Leden, & Rosenberg, 1993; Borenstein, 2001; Grimby, Fastbom, Forsell, Thorslund, Claesson, & Winblad, 1999; Loney & Stratford, 1999).

Pathology is the overriding contributing factor to the increase in pain in old age. Many of the diseases that are more common with increasing age are associated with pain, such as arthritis, osteoarthritis and pressure ulcers (Helme & Gibson, 2001; Protor & Hirdes, 2001). It is important for healthcare professionals to be aware that, while pathology is more frequent among older persons and often leads to an increase in pain, pain itself is not “normal” in older adults nor is it an inherent part of aging. Being unaware of this can have implications for pain assessment.

Pain in Older Adults with Dementia

Dementia is common in older adults who have an increasing risk of developing the disease with increasing age. In 2008, 7% of Canadians over the age of 60 and 55% of Canadians over the age of 80 had dementia (Alzheimer Society of Canada, 2010). The progressive nature of this disease means that many individuals will eventually move to long-term care when their care needs become too great to remain in their homes

(Veerbeek et al., 2010). In 2008, 45.4% of Canadians with dementia were reported to be living in long-term care facilities (Alzheimer Society of Canada, 2010).

Irreversible dementia refers to a group of conditions that involve a deterioration of cognitive ability. Dementias include Alzheimer's disease, vascular dementia, frontotemporal dementia, Lewy Body dementia, Creutzfeldt-Jakob disease, as well as cognitive consequences of Parkinson's disease and Huntingdon's disease (Alzheimer Society of Canada, 2010). Symptoms associated with dementia frequently involve impaired judgement, reasoning, and thinking ability; changes in mood and behaviour; and limitations in ability to communicate. Additional cognitive deficits that are frequently a result of dementia include aphasia, apraxia, agnosia or disturbances in executive functioning (American Psychological Association, 2000). Given the high proportion of long-term care residents living with dementia, it is imperative that long-term care staff know how to assess pain in this group.

There is an increasing debate as to whether pain processing might be affected by the presence of dementia (Hadjistavropoulos, Gibson, & Fine, 2011). Support exists for the notion that dementia may affect the pain experience, as the degeneration in the brain affects pathways associated with pain. For example, the degeneration that occurs in Alzheimer's disease affects components of the medial pain system, including the medial thalamic nuclei, the hypothalamus, and the cingulate and the insula cortex (Braak & Braak, 1997; Cole et al., 2006; Nagy et al., 1997; Rub, Del Tredecì, Del Turco, & Braak, 2002; Thompson et al., 1999). This pain system has been proposed to play a role in the affective aspect of pain (Price, 2000).

Conversely, recent neuroimaging research on pain-related activity in the brain (Cole et al., 2006) has failed to support this idea. Specifically, in a comparison of brain images of older adults with Alzheimer's disease with those of older persons without any cognitive impairment, Cole and colleagues (2006) concluded that pain-related activity in the medial and lateral pain pathways of the brain are preserved in individuals with Alzheimer's disease and show no evidence of diminished pain-related activity in the brains of such patients. Moreover, significantly greater pain-related activations were found in patients with Alzheimer's disease than patients without Alzheimer's disease.

Pain threshold and tolerance in individuals with Alzheimer's disease compared to individuals without Alzheimer's disease have also been investigated. Benedetti and colleagues (1999) found no difference between persons with and without Alzheimer's disease in stimulus detection and pain threshold. Differences were found in pain tolerance. The more severe the cognitive impairment, the higher the pain tolerance was found to be (Benedetti et al., 1999). In contrast, Kunz and colleagues (2009) found that there was a difference in pain threshold between persons with and without cognitive impairment. In a group of patients with dementia, they found the nociceptive flexion reflex, a measure of pain threshold, to be markedly decreased compared to that in persons without cognitive impairment. These findings suggest an intensified pain experience in persons with dementia (Kunz, Mylius, Scharmann, Schepelmann, & Lautenbacher, 2009). It is important to note that threshold and tolerance differences such as these are identified in experimental contexts with artificially-induced pain. As such, they may be of very limited clinical significance.

Facial action coding (Ekman & Friesen, 1978) has also been used as a method of comparing the pain experiences of individuals with and without cognitive impairment. Researchers using facial action coding to examine pain have shown that facial reactions are similar in individuals with and without cognitive impairments who are experiencing pain (Hadjistavropoulos, Von Bayer, & Craig, 2001). In fact, several studies have found enhanced facial responses to noxious stimulation in individuals with dementia when compared to individuals without dementia (Hadjistavropoulos et al., 2001; Kunz et al., 2009; Kunz, Scharmann, Schepelmann, Hemmeter, & Lautenbacher, 2007), which could be an indication of intensified pain processing in individuals with cognitive impairment.

Researchers investigating the frequency of pain in persons with cognitive impairment have also reported inconsistent findings. Ferrell and colleagues (1995), in a study of persons with dementia, found that 62% of their participants reported pain. In contrast, Proctor and Hirdes (2001), in their study of long-term care residents in Canada found that, while 61% of long-term care residents with no cognitive impairment reported pain, pain was reported in only 31.5% of residents with cognitive impairment. Keeping in mind that the neuroimaging research and facial coding research do not support the notion that there are substantial differences in the experience of pain between persons with and without cognitive impairment, these discrepancies could be due to inadequacies in the assessment methods used to identify the presence of pain in individuals with cognitive impairments.

To date, research findings have indicated that pain is still very prevalent in individuals with dementia, which speaks to the need for improved pain assessment among this group. Pain assessment in individuals capable of self-reporting pain can be

relatively straightforward. With persons who have difficulty communicating their pain, pain assessment becomes much more complex. Difficulties in ability to communicate can often appear with the progression of dementia. Given the high prevalence of dementia in long-term care, nearly every long-term care staff member will be faced with the challenge of assessing pain in persons with dementia and persons with limited ability to communicate. It is extremely important that staff are trained in the available pain assessment methods. This study aimed to provide this training to long-term care staff members in a format that was easily distributable in order to reach as many long-term care staff members as possible.

The presentation of pain in older adults with dementia. When an individual is unable to communicate, the ability to identify presentations of pain becomes invaluable. Behavioural disturbances often occur with the progression of dementia (Desai & Grossberg, 2001), regardless of pain status. Behavioural disturbances have been noted as expressions of pain in older adults with dementia. In a study examining pain in long-term care residents with dementia, withdrawal, loss of weight or appetite, and low activity levels presented as the behavioural disturbances with the highest intensity in residents with chronic pain (Cipher, Clifford, & Roper, 2006). Further, the presentation of behavioural disturbances was found to be related to the severity of dementia. Residents with severe dementia exhibited more physical combativeness, agitation, distress, repetitive behaviours, sundowning, delusional territorial behaviours, socially disruptive behaviours, and wandering than residents with mild to moderate dementia (Cipher, Clifford & Roper, 2006).

Given that many of these behavioural disturbances can accompany severe cognitive impairment, behavioural disturbances caused by pain have the potential to be misattributed if not treated appropriately. Healthcare providers must be diligent not to assume that such behaviours are simply due to cognitive impairment and must carry out a complete pain assessment (Cipher et al., 2006; Hadjistavropoulos, Dever Fitzgerald, & Marchildon, 2010). To recognize and prevent potential misattributions, nursing staff and care aides working with residents in long-term care must be educated in the role of pain in behavioural disturbances. Moreover, although the relation between pain control and improved behaviour in dementia requires further exploration (Husebo, Ballard, & Aarsland, 2011), recent research suggests that controlling pain among individuals with dementia may result in reduced behavioural disturbances (Husebo, Ballard, Sandvik, Nilsen, & Aarsland, 2011). As such, long-term care staff providing timely pain interventions to residents may prevent the development or increase in intensity of behavioural manifestations of pain. Long-term care staff should be trained in the use of pain assessment measures that have been found to be reliable for use among individuals with dementia and that can distinguish between indications of pain and indications of other distress.

Communications model of pain. Given the complexity of pain, as demonstrated by the biopsychosocial models, communication of pain is extremely important. In long-term care settings, residents are not always able to clearly articulate that they are experiencing pain. While behavioural disturbances are one indicator of pain in individuals with dementia, there are many other methods of communicating pain in both individuals with dementia and individuals without dementia. The communications model

can be applied in long-term care to provide a framework in which pain is expressed, communicated, assessed, and understood.

The communications model of pain (Hadjistavropoulos & Craig, 2002; Hadjistavropoulos et al., 2011; Prkachin & Craig, 1995) works from a biopsychosocial perspective to provide a model of pain communication. This model takes into account the person in pain and the caregiver or the observer of the pain. In a long-term care facility, this relationship would be between a resident and a nurse/care aide. The communications model is based on an $A \rightarrow B \rightarrow C$ formulation by Rosenthal (1982), wherein A represents the internal experience, which is then encoded as B, in particular features of expressive behaviour, which leads to C, which is the observers' inferences about the nature of the sender's experience or the decoding. All three stages described in the model are subject to influence from personal characteristics and the social context (Hadjistavropoulos & Craig, 2002; Hadjistavropoulos, Craig, & Fuchs-Lacelle, 2004). The communications model of pain is consistent with findings in the pain literature (Hadjistavropoulos et al., 2011). Treatment of pain is dependent on the observer's ability to decode another's expressive behaviours (Hadjistavropoulos et al., 2004). This is especially true in long-term care settings with individuals who have limited ability to communicate.

Pain can be communicated intentionally, for example, in response to someone's query, or unintentionally, for example, a reflexive pain reaction. It can be observed through verbal (e.g., being told about the pain) and nonverbal indicators (e.g., rubbing, guarding; Hadjistavropoulos et al., 2004). The challenge, especially when working with individuals with a limited ability to communicate, is knowing how to take an encoded

message and interpret it to obtain a meaningful understanding of an individual's pain. The current undertreatment of pain in long-term care may be due, in part, to the difficulties encountered by long-term care staff in decoding pain expressions. Tools are available to facilitate such decoding. Staff working in long-term care facilities need to become aware of the various ways that their residents, especially those with limited ability to communicate, may be expressing their pain. They must also become aware of the available measures that can help them decode these expressions as accurately as possible.

The Underassessment and Undermanagement of Pain in Older Adults in Long-Term Care

Health professionals agree that the undertreatment of pain in older adults is a growing ethical concern that requires amelioration (Ferrell et al., 2000). Many researchers have found pain to be poorly assessed and inconsistently documented among individuals with dementia in long-term care, which inevitably leads to improper pain management. In a study examining pain in individuals with dementia in long-term care, Ferrell and colleagues (1995) found that although 62% of patients with dementia reported having pain, none of the participants' pain was routinely or systematically evaluated. Further, of the patients reporting pain, none had their pain complaints well documented in their charts.

Pharmacological studies provide strong evidence of pain mismanagement among older persons with cognitive impairments. Of particular relevance are studies in which numbers of prescriptions and strength of dosage are compared in individuals with and without dementia. For instance, in a study comparing patients with hip fractures both

with and without cognitive impairments, Morrison and Siu (2000) found that patients without cognitive impairment were prescribed nearly three times the amount of analgesics as the patients with advanced dementia, despite all other patient characteristics being comparable. Horgas and Tsai (1998) also found disparities in number and dosage of pain medications prescribed in older persons with and without cognitive impairment, with those with cognitive impairments being administered an average of 5,804 mg of acetaminophen over a one-week period compared to the 2,871 mg average administered to the group with cognitive impairments (Horgas & Tsai, 1998). Kaasalainen and colleagues (1998) found that while nearly 50% of long-term care residents without cognitive impairment had scheduled pain medications orders, only 25% of long-term care residents with cognitive impairments had scheduled pain medication orders (Kaasalainen et al., 1998).

This inconsistency in medication use continued to be seen in more recent studies. In a study examining long-term care patients, those with a diagnosis of dementia were significantly less likely to receive PRN (as-needed) medication (Nygaard & Jarland, 2005). Moreover, inadequate pain treatment was found not to be limited to those with a dementia diagnosis. Of their total sample (125 persons with and without cognitive impairment) 44% of those considered to be in pain were not receiving any pain treatment.

Experiencing persistent chronic pain can be detrimental to both physical and psychological well-being (Farrell, Gibson, & Helme, 1996). Consequences of persistent pain in older persons include, but are not limited to, depression, anxiety, decreased socialization, sleep disturbances, and impaired ambulation (American Geriatrics Society Panel on Persistent Pain in Older Persons, 2002). Longitudinal findings suggest that

individuals who initially presented with pain can be as much as three times as likely to develop depression (Geerling, Twisk, Beekman, Deeg, & van Tilburg, 2002). The relationship between pain and depression has been particularly emphasized by researchers, with many researchers suggesting that a reciprocal relationship exists between these two variables (Geerling et al., 2002; Lépine & Briley, 2004). In addition to depression, individuals in long-term care who are living in pain have been found to experience more loneliness than long-term care residents without pain (Tse, Leung, & Ho, 2011).

There is an evident need for immediate promotion of pain management in older persons in long-term care. Improved pain assessment may offer a first step in reaching this goal. Pain management may be facilitated by pain assessment as pain cannot be properly managed without proper identification. In a study involving the implementation of systematic pain assessment over a three-month period in long-term care facilities, Fuchs-Lacelle, Hadjistavropoulos, and Lix (2008) found an increase in the usage of PRN analgesic medications among patients with dementia, resulting in a decrease in observable pain behaviours (Fuchs-Lacelle & Hadjistavropoulos, 2004; Fuchs-Lacelle et al., 2008). These findings support the need for improvements in pain assessment training among long-term care staff, as proper knowledge of pain assessment resulting in appropriate and systematic pain assessment practices could ameliorate pain management.

Barriers to effective pain assessment and management in older adults. While the need for improved pain practices has been demonstrated, rectifying this situation has proven difficult. A better understanding of the barriers that interfere with attempts at

improving pain practices is an important step in assuring that older persons are receiving better care for their pain.

Beliefs, attitudes, and perceptions held among long-term care staff have been identified as an overriding theme under which many specific obstacles lie. Weiner and Rudy (2002), in a survey of nurses and care aides in seven long-term care facilities in the United States, found staff to believe there to be inadequate time to assess and address pain in long-term care. Tarzian and Hoffman (2004) in their survey of nursing directors in the United States found that 25.9% of directors believed that proper pain management is hindered by the amount of available time to diagnose and treat pain.

Lack of knowledge has also been identified as a major barrier to proper pain assessment. In their survey, Tarzian and Hoffman (2004) learned that 64% of nursing directors perceived lack of knowledge to be a major barrier. Other barriers identified by the nursing directors included lack of standardized approaches to treating pain, difficulty in choosing the right analgesic, difficulty diagnosing pain with enough precision, and poor pain assessment. All of these barriers could be interpreted as specific examples that fall under the broader issue of inadequate knowledge. The clear lack of knowledge emphasizes the immediate need for further training in this area.

Individual beliefs and attitudes about pain and aging. Beliefs about the nature of pain in old age and the nature of dementia have been identified as likely causes of inadequate pain assessment and management among older adults in long-term care (e.g., Blomqvist, 2003; Long, in press; Malloy & Hadjistavropoulos, 2004; Tarzian & Hoffman, 2004; Zwakhalen et al., 2007). Both nurses and care aides working in long-

term care have been found to hold negative attitudes and inaccurate beliefs (Long, in press).

Researchers have found nursing directors in long-term care facilities to recognize the influence of negative staff attitudes and inaccurate staff beliefs as a major barrier to proper pain management (Tarzian & Hoffman, 2004). However, nursing staff have been found to be largely unaware of the detrimental effects that inaccurate beliefs can have on pain management (Zwakhaleh et al., 2007). For instance, in nursing facilities where staff members have been found to hold misconceptions about pain, such as “Assessing pain in a dementia patient is a matter of guessing” or “Pain is part of the aging process,” nursing home staff reported that they were satisfied with the assessment and treatment of pain within their facilities (Zwakhaleh et al., 2007). This speaks to the detrimental effect of false beliefs and the importance of addressing pain in initial training programs. If staff do not see a problem with the way they are assessing and managing pain, further training on pain management is unlikely to be sought, leading to the continued use of inadequate pain practices in long-term care.

In addition to general misconceptions, many long-term care staff members also hold inaccurate belief about medication. Large-scale surveys of nurses about general pain management and pain management in older adults have found participants to lack knowledge in the true, addictive effects of opioids; duration for which analgesics last in older adults compared to youth; relationship between dose administration and degree of pain relief; risk of opioid-induced respiratory depression, among others (Closs 1996; McCaffery & Robinson, 2002, Sloman, Ahern, Wright, & Brown., 2001). These

misconceptions have been found to be held by both nurses and care aides, although more frequently by care aides (Long, in press; McCaffery & Robinson, 2002).

Many also believe that pain is natural in aging. For example, Sloman and colleagues (2001) found in their large-scale study of attitudes and beliefs held by nurses in long-term care, that nearly a third of the participating nurses falsely believed pain to be a natural part of the aging process. Other researchers have also found long-term care staff to hold misconceptions of the role of pain in the aging process (Zwakhalen et al., 2007). Pain, despite a high prevalence, is not natural but the result of pathology that needs to be treated irrespective of a person's age.

Pain management strategies used in long-term care settings have also been influenced by nurses' attitudes and beliefs. Blomqvist (2003) found that nurses and paramedical staff had a tendency to form personal opinions as to the type of pain the older adult was experiencing. For example, participants perceived pain as real, exaggerated, trivial, care-related, endured, concealed, self-caused, or inarticulate. Based on these perceptions of the type of pain experienced by the resident, staff members had a tendency to feel either frustration or satisfaction. The type of activity or intervention employed to address the pain was influenced by the staff members' perception of the type of pain being experienced.

In the current study, the relationship between staff beliefs and attitudes about pain was examined in terms of success of the training program. It is imperative to determine whether misconceptions and negative attitudes interfere with the success of the training program and subsequent implementation of learned practices, as this holds important

implications for training curricula and the development of future continuing education programs.

Dementia and personhood. Some researchers have argued that healthcare professionals' perceptions of patient personhood affects clinical care (Malloy & Hadjistavropoulos, 2004). Personhood refers to all of the elements that contribute to a person being a person (Kitwood, 1993). The concept of personhood increases in complexity when it is framed in the context of physical or mental anomalies at conception and early stages of life and at the end of life (Buron, 2008). It has been suggested that there are three levels of personhood: (a) biological personhood; (b) individual personhood; and (c) sociological personhood (Buron, 2008). These three levels of personhood can be examined in terms of individuals with dementia.

Biological personhood is the notion that the human biological system creates a person. This level of personhood relates to sentience or the ability to feel pleasure and pain. It is generally agreed by authors and researchers who address personhood that this level of personhood is retained in individuals with dementia (Buron, 2008).

The second level of personhood, individual personhood, refers to the collection of characteristics embodying a person. These include, among others, personality, individual history, roles, values, affect, self-awareness, and ability to communicate (Buron, 2008; Coker, 1998; Harrison, 1993; Moody, 2003). This second level plays an important role in dementia. As the disease progresses, many individual features and characteristics that form this second level of personhood within an individual appear to deteriorate. Ability to communicate, which often declines as dementia progresses, has been outlined as being particularly integral to individual personhood (Harrison, 1993; Moody, 2003).

This second level of personhood becomes threatened in long-term care. Many individuals appear to lose the characteristics that make up who they are, which, to some, gives the impression that they are no longer truly a “person.” Healthcare professionals who believe that personhood becomes lost in residents with dementia may be less inclined to provide person-centered care and, consequently, less likely to provide adequate pain assessment (Malloy & Hadjistavropoulos, 2004).

The third level of personhood, social personhood, is based on the way in which an individual relates to his or her environment and to others. Included in this third level are such components as social relationships, responsibility to society, and membership in professional and social groups (Cecchin, 2001; Malloy & Hadjistavropoulos, 2004). Individuals in long-term care often become isolated and no longer hold the same social roles as they did when they were younger. This is especially the case in persons with dementia. The loss of social roles and relationships threatens this third level of personhood among individuals with dementia.

The social level is the level that has been most often discussed by researchers interested in personhood. Kitwood and Bredin (1992) suggested that while “person” often comes to have the same meaning as “individual,” “personhood” emerges in a social context and is only guaranteed by the presence of others. This can be understood when put in the framework of a young child. It is out of interactions with others that selfhood emerges and the child’s sense of who he is develops (Kitwood & Bredin, 1992). Other authors have gone so far as to propose that being a “person” is facilitated or hindered by others and the individuals in a person’s environment can extend or restrict the person’s effective agency (Tolman, 1998). If such positions are believed, it could be argued that

long-term care staff have the power to allow a resident to be a “person” and reach his or her fullest potential of self or can withhold or take away any agency and potential of “being” that a person may have.

In a philosophical analysis of personhood in dementia, Malloy and Hadjistavropoulos (2004) described how the traditional philosophical perspective of patient care is based on ontological dualism, which proposed that the essence of humanity is both mind/psyche and body (Malloy & Hadjistavropoulos, 2004). Limiting a person’s essence to these two components places emphasis on each of them, raising questions as to what remains when the mind begins to deteriorate (as a consequence of dementia) and only the body is left (Smith, 1984; Rich, 2000). This perspective within the framework of patient care leads to the ontological tendency to stop thinking of the patient as an individual capable of relationships and start thinking of the patient as an object of care. A relationship can only be maintained between patient and caregiver as long as both body and mind are intact (Malloy & Hadjistavropoulos, 2004).

In response to this, Kitwood and Bredin (1992) proposed that there must be a separation between the notion of personhood and cognitive ability, which directly relates to personhood in individuals with dementia. While traditionally dementia is presented as a dire condition with a state of “ever-deepening ill being” (Kitwood & Bredin, 1992), keeping the social context and forgetting the idea of cognitive ability makes it be possible to maintain this sense of personhood that many believe is lost in individuals with dementia.

When the belief that residents with dementia lose their personhood is held by caregivers, implications arise for long-term care and specifically for pain assessment and

management. These caregivers no longer enter into the same relationship with the individual. This reduces the available opportunities to understand the needs of the patient on an individual basis or to decode the individual's pain expressions. The resident with dementia is seen as a shell. As the caregiver believes that no hope remains for this individual, no additional effort is extended to meet his or her needs (Malloy & Hadjistavropoulos, 2004).

Important consequences arise when patients become viewed simply as objects of care (Malloy & Hadjistavropoulos, 2004). They become perceived as being less worthy of full care and dignity than individuals who are cognitively intact. Once there is cognitive decline, the nature of the relationship shifts to a relationship of "us vs. them." Kitwood and Bredin (1992) described this "us vs. them" scenario as one in which "us" refers to "normal" members of the population while "them" refers to individuals with dementia. Those in the "us" category are basically sound, while those in the "them" category are viewed as damaged, derailed, and deficient (Kitwood & Bredin, 1992). This detachment can lead to failure on the caregivers' part to take the time to assess properly each patient's unique experience of pain (Malloy & Hadjistavropoulos). A better understanding of the way in which caregiver perception of personhood impacts care is necessary.

Person-centered care has emerged in recent years as a model that acknowledges the full personhood of an individual in long-term care. This model aims to ensure that individuals in long-term care are fully cared for, fully heard, and fully acknowledged (Boettcher, Kemeny, DeShon, & Stevens, 2004; Knight, 2005). There is still a need for research in the area of dementia care and personhood; however, residents living in care

facilities with a person-centered care model have been found to benefit from the implementation of this model (Penrod et al., 2007; Buron, 2008). In terms of pain assessment, providing staff members with tools that better allow them to understand an individual's unique pain experience may be a first step in helping staff increase the levels of personhood they perceive within their clients. As such, it is important for pain assessment training programs to emphasize that pain assessment can be conducted in individuals with dementia, that these individuals still experience pain, and that tools exist that allows caregivers to assess this pain accurately.

While research has provided support for the presence of sustained personhood in individuals with dementia living in long-term care, not all long-term care facilities implement models of person-centered care or support the concept of sustained personhood. Even long-term care facilities that do support sustained personhood may not be implementing practices that acknowledge the full "person" in all aspects of care, including pain assessment. In these cases, lack of knowledge of proper practices to use with individuals with dementia is likely an issue. A recent study of 244 nursing managers in Ireland revealed that knowledge of appropriate pain assessment and management practices was lacking, despite the managers' having good knowledge of the pain experience in individuals with dementia (Barry, Parsons, Passmore, & Hughes, 2012).

Even if a facility supports person-centred care, it is unlikely that each individual working within the facility will hold beliefs that fit this model. Nurses and care aides who believe that personhood is lost with the onset and progression of dementia may incorrectly believe that individuals with dementia do not feel pain in the same way as

others. As such, they may be less inclined to use pain assessment tools available for use with these patients.

The role of nurses' and care aides' personhood beliefs in pain assessment has not been fully investigated. It is important to determine whether belief in the concept of sustained personhood affects willingness to implement effective pain assessment tools in individuals with cognitive impairment. This study offers a step in addressing this question. Staff perceptions of dementia patients' personhood were psychometrically assessed with the aim of examining the influence that these perceptions have on perceived value and utility of the training program. If personhood beliefs act as a barrier to improving pain assessment in long-term care, future training programs would need to be developed with this in mind.

Many researchers attribute inaccurate beliefs about the nature of pain, pain in aging, and personhood to knowledge deficits (e.g., Sloman et al., 2001; Zwakhalen et al., 2007). Inaccurate beliefs could be rectified if initial and continuing education programs integrated suitable information into their curricula. Conversely, if these beliefs are inherent to an individual and not easily modifiable through education, the translation of new research findings into practice may be more difficult among staff members who hold inaccurate beliefs. This would indicate that strategies must be developed to increase the effectiveness of training programs among individuals who hold these misconceptions.

Guidelines and Methods for Assessing Pain in Long-Term Care

Several researchers and organizations have established pain assessment practice guidelines to improve quality of care. While such guidelines exist, the problem remains. The implementation of these guidelines has proven to be a difficult task, and the

translation of research findings into practice has been challenging given insufficient resources and often inadequate staff education.

Hadjistavropoulos, Dever Fitzgerald, and Marchildon (2010) have outlined guidelines for assessing pain in long-term care; many of these guidelines are based on guidelines previously presented by Hadjistavropoulos et al. (2007) and Herr et al. (2006). These guidelines include recommendations specific to self-report measures and recommendations specific to observational measures. Sharing these guidelines with long-term care staff could help increase staff confidence in how to proceed when they must assess pain in long-term care in a way that is not resource intensive. This may lead to improved quality of care.

In addition to specific pain assessment guidelines, staff members must be aware of the pain assessment measures that are available for use with persons with dementia, as these individuals may be less able to express their pain verbally to the staff. Pain assessment in individuals with limited ability to communicate can be challenging, but there exist both self-report methods and behavioural or observational methods of pain assessment that are valid for use with this population. These recommendations are reproduced in Appendix A.

Self-report methods of pain assessment. Pain assessment in older adults is usually conducted through self-report, observational, or third-party proxy measures. Of these methods, self-report is the most commonly used method and is often presented as the “gold standard” in pain assessment despite many limitations, such as reliance on abstract cognitive ability (Hadjistavropoulos et al., 2001). Many different self-report measures are available to long-term care staff, although not all have the same clinical

utility. Self-report measures can be as simple as asking the person whether he or she feels pain, but more systematic measures are recommended (Hadjistavropoulos et al., 2010).

Self-report measures suitable for seniors with mild to moderate dementia are generally unidimensional, with pain intensity as the primary factor being assessed. Pain intensity can be defined as “a quantitative estimate of the severity of magnitude of perceived pain” (Jensen & Karoly, 2001). The three most commonly used types of measures for the assessment of pain intensity are numerical rating scales, verbal rating scales, and visual analogue scales (Jensen & Karoly, 2001).

Numerical rating scales represent one of the simplest ways of asking a patient to rate his or her pain. An example of using a numerical rating scale would be to ask the patient a question, such as “On a scale from 0 to 10, with zero being ‘no pain’ and 10 being ‘the worst pain ever’, how much pain are you feeling right now?” Another suitable measure is the Coloured Analogue Scale (CAS; McGrath et al., 1996). This scale resembles a thermometer and is held vertically by the assessor. The bottom of the scale is nearly white in colour and represents “no pain.” Moving up the scale, the white turns to red, gradually becoming darker. The top of the scale is the darkest red and represents the “most pain.” There is a horizontal sliding bar that slides up and down the length the thermometer. The person is asked to rank his or her level of pain using the sliding bar. On the back side of the thermometer are numbers from 0 to 10. The pain assessor can use this number to record the participant’s pain score. Researchers have supported use of this measure in seniors with dementia (Hadjistavropoulos, Craig, Martin, Hadjistavropoulos, & McMurtry, 1997).

Verbal rating scales are measures in which the patient must choose a pain descriptor that best fits his or her level of pain. For example, the patient could be asked to rate his or her pain according to the following descriptions: no pain, slight pain, mild pain, moderate pain, severe pain, extreme pain, and pain as bad as it can be (Gagliese & Katz, 2003; Gagliese, Weizblit, Ellis, & Chan, 2005; Wynne, Ling, & Remsburg, 2000). This scale can be presented to the patient on a sheet of paper, with the descriptors listed either vertically or horizontally, depending on what the patient prefers. Similar to the CAS, each descriptor is associated with a number on the back of the scale (e.g., no pain = 0; pain as bad as it can be = 7). In pain studies of older adults, verbal rating scales and numeric rating scales have been found accurate and the preferred measures of pain intensity (Herr & Mobily, 1993).

While unidimensional measures of pain are effective, they do not take into account the multidimensional nature of pain. To better understand a person's pain, there exist multidimensional measures such as the McGill Pain Questionnaire (MPQ), the Geriatric Pain Measure (GPM), and the Multidimensional Pain Inventory (MPI). The MPQ, for example, has been shown to be a highly valid and reliable tool that measures three factors of pain – sensory, affective, and evaluative (Melzack & Katz, 2004). As a result, multidimensional measures give a much more complete picture of the pain experience. It is important to keep in mind that, in a long-term care setting, these measures may not often be the best option as they are more time consuming and not always feasible for use with individuals with cognitive impairment.

When using any kind of measure with older adults, cognitive and sensory changes that occur with age must be taken into account. It may be necessary to modify a scale to

adapt to the individual's needs and obtain a more valid assessment. For example, for an individual who is visually impaired, the font size could be increased so that the person is better able to see (Hadjistavropoulos et al., 2010; Herr & Mobily, 1991).

Self-report measures have been found to be effective with individuals who have mild to moderate dementia. In a study of long-term care residents with cognitive impairment, Ferrell and colleagues (1995) found that 83% of participants were able to complete at least one of four self-report measures. Although self-report measures should always be attempted regardless of cognitive status, the mini-mental status examination (MMSE) can be used to help determine whether a self-report response will be valid. The general rule of thumb is as follows: individuals scoring 18 and above on the MMSE generally tend to be able to provide a reliable self-report of pain, whereas individuals scoring 13 and below on the MMSE generally tend to be unable to self-report pain reliably (Hadjistavropoulos & Fine, 2006; Weiner, Peterson, Ladd, McConnell, & Keefe, 1999). Self-report measures should be used first and for as long as possible with all individuals (Lukas et al., 2012). In the case of individuals unable to provide a reliable self-report, other approaches to pain assessment must be the primary focus.

Observational/behavioural pain assessment. Changes that occur with the aging process, such as visual impairment, auditory impairment, cognitive impairment, and difficulties communicating can interfere with the use of self-report measures (Hadjistavropoulos, Hunter, & Dever Fitzgerald, 2009). The American Geriatrics Society panel on Persistent Pain in Older Persons (2002) supports behavioural observation for the assessment of pain in older adults when there are communication barriers. Many individuals living in long-term care are not able to understand or respond to the questions

that are involved in a self-report measure. Using behavioural pain assessment tools, a clinician can assess pain through verbal cues, such as crying and moaning; non-verbal cues, such as rubbing or guarding; and facial expressions, such as grimacing or frowning (Herr, 2002). These tools can also involve observations of changes in behaviour and functioning, including sleep, appetite, physical activity, mobility, and body language, and through physiological indicators, for example, heart rate or blood pressure (Zwakhalen, Hamers, Abu-Saad, et al., 2006).

Several behavioural pain assessment measures have been developed, including the DOLOPLUS-2 (Wary, 1999), l'échelle comportementale pour personnes âgées (Jean, Morello, & Alix, 1998), the Observational Behaviour Tool (Simons & Malaber, 1995), the Checklist of Non-Verbal Pain Indicators (CNPI; Feldt, 2000), the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC; Fuchs-Lacelle & Hadjistavropoulos, 2004), the Pain Assessment in Advanced Dementia (PAINAD; Warden, Hurley, & Volicer, 2003), the Pain Assessment in Dementing Elderly (PADE; Villanueva, Smith, Erickson, Lee, & Singer, 2003), the Rating Pain in Dementia (RaPID; Sign & Orrell, 2003), the Abbey Pain Scale (Abbey et al., 2004), the Non-Communicative Patient's Pain Assessment Instrument (NOPPAIN; Snow et al., 2004), and the Pain Assessment Tool for Use with Cognitive Impaired Adults (Davies, Male, Reimer, Turner, & Wylie, 2004).

While several measures exist, they are not equivalent in quality or utility. Any increase in pain assessment in long-term care would be beneficial, but using the strongest measures is likely to have the most positive effects with regard to pain management.

Nurses and care aides need to be aware of which measures are most feasible and will be the most useful with their residents.

In a systematic review of behavioural pain assessment tools, Zwakhalen, Hammers, Abu-Saad, and Berger (2006) reviewed twelve behavioural pain assessment measures (DOLOPLUS-2, ECPA, ECS, Observational Pain Behavior Tool, CNPI, PACSLAC, PAINAD, PADE, RaPID; Abbey Pain Scale, NOPPAIN, Pain Assessment Scale for Use with Cognitively Impaired Adults) with regard to psychometric properties, sensitivity, and clinical utility. They concluded that, of the available scales, the DOLOPLUS-2 and the PACSLAC were the strongest measures of behavioural pain assessment.

While both tools appear to be strong, the PACSLAC may be a measure with more clinical utility than the DOLOPLUS-2. In a study re-assessing the psychometric properties of the DOLOPLUS-2 (Holen et al., 2007), the researchers recommended systematic training of tool administrators before the instrument can be of clinical use. This speaks to the complexity of this behavioural pain assessment measure. Given the time constraints and barriers that have been found in long-term care, a measure that would require onerous training is not ideal. Furthermore, in an evaluation of three pain assessment measures for older adults with dementia (PAINAD, PACSLAC, DOLOPLUS-2), Zwakhalen, Hamers, and Berger (2006) found that, although all three measures had good psychometric properties, nurses rated the PACSLAC as having the highest clinical utility, with 75% of the participants in this study preferring this measure. Moreover, in a recent study which involved the direct psychometric comparison of six pain assessment tools for seniors with dementia, the PACSLAC was shown to have the strongest psychometric

properties (Lints-Martindale, Hadjistavropoulos, Lix, & Thorpe, 2012). It is very simple to learn how to employ this measure, which can be used by nurses and care aides alike. As such, the PACSLAC would be a very useful measure to be included in pain assessment training programs for long-term care staff.

The PACSLAC. The Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) is a 60-item behavioural observation checklist. In a position paper outlining best practices in pain assessment in older adults, the American Geriatrics Society (AGS) outlines six behavioural domains that should be assessed in all pain assessment measures for older adults with limited ability to communicate. These six domains include facial expressions, verbalizations and vocalizations, body movements, changes in interpersonal interactions, changes in activity patterns or routines, and mental status changes (AGS Panel on Persistent Pain in Older Persons, 2002). To date, the PACSLAC is the only pain assessment tool for seniors with dementia that comprehensively covers all six of these domains (Hadjistavropoulos et al., 2009).

The administration of the PACSLAC is very simple, which increases its clinical utility. The 60-item checklist of behaviours and signs that have been found to be indicators of pain includes items such as tight face, wandering, guarding sore areas, throwing things, agitated, teary eyed, and moaning. The administration of the PACSLAC takes less than five minutes. To conduct the assessment, the assessor observes the patient, scans the list, and checks off the observed symptoms. The number of checked items is then tallied to become that individual's pain score. The PACSLAC does not have cut-off scores or a scoring grid. Rather, it uses an individualized approach in which patients'

scores are monitored, allowing for baseline scores to be collected and then fluctuations over time to be monitored.

In a study investigating the systematic use of the PACSLAC over three months in long-term care, Fuchs-Lacelle and colleagues (2008) found positive outcomes for both residents and nursing staff. Over the three-month period, nurses in 12 Canadian nursing homes were asked to regularly administer the PACSLAC (minimum of three times per week). Patients' pain scores statistically significantly decreased over the three-month period. As well, an increase was seen in the number of pain medications prescribed on an as-needed basis. This was considered an indication of improved pain management, given the established finding of underuse of such medications in this population (Fuchs-Lacelle et al., 2008). These findings strongly suggest that systematic use of the PACSLAC can lead to improved pain management practices.

The researchers also found that the systematic use of the PACSLAC had a positive impact on the nurses. Nurses who used the PACSLAC reported a decrease in their levels of distress and burnout. The researchers speculated that this may be due, in part, to the increase in confidence and decrease in uncertainty garnered by systematically assessing for pain (Fuchs-Lacelle et al., 2008). Other researchers have found that the PACSLAC is well-liked by nurses (Zwakhalen, Hamers, & Berger, 2006).

Psychometric evaluations of the PACSLAC have demonstrated it to be a highly reliable and valid tool (Lints-Martindale, Hadjistavropoulos, Lix, & Thorpe, 2012). PACSLAC scores have been reported to have high internal consistency, with a Cronbach's alpha of .92 (Fuchs-Lacelle & Hadjistavropoulos, 2004). Furthermore, the PACSLAC has been found to have potential for discriminating among painful, calm, and

distressing events (Fuchs-Lacelle & Hadjistavropoulos, 2004). This is a valuable element, given the difficulties staff report in discriminating between behaviour due to pain or due to another cause. The accumulation of evidence demonstrating the strength of this tool provides the basis for this study's focus on the PACSLAC as a measure of behavioural pain assessment.

Purpose

The primary purpose of this study was to develop and evaluate a training video on pain assessment in long-term care, geared towards nurses and care aides. It was anticipated that the participants would rate the video in a favourable manner and that the video would increase staff knowledge of pain assessment practices. If supported by the findings of this study, the developed training video could be used as a training tool in long-term care facilities. As discussed, many barriers impede long-term care staff from participating in continuing education programs. Such barriers include limited time, inability to leave the workplace to attend off-site training programs, and limited availability of training programs to long-term care staff in rural and remote areas. The video format used in this study addressed many of these barriers, as it required limited time commitment, could be viewed on-site, and could be distributed to care staff in any geographical region. As such, if this video is found to be a feasible training option, distribution of this program to long-term care facilities could lead to an increase in pain assessment knowledge among staff. This could result in improved pain assessment practices in long-term care, which, in turn, could result in improved pain management and improved quality of life among long-term care residents.

The secondary purpose of this study was to determine whether beliefs about pain and personhood would interfere with the perceived success of the training program. If individual beliefs about pain and aging interfere with the willingness of long-term care staff to value this educational initiative, efficacy of the training program could be at risk. Such a finding would be of value to training program developers as well as educators in initial programs.

It was expected that nurses and care aides would provide positive ratings for their level of perceived learning from, and appreciation of, the training video. As well, it was expected that they would express willingness to implement the described practices within their facilities. Such findings would be reflected through higher-end mean scores on learning and implementation- related questions on the video evaluation questionnaires. It was also expected that the information presentation format and technical aspects of the video (e.g., graphics, audio) would be rated positively by nurses and care aides. This would be reflected by higher-end mean scores on the technical and production-related questions of the video evaluation questionnaires.

In addition, the following specific hypotheses were tested:

Hypothesis I: Nurses and care aides would differ significantly on the degree to which they evaluate the video in a positive manner. It was predicted that nurses would more positively rate the content of the video. This hypothesis was based on previous research demonstrating higher levels of knowledge of pain beliefs in staff with more education (McCaffery & Robinson, 2002).

Hypothesis II: Nurses' and care aides' knowledge of pain assessment and management in long-term care would increase as a result of having watched the video, and these increases would be maintained over a four-week period.

Hypothesis III: Maladaptive beliefs about pain (e.g., that pain is a natural part of growing old and is not affected by psychological factors), and perception of patients with dementia as having greater diminished personhood would be predictive of less positive overall evaluation of the video content. These variables were predicted to account for more unique variance than demographic variables.

Hypothesis IV: Maladaptive beliefs about pain (e.g., that pain is a natural part of growing old and is not affected by psychological factors) and reduced perceptions of personhood in patients with dementia would be predictive of lower perceived impact of the video on practices and of fewer changes in clinical practice among nurses/care aides at follow-up. These variables were expected to account for more unique variance than demographic variables.

In addition, several exploratory analyses were conducted to determine if differences exist between nurses and care aides in terms of their beliefs about the nature of pain, pain in old age, and their perception of sustained personhood in individuals with dementia. To further elucidate the quantitative findings of this study, qualitative analyses were completed on narrative questionnaire responses and on the responses collected during focus groups discussions and individual interviews with long-term care staff. Questions requiring narrative responses were posed to provide a better understanding of video ratings and identify what participants deemed to be the most and least helpful aspects of the video. Interviews targeted a greater understanding of current pain

assessment training and practices, long-term impact of the video, and barriers and supports within the long-term care facilities that aid or impede the implementation of improved pain assessment practices.

Method

Participants

One hundred and fifty nurses and care aides currently working with older adults in long-term care facilities were recruited to participate in this study through long-term care facilities in two health regions across Saskatchewan. A power analysis executed using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) indicated that a total of 109 participants would be required to provide sufficient power for the detection of medium-size effects. This power calculation assumed a 1-beta of .80 and an alpha level (α) of .05. Given that several analyses were to be conducted, power calculations were completed for each analysis. The analysis requiring the greatest number of participants (i.e., regression predicting video evaluation using demographic variables and variables of beliefs about pain and dementia patient personhood) was used to determine the required number of participants.

Prior to beginning participation in the study, all participants completed a consent form. Personal information and all participant responses remained confidential. Once responses were entered into the database, identifying information was kept separate from data to prevent any identification of participants.

Materials and Measures

Pain assessment training video. A training video that focused on pain assessment in long-term care with a special focus on individuals with dementia was

developed for this study. The video was developed using a combination of video clips taken from training sessions on pain assessment in long-term care conducted by an expert in the area and on-screen text with an accompanying audio description of the content. Role-played illustrations of pain assessment with a long-term care patient, as well as material from interviews with healthcare staff, are also included in the video.

The video is 45-minutes in length and consists of four sections. The first section provides an introduction to the video. It begins with a discussion concerning the need for improved pain assessment in long-term care, challenges to pain assessment in long-term care, and challenges to assessing pain in individuals with dementia. This discussion is followed by a description of the benefits of using pain assessment in long-term care.

The second section of the video presents self-report measures of pain assessment. This section is intended for the assessment of pain in older persons who have the ability to self-report, which may include individuals with mild to moderate dementia. Several self-report measures are presented in this section, including the verbal rating scale (Gagliese & Katz, 2003), the Coloured Analogue Scale (McGrath et al., 1996), and a numeric rating scale (0 to 10 method). A demonstration on how to conduct a pain assessment using self-report is then presented, and the section concludes with a discussion of how to help determine whether or not a patient is able to use a self-report measure for pain assessment.

The third section involves a discussion of pain assessment measures suitable for individuals who have severe limitations in ability to communicate their pain, with a particular focus on the PACSLAC (Fuchs-Lacelle & Hadjistavropoulos, 2004). The six non-verbal pain assessment domains to consider, outlined by the AGS (AGS Panel on

Persistent Pain in Older Persons, 2002), are described and are followed by an in-depth explanation and demonstration of the administration and scoring of the PACSLAC. Particular emphasis is placed on the Pain Diary method (Misson, Savoie, Aubin, Hadjistavropoulos, & Verreault, 2011) of charting PACSLAC scores. A sample Pain Diary, used to track scores of a long-term care patient over the course of a month, is reviewed, as described in the guidelines presented in Appendix A.

The final section of the video focuses on guidelines for assessing pain in seniors with cognitive impairment. These guidelines were presented by Hadjistavropoulos et al. (2010) and are based on previous work by others (Hadjistavropoulos et al., 2009; Hadjistavropoulos et al., 2007; Herr et al., 2006). They include general pain assessment recommendations, as well as recommendations specific to both self-report measures and observational measures of pain. The video concludes with suggestions of feasible ways for long-term care staff to begin implementing the practices taught in the video.

Demographic Information Sheet. The nurse/care aide demographic sheet (see Appendix D) inquired about sex, age, level of degree or certification as a nurse, years of experience as a nurse or care aide, and years experience working in long-term care. Participants were also asked to indicate if they had received formal training in pain assessment and in the assessment of pain in dementia. Those who had completed prior formal training were asked to comment on what this training entailed.

Pain Beliefs Questionnaire. Beliefs about pain were assessed using a modified *Pain Beliefs Questionnaire* (PBQ; Edwards et al., 1992). The original version of this questionnaire, developed by Edwards and colleagues, was composed of two subscales that assess the extent to which individuals attributed pain to psychological and organic

causes. The measure has been modified to include a third subscale investigating the relationship between pain and aging (Gagliese & Melzack, 1997). The Organic subscale (PBQ-O) addresses beliefs about the nature of pain. The Psychological subscale (PBQ-P) evaluates beliefs concerning the relationship between psychological factors and pain. The Aging subscale (PBQ-A) addresses an individual's beliefs about the relationship between aging and pain. All three subscales of the PBQ have demonstrated acceptable reliability with internal consistencies of .73, .70, and .73 for the Organic, Psychological, and Aging subscale respectively, using Cronbach's alpha (Edwards et al., 1992; Gagliese & Melzack, 1997). In the current sample, Cronbach's alpha was .51 for the PBQ-O subscale, .78 for the PBQ-P subscale, and .69 for the PBQ-A subscale.

This measure has been demonstrated to have good criterion validity. In their initial validation study, Edwards et al. found that the PBQ correlated significantly with scores on the Multidimensional Health Locus of Control Questionnaire (MHLC; Wallston & Wallston, 1978). Specifically, the Internal scale of the MHLC, which measures the extent to which an individual has control over his or her pain, was found to correlate with scores on the PBQ-P subscale, and the Chance and Powerful Others scale of the MHLC correlated with scores on the PBQ-O subscale. Generally, stronger endorsement of psychological pain beliefs and weaker endorsement of the organic and aging pain beliefs is considered to reflect a more adaptive understanding of the pain experience.

Personhood in Dementia Questionnaire. The Personhood in Dementia Questionnaire (PDQ) is a measure that has been developed by Hunter and Hadjistavropoulos (in preparation). This measure addresses the issue of personhood and

beliefs about dementia and consists of 20 items. The questionnaire examines biological, psychological, social, and moral facets of dementia. While currently in the end stages of its validation process, reliability analyses have shown this measure to have strong internal consistency, with a Cronbach's alpha of .81. In the current sample, the PDQ had an internal consistency of .86. This measure has been demonstrated to have moderate-level correlations with a measure of person-centered care.

Knowledge Test. The Knowledge Test (Appendix E) was administered at three points throughout the course of the study: pre-video, post-video, and four weeks following the training session. The Knowledge Test aims to determine whether knowledge increases as a result of having watched the video. This 14-item questionnaire addresses questions of pain assessment and management that were discussed throughout the training video. Internal consistency for the pre-video, post-video, and follow-up Knowledge Test were calculated using Kuder-Richardson Formula 20 (K-R-20), and were found to be .62 for both the pre- and the post-video Knowledge Test and .61 for the follow-up Knowledge Test.

Video Evaluation Questionnaire. The Video Evaluation Questionnaire (VEQ; see Appendix F) was administered immediately after participants completed the video. This questionnaire includes two scales. The first scale (Content Quality scale) poses questions related to learning from the video, value seen in the video, and willingness to implement practices demonstrated in the video. The second scale (Technical Quality scale) addresses the technical nature of the video and quality of video production. Both the Content Quality scale and the Technical Quality scale demonstrated good internal consistency, with a Cronbach's alpha of .91 and .89, respectively. Open-ended questions

were also asked as part of this questionnaire to clarify issues such as why the video was found to be helpful or unhelpful, ways to improve the video, and barriers to implementation of practices.

Follow-up Questionnaire. The Follow-up Questionnaire (FQ; see Appendix G) was distributed to the nurses and care aides four weeks after having watched the video. The purpose of this questionnaire is to determine whether the continuing education program led to a change in behaviours, an indicator of an effective program (Quinn, 2000). This short 14-item questionnaire focuses on implementation, changes in practices, and increased likelihood of using effective pain assessment methods. It consists of questions to be answered using a Likert scale, as well as open-ended questions where staff were asked to explain which practices they were using and why or why their practices had not changed. This questionnaire was found to have good internal consistency with a Cronbach's alpha of .91.

Procedure

This study employed a mixed-methods approach. Qualitative and narrative data were collected through administered questionnaires. Narrative data were also collected through individual interviews held with nurses and care aides.

Following all necessary ethics clearances, nurses and care aides were recruited from two health regions in Saskatchewan. Directors of Care (DOCs) from facilities within the region were then contacted and told about the study. Upon approval of the DOC, DOCs were asked to inform qualifying staff members within their facility and, in some cases, other facilities within their health region of the study. Interested participants

contacted their DOC to sign up for a session date and time. A total of 13 training sessions were organized across the two health regions.

At the beginning of each training session, participants were provided with a short description of the study and informed of consent procedures. Subsequently, consenting participants were asked to complete the demographic information sheet, the PBQ, the PDQ, and the Knowledge Test. Once all participants had completed these questionnaires the 45-minute training video was presented. Upon completion of the video, participants were asked to complete the VEQ and to repeat the Knowledge Test.

Four weeks following the training session, participating facilities were mailed packages containing follow-up questionnaires individually addressed for each participant. Participants were asked to complete the questionnaires and return them by mail to the Health Psychology Laboratory at the University of Regina. Focus groups and individual interviews were also arranged with a subset of the long-term care staff. Staff members who participated in the interviews and focus groups were nominated, as per qualitative research standards (Patton, 2002). Nominated staff members were then contacted and, if the staff member was interested in participating, a time was arranged for them to participate in either the interview or a focus group. Interviews were organized in such a way as to obtain an equivalent number of nurses and care aides, as well as to include nurses with varying years of experience and levels of education (Registered Nurses, Licensed Practical Nurses, and Registered Psychiatric Nurses). The interviews took place over the phone and focus groups were conducted in the long-term care facilities. All interviews and focus groups were audio recorded.

The interview questions were standardized according to the moderator guide developed for the purposes of this study (see Appendix H). Questions were posed regarding pain assessment training and current pain assessment practices, perceived quality and utility of the video, and supports or barriers to implementation and feasibility of practices.

Nursing staff did not receive compensation for their participation in this study. Participants were encouraged to apply for continuing education credits through their facility and local nursing association.

Data Analysis

Once all the data were collected, descriptive statistics were calculated in order to obtain a description of the sample.

Quantitative analyses. A primary purpose of this study was to evaluate the video. This was achieved through the VEQ and the FQ. Prior to performing any analyses, the factor structures of the VEQ Content Quality scale and of the FQ were further examined using principle axis factoring, with Direct Oblimin rotation. This was done to determine if a multi-factor solution provided a better understanding of the measures' items or if the single-factor structure was the best structure for these scales.

To determine whether nurses/care aides positively evaluated the video content, found the information helpful, and demonstrated willingness to implement the practices described, a "Content Quality" score was calculated for each participant. This score was determined by adding responses from the Content Quality scale of the VEQ. Nurses'/care aides' means and standard deviations on each subscale of this measure were examined. While the total scale score was the primary source of information, responses to individual

items were also considered by calculating and presenting mean scores for each questionnaire item.

To determine whether nurses/care aides positively rated the quality of the presentation of the information and the technical aspects of the video, a “Technical Quality” score was calculated for each participant. This score was determined by adding responses from the Technical Quality scale on the VEQ. Nurses’/care aides’ scores were first analysed through calculations of mean scores and standard deviations of the scale scores. While the total scale scores were the primary source of information, responses to individual items were also considered by calculating and presenting mean scores for each questionnaire item. Further analyses were not conducted with the Technical Quality scale, as the purpose of the information gained from this scale was improvement of video quality and presentation. No relationship between ratings on this subscale and beliefs about pain in old age and perception of personhood were hypothesized.

To test the first hypothesis that group differences existed between nurse scores and care aide scores on the Content Quality scale, an independent-samples *t*-test was conducted. It was hypothesized that nurses would rate the video more positively than care aides. Nurse Content Quality scores were compared to care aide Content Quality scores to determine whether significant group differences exist in video ratings.

To test the second hypothesis that nurses’/care aides’ knowledge of pain assessment and management in long-term care would increase as a result of having watched the video, a repeated-measures ANOVA was conducted. Pre-video, post-video, and follow-up Knowledge Test scores were compared to determine if significant differences in scores were present. In the case of significant differences between groups,

as represented by Wilks' Lambda, post-hoc comparisons of means (adjusted using Bonferroni's correction for multiple comparisons) were conducted to determine between which two time points these differences lay.

In order to determine if maladaptive beliefs and negative attitudes about the nature of pain, pain in old age, and perception of patient personhood would be more significant contributors than demographic variables to overall video evaluation, multiple regression was used. The predictors of age, sex, job type (nurse or care aide), years experience in long-term care, level of pain training, level of pain in dementia training, the three PBQ scores (one score for each subscale), and the PDQ scores were entered into the regression equation. The VEQ Content Quality score was used as the dependant variable; however, if the factor analysis indicated the presence of more than one factor on the Content Quality scale, each factor was to be tested individually as the dependent variable. If the overall model was found to be significant, each variable's unique contribution to the regression was examined using a conservative regression approach in which each predictor's ability to account for unique variance was examined after all other predictors had been entered into the model.

Multiple regression was also used to test Hypothesis IV which proposed that maladaptive beliefs and negative attitudes about the nature of pain, pain in old age, and perception of patient personhood would be more significant contributors to long-term use and implementation of practices than demographic variables. The predictors of age, sex, job type (nurse or care aide), years experience in long-term care, level of pain training, level of pain in dementia training, the three PBQ scores (PBQ-O, PBQ-P, and PBQ-A) and the PDQ scores were entered into the regression equation. The FQ total score was

used as the dependant variable; however, if the factor analysis indicated the presence of more than one factor on the FQ, each factor was to be tested individually as the dependant variable. If the overall model was found to be significant, each variable's unique contribution to the regression was examined using a conservative regression approach in which each predictor's ability to account for unique variance was examined after all other predictors had been entered into the model.

Qualitative analyses. Qualitative analyses were performed on the narrative responses collected from the post-video questionnaire and follow-up questionnaires and from the focus groups and individual interviews. The open-ended responses were examined using content analysis and thematic content analysis (Patton, 2002; Sandelowski, 2000). The computer software program Nvivo was used to assist in data analysis (QSR International Ltd., 2006). Questionnaire responses were broken down into meaning units, and similar meaning units across participants were grouped. The frequency with which meaning units occurred was calculated in some instances to determine what was of greatest importance to the total sample of participants. The narrative responses from the focus groups and interviews were also broken down into meaning units. Similar meaning units from different participants were grouped together to create initial themes. Once all the responses had been broken down and categorized by meaning units, the themes were examined and collapsed or subdivided as necessary. Then, each meaning unit and category was reconsidered and reorganized if necessary. Again, the themes were then examined and collapsed or subdivided as necessary. This reoccurred until the themes accurately reflected the participants' responses. These themes informed the main research goal of examining the effectiveness of the training video and

provided further understanding as to barriers and facilitators to the implementation of the video practices.

The data were initially coded independently by a first coder. To ensure that the coding remained unbiased and consistent, the trustworthiness of the qualitative analysis was established through a second coder. After being provided with a codebook outlining the themes and their descriptors, the coder was asked to code a random 15% of the meaning units into the themes. Member checking then occurred to ensure accurate interpretation of the focus group and interview findings (Crabtree & Miller, 1999). An audit trail (step-by-step record) of all study decisions was maintained throughout the process.

Quantitative Results

Data Cleaning and Preparation

Prior to the further analyses, all variables were examined for accuracy of data entry, missing values, and normality of the distributions. Two participants had left more than 20% of total questionnaire responses unanswered, which resulted in the deletion of these two cases. This left a final sample size of 148 participants.

Through examination of the histogram, skewness and kurtosis statistics, normal Q-Q Plot, and detrended Q-Q plot for each variable, five variables were identified as not meeting the assumption of normality. In each case, transformations were performed to address issues of skewness and kurtosis. The PDQ was found to be negatively skewed. A reflect and square root transformation was conducted on this variable, which led to a more normalized distribution. To correct high positive skewness of the level of dementia training received, a log transformation was performed, adequately addressing the

skewness of this distribution. Finally, the Pre, Post, and Follow-up Knowledge Test scores were all found to be moderately negatively skewed. A square root transformation was performed in each case and all three distributions were found to improve.

The data were also examined for outliers. As recommended by Tabachnick and Fidell (2007), cases in which standardized z -scores exceeded 3.29 were considered as potential outliers. Each continuous independent variable was examined. The PDQ, the VEQ Content Quality scale, and the VEQ Technical Quality scale were identified as having outlying values. Subsequent to transformation, the outlying PDQ value was no longer an outlier. The outlying values on both the VEQ Content Quality and Technical Quality scales were changed to be less deviant, in accordance with Tabachnik and Fidell's (2007) recommendation of changing the raw score to a score that is one unit larger or smaller than the next most extreme case in the distribution. This change remediated the outlier on the Technical Quality scale; however, this was not the case on the Content Quality scale. As such, the outlying case on the Content Quality subscale was assigned a raw score equal in value to the next most extreme case, as it was at this value that the individual was no longer found to be an outlier. The data were also analyzed for the presence of multivariate outliers, using Mahalanobis distance with $p < .001$. No multivariate outliers were found in the dataset.

All further assumptions of regression were tested subsequent to conducting the multiple regressions. When assumptions were not met, further transformations were made. All analyses were conducted both with and without transformed variables in order to determine if changes in significance occurred. Where no differences were found in level of significance, the non-transformed results are reported.

Factor Analysis of the VEQ and FQ

The factor structure of the Content Quality scale of the VEQ was examined prior to conducting any analyses with this measure. This analysis was possible given the adequate sample size (Gorsuch, 1983). Reliability analysis led to the deletion of five Content Quality items, as they had low inter-item correlations ($<.2$). The remaining 11 items of the Content Quality scale were analyzed using principle axis factoring with a Direct Oblimin oblique rotation. Inspection of the correlation matrix revealed the presence of many coefficients of $.3$ and above. The Kaiser-Meyer-Olkin value was $.90$, exceeding the recommended value of $.6$ (Kaiser, 1970) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix.

Scree plot analysis and eigenvalue > 1.0 criteria were used to determine the number of factors to retain. Principle axis factoring revealed the presence of two components with eigenvalues exceeding 1.0 , explaining 56.2% and 11.0% of the variance respectively. Inspection of the scree plot revealed a clear break after the second component, supporting the retention of a two-factor solution.

The two-factor solution explained a total of 67.2% of the variance. To aid in the interpretation of these two components, oblimin rotation was performed. The pattern matrix of the two-factor solution is presented in Table 1 and the structure matrix is presented in Table 2. There was a moderate negative correlation between the two factors ($-.60$). The items loading on factor one could be interpreted as representing more specific value of the knowledge in terms of the long-term care facility and the participants' current job (Specific subscale), while factor two could be interpreted as perceived value

Table 1

Rotated Pattern Matrix for Video Evaluation Questionnaire Items

| Item | Factor 1 | Factor 2 |
|--|-------------|--------------|
| 1. The video improved my knowledge of pain assessment in LTC | -.105 | -.976 |
| 2. The video improved my knowledge of pain management in LTC | -.043 | -.799 |
| 3. The video provided valuable information | .295 | -.599 |
| 4. I feel more confident assessing pain in individuals with cognitive impairment than I did before watching this video | .218 | -.607 |
| 5. The video demonstrated tools that are practical for use with individuals with dementia in LTC | .482 | -.294 |
| 6. The video was a helpful learning tool | .443 | -.397 |
| 7. I would recommend this video to other healthcare staff/students | .511 | -.394 |
| 8. The video provided information about pain assessment tools and practices that are not suitable for patients in LTC | .530 | .091 |
| 9. The information presented in this video is useful to me in my current job/position | .734 | -.112 |
| 10. If it were up to me, I would begin using the pain assessment measures demonstrated in this video | .897 | .072 |
| 11. All staff who work with LTC patients should be provided with the information covered in the video. | .740 | -.158. |
| Variance explained (%) | 56.20 | 10.98 |
| Cumulative variance explained (%) | 56.20 | 67.19 |

Note. LTC = Long-term care; Item 8 was reverse-scored prior to analysis; Major loadings for each item are bolded.

Table 2

Rotated Structure Matrix for Video Evaluation Questionnaire Items

| Item | Factor 1 | Factor 2 |
|--|-------------|--------------|
| 1. The video improved my knowledge of pain assessment in LTC | .479 | -.914 |
| 2. The video improved my knowledge of pain management in LTC | .435 | -.773 |
| 3. The video provided valuable information | .653 | -.775 |
| 4. I feel more confident assessing pain in individuals with cognitive impairment that I did before watching the video | .581 | -.737 |
| 5. The video demonstrated tools that are practical for use with individuals with dementia in long-term care | .658 | -.582 |
| 6. The video was a helpful learning tool | .680 | -.662 |
| 7. I would recommend this video to other healthcare staff/students | .747 | -.700 |
| 8. The video provided information about pain assessment tools and practices that are not suitable for patients in LTC | .476 | .226 |
| 9. The information presented in this video is useful to me in my current job/position | .801 | -.552 |
| 10. If it were up to me, I would begin using the pain assessment measures demonstrated in this video | .853 | .464 |
| 11. All staff who work with LTC patients should be provided with the information covered in the video. | .802 | -.582 |
| Variance explained (%) | 56.20 | 10.98 |
| Cumulative variance explained (%) | 56.20 | 67.19 |

Note. LTC = Long-term care; Item 8 was reverse-scored prior to analysis; Major loadings for item are bolded.

of the general information and knowledge in the video (General subscale). Factor one had a Cronbach's alpha of .89 and factor two had a Cronbach's alpha of .87.

The FQ, sent out four weeks following the training sessions, was returned by a total of 88 participants, resulting in a 61% return rate. As per authoritative criteria (Gorsuch, 1983), a ratio of 5 participants per one questionnaire item, with a minimum of 100 participants, is required to conduct factor analyses. As such, number of participants was deemed insufficient for factor analysis of the FQ.

Demographic Results

The final sample was comprised of 137 females (92.6%) and 11 males (7.4%), resulting in a total sample of 148 participants. Demographic characteristics of the sample are summarized in Table 3. For all further analysis, all levels of nurses (licensed practice nurses, registered psychiatric nurses, and registered nurses) were combined to make the "nurse" group and the care aides and orderlies were combined to make the "care aide" group.

To obtain a better understanding of participants' prior level of training, participants were asked to rate their level of training in both general pain assessment and pain assessment in older adult population with dementia using a Likert scale. Subsequently, responses were grouped as

being "minimal prior training," "moderate prior training," and "extensive prior training."

Prior training was examined for the entire sample, as well as by position (care aides/orderlies and nurses). These results are summarized in Table 4.

Participants were also asked to specify the type of training they had received. Of those who chose to specify the type training received in general pain assessment, 26.5%

Table 3

Demographic Characteristics of the Full Sample

| Variable | <i>M (SD)/n (%)</i> |
|------------------------------|---------------------|
| Age | 45.34 (10.62) |
| Sex | |
| Male | 11 (7.4%) |
| Female | 137 (92.6%) |
| Job Level | |
| Care Aide | 77 (52%) |
| Orderly | 4 (2.7%) |
| Licensed Practical Nurse | 24(16.2%) |
| Registered Nurse | 30 (20.3%) |
| Registered Psychiatric Nurse | 13 (8.8%) |
| Years in Current Job | 18.41 (11.60) |
| Years Working in LTC | 14.24 (9.56) |

Note: N = 148; LTC = long-term care

Table 4

*Prior Training in Pain Assessment and Pain Assessment in Older Adults with Dementia
for Total Sample, Nurses, and Care Aides*

| Prior pain assessment training | Total Sample | Care Aides | Nurses |
|-----------------------------------|--------------|------------|-----------|
| | % (n) | % (n) | % (n) |
| General | | | |
| Minimal | 39.5 (52) | 56.5 (44) | 12.0 (8) |
| Moderate | 57.3 (83) | 38.4 (30) | 79.1 (53) |
| Extensive | 6.9 (10) | 5.1 (4) | 9 (6) |
| In Older Adults with Dementia | | | |
| Minimal | 59.2 (84) | 60.6 (46) | 57.6 (38) |
| Moderate | 38.7 (55) | 35.5 (27) | 36.5 (28) |
| Extensive | 2.1 (3) | 3.9 (3) | 0.0 (0) |

Note. Care Aides = care aides and orderlies; Nurses = Licensed practical nurses, registered nurses, registered practical nurses, and registered psychiatric nurses. General = Training in the area of pain assessment; In Older Adults with Dementia = training specific to pain assessment in older adults with dementia.

($n = 39$) indicated receiving training in their initial training program and 24.5% ($n = 36$) reported having received in-service training. A small number of participants indicated that their training came from experience (3.4% , $n = 5$), while another 17% ($n = 25$) reported “other” methods of training, such as conversations with other staff members, self-study, or other unspecified types of training. In terms of pain assessment specific to older adults with dementia, 18% ($n = 28$) reported receiving training through in-services, 8.8% ($n = 13$) reported training through their initial training program, 2.7% ($n = 4$) cited on-the-job experience as their formal training, and 6.8% reported “other” methods of formal training , including conversations with staff members, self-study, or other unspecified types of training.

Overall Video Evaluation and Group Differences

In order to assess participants’ overall evaluation of the video, the mean and standard deviation of the VEQ Content Quality scale and subscales and Technical Quality scales were calculated to establish how participants rated the quality of each. These scores are summarized in

Table 5. Scores reflected an overall satisfaction with both the content and the quality. Individual items were examined to identify any questions with particularly low scores. Both subscales had no mean item scores falling below 2, indicating that all areas were evaluated as being adequate or better.

Group differences between nurses and care aides. To test the first hypothesis that nurses would rate the Content Quality of the VEQ significantly higher than care aides, an independent samples *t*-test was conducted. The Content Quality subscale total score was used to examine these differences. Significant differences were found between

Table 5

Descriptive Results of the VEQ Scales and Subscales

| VEQ Subscale | Mean | SD | Min | Max |
|-------------------|-------|------|-------|-------|
| Content Quality | 33.53 | 5.29 | 16.00 | 44.00 |
| General Content | 11.74 | 2.31 | 4.50 | 16.00 |
| Specific Content | 21.79 | 3.49 | 10.50 | 28.00 |
| Technical Quality | 39.77 | 5.89 | 22.00 | 56.00 |

Note. $n = 147$; VEQ = Video Evaluation Questionnaire; Content Quality maximum score = 44; Content Quality General maximum score = 16; Content Quality Specific maximum score = 28; Technical Quality maximum score = 56.

nurses' and care aide' ratings, $t(145) = 2.75, p = .007$. As expected nurses' ratings ($M = 34.81, SD = 5.3$) were significantly higher than care aides' ratings ($M = 32.46, SD = 5.07$). The magnitude of the differences in the means (mean difference = 2.36, 95% $CI = 4.05$ to $.66$) was very small ($\eta^2 = .01$).

Examination of Overall Learning

In addition to evaluating participants' perception of the video, knowledge learned from the video was also evaluated by comparing results on the pre-video, post-video, and follow-up Knowledge Test results. A one-way repeated measures ANOVA was conducted to compare scores on the Knowledge Test at Time 1 (pre-video), Time 2 (post-video), and Time 3 (follow-up). No differences were found between the ANOVA results based on the transformed variables and those based on the untransformed variables. As such, the untransformed results are reported here. The results of the ANOVA indicated a significant effect for time, Wilks' Lambda = .35, $F(2, 86) = 79.03, p < .001$, multivariate partial $\eta^2 = .65$. To identify where significant differences in time were found, post-hoc pair-wise analyses, adjusted for multiple comparisons using Bonferroni's correction, were conducted to compare the means of each pair of time points. These comparisons are summarized in Table 6. The KT scores significantly increased from pre-video to post-video as well as from pre-video to follow-up; however, there was a significant decrease in mean score between post-test and follow-up.

Role of Beliefs in Video Evaluation

Hypothesis III stated that maladaptive beliefs about pain, pain in aging, and perception of patient personhood would predict participants' evaluation of the video, over and above demographic variables. To test this hypothesis, multiple regression was used.

Table 6

Post-hoc Comparisons of Pre-video, Post-video, and Follow-up Knowledge Test Mean

Scores

| Paired Comparison | Means | Mean Difference | <i>p</i> |
|-------------------|-------|-----------------|----------|
| Pre-video | 7.93 | 3.37 | < .001 |
| Post-video | 11.20 | | |
| Pre-video | 8.14 | 2.41 | < .001 |
| Follow-up | 10.55 | | |
| Post-video | 11.52 | .98 | < .001 |
| Follow-up | 10.55 | | |

Note. The post-video Knowledge Test was administered immediately following the viewing of the video. Follow-up Knowledge Tests were distributed starting four weeks following the video viewing sessions.

Two regression equations were calculated, with each predicting one of the two subscale scores (General or Specific) of the Content Quality scale. The intercorrelations of all variables included in the regression equations are presented in Table 7. Independent variables for each equation were age, sex, job level, years of experience, degree of pain training, and degree of dementia training, the three PBQ subscales scores (Organic, Psychological, Aging), and the PDQ total score. Regression analyses were performed both with transformed and untransformed variables. No differences in significance were found and, as such, untransformed results are presented below. Preliminary analyses were conducted on both equations to ensure no violation of the assumptions of normality, linearity, multicollinearity, and independence of residuals. In each instance, the full model was tested first. If the full model was significant, each variable's unique contribution to the regression equation was examined using a conservative approach in which each predictor's ability to account for unique variance was examined after all other predictors were entered into the equation.

The full model for General Content Quality was not significant, $F(10, 119) = .113, p = .113, R^2 = .12$, and therefore the model was not examined further. The full model for Specific Content Quality was significant, $F(10, 119) = 2.13, p = .03, R^2 = .15$. The regression results and standardized regression coefficients (β) are summarized in Table 8. As the second model was significant, an examination of each variable's unique contribution to the equation suggested that job level (nurse or care aide) and PBQ Organic beliefs each accounted for a significant and unique portion of the variance.

Long-term perception of utility of practices and implementation. The FQ allowed for further examination of participants' perception of the training's utility over

Table 7

Correlation Matrix for Variables Used in Regression Equations Predicting the Video Evaluation Questionnaire's General and Specific Content Quality Subscales

| Variables | Sex | Job Level | Yrs as N/CA | Pain Training | Dementia Pain Training | PBQ-O | PBQ-P | PBQ-A | PDQ | VEQCQ | VEQCQ-G | VEQCQ-S |
|------------------------|-----|-----------|-------------|---------------|------------------------|-------|--------|-------|-------|-------|---------|---------|
| Age | .01 | .11 | .72*** | -.12 | -.15 | .12 | .12 | .04 | -.02 | .13 | .10 | .13 |
| Sex | | .11 | -.11 | .02 | .01 | -.04 | .10 | -.12 | .22** | .01 | .00 | .01 |
| Job Level | | | .30*** | .40*** | .05 | .08 | .27** | -.05 | .14 | .22** | .10 | .27** |
| Yrs as N/CA | | | | .08 | .02 | .08 | .04 | .02 | .07 | .13 | .04 | .18* |
| Pain Training | | | | | .64*** | .01 | .01 | .07 | .02 | .10 | -.01 | .16 |
| Dementia Pain Training | | | | | | -.02 | -.09 | .02 | .03 | .07 | .05 | .07 |
| PBQ-O | | | | | | | .31*** | .24** | -.05 | .19* | .21* | .15 |
| PBQ-P | | | | | | | | .25** | .19* | .14 | .07 | .17* |
| PBQ-A | | | | | | | | | -.06 | .04 | .09 | .01 |
| PDQ | | | | | | | | | | .12 | .05 | .15 |
| VEQCQ | | | | | | | | | | | .87*** | .95*** |
| VEQCQ-G | | | | | | | | | | | | .66*** |

Note. Job level = Nurse or Care aide/orderly; Yrs as N/CA = Years experience as a nurse or a care aide/orderly; PBQ-O = Pain Beliefs Questionnaire Organic subscale; PBQ-Psych = Pain Beliefs Questionnaire Psychological subscale, PBQ-A= Pain Beliefs Questionnaire Aging subscale; PDQ = Personhood in Dementia Questionnaire; VEQCQ = Video Evaluation Questionnaire Content Quality; VEQCQ-G = Video Evaluation Questionnaire Content Quality – General Evaluation; VEQCQ-S = Video Evaluation Questionnaire Content Quality – Specific Evaluation.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8

Regression Analysis Examining the Unique Variance Accounted for by the Predictors of Demographics and Beliefs for the Specific Content Quality Regression Model

| Predictors | β | $F(10,119)$ | p | R^2 Change |
|---------------------------|---------|-------------|------|-----------------|
| Specific Content Quality | | | | |
| Age | .09 | .44 | .510 | .00 |
| Sex | -.06 | .38 | .54 | .00 |
| Job Level | .23 | 4.67 | .00 | .03 |
| Years Experience | .01 | .01 | .93 | .00 |
| Pain Training | .02 | .02 | .88 | .00 |
| Pain in Dementia Training | .03 | .06 | .81 | .00 |
| PBQ-O | .20 | 4.69 | .03 | .03 |
| PBQ-P | .04 | .13 | .72 | .00 |
| PBQ-A | -.09 | .85 | .36 | .01 |
| PDQ | .13 | 1.98 | .16 | .01 |

Note. β = Standardized coefficient (Beta); PBQ-O = Pain Beliefs Questionnaire Organic subscale; PBQ-P = Pain Beliefs Questionnaire Psychological subscale; PBQ-A = Pain Beliefs Questionnaire Aging subscale; PDQ = Personhood in Dementia Questionnaire

time and the degree to which participants were implementing the practices described in the video. Table 9 summarizes the overall mean, nurse mean, and care aide mean on the FQ.

Role of beliefs on implementation. Hypothesis IV proposed that maladaptive beliefs about pain, pain in aging, and perception of patient personhood would influence participants' perception of the practical value of the video and implementation, more so than influences of demographics variables. This hypothesis was tested using multiple regression. The intercorrelations of all variables included in the analysis are presented in Table 10. Included in the equation were age, sex, job level, years of experience, degree of pain training, and degree of dementia training, the three PBQ subscales scores (Organic, Psychological, Aging), and the PDQ total score. Regression analyses were conducted both with transformed and untransformed variables. No differences in significance were found and, as such, untransformed results are presented below. Preliminary analyses were conducted on both equations to ensure no violation of the assumptions of normality, linearity, multicollinearity, and independence of residuals.

The full model was tested first. If the full model was significant, each variable's unique contribution to the regression equation was examined using a conservative approach in which each predictor's ability to account for unique variance was examined after all other predictors were entered into the equation. The full correlation matrix of predictors included in the regression equations can be found in Table 11. The full model was significant, $F(10, 66) = 2.04, p = .042, R^2 = .24$. As this model was significant, the FQ was then tested further to determine each variable's unique contribution to the

Table 9

Mean Scores on the Follow-up Questionnaire for Full Sample, Nurses, and Care Aides

| Measure | Full Sample(<i>n</i> =87) | Nurses(<i>n</i> =46) | Care Aides(<i>n</i> =42) |
|----------|----------------------------|------------------------|---------------------------|
| | <i>M</i> (<i>SD</i>) | <i>M</i> (<i>SD</i>) | <i>M</i> (<i>SD</i>) |
| FQ Total | 37.94 (6.79) | 38.85 (6.83) | 36.69(6.73) |

Note. FQ = Follow-up Questionnaire; FQ Total maximum score = 56.

Table 10

Correlation Matrix for Variables Used in Regressions Equations Predicting the Follow-up Questionnaire

| Variables | Age | Sex | Job Level | Yrs as N/CA | Pain Training | Pain in Dementia Training | PBQ-O | PBQ-P | PBQ-A | PDQ | FQ |
|------------------------|-----|-----|-----------|-------------|---------------|---------------------------|-------|--------|-------|-------|-------|
| Age | | .01 | .11 | .72*** | -.12 | -.15 | .12 | .12 | .04 | -.02 | .10 |
| Sex | | | .11 | -.11 | .02 | .01 | -.04 | .10 | -.12 | .22** | .12 |
| Job Level | | | | .30*** | .40*** | .05 | .08 | .27** | -.05 | .14 | .16 |
| Years as N/CA | | | | | .08 | .02 | .08 | .04 | .02 | .07 | .22 |
| Pain Training | | | | | | .64*** | .01 | .01 | .07 | .02 | .28* |
| Dementia Pain Training | | | | | | | -.02 | -.09 | .02 | .03 | .32** |
| PBQ-O | | | | | | | | .31*** | .24** | -.05 | .03 |
| PBQ-P | | | | | | | | | .25** | .19* | .02 |
| PBQ-A | | | | | | | | | | -.06 | -.12 |
| PDQ | | | | | | | | | | | .13 |

Note. Job level = Nurse or Care aide/orderly; Yrs as N/CA = Years experience as a nurse or a care aide/orderly; PBQ-O = Pain Beliefs Questionnaire Organic subscale; PBQ-P = Pain Beliefs Questionnaire Psychological subscale, PBQ-A = Pain Beliefs Questionnaire Aging subscale; PDQ = Personhood in Dementia Questionnaire; FQ = Follow-up Questionnaire.

regression after all other predictors were entered into the equation. None of the predictors made independent and unique contributions.

Exploratory Analyses

Given that differences were found in nurse and care aide evaluations of the content of the video, and that job level was found to be highly correlated with the FQ, exploratory analyses were conducted to determine if any further differences emerged between nurse and care aide responses. Of particular interest were scores on the PBQ subscales and the PDQ total score in relations to job level. Table 11 shows the relevant means and standard deviations. A one-way between-groups Multivariate Analysis of Variance (MANOVA) was performed to investigate job level differences in beliefs. The independent variable was job level (nurse or care aide). Preliminary assumption testing was conducted to verify homogeneity of variance-covariance matrices and multicollinearity, with no violations noted. A statistically significant difference in beliefs was found between nurses and care aides, $F(4, 140) = 3.46, p = .007$, Wilks' Lambda = .91, partial $\eta^2 = .09$. When the results of the dependent variables were considered separately, the only difference to reach statistical significance, using a Bonferroni adjusted alpha level of .01, was PBQ-P, $F(1, 143) = 11.06, p = .001$, partial $\eta^2 = .07$. An inspection of the mean scores indicated that nurses more strongly endorsed psychological factors of pain ($M = 17.15, SD = 2.84$) than care aides ($M = 15.53, SD = 3.00$). Between-subjects results on each belief are summarized in Table 11.

To further evaluate ways in which nurses' and care aides' answers may have differed, specific individual questions of the VEQ Content quality scale were studied. Four questions were examined: (a) previous knowledge of self-report measures; (b)

Table 11

Exploratory Between-subjects MANOVA Results of Differences between Nurses and Care Aides on the Pain Beliefs Questionnaire Subscales and the Personhood in Dementia Questionnaire

| Measure | <i>M(SD)</i> | <i>F(1,143)</i> | <i>p</i> | Partial η^2 |
|--------------------------|---------------|-----------------|----------|------------------|
| PBQ Organic | | | | |
| Nurses | 28.48(3.22) | 1.00 | .320 | .007 |
| Care Aides | 27.98(3.09) | | | |
| PBQ Psychological | | | | |
| Nurses | 17.15(2.85) | 11.06 | .001 | .072 |
| Care Aides | 15.54(2.99) | | | |
| PBQ Aging | | | | |
| Nurses | 23.94(4.11)) | .38 | .541 | .003 |
| Care Aides | 24.34(3.76) | | | |
| PDQ | | | | |
| Nurses | 119.41(12.26) | 3.08 | .088 | .021 |
| Care Aides | 115.32(15.12) | | | |

Note. PBQ = Pain Beliefs Questionnaire; PDQ = Personhood in Dementia Questionnaire.

PBQ Organic Max score =48; PDQ Psychological Max score = 24; PDQ Aging Max score = 42; PDQ Max Score = 140.

previous knowledge of observational measures; (c) willingness to implement the pain assessment measures demonstrated; and (d) usefulness of video relative to current position. Relevant means and standard deviations can be found in Table 12. A one-way between-groups MANOVA was performed to investigate job level differences in specific video evaluation areas. Preliminary assumption testing was conducted to verify that the assumptions of homogeneity of variance-covariance matrices and multicollinearity were met. No violations of these assumptions were noted.

A statistically significant difference between nurses and care aides was identified on the combined evaluation questions, $F(4, 141) = 5.30, p = .001$, Wilks' Lambda = .87, partial $\eta^2 = .13$. When considered separately, using a Bonferroni adjusted alpha level of .01, two of the questions were found to reach statistically significant differences between nurse and care aide ratings. Nurses and care aides differed on previous knowledge of self-report methods, $F(1, 144) = 7.09, p = .009$, partial $\eta^2 = .05$, with nurses more familiar with self-report measures than care aides. Nurses also found the information to be relevant to their position within the facility. Between subject results are summarized in Table 12.

Discussion of Quantitative Results

The dearth of knowledge in pain assessment training that occurs at an initial training level (Chiu et al., 2003; Plaisance & Logan, 2006) and the low levels of pain-related knowledge among current healthcare workers (Cason et al., 1991; McCaffery & Robinson, 2002) highlight the need for effective continuing education programs on pain assessment in long-term care. The quantitative findings of this study provide support for the use of this video-based program as a method of knowledge translation to long-term care staff. Not only was this program evaluated as being a high quality tool, but

Table 12

*Exploratory Between-subjects MANOVA Results Comparing Nurse and Care Aide**Responses on Select Questions of the Video Evaluation Questionnaire*

| VEQ Question | <i>M(SD)</i> | <i>F(1,144)</i> | <i>p</i> | η^2 |
|--|--------------|-----------------|----------|----------|
| Before watching this video, I was familiar with standardized self-report methods of pain assessment | | | | |
| Nurses (<i>n</i> = 66) | 2.70(.83) | 7.09 | .009 | .047 |
| Care Aides (<i>n</i> =80) | 2.28 (.93) | | | |
| Before watching this video, I was familiar with standardized observational/behavioural measures of pain assessment (e.g., the PACSLAC, PAINAD, DOLOPLUS-2) | | | | |
| Nurses (<i>n</i> = 67) | 1.49 (1.15) | .05 | .834 | .000 |
| Care Aides (<i>n</i> =80) | 1.54 (1.01) | | | |
| If it were up to me, I would begin using the pain assessment measures demonstrated in this video | | | | |
| Nurses (<i>n</i> = 67) | 3.27 (.71) | 3.21 | .075 | .022 |
| Care Aides (<i>n</i> =80) | 2.84 (.72) | | | |
| The information presented in this video is useful to me in my current job/position. | | | | |
| Nurses (<i>n</i> = 67) | 3.27 (.69) | 14.59 | .000 | .092 |
| Care Aides (<i>n</i> =80) | 3.06 (.72) | | | |

Note. VEQ = Video Evaluation Questionnaire; Maximum score = 4; minimum score = 0; responses were on a 5-point Likert scale, 0= strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, 4 = strongly agree.

knowledge gains were demonstrated to have occurred. These findings provide initial support for the utility of this program in long-term care facilities.

Consistent with previous research that indicated that healthcare professionals receive insufficient training in pain assessment (Watt-Watson et al., 2009), the participants in this study reported having received very little prior training. More than a third of nurses and more than half of care aides reported having received little to no training in general pain assessment, while more than half of care aides and nurses indicated that they had received little training in pain assessment in older adults with dementia. Nurses and care aides also reported having little familiarity with behavioural/observational measures of pain assessment, as demonstrated by examination of specific VEQ questions. The lack of training and familiarity in these areas are problematic given the identified ethical concerns related to inadequate pain assessment in older adults (Ferrell et al. 2000) and the identified inadequacies in assessment and management of pain in individuals with dementia (Horgas & Tsai, 1998; Morrison & Siu, 2000). These findings further support the immediate need for pain assessment training programs that can be offered quickly and cost-effectively to long-term care staff. These findings also indicate the need for training with specific focus on pain assessment practices that may be used with individuals with dementia.

The training program evaluated in this study provides a potential avenue for addressing this need. Results suggest that this training video is a strong and well-developed training program. Overall, evaluations of the content and the quality of the training program were positive. In terms of the technical quality, mean scores suggest that, in general, participants found the technical aspects of the video, such as graphics,

images, length of video, and degree of difficulty, to be suitable. In terms of video content, mean scores suggest that participants were pleased with the information provided in the video. More specifically, participants positively evaluated both the general information about pain assessment and the specific ways in which the information was useful to the participants' job level. These findings offer compelling evidence that this program is well designed and contains valuable information.

Although nurses and care aides rated the content of the video positively, as hypothesized, group differences in evaluation of video content emerged. Nurses rated the content of the video more positively than care aides; however, the magnitude of this difference was rather small indicating that it may not be of practical significance. In addition, nurses indicated having more previous knowledge about self-report measures of pain assessment and that the information in the video was more relevant to their current position than did care aides. These differences may be attributed to care aides receiving less, if any, training on pain assessment in their initial training program. This may lead them to be less aware than nurses of the importance of conducting pain assessments.

Knowledge gains are of critical importance in the examination of a training program. Participants in this study had significantly greater knowledge in pain assessment after having watched the video. This increase in knowledge remained significant at the follow-up period compared to participants' knowledge prior to watching the video. Knowledge was found to decrease between the post-video phase and the four-week follow-up. These findings suggest that this tool can effectively educate staff in evidence-based pain assessment practices, but support the necessity of refresher or booster training, which has been recommended by previous researchers (Guardini et al.,

2008). This format of training is ideal for providing such refreshers, as the training video can remain on-site for review, as needed. Future research may wish to examine knowledge maintenance over a longer follow-up period to identify the ideal time after which to provide staff with such refreshers.

It was expected that beliefs about pain, pain in old age, and participants' perception of sustained personhood in dementia would influence participants' evaluation of the video. This hypothesis was partially supported. The Specific subscale scores of the Content Quality scale were significantly influenced by organic beliefs about pain. The Specific subscale assessed the relevance and usefulness of the video information in terms of the participants' position within the long-term care setting. Accordingly, organic beliefs about the nature of pain were found to make a significant contribution to the prediction of staff evaluations of the video's relevance to their job and their work in the long-term care setting. As organic beliefs increased, evaluation of the video increased. It is important to note that, in the current sample, the PBQ-O subscale had low internal consistency. Thus, interpretation using the results of this subscale must be made with caution.

One possible interpretation of this finding is that individuals who more strongly believe in the organic nature of pain, such as the belief that pain always has an organic cause, may be more anxious to learn ways to identify the organic or physical cause of pain so that it can be properly addressed. This would increase their appreciation of the utility of the information in the specific context of a long-term care facility, as the information provided them with ways in which to better monitor pain in a long-term care population.

Despite providing more positive evaluations of the video, strongly believing in the organic nature of pain may have implications for the quality of pain management provided. Previous research findings have supported the notion that stronger organic beliefs interfere with pain management. Higher scores on the Organic Beliefs subscale of the PBQ have been related to beliefs that control of the pain experience lies not in the hands of the patient but rather in the hands of the medical professionals (Edwards et al., 1992; Walsh & Radcliff, 2002). Such beliefs have been associated with poorer patient outcomes and greater disability (Walsh & Radcliff, 2002). Moreover, it is possible that individuals who believe in a more direct relationship between physical damage and pain may be more likely to overlook psychosocial and environment influences of pain. This may lead them to ignore beneficial psychosocial or environmental interventions, instead focusing only on pain medication as the course of treatment. While pain medications are a viable, and likely necessary, intervention to pain for most long-term care patients, they are not the only possibility.

The remaining beliefs examined in this study, including perception of patient personhood, beliefs about the nature of pain in old age, and beliefs about the psychological nature of pain, did not influence video evaluation. In addition, contrary to what was hypothesized, beliefs did not play a role in participants' perception of the training's influence on their pain assessment practices and did not influence implementation of practices.

The participants' position within the facility was related to the degree to which participants believed in the psychological nature of pain. The Psychological subscale of the PBQ was found to be highly correlated to job level (being a nurse or a care aide). An

exploratory MANOVA evaluating differences in beliefs between nurses and care aides demonstrated that nurses endorsed psychological beliefs about pain significantly more than care aides. Higher endorsement of psychological beliefs is suggestive of more adaptive pain attitudes (Edwards et al., 1992). Researchers have found that individuals with greater education in pain are less likely to hold maladaptive beliefs (Zwakhalen et al., 2007). Educational differences may have played a role in the nurses' higher endorsement of psychological beliefs, as nurses generally have a higher level of education than care aides, resulting in more opportunities to have learned about the psychological influences of pain.

These findings suggest that this training program is an appropriate and effective tool for training long-term care staff in pain assessment practices. To further improve the effectiveness of this training program, beliefs about the nature of pain should be addressed. In addition, quality of care might vary among different levels of staff due to influences of beliefs on care. As care aides spend the most one-to-one time with patients, future training might wish to focus on increasing knowledge among care aides of the psychological nature of pain.

Qualitative Results

Narrative data were collected through a variety of methods. First the VEQ and the FQ had questions requiring narrative responses, which were analyzed using both thematic analysis and a content analysis approach (Patton, 2002; Sandelowski, 2000). Secondly, focus groups and individual interviews were conducted, which were analyzed using thematic content analysis.

Analysis of Narrative Responses on VEQ

Participants were asked several questions in the VEQ that required a narrative response. Four of these questions had a sufficient number of responses to allow for further analysis. These were examined to extract common themes and to examine the frequency with which these themes were identified by participants. Because participants may have identified more than one idea within their response, responses were broken to smaller meaning units in which only one idea was present. This allowed for responses to be more accurately coded into the themes and for a better representation of participant responses. To ensure consistency of the coding scheme, once the themes were established and initial coding had occurred, a second coder was asked to code each response into the pre-established themes. Disagreements were discussed and resolved via consensus. No adjustments were deemed necessary to the coding structure.

Participants were first asked to identify in what ways they did or did not find the video to be helpful. Responses to this question were examined and those that did not clearly answer the question “why” it was helpful or unhelpful were excluded as were responses using vague qualifiers such as “interesting” or “informative.” This resulted in the exclusion of 47 participant responses. Subsequently, the remaining answers were categorized as either describing the video as helpful or unhelpful. In a broad sense, participant responses to why the video was helpful ($n = 39$) were able to be categorized into two groups. The first was that the video increased *awareness or understanding* of pain assessment tools or methods and specific strategies that are available for pain assessment. The second broad reason that the video was found to be helpful was because of the *simplicity, clarity, and accessibility of the information presented*. These responses

suggest that not only was the content appreciated by the participants, but that the way in which the content was presented was important.

Participants ($n = 13$) who identified the video as unhelpful described several reasons for this, with a big concern being its *focus in dementia*. Within this theme, participants expressed interest in knowing how the practices would work with individuals who have more severe cognitive impairments than shown in the video demonstration and concerns about the realism of using such measures in people with severe dementia. The second major theme around unhelpful reasons included a variety of *presentation concerns*. While there was no major trends in these responses, concerns included the quality of sound, the presentation not being ideal for non-auditory learners, and too much repetition or unexciting content.

To further inform these responses, participants were asked to state explicitly what they found most helpful in the video and what they found to be least helpful in the video. The narrative responses were then categorized and examined quantitatively to provide some additional insight into whether the overall response to the video was more positive or negative. Using a quantitative examination of these narrative data also allowed the identification of areas that might be most problematic and require attention, and aspects of the presentation that were of most interest and utility to the participants. These identified helpful and unhelpful aspects of the video, as well as sample responses provided by participants, are summarized in the Table 13.

Participants were also asked if anything was missing from the video that they would have liked to have seen included. Although only 28 participants responded to this question, the most commonly stated improvements were 1) the use of a real patient in the

Table 13

Frequency of Identified Helpful and Unhelpful Aspect of the Training Video

| Comment Category | Frequency | Example Participant Responses |
|-------------------------------|-----------|--|
| Helpful | | |
| Tools and methods | 41 | <p>“The explanation of how and when to use PACSLAC and the self report methods were very helpful ” (Nurse)</p> <p>“Liked the scale that allowed the resident to indicate his/her pain – looked useful”(CA)</p> |
| Demonstrations | 24 | <p>“The actual demonstration of the pain assessment to a volunteer” (nurse)</p> <p>“The patient demonstration and scale demo” (CA)</p> |
| Charting | 16 | <p>“Monthly tracking data to understand behavioural pain patterns” (Nurse)</p> <p>“How clearly you could track pain levels and the success that increased pain medications worked” (CA)</p> |
| Presentation audio or visuals | 8 | <p>“It was well presented to help with the material content to be learned” (Nurse)</p> <p>“Visual references” (Nurse)</p> |
| Acknowledging | 4 | <p>“Increase awareness of the difficulty</p> |

population difficulties

assessing pain in patients with dementia
and to be more cognizant of
same”(Nurse)

Unhelpful

Presentation audio or
visuals

11

“The sound quality was not the best when
Hadjistavropoulos was talking” (CA)
“Decrease the amount of time that the video
is just playing pictures and
music”(Nurse)

Tools and methods

6

“Pain scales – have been using for years”
(Nurse)
“The part on how to assess pain to
cognitively impaired clients” (Nurse)

Unrealistic for setting and
patients

5

“Using a volunteer that cooperates is
unrealistic” (Nurse)
“How many LTC facilities have
physiotherapists working in them – not
realistic” (Nurse)

Insufficient detail on
PACSLAC or tools

2

“Would have liked a little more time with
contents of PACSLAC” (Nurse)
“There should be more emphasis on the
actual tool” (Nurse)

Note. Frequency = number of times the helpful or unhelpful aspect was identified by participants; CA = Care aide. Not all participants provided a response to the questions; however, some participants provided more than one response.

demonstrations in the video ($n = 10$) and, 2) the provision of a handout of the PACSLAC during the session ($n = 6$). Other less common concerns included need for specification of who may conduct the PACSLAC ($n = 5$), and size of font ($n = 2$). The remaining participants made suggestions not echoed by other participants, such as the inclusion of humour or specific facial expressions that indicate pain.

Participants were asked to identify barriers that might interfere with their ability to implement the practices. Because these issues are discussed in further detail in the qualitative analyses of the narrative responses from focus groups and interviews, a content analysis method was used to gain an overview of some of the most common concerns of staff members. The results and examples of participants' responses for each barrier identified are presented in Table 14. The most commonly cited concern was time. Negative co-workers and lack of cooperation were identified as also being concerns, with many acknowledging that their co-workers would likely say there was insufficient time, even if the participants themselves did not agree. Many also thought that resident characteristics, such as aggression or severe dementia, would make implementation of the practices too difficult. As well, there were concerns about consistent education, implementation, and charting of the practices. Lack of management support or health region approval was also identified as a potential barrier. Lack of follow-up following implementation and difficulty working with doctors and obtaining medications were also identified, although less commonly.

Two final questions were asked on the VEQ that allowed for evaluation of participant's willingness and confidence in implementing the practices described in the video. Responses were classified as either "yes," "no," or "not yet/maybe." The majority

Table 14

Identified Barriers to Implementing the Practices Described in the Training Video

| Barrier | Frequency | Sample Responses |
|-------------------|-----------|--|
| Time/workload | 35 | <p>“Time factor, our work days are full” (Nurse)</p> <p>“We don’t have time for paperwork first thing in the morning when we are moving and transferring them” (CA)</p> |
| Negativity | 20 | <p>“Staff resistance of ‘more paperwork’ ‘we don’t have time already and you want to give us more’” (Nurse)</p> <p>“Getting all staff on board; everyone thinks they are overworked” (Nurse)</p> |
| Resident factors | 11 | <p>“Someone who is upset and aggressive it would be hard to assess them” (CA)</p> <p>“Resident might not cooperate” (CA)</p> |
| Consistency | 9 | <p>“If everyone has seen the video it shouldn’t be difficult to implement – otherwise it may be difficult”(Nurse)</p> <p>“All staff need to be doing this method to be consistent” (Nurse)</p> |
| Region/Management | 5 | <p>“Not recognized by health region? Not being available in the facility” (Nurse)</p> <p>“District policies as to what we are ‘allowed’</p> |

| | | |
|--------------------|---|---|
| | | to use” (Nurse) |
| Follow-up | 2 | “Lack of follow-up by manager re:implementation” (Nurse) |
| Doctors/medication | 2 | “We can do the methods taught but to get the proper meds for that resident is tough” (CA) |

Note. Frequency = number of times identified by participants as a barrier; CA = Care aide; Not all participants identified barriers. Some participants identified more than one barrier.

of participants indicated that they would be willing to implement the practices and that they felt comfortable doing so. Frequencies of responses are summarized in Table 15. Two questions requiring narrative responses were also asked on the FQs. These questions were asked to better ascertain to what degree the participants had been implementing specific practices described in the video. The first question asked specifically about the use of self-report measures, while the second question asked about the use of behavioural/observational measures. Of the total 87 returned FQs, 53 participants responded to the query about use of self-report measures. Of those 53 participants, only one method of self-report pain assessment (the 0 to 10 method) that was used in the video was identified by participants. A total of 9 participants indicated that they had used the 0 to 10 method. One participant indicated that he or she has asked patients to rate pain on a scale; however, the scale used was not made explicit. The remaining responses were varied, but did not show any common trend including people who reported using observation (which should have been reported in the subsequent question). Participants indicated that they did not have access to the tools, that they had a lack of opportunity, or that they were already using self-report measures of pain assessment prior to using the video (although did not specify which measures).

A total of 46 people responded to the query concerning use of behavioural/observational measures. Of those 46, only 3 people indicated that they had used the PACSLAC. An additional 20 individuals indicated that they had used observation of behaviours to assess pain but did not report specific use of a tool. The remaining responses either provided various reasons for not using the tool or another response that did not specifically answer the question being posed.

Table 15

Summary of Participants' Confidence and Willingness to Use the Pain Assessment

Practices Described in the Video

| Questions | Yes <i>n</i> (%) | Not yet/maybe <i>n</i> (%) | No <i>n</i> (%) |
|--|---------------------|-------------------------------|--------------------|
| Would you feel confident using these practices* | 88 (85.3) | 11 (10.7) | 4 (3.9) |
| Would you be willing to use these practices?*** | 90 (90.0) | 8 (8.0) | 2 (2.0) |

Note. *Total valid responses = 103; ***Total valid responses = 100.

Results and Discussion of Focus Group and Individual Interviews

A combination of individual interviews and focus groups were held with a subset of participants who had watched the video (16 nurses and 10 care aides). A total of 6 individual interviews and 4 focus groups were conducted. Each focus group consisted of 4 to 6 participants, which is within the recommended number of participants for focus group discussions (Brown, 1999; Morgan, 1997), and lasted between one hour and an hour and a half, while the individual interviews lasted twenty minutes to half an hour. Focus groups and interviews were audio recorded and transcribed. The interviews and focus groups focused on the participants' current role in pain assessment within the facility, the current status of pain assessment within the facility, participants' thoughts on the video, and perceived barriers and facilitators to changing pain assessment practices within their facility.

Thematic content analysis was used to analyze the data collected from the focus groups and individual interviews. A combination of a top-down and a bottom-up approach was used to analyze these data. First, focus groups and individual interview transcripts were examined line by line, and meaning units were identified based on units of text from participants or short interactions between participants that captured a single idea or thought. A total of 495 meaning units were identified. The moderator guide (which was inspired by the literature) provided four broad content areas under which responses could be categorized. The content areas were (a) current role in pain assessment; (b) training; (c) video evaluation and utility; and (d) barriers, facilitators, and process of change. Each meaning unit was sorted into one of these four content areas. Finally, using a bottom-up approach, themes were identified within each content area. This was

accomplished by examining meaning units within each content area for communalities, dissimilarities, and grouping of concepts. The themes were based on the participants' account of their experience working in long-term care. At times, different issues arose for nurses and care aides.

Initially, a total of 25 themes and 4 subthemes were identified. The complete list of themes can be found in Appendix I. To ensure consistency of the coding scheme, unbiased interpretation of the meaning units, and trustworthiness of themes, a second coder analyzed a random 15% of meaning units ($n = 76$) into the established themes. The second coder was provided with a codebook that consisted of the theme names, a description of each theme, including inclusion and exclusion criteria, and an example of a meaning unit that would be coded within the theme. The second coder's decisions were then reviewed, and any disagreements concerning the theme under which a meaning unit should be coded were discussed and resolved by consensus. Themes that were consistently found to be problematic, and the meaning units within them, were reconsidered and reorganized. This led to a case in which two themes were merged into a single, more representative theme and resulted in a total of 23 themes and 4 subthemes. Two themes were nurse-specific themes and two themes were care aide-specific themes, while the remaining themes emerged from both nurse and care aide data. Once the finalized list of themes was generated, member-checking was conducted by sending a 2-page summary of key findings to a random 50% of focus group/interview participants (7 nurses, 6 care aides). Participants were asked to indicate whether the summary was consistent with their experience and with the discussion that occurred during their

interview/focus group. Participants indicated that the themes were consistent with their experience and no additional information was added.

Content Area 1: Current status of pain and pain assessment in long-term care. Within this content area, discussion revolved around participants' role in pain assessment within the facility and their view of current pain assessment practices and challenges to the practices. Analysis of the meaning units within this content area led to the emergence of seven themes that included: (a) role in the assessment of pain in the facility; (b) reasons for assessing pain and importance of pain assessment; (c) challenge of working with people unable to communicate their pain; (d) importance of knowing the client when identifying pain; (e) charting, reporting, and communication between nurses and care aides; (f) family demands and family interference with pain management; and (g) physician involvement in pain assessment and management. These themes provide important indications of influences pre-existing in long-term care facilities that should be considered when providing training in pain assessment.

The participants' *role in the assessment of pain in the facility* was an important theme that emerged, and the perceived role was different between nurses and care aides. Nurses described their roles in terms of responding to the initial report of pain from the care aide, conducting an assessment to evaluate the situation further, and implementing some type of pain management, most often by contacting the physician or administering a Tylenol or pro re nata (PRN; as needed) medication. This process was described as follows by one nurse:

My assessment leads to analgesics, I guess, or discovering the reason for the pain. If someone's limping, we might send them for x-rays or...to find out if there is a

problem and hopefully cure that. . . . I guess if it comes to me, however it does, through the special care aides or whatever, I'm sort of responsible for getting pain preventative things in place.

Of noteworthy mention among the responses from the nurses was the degree of importance attributed to their role in either administering the medication or contacting the physician. Nearly all nurses emphasized that an important aspect of their role was contact with the physician or passing out a pain medication, which may suggest a strong medical focus in understanding of pain and its treatments. This is somewhat inconsistent with previous research suggesting that nurses are hesitant to prescribe pain medications out of fear of addiction or adverse effects (Kaasaleinen et al., 2007).

The care aides saw their role as much less defined. Care aides felt that pain assessment was not a specific task that they conducted but rather something of which they were continuously conscious while performing daily resident care. Some even suggested that they did not have any discrete pain assessment practices in place, such as illustrated by one care aide's statement:

But you never hear the word "pain assessment" really. Like if you're new to the facility, you never hear it. Even us we don't, even being here I've never heard anyone say, let's do a pain assessment on this person.

Instead, care aides perceived their role in pain assessment as more of an ongoing process. Care aides watch for signs of pain in all daily tasks, such as daily care and getting residents up in the morning or into bed at night, as described by a care aide, "Every day is a different story. So I think we assess our residents on the daily basis as we're doing our care." Care aides saw their responsibility as ending after initial

identification and reporting or charting of the pain. Once reported, the responsibility shifted to the nurses who would then be accountable for putting into place pain management interventions.

The participants in this study presented a narrower perspective of their role in pain assessment than that found by previous researchers. For instance, the care aides in this study limited their role to identifying and notifying the nurse. Wright, Varholak, and Costello (2003), in their study investigating the care aide role in long-term care, found that care aides did not feel that notifying the nurses was necessarily the first or only response. The care aides in their study recognized alternative physical interventions (such as voiding or whirlpool bath) and psychological interventions (such as distraction or a back rub) than could be tried first. These inconsistent findings might suggest ambiguity in the care aide role in pain assessment and suggest that roles may vary depending on facility. Given that care aides are responsible for the majority of the patient care, they are most likely to identify pain. Pain assessment and management training programs are typically geared towards nursing staff. Facilities should clarify expectations for care aides in terms of pain assessment and train care aides (in addition to the nurses) in appropriate and effective pain assessment.

Throughout the analysis of the discussions around pain in long-term care, it became clear that both nurses and care aides saw many *reasons for assessing pain and the importance of knowing how to conduct pain assessment*. Specifically, nurses and care aides emphasized how addressing the residents' pain and making them comfortable were integral parts of why they were caring for the residents in the first place. Both groups underlined the importance of being able to assess pain. The consequences of not catching

and addressing pain quickly were of great concern to staff. Of particular note were aggressive or agitated behaviours or pain that had reached an extremely high level. While participants recognized that it was not appropriate for the patient to be experiencing this degree of pain, they also noted the challenges of completing everyday tasks with patients experiencing uncontrolled pain. For instance, one care aide described:

If they're not getting their meds when they need something, you're darn right, the pain gets greater, they get more uptight, then they get more, like you said, anxious and resistant with care, and then it makes us. . .we're the ones who get hurt, because so-and-so punched me because she's in pain.

A major concern for both nurses and care aides was the *challenge of working with people unable to communicate their pain*. Of greatest concern was working with residents who were unable to provide a reliable report of their pain, as it became difficult to know whether they were experiencing pain. As well, staff recognized that they might be overlooking pain in those who were not creating any problems within the unit, as they would receive less attention. The challenges that emerged were illustrated through one care aide's description of trying to determine the severity of a resident's pain:

I was even talking with a lady the other day and I was asking her about her pain, where it was between a 1 and a 10, 1 being the worst, and 10 being the most pain. She said, "It's in between." She couldn't give me a number in between. So...you know, I...that figures, she's pretty cognitive, so that's a pretty basic question, 0, you know, to 10. And yeah, she couldn't answer that for me. She just said "in between."

These two themes suggest that nurses and care aides are aware of the need to address pain in older adults, share some of the same ethical concerns of undertreatment of pain as highlighted by past researchers (Ferrell et al., 2000), and recognize the consequences of untreated pain. Awareness of the issues does not provide them with a better understanding of how to address it, which leads to frustration.

Nurses and care aides emphasized the *importance of knowing the client when identifying pain* as a factor of addressing the challenge of working with non-verbal patients. Not knowing the patient was described as being particularly challenging. Staff indicated that being new to the facility, having a new resident, working as a casual employee, or having shifts that rotate through various units was taxing when trying to determine if a patient was experiencing pain. Without having any prior knowledge of the patient, staff felt less equipped to know what was normal and what might be an indication of a problem. This was well illustrated by one care aide:

Personally, I think the big thing when it comes to pain. . .is really knowing your resident. . . I know my residents inside out, and I know if they're having a bad day or if they're in pain.... Whereas if you work over like over on [Name of unit within facility], which I do pick up, I know them, but not near as well as I know them over here. So you know, if I'm on [Name]'s side working on the other unit, I don't know, I can't tell like. . .as opposed to what I know with the residents on that side. . . So I think a lot of it is just knowing your resident. . . . Because like you said, you don't have to ask them. You can tell.

As the above quote demonstrates, staff not only find it easier when they know their patients but they described it as necessary to rely on knowing their patients to be able to tell whether the patient may be in pain.

Other researchers have also found that care staff rely on knowing the patient when identifying pain (Fox, Solomon, Raina & Jadad, 2004). The nature of the long-term care facility is one of high turnover in residents, high rates of casual staff, and frequent staff rotations through units. These characteristics make it unlikely that staff will always know every patient with whom they are working. This is a significant concern, because it suggests that until staff become very familiar with a patient, his or her pain may be improperly managed. For pain to be addressed immediately, staff members need to be aware of pain assessment practices that can assist them in identifying pain, regardless of their relationship or knowledge of the client. The pain assessment tools described in the video, particularly the PACSLAC and the Pain Diary, are practices that allow for proper pain assessment and management, despite high turnover (Fuchs-Lacelle et al., 2008; Misson et al., 2011). The Pain Diary in particular allows for increased consistency in charting, an important first step in proper pain management.

To help assist with adequately assessing and managing pain when they were not familiar with the client, many participants emphasized the necessity of the *charting, reporting, and communication between nurses and care aides*. This theme was found to be a central facet of nurses' and care aides' experience with pain assessment and pain management to the extent that several subthemes emerged. A first important component was the *completion and consistency of charting among staff*. As one nurse describing the

difficulty of determining how to manage pain without proper charting from the previous shift stated:

We have a situation where I was on last night and I'm going down the hall with my cart and this lady recently had a fall, went to the hospital, came back with a PRN for morphine. So you get to the room, well does she need it, or doesn't she? So I just say, "Well, Days gave it, I guess I'll just give it."

Staff suggested that with proper reporting and charting, they would feel more confident in knowing what decisions to make and in knowing if further pain assessment or management steps need to be taken. Several participants acknowledged how advantageous improved charting could be for staff working on a casual basis, as it would allow them to assess the situation quickly and take the appropriate action. Care aides also expressed difficulty completing their various duties without the proper information:

CA1: You need the paper trail, from each shift to each shift so everyone knows. . .

CA2: There isn't enough reported on that. And even if we discuss it at report, a lot of it is not documented, and that's a big problem. A lot of that is not passed on from shift to shift.

Despite the recognized necessity of charting and reporting, a second important subtheme emerged through discussions with the care aides regarding the *perceived validity of care aides' opinion or reports*. The majority of care aides felt that they were often dismissed by the nurses when reporting pain or that the nurse did not address their concerns in a timely manner, resulting in the patient suffering unnecessarily. For instance, as one care aide described her interaction with nurses regarding her reporting:

We have done so much documentation, not even just for pain management, but behavioural issues and monitoring that, “Well, we can’t do anything until we have proof.” So you have three hundred pages of proof and it sits in a file and they look at it, “Oh.” Nothing changes. So unless they’re willing to change, then don’t give us all this information and all these steps if nobody is going to help us with it.

This sentiment was reflected by other care aides, with many indicating that the way in which nurses responded to their reporting discouraged them from continuing to complete reports:

That’s where the frustration comes from. Like [Name] said, you can only do so much. And then it’s out of our hands and the same thing going on and on and on. And then that’s when you become frustrated and say, “Okay, you know what, we’ve been writing this person up and documented for six months now that they have this and that. Nothing’s being done; I’m not doing it no more.” Like, eventually you get to the point that you’re going, “Well, what for?”

Care aide frustration with lack of regard for their opinion has been identified by other researchers (Wright et al., 2004). Care aides in this research and in previous research noted that, as the care provider spending the most one-on-one time with the residents, their opinion should be taken more seriously (Wright et al., 2004).

Despite this feeling among care aides, the nurses seemed to value the work of the care aides and reported a *reliance on care aides to identify and report patients who may be experiencing pain*. In general, the nurses recognized the significant role played by the care aide, indicating how essential it was for care aides to perform proper reporting and

charting so that the nurses could complete their jobs as well as possible. As one nurse stated:

The [care aides] are the ones that see the resident all the time. If they say something is wrong, there's something wrong A nurse can be bombarded by many things. Like on evenings, we only have one nurse for the two sides, so it's a terrible mess. So if the aides aren't on top of things and charting, lots of things could be missed.

Nurses gave an indication that they are aware of the care aide's perception of not being taken seriously. One nurse described this as occurring as a result of too much work and lack of communication:

I think that the big thing up here right now is the care aides will tell you so-and-so's in pain day after day, and we're doing stuff but they don't see what we're doing. So if we can show them, you know, "This is what we're doing; we're working on it." Because you might hear when you have your session with them, "Oh, we tell the nurses, but they don't do anything about it." But we have been contacting the doctor, and we'll try things for three or four days or a week, and then we'll increase it . . . but they don't always see what goes on behind the scenes, 'cause maybe the communication isn't there, we're too busy... which isn't an excuse either, but I think that's lacking.

The subthemes emerging within the greater theme of charting and communication have important implications for pain assessment and training programs. Despite the vital role in the pain assessment/management process played by the care aide, care aides suggest that they do not see the impact of their reports. This suggests a communication

breakdown in how pain is being addressed between nurses and care aides. Such communication concerns between nurses and care aides are consistent with the findings of previous research (Ghandehari et al., in press). Increasing the communication between nurses and care aides could provide care aides with a greater sense that their reporting plays a role in the facility. Better charting practices that can be consistently used by all staff members are an ideal avenue by which to improve communication.

The second implication of the themes surrounding charting suggest that there is a disconnection between the pain assessment and the subsequent reporting and charting at all levels of staff. From the theme of *role in the assessment of pain in the facility*, it is evident that staff members, especially nurses, are conducting pain assessments (despite not necessarily being standardized or consistent) and are aware of ways to observe pain through non-verbal indicators. None of the staff members identified documentation in the chart as a component of their role. Previous researchers have identified improper documentation as critical issue in pain management (Ferrell et al., 1995). Despite recognising the consequences of improper documentation, it is possible that prior training has not fully emphasized the necessity of pairing pain assessments with consistent, continuous documentation. Without proper documentation of pain over time, a resident's pain becomes addressed on a day-by-day and nurse-by-nurse basis instead of implementing a larger, long-term pain management program in which every staff member is involved. Continuing education programs, such as this one, may need to call attention to the importance of documentation over time and emphasize the interconnectedness of pain assessment and documentation.

The two final themes that emerged within this content were related to external pressures that influence pain assessment and management. Families and physicians were identified as being two groups of individuals who made nurses and care aides role in pain assessment more challenging. The majority of participants described *family demands and family interference with pain management* as being problematic. Staff indicated that oftentimes families wanted their family member's needs met immediately, which detracted attention that might be needed elsewhere to ensure that pain is being identified. Family members were also reported to make it more difficult for staff members to address pain because family often insisted that residents attend recreational activities, feared prescription pain medication, and insisted on the use of particular medications despite a lack of awareness of medication side effects in older populations. One staff member summarized:

You didn't have this many families back then questioning every move that you made, compared to now. The families are more educated, they're reading more, they're searching out information about why Mom's doing this, why is Mom limping and dragging one leg, did she fall, did she hurt herself? You've got more family members that are...educating themselves on-line, while you're trying to keep up with the front line.

Families were not the only challenge to pain assessment that emerged. The *physician involvement in pain assessment and management* was described to be a source of frustration for some of the frontline staff. Many care aides and nurses felt that the doctor did not have enough contact with the patients to know what the patient might need, especially given that the doctors did not conduct pain assessments on the patients.

Staff felt that it interfered with their ability to manage pain properly, because they could not make changes without consulting the physicians, who are often unavailable. As well, they described challenges in obtaining a prescription from the physician that was appropriate for the pain experienced by the patient, and felt that communication needed to be improved, as indicated by one nurse who stated:

They don't ever ask us, like, what we think might be a good pain medication, they never ask us that. You know what might be a good pain management medication...and lots of times we know. So sometimes we get something and we're like "Well, that is way too much" or "This isn't enough."

However, it should be noted that the breakdown in communication between long-term care staff and the physician was not perceived by all participants. For instance, one nurse described a much more positive experience:

Usually though, if we do fax the doctors, they're usually pretty good about getting something for pain relief though. So I think it's a lot on our part to let the doctor know that the people are having pain.

This different perspective could be an indication that the degree to which staff find communication with the doctors challenging may vary as a function of the facility.

Previous research has identified nurse frustration with the physicians' insufficient respect for the nurses' opinions and power to make all treatment decisions (Fox et al., 2004; Long, in press; Malloy et al., 2009). The growing evidence suggesting that the physician's role in the long-term care facility is a challenge to long-term care staff and an indication that measures must be taken to improve communication among healthcare professionals. Improved charting may assist in improving this communication. Other

researchers have found that physicians working with long-term care patients struggle with having insufficient information on which to base pain management decisions (Fox et al., 2004). Moreover, physicians rarely have direct patient contact, with some researchers suggesting that physicians may see the patient once every 30 days. Focus group and interview participants suggested that direct patient contact by physicians was even less frequent and that most decisions are made by reviewing the charts. If staff members within the same facility are struggling to make pain assessment and management decisions based on chart notes, it is likely that physicians, who are unfamiliar with the patients and seldom in the facility, experience similar challenges. Staff members proposed that using the PACSLAC and Pain Diary charting methods with each patient might be valuable when speaking to the physician and may lead to greater physician consideration of the nurse's opinion.

Such tracking may also assist in working with family members. Providing families with a better understanding of the pain their family member is experiencing and the steps that have been taken to address it may allow them to have a better understanding of pain management decision. This would permit them to better recognize what are manageable and unmanageable activities for their family member. As well, if the families can observe what pain interventions have occurred and the steps being taken to ensure that the medication is effective and that the proper dosage is being administered, they may feel more at ease and interfere less with pain assessment and management procedures. Other researchers have found that communicating about pain with the family can function as a facilitator to pain management, as the family is able to provide a valuable perspective of a resident's behaviour (Fox et al., 2004). Future versions of the

training video could potentially address the ways in which implementing such practices may be beneficial in working with family members.

Content area 2: Training in pain assessment. Within this content area, three main themes regarding training emerged. These themes consisted of: (a) training received in pain assessment; (b) comfort with level of training received; and (c) importance of training and continuing education in pain assessment.

Participants reported a range of *training received in pain assessment*, and these differences were divergent between care aides and nurses. In general, nurse and care aide reports of prior training were consistent with previous research findings indicating that there is little to no specialized pain training in initial training programs (Watt-Watson, 2004; 2009). All care aides reported that they had received no formal training in pain assessment in older persons with dementia, that it was not typically a topic covered in the continuing care aide training course, and that their experience typically was derived from working in long-term care.

Nurses reported a greater range in training received. Many nurses reported that they had received no formal training, such as one nurse who stated, “The only training I’ve had is on-the-job training. There’s been no formal training...this is the first pain assessment training I’ve ever been on in 20 years.” Others reported that they had received some level of training in their initial programs, as one nurse indicated “as far as training with our assessments...basically our assessments are from when we went to nursing school and just through years of practice.” Others yet reported that they had received various types of in-service training over their years of working in long-term care and that

the training may have touched on pain assessment or management, such as training focused on medication.

Despite the differences in training received, the majority of nurses agreed that they would have liked more training initially as their *level of comfort with training received* was lower than they would have liked. The majority, however, also expressed that their experience had led them to become comfortable with conducting pain assessment in this population.

The care aide perspective was similar to that of the nurses in that they felt that, over time, they had come to learn what they needed to know. The majority of care aides indicated that they would have liked to have more training at the beginning of their employment or career, as they were overwhelmed or did not know what to look for, as reflected in this experience described by one care aide:

Well, I've been doing this for, I guess for...let's see...18 years, so, but probably if I were to think back when I was new, no probably some training in...being able to define pain in residents with dementia would have been very helpful actually.

In addition to indicating that more training would have made them feel more comfortable when they were beginning in their positions, many staff members recognized and emphasized the *importance of training in pain assessment*. In particular, both nurses and care aides expressed that training was important as optimal comfort was the main goal. Other staff underscored the importance of training in pain assessment that focused on the difficulties of assessing for pain in individuals who cannot communicate. These findings are consistent with the findings of other researchers who have suggested that both nurses and care aides are aware of their knowledge deficits in the area of pain and

are receptive to obtaining more training in the area (Chiu et al., 2003; Fox et al., 2004; Wright et al., 2003)

Although participants felt that training, in general, was of great necessity, continuing education was identified as essential. Participants described several benefits to continuing education, including being an avenue for learning about changes or advancements in practices that may have occurred since initial training and being a tool for refreshing or bringing back into awareness what was learned in initial training.

Content area 3: Video evaluation and utility. Focus group and interview discussions were used to elicit participants' evaluation of the video and their perception of its utility. Within this content area, several themes emerged and several differences in perspective were identified between nurses and care aides. Five broad themes were identified: (a) positive aspects of the training video; (b) weaknesses of the training video; (c) appropriateness of the level of difficulty of the training video; (d) perception of value of implementation of specific practices described; (e) stage of training most appropriate for viewing the video; and (f) level of staff most suited for viewing the video.

Nurses' and care aides' impressions of the video quality and content varied substantially. Overall, both groups indicated that there were several *positive aspects to the training video*. While participants reported difficulty remembering the exact content of the video, the general feedback was that they recalled enjoying the training session and indicated that they learned new information, such as described by one nurse:

From what I could remember, the concept was definitely worth listening to and ... watching ... where they were actually doing the assessment was beneficial. You know, it's nice to be able to see the movements and that. And I guess just talking

about each area that was involved with it so that we understood exactly how it was set up, those things I remember as being positive.

Although there were several positive reactions to the video, both groups pointed out some *weaknesses of the training video*. The majority of participants indicated that the sound quality was poor at times, especially in the clips that were taped from the session with the pain expert.

As well, nurses indicated that they would have liked the video demonstrations of the tools, specifically the PACSLAC, to have been conducted on a patient with more severe dementia. They indicated that this would have provided a more realistic scenario. Many emphasized the challenges of assessing pain in an individual with dementia who might be aggressive or unresponsive, indicating that pointers on conduct assessments in a more severe population would have been of great value.

Nurses also indicated that they would have liked a more interactive training session consisting of a practical component. They also would have appreciated having a copy of the PACSLAC available to them while they were watching the video. Many had never heard of the tool and believed this would have provided them with a better understanding of the tool and would have allowed them to commit the information to memory more easily. While the severity of the dementia in the patient and the desire for more interactive sessions were consistently reported by nurses, these were not concerns raised by the care aides. This may be implying that there are different needs at different levels of care.

In the video discussions, participants commented on the *appropriateness of the level of difficulty of the training video*. Nurses' and care aides' perspectives within this

theme were divergent. Nurses indicated that much of what was covered in the video was already part of the training they had received, and proposed that they would have liked to have had more in-depth information specific to the assessment process, as was underscored by one nurse:

Training video was good as a start...especially, like, for those that didn't know anything about it . . . it could be probably, like, on the RN perspective, maybe a little bit more detail on how to assess . . . more symptoms of what dementia people could be experiencing that equals pain.

Many of the nurses echoed this perspective that the training was too basic, and that more details on the more complex aspects of assessing could have been provided. This nurse perspective is inconsistent with the previous theme in which nurses indicated not having previous exposure to the PACSLAC. This might be attributable to a misunderstanding in the process of full pain assessment. While many nurses know how to conduct pain assessments, proper pain assessment and management require an ongoing process in which pain assessments are consistently conducted and scores are charted over time (Hadjistavropoulos et al., 2010). Moreover, these findings suggest that nurses are conducting pain assessment using either unstandardized or non-evidence-based methods.

Conversely, the care aides indicated that, although they knew some of the information, they also learned a substantial amount. Overall, care aides indicated that they were very pleased with the level of training and the accessibility of the information. Considering the varying levels of training received by staff in the care facility, developing a training program that is of an appropriate level of complexity is likely a challenge inherent to any training program that is developed to train all levels of staff. As

the intent of the program was to be accessible to both nurses and care aides, these findings suggest that the training video was at an adequate level, but that provision of the actual PACSLAC form and an opportunity to practice the PACSLAC would enhance the training and be of particular value to nurses.

Irrespective of the degree of difficulty perceived in the video and any negative aspects of the video that were identified, participants were enthusiastic about their *perceived value of implementing specific practices in the video* as they saw ways in which the practices could facilitate their work. Both groups indicated that the practices were useful because of the population with which they were working, and many reflected on the importance of making sure that older adults were comfortable. For instance, as stated by one nurse who summarized this idea well:

I would consider [using the practices] because I think everyone needs to be kept comfortable...some people are overlooked, just because they are quieter, they can't express themselves, doesn't mean that they're not uncomfortable or in pain, and our elderly, I feel, don't need to be in any pain at all, not with this day and age's drugs that we have, one could be kept comfortable.

The nurses, in particular, found that the practices could be of value, as they thought the Pain Diary tracking of PACSLAC scores might have the potential to improve communication with the facility physicians – an area, as discussed, which presented challenges in pain management. As one nurse emphasized:

I thought that it would be a good tool, and where I really thought it would be also good is that the communication between the nurses and the doctors, which seems to be lacking on an understanding of exactly how the pain should be treated. I

thought this might be a little clearer to a physician and what we're trying to get across now at times, whether they're over-medicated or under-medicated or with their pain management.

As well, many nurses commented on the use of a checklist with regard to decreasing the time it takes to conduct the assessment. The majority were enthusiastic about the ease of the use of the PACSLAC's check mark system, specifically with regard to how it could be easily implemented by individuals with less formal training in pain assessment.

Overall, staff indicated that the training should be provided as it was a useful tool. *The level of staff most suited for viewing the video* was discussed throughout all interviews and focus groups. In general, participants agreed that the video should be watched by all levels of care, including care aides and nurses, as everyone should have the necessary tools to conduct assessments. Training across all levels of staff was emphasized as being important as it would increase consistency and because having nurses and care aides using the same tools and practices would likely facilitate communication. This theme stresses the desire for a team approach, a desire which other researchers have also found to be present in all levels of long-term care staff (Fox et al., 2004). As Fox and colleagues underscore, this need for a team approach is in direct contrast to many of the challenges that exist within long-term care facilities, particularly communication challenges and lack of respect for others' opinions.

Some participants thought that training should be even more widespread and offered to everyone in the facility, including dietary and recreation workers. Several

nurses even suggested that housekeeping staff should have the training, such as demonstrated by one nurse's statement:

I think everybody, like I think right from housekeeping up to the nursing staff, it's important. Because sometimes our housekeeping is in that room cleaning, and . . . residents will say stuff to them they maybe won't say to us . . . of course the special care aides when they're dealing with someone moving them, whatever, should be able to read their facial expressions too. So I think everybody right from housekeeping right to nursing should, you know, see it and be aware of it.

In addition to who should receive the training, the *stage of training most appropriate for viewing the video* was also discussed. Participants consistently agreed that this training would be most beneficial either during initial training or when a staff member first begins working in a long-term care setting. This is a very practical recommendation given some of the barriers that were identified by the care staff when it comes to changing or improving pain assessment. Training staff upon arrival at the facility may increase consistency in methods used and enforce the methods that are to be practiced within the facility. Central pre-existing challenges to pain assessment were the lack of completion and consistency of charting among staff. If compulsory completion of the training program occurred as new staff members begin working in a facility, all new staff would be provided with consistent education. This might result in fewer new staff implementing their own charting methods due to lack of specification of facility practices and might create more consistency in charting practices. Moreover, orienting staff to the pain assessment and charting expectations within the facility would establish these practices as the standard.

Content area 4: Barriers, facilitators, and process of change. Within this content area, specific questions were asked to identify barriers and facilitators to changing or implementing pain assessment practices. Three themes relating to barriers/facilitator that emerged included: (a) insufficient time, insufficient resources, and overwhelming workload; (b) co-worker negativity, resistance to change, and perception of lack of time; and (c) need to see benefits prior to implementation. Three additional themes emerged around the process of change and the role that the participants played, or perceived they played, in creating changes in pain assessment. These themes were: (d) follow-up and communication with management; (e) initiation of the change and support for the change needed to come from management; and (f) scope of participants' impact in decision-making and change.

Both nurses and care aides identified *insufficient time, insufficient resources, and overwhelming workloads* as a main concern in making changes to pain assessment practices. These concerns have been previously identified by numerous researchers (e.g., Francke et al., 1997; Stolee et al., 2009; Twycross, 2002; Weiner & Rudy, 2002). In the current study, participants expressed that the staff to patient ratio was too low, leaving staff shorthanded and unable to attend as closely to needs of patients or take time to implement change, even if they recognized the benefits that could ensue. As one care aide stated regarding implementing new practices, "Certainly I'd like to do it, because it probably would benefit my job in the end, or my coworkers on shift. I'd love to do it, but it comes down to time." Some participants also believed that the time it would take to do a pain assessment, itself, was too great. As one nurse described:

So then, like, on evening you have 60 some patients and if you do . . . a form or do your pain assessment here, it's going to take 5, 10, 15 minutes, you know you have somebody else in pain that's getting out of control. Maybe not just one, right.

The perceptions that implementing pain assessment practices would take too much time was not held by all participants, as some did recognize that certain methods could be quickly administered, such as illustrated in the following interaction between two care aides:

CA1: If we were to have [a consistent tool], I don't think it would take that much time to look at. Like we don't have anything specific now so we don't got nothing to go on, except what we see visually.

CA2: Like I said, it will cut down your work time and helps us.

A second theme that emerged in discussions with participants was *co-workers' resistance to change, negativity, and perception of lack of time*. Within the focus groups and interview it was apparent that not all staff members believed that there was insufficient time. Those who felt there was enough time still identified time as an issue, as they expressed it was difficult to overcome the negativity of those staff members who really did feel there was no time. This challenge, and its resulting frustration, was illustrated by one care aide who described:

Well, we work with a lot of close-minded people. "We don't have time for that" [...] They're just tired and bitter and they won't open their minds to "let's be helpful" and not everybody's in pain. This isn't something you're going to do with every resident every minute of every day.

Understanding what aspects of the job or personal characteristics may influence a staff member's perception of time would be an important area for further research to explore, as it remains unclear why staff members had such divergent points of views on the time available to change or improve practices. It is possible that, within the facility, different shifts have different workloads despite having the same number of staff working. As well, throughout the day, patients' pain might change or increase in such a way that members on one shift are struggling to cope with patients with a higher degree of pain, making it more overwhelming to address all the pain complaints. Individual differences in ability to cope with the overwhelming environment of the long-term care facility may also influence ability or willingness to implement practices and make changes. Understanding and addressing these factors may lead to important improvements in pain assessment practices in long-term care facilities.

The challenge of working with resistant staff was expressed by both staff and nurses. In addition to the perception that there would be resistance based on time, both nurses and care aides identified that there would be more widespread co-worker negativity and resistance to change. This was well summarized by one participant, who stated:

Yes, I'm thinking of certain people here, and I think, short of an atomic bomb, nothing will change their outlook on life . . . there are some, they would rather die than change. "We've done it this way, and we're always going to do it this way, and don't tell me that I have to change."

This resistance was presented as being especially problematic, because it was recognized that unless everybody was onboard and consistent in their practices the

changes would not be effective. As discussed, care aides feel that the efforts they put into reporting and charting pain were largely ignored. In contrast to this finding, other researchers have identified that care aides wish to be included in the decision-making process concerning situations and issues surrounding their job role (Wright, 2003). While resistance may never entirely dissipate, seeing a clear link between how a task completed by a care aide can influence pain assessment and management decisions might empower care aides. This might improve their perception of the role they play in the pain management process and, consequently, improve the daily lives of the patients for whom they are caring. Researchers have found that a team approach in long-term care can empower care aides, improve resident care, improve cooperation between nurses and care aides, and lead to decreases in staff turnover (Yeatts & Cready, 2007).

Despite these barriers, participants were able to identify facilitators to change. Of particular importance to nurses was the *need to see the benefits prior to implementation*. Nurses indicated that they would be willing to try new approaches if they could see how the changes would be of value or would improve upon what they were already doing. As one nurse stated, “Show us how to use it, the benefits. Like what are we going to get out of this that we aren’t doing right now.”

In addition to needing to see benefits, nurses also indicated that they would be hesitant to change practices unless there were *standardization of tools and use of user-friendly tools*. Nurses expressed that they would be willing to make changes that would allow for standardization across staff and, ideally, standardization across facilities. Without standardization, nurses indicated that they would be hesitant to make changes,

such as exemplified by one nurse who stated, “She’s doing one thing and I’m doing something else. What’s the point of me doing that, right? It’s a waste of my time.”

The majority of nurses indicated that unless a tool was quick and easy to use, it would be very challenging to implement. As one participant described:

And it needs to be quick. It means that whatever pain assessment program that’s brought in needs to be a fairly quick evaluation, like a tick for or something, and not pages because otherwise it probably wouldn’t be efficient and implemented.

Even though the practices and tools described in the video allowed for standardization, were user friendly, and addressed the challenges of lack of communication, documentation, and underreporting, the practices were not being implemented by participants. Staff appeared to have difficulty believing that the methods would facilitate their workload in the long-run. Staff were hesitant to implement practices unless they could clearly see the benefits and identify ways in which the practices would make their jobs easier. As with most programs, initial implementation takes time and the true time-saving benefits are not immediately seen. Therefore, because staff do not want to implement practices that may increase workload, staff never have the opportunity to see the benefits. This problem makes evident the necessity of having a program strongly supported by management, a facilitating factor highlighted by nurses and care aides. If staff are resistant to change because they cannot see the immediate benefits, staff will be unlikely to ever try anything new, despite practices being strongly supported by research as being user-friendly, timesaving, and efficient.

Throughout the focus groups and interviews, participants were asked to comment on the process of change and the role they played in pain assessment decisions and

changes to practices. The responses that emerged were complex in that they demonstrated the hierarchical structure within the facility and the effect that the structure plays on perception of power for change at different levels. The majority of participants indicated that for large-scale changes to occur the *initiation of change and support for the change must come from management*. The process was described as “the big changes are always done by the management. They’ll come talk with the staff personally, or they’ll send out a memo. . .with directions as to what changes are taking place.” Some nurses recognized that decisions on practices came from a higher level, such as the health region or provincial policies. The involvement of the district/health region was not identified by the care aides. Moreover, although the majority of care aides identified that changes came from management, similar to what the nurses identified, the care aides also indicated that their directions for change came from the nurse or nurse manager level.

Further to their role in making the decisions, nurses, although not care aides, emphasized the *necessity of follow-up and communication with management*. Although management or the district/health region were responsible for initiating or implementing the change, the nurse indicated that there remained a necessity for management follow-up and that management needed to have better consideration of nurses’ opinions. They indicated that there was a disconnection between the front-line workers and the managers, which created several problems. A primary concern was that even if the front-line workers were told to implement a new practice, managers did not follow-up with the implementation, which led to the program being quickly abandoned. The nurses described that more than a request for the change to be implemented was required:

It seems like all the mangers are done at 3:30 [p.m.] and they're gone, and you can't carry these things out as a nurse on your own. You're responsible for so much. When you bring in change you got to oversee it, seven days a week. Not Monday to Friday.

Within this theme, the nurses also expressed that there was not always clear communication between management and nurses, in the sense that either nurses' suggestions were not well received or were heard but the nurses were never made aware of the follow-up. This issue was well characterized by the following nurse's description:

I think that people are addressing it but it doesn't always get passed back down as to how it was addressed and then people think it was not managed per se, going up the ladder. But it might have been but change doesn't always happen easy in nursing and so, even though your voice might have been heard per se, you don't get the feedback. Because management's so busy, I guess. I'm not really sure why the communication breaks down, but it seems like... it goes up the ladder, it doesn't always come down as feedback.

Given the high number of participants who indicated that they would be willing to implement the methods and would feel confident doing so, it is possible that lack of follow-up from management subsequent to the training sessions played a role in the implementation. Management follow-up was seen as facilitator to changing pain assessment practices within a facility, which is consistent with findings from previous researchers (Stolee, 2007). While staff might have been encouraged to attend the training, management may not have offered the same support in encouraging staff to complete the pain assessments on their unit and to track the pain consistently in the chart.

While self-report measures can be conducted without access to any tools, if participants were to implement the PACSLAC, access to the PACSLAC forms would be necessary. Although the health regions involved in the study had access to the PACSLAC, it is unclear to what degree the staff within the health region were aware of this or were aware of how or where to gain access to the forms. Greater management support may be an important factor in ensuring that implementation of continuing education is occurring. The need for greater management support is consistent with outcomes of educational programs in which support was high, as these programs were found to be successful and result in concrete changes to policies and documentation procedures (Long, in press).

While the large-scale changes were described as coming from management, it was evident that the participants had a perception of their role in these changes, but that the *scope of participants' impact in decision-making and change* was greatly dependent on their status as care aides or nurses. Nurses felt that they played an important role in decisions made, despite recognizing that changes had to be implemented by management. Throughout their descriptions of their role, it emerged that they perceived their role to be one of initiating discussion between caregivers to create a team approach, expressing concerns, and continuously considering what needed to be done for the resident's pain. Nurses further noted that they were still responsible for the assessments, regardless of what they were told by management. As one participant indicated:

The forms, the forms we're not part of that, that's given to us pretty well. As far as our assessment though, and that's the most important part, that's a training thing, that's something you do on a regular basis, and we're totally responsible for that. And whether they tell us what to do and how to do it, we still do it how we

were trained to do it, and you know what we've adapted through years of nursing. That's what we go by.

The nurses' perception of the role in decisions made about pain assessment practices contrasted with the care aides' perception of their own role. Many described that they played a role in bringing their concerns to the nurses or even management, if necessary, as demonstrated by one care aide who described, "We can bring our recommendations of what we feel to the nurses or to management, but you know, they take it from there. I don't feel we have any power in that aspect at all, really." As reflected by this participant, care aides indicated that in terms of direct change, there was very little they could do because everything required someone with more power to make decisions or implement change. This was discussed with a sense of discouragement among care aides, and one care aide, who illustrated this point well, stated, "The only change you might make is their day might be a little better. If, you know, something you can do that's very simple that doesn't require anything from the next step up." Care aides described a sense of powerlessness and spoke as if all the influence they could have in making changes to pain assessment practices was negligible.

Although this study aimed to use a bottom-up approach wherein front-line workers were educated in the hope that practices may be implemented through them, the findings of this study suggest that such an approach is not feasible in the long-term care setting. Given the number of barriers, staff may need initial encouragement and enforcement to ensure that practices are being used within the facility. Staff members are aware that most changes come from management; however, staff identified that the lack of follow-up from management subsequent to implementation of any new program or

practices causes the program or practices to fall by the wayside. Having management more involved in the implementation of continuing education programs and the practices within these programs may be necessary to ensure that what is learned is being implemented. Moreover, as other researchers have demonstrated, knowledge deficits exist among nursing managers in the proper pain assessment and management practices to be used in individuals with dementia (Barry et al., 2012). Management support is likely to increase if managers have completed the program themselves. With management enforcing use of a pain charting system (either the Pain Diary or simple number reporting in the chart), several of the identified charting, reporting, and communication issues may be addressed and staff may begin to see the time-saving benefits the practices. This may then lead to further support for the program at the staffing level. It is unlikely that the same degree of support could be obtained without individuals having the opportunity to engage in using the practices. Resistance from co-workers, perception of lack of time, and inability to get everybody to agree to implement the practices may be too large a challenge for a small subset of care aides or nurses to overcome without the support of management.

Integrative discussion of qualitative findings. Together the qualitative results of the VEQ and FU questionnaires, as well as the results of the focus groups and interview discussions, provide indications of the success of this pain assessment training program and ways to improve future training and implementation. A number of barriers identified in the VEQ and in the themes emerging within the four content areas of the focus group/interview analysis illustrated several factors influencing the successful implementation of training programs. The majority of participants indicated that they

would be willing to implement the practices and perceived the practices described in the video to be a valuable tool. This positive evaluation was paralleled in the themes that emerged within the *training in pain assessment* and the *video evaluation and utility*. Moreover, the themes within these areas suggested recognition among staff of the need for training in pain assessment, especially focusing on pain assessment in individuals with dementia. Although staff made minor suggestions as to how the training program could be enhanced, such as improving audio and providing a copy of the PACSLAC to participants, overall participants felt the training was helpful and believed they acquired valuable information.

Despite a positive attitude about the training, the narrative data suggest that staff members are not implementing the practices. Quinn (2000) defines a successful continuing education program as one that results in a change in practices. Thus, implementation of the practices would represent optimal success of this training program. Paired with the findings of this study, this suggests that, for lasting change to occur, appreciation and positive evaluation of the training program may not be sufficient.

Focus group and interview participants described struggling both with pre-existing facility challenges to adequate pain assessment and barriers interfering with the implementation of new pain assessment practices. The barriers emerging in the focus group/interview discussion were consistent with those that emerged in the VEQ. To improve the success of future training using this program and to optimize changes in practices following training, a model offering a conceptualization of this study's findings was developed (Figure 1). By incorporating the themes that emerged both in the VEQ

and in the discussions, this model outlines the process through which participants suggest lasting change might occur.

Model of successful change in pain assessment practices. This model (shown in Figure 1) focuses on the two main aspects identified by staff as being facilitators to change: the importance of seeing the benefits and continuous management support. This model incorporates the many challenges to pain assessment and the barriers and facilitators to changing pain assessment practices. The manner in which these factors influence staff members' willingness and ability to change practices are delineated. The four downward flowing arrows found in the center of the model represent the staff members' experience in the training and change process. The desired outcome, shown at the base of these four arrows, is a sustained positive change in pain assessment practices. The boxes found on the left side of the model represent factors influencing the program: a) facility factors; b) external factors; c) barriers to change; and d) benefits of change. The dark coloured arrows along the right side of the model correspond to management's role throughout the process. The downward vertical line at the base of these arrows demonstrates the need for ongoing management involvement.

For front-line staff, this process begins with the completion of the training program (Box 1 of Figure 1). Management's role begins prior to this, as demonstrated by Arrows 2 and 3. Staff members outlined several ways in which management support would be necessary in the initial training phase. Implementing new practices when not all staff members have the same knowledge base or have received the same training was identified as being very challenging for staff members. Thus, management would ideally be responsible for ensuring that all staff members are trained in the training program.

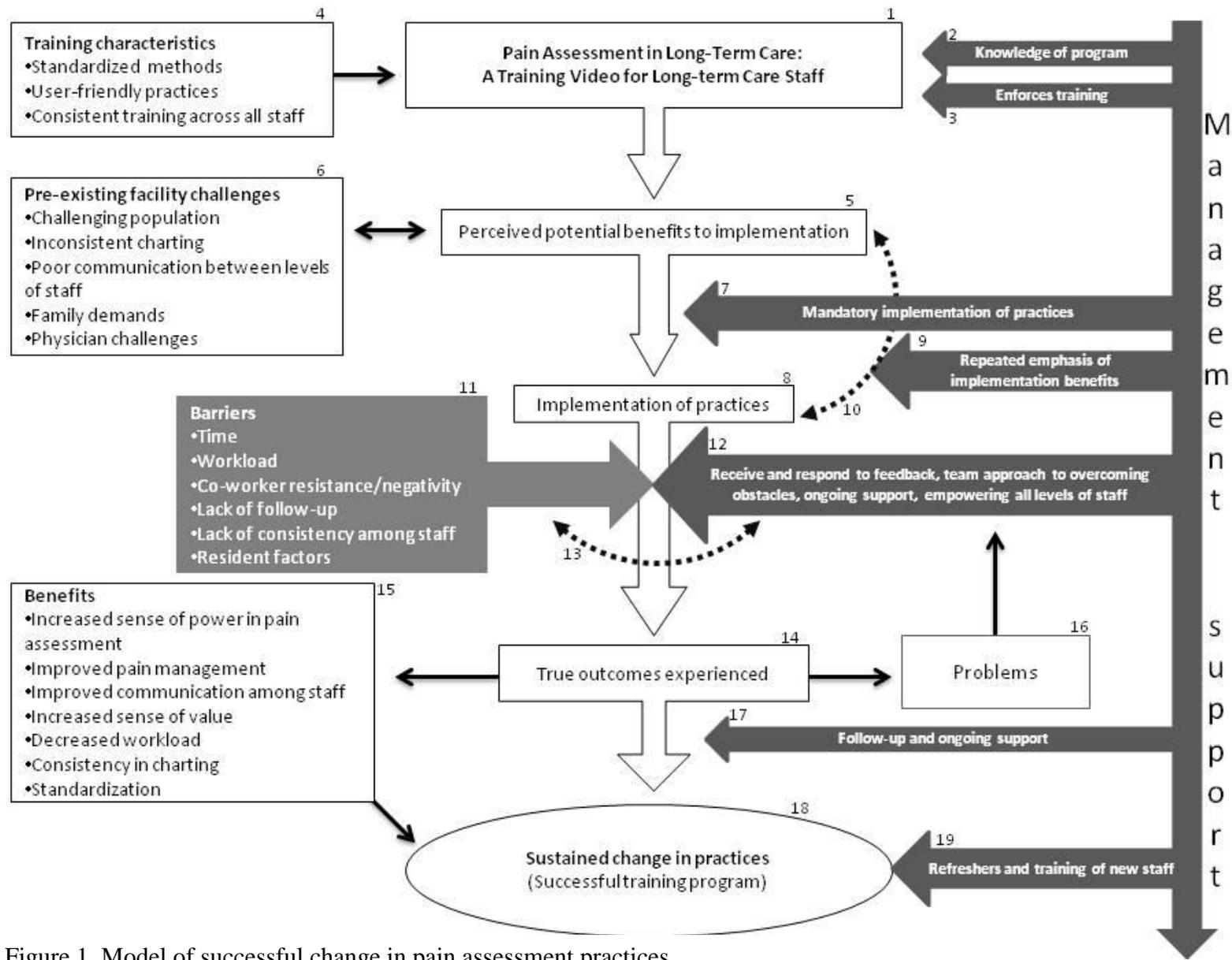


Figure 1. Model of successful change in pain assessment practices

Moreover, staff members expressed frustration that managers were not fully aware of the reality of what happens on the unit. As such, having a good knowledge of the training program would assist managers to better understand and address staff concerns.

Training program factors identified as being necessary for program success were highlighted by participants. These factors are represented in Box 4 of Figure 1. Specifically, the training program must teach practices that are user-friendly and that allow for standardization in pain assessment, and the program must be designed in such a way as to allow for all staff members to be trained consistently.

Subsequent to training, participants perceived several benefits to the training program, as illustrated by Box 5 of Figure 1. Participants stressed the importance of being able to observe the benefits of any training program prior to implementation of new practices. Throughout the training program, the specific benefits of using the described practices were emphasized. Participants' responses on the VEQ suggest that most perceived several benefits to implementing the practices described in the video. The perception of benefits in and of themselves did not lead to any lasting change in practices, indicating that further steps must be taken.

As participants consider implementation, it is likely that many of the identified pre-existing challenges to pain assessment will interfere and make it challenging for staff members to adjust their practices independently. These challenges, summarized in Box 6 of Figure 1, include difficulties that arise within the long-term care population, inconsistent charting practices among staff members, poor communication between nurses and care aides, pressures from family members of long-term care residents, and challenges working with the physician. To offset these challenges, Arrow 7 illustrates

management's role in making the implementation of the practices mandatory. Staff members suggested that large-scale changes had to come from management, otherwise adherence would be low. Mandatory implementation paired with staff perception of benefits to implementation should lead to actual staff implementation of practices, as shown by Box 8 of Figure 1. To increase staff buy-in and implementation, managers may need to re-emphasize the benefits that would arise as a result of using the practices, as shown by Box 9. This allows staffs members to remain aware of the potential positive outcomes and not be discouraged by pre-existing facility challenges. Staff members may lose sight of the benefits when faced with challenges to implementation, decreasing adherence to the practices. As demonstrated by the dashed arrow connecting Boxes 5 and 8 (Figure 1), staff members may need to be reminded of the benefits several times throughout implementation before full implementation is seen among all staff members.

During the initial phases of implementation, several barriers will influence the successful change in practices. These barriers, illustrated in Box 11(Figure 1), include lack of time, overwhelming workload, co-worker resistance and negativity to changing practices, lack of follow-up from management, lack of consistency among staff, and resident factors such as severe dementia or lack of cooperation. To counteract these barriers, managers would ideally be highly involved and aware of how implementation is occurring at the front-line level. As demonstrated by Box 12 (Figure 1), managers must be available to receive feedback from staff members, respond to the feedback, encourage a team approach to overcoming any challenges that arise, be supportive throughout the process, and take steps to empower staff members in using the practices. By recognizing and responding to staff concerns, managers and staff members would be better able to

solve problems as they arise. The relationship between barriers and management's role during the implementation phase is reciprocal, as illustrated by the dashed arrow connecting Box 11 and Arrow 12 of Figure 1. As each new barrier or challenge arises, managers must be available to address it, and managers will influence the degree to which staff members are able to overcome or address barriers.

Through continued management support, staff members could be encouraged to raise any concerns and these could be discussed and addressed. The way in which the pain assessment practices are implemented within the facility can be flexible and decided through ongoing communication among nurses, care aides, and administrators. By allowing for perspectives and opinions of front-line staff to be heard throughout the change process, being responsive to feedback, and working to implement the practices in a manner that is acceptable to front-line workers, managers can play a major role in empowering staff members in pain assessment decisions. By bringing more clarity and consistency to the practices used, staff members may be better able to see the ways in which their involvement in pain assessment influences subsequent pain assessment decisions with each resident. For instance, if all staff members are using the PACSLAC and charting scores in the Pain Diary for a particular resident, care aides with knowledge of the PACSLAC and the Pain Diary can assist in conducting the assessments. They can then also chart in a manner that is consistent with that of the nurses and can provide easily interpretable information (e.g., a PACSLAC score) to the nurses. This may result in improved communication among all levels of staff.

The quality of the communication that occurs between front-line staff members and managers throughout the initial implementation of the new practices will likely

influence the success of this implementation. Staff members indicated that without management support and without working as a team, new practices fall by the wayside. Managers' availability to address issues, outside of regular work hours if necessary, and continued support and encouragement of the implementation process were identified as being necessary for the changes to be sustained.

As implementation of new practices occurs, staff members will begin to experience the true outcomes associated with using the pain assessment practices, as demonstrated by Box 14 (Figure 1). Sufficient management support should lead to the positive outcomes found in Box 15 (Figure 1). These positive outcomes include an increased sense of power in pain assessment, improved pain management in the facility, improved communication among all levels of staff, increased sense of value among care aides, a decrease in staff workload, consistency in charting practices, and standardization in the pain assessment and charting practices used. Positive outcomes should result in a sustained change in pain assessment practices. If unexpected negative outcomes were to arise, management would again play an essential role in assisting with problem solving, encouraging open communication, and re-emphasizing long-term benefits. In instances when negative outcomes are experienced (Box 16 of Figure 1), these problems must be immediately addressed by management.

To ensure that positive outcomes result in a sustained change in pain assessment practices, management must remain involved by providing continuous follow-up throughout the months following implementation. As well, managers should provide encouragement and support to staff as any additional challenges or frustrations arise. This continued management involvement is illustrated by Arrow 17 of Figure 1.

As staff members begin to experience the benefits of the newly implemented pain assessment practices, sustained changes will occur within the facility (Box 18 of Figure 1). These sustained changes are facilitated by managers continued involvement. Managers must encourage staff members to complete refresher training as needed and must ensure that all new staff members are trained in these practices, using the training video, upon arrival at the facility (Arrow 19). Participants identified initial arrival at the facility as the ideal time to train staff members in these practices. By ensuring that all new staff members are trained using this pain assessment program, management will assist in ensuring that all front-line workers have the same knowledge base and are consistently trained in the same pain assessment practices.

General Discussion

The results of this study have important implications for pain-related continuing education programs in long-term care. This investigation provides support for the use of this video-based program as a method of knowledge translation for long-term care staff. Positive video evaluations by staff are encouraging, as they suggest that this is a tool that would be welcomed if disseminated throughout long-term care facilities. This training program provides quick, focused training to staff and is a first step in addressing the substantial need for increased training on pain assessment in long-term care. The content of the video is consistent with current evidence-based best practices and is an ideal tool to assist long-term care facilities in meeting clinical and policy recommendation for pain management in long-term care (Hadjistavropoulos et al., 2009). Knowledge levels were found to increase and be sustained over time, which further demonstrates the effectiveness of this tool in filling some of the identified knowledge inadequacies in pain

assessment and management (McCaffery & Robinson, 2002; Sloman, Ahern, Wright, & Brown, 2001). With proper implementation, this training tool has the potential to address the growing ethical concern of the undertreatment of pain in older adults (Ferrell, 2000).

This study also provides indications of factors that will affect the success of training programs, specifically the influence of beliefs and attitudes about the nature of pain. The results of this study offer support to the idea that beliefs and attitudes may interfere with the quality of care provided to long-term care residents (Malloy & Hadjistavropoulos, 2004; Zwakhalen et al., 2007). These findings accentuate the need for initial and continuing education programs to address these inaccurate beliefs and negative attitudes prior to training. This may increase positive outcomes of this training both in terms of knowledge translation and application.

Focus group and individual interview discussions suggest that staff are aware of the need for improved training and are open to training options. Training programs that can offer quick and widespread education are indispensable to target the serious issues surrounding pain assessment and management in long-term care. Furthermore, the training video format addresses many of the previously identified challenges to continuing education programs, including lack of physical space (Stolee et al., 2005), overwhelming amounts of information (Ghandehari, in press), cost of bringing in a program or having staff members attend a program (Aoki & Davies, 2002; Harper, 2000) and reaching rural and remote facilities (Penz et al., 2007).

Although this study provides evidence for a viable pain assessment training program, the results of this study allow for observations to be made about transforming training into practice. Pre-existing challenges to pain assessment and barriers to

implementation create many obstacles for long-term care staff who wish to change pain assessment practices. These obstacles are formidable for front-line staff to overcome on their own. Participants in this study stress the need for strong and ongoing management support in order for a training program to result in a change in practices. As well, training programs must account for the challenges already present within the long-term care facility and provide training in practices that mitigate these challenges. In order for staff to consider using new practices, staff must be able to discern the way in which implementing the practices will be of benefit to them.

Bottom-up approaches to education in which staff are educated in the hope that practices will be implemented have been shown to have some success (e.g., Ghandehari et al., in press; Long et al., in press). The findings of this study suggest that these approaches may not be the most realistic from a resource perspective in the long-term care setting. Participants in this study identified staff resistance as a significant barrier to implementing new practices, suggesting that this support may not be easily acquired. Moreover, staff members noted that they have considerable time and workload constraints. Bottom-up approaches require a small subset of staff members to advocate for the implementation of practices, taking time away from other duties. This may not be possible in all facilities, given staffing limitations. Finally, as underlined by the participants in this study, large-scale changes and policy or procedural changes are typically generated by management. Bottom-up approaches may be overly optimistic and overlook structural factors within the facility that prevent front-line staff from creating lasting change.

Instead, the findings of this study support a more viable approach to the implementation of practices learned through training. This approach is one of consistent and continuous management involvement and support. Ideally, as suggested by participants, all staff members should complete this training program, and training should be provided to every new staff member upon arrival at the facility. Management would be responsible for ensuring that this training occurs. While staff members identified many workplace challenges and barriers to implementing or changing practices, participants recognized the need for corrections and improvements in current pain assessment practices. If long-term care staff are supported throughout implementation and are able to see the benefits of using evidence-based practices, lasting changes are more likely to occur. Such changes could result in better pain assessment and management within the facility, which has been shown to improve workplace environment for the front-line staff and quality of life for long-term care residents (Fuchs-Lacelle et al., 2008).

Strengths and Limitations

It is important to note the strengths and limitations of this study. The sample size and the strength of the methodology provided strong support for the conclusions made. The inclusion of members from various long-term care facilities allowed for diverse nurse and care perspective of pain assessment in the long-term care setting. As well, much of the research conducted on continuing education programs in long-term care did not take into account the care aide perspective. This study included this subgroup of long-term care staff and noted differences that emerged between nurses and care aides. Finally, the quantitative and narrative nature of the analyses in this study allowed for greater depth and understanding of the data.

There are several limitations of this investigation that are important when interpreting the results. For instance, although the combined interviews and the focus groups represented staff from several different long-term care facilities, all focus group participants came from the same facility. This is problematic for several reasons. While all necessary steps were taken to ensure participant confidentiality and decrease disclosure, it is possible that more information or different perspectives might have emerged had participants been less familiar with each other. As well, although individual interviews were held with participants from a variety of facilities, the information collected in the focus groups may reflect facility-specific issues and may limit the generalizability of the findings.

Another limitation of this study arises as a result of the number of participants who returned the FQ. While a large number participated in the follow-up phase, all analyses that were conducted using this questionnaire may have had insufficient power. It is possible that with a larger sample size, analyses may have yielded different results.

Directions for Future Research

Communication with the physician was identified as problematic in terms of current pain management in long-term care facilities. This is consistent with other research (Fox et al., 2004; Malloy et al., 2009). Inter-professional training provided to all individuals working with long-term care patients may provide some assistance in increasing communication between professions. Nurses may be able to improve communication with physicians by using consistent pain assessment and charting practices in the facility. Educating the physicians on these practices may lead to a greater understanding of the nurses' role and lead to greater perceived validity of the nurses'

opinions. Physicians may also have a better understanding of how pain is assessed within the facility and be provided with information on the patient's progress over time, allowing them to make more informed decisions about a course of treatment.

As well, researchers conducting further research in this area may monitor in-facility implementation of practices both pre- and post-training. This could be done through examination of the charts and tracking of PRN medication administration and would allow for a better understanding of whether pain assessment practices changed or improved subsequent to training. Although participants in this study were asked to report their individual implementation of the practices described in the training video, the self-report nature of these questions did not allow for the direct observation of whether true changes had occurred.

Finally, as discussed, bottom-up approaches in which front-line staff are expected to make changes without enforcement or support from management may be unrealistic and unlikely to result in lasting change. Other researchers could consider implementation of a top-down approach, in which education begins with management and managers are subsequently responsible for training staff, implementing the program among their staff, and supporting staff throughout the implementation phase. This would lead to a greater understanding of ways in which training programs and new practices can be most effectively implemented within long-term care facilities.

References

- Abbey, J., Piller, N., DeBellis, A., Esterman, A., Parker, D., Giles, L., & Lowcay, B. (2004). The Abbey pain scale: a 1-minute numerical indicator for people with end-stage dementia. *International Journal of Palliative Nursing*, *10*(1), 6-13.
- American Geriatrics Society Panel on Persistent Pain in Older Persons. (2002). The management of persistent pain in older persons. *Journal of the American Geriatrics Society*, *50*(Suppl. 6), S205–S224.
- Alzheimer Society of Canada. (2010). *Rising tide: The impact of dementia on Canadian society*. Toronto: Author.
- American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th text revision ed.). Washington, D. C.: Author.
- Andersson, H. I., Ejlertsson, G., Leden, I., & Rosenberg, C. (1993). Chronic pain in a geographically defined general population: Studies of differences in age, gender, social class, and pain localization. *The Clinical Journal of Pain*, *9*(3), 174-182.
- Aoki, Y., & Davies, S. (2002). Survey of continuing professional education within nursing homes. *British Journal of Nursing*, *11*(13), 902-903.
- Asmundson, G. J. G., & Wright, K. D. (2004). Biopsychosocial approaches to pain. In T. Hadjistavropoulos & K. D. Craig (Eds.), *Pain: Psychological Perspectives* (pp. 35-57). Mahwah, NJ: Lawrence Erlbaum Associates.
- Barry, H. E., Parsons, C., Passmore, A. P., & Hughes, C. M. (2012). An exploration of nursing home managers' knowledge of and attitudes toward the management of pain in residents with dementia. *International Journal of Geriatric Psychiatry*. doi: 10.1002/gps.3770

- Bartlett, M. A.. (1954). A note on the multiplying factors for various chi square approximations. *Journal of the Royal Statistical Society, 16b*, 296-298.
- Basbaum, A. I., & Fields, H. L. (1984). Endogenous pain control systems: Brainstem spinal pathways and endorphin circuitry. *Annual Review of Neuroscience, 7*, 309–338. doi:10.1146/annurev.ne.07.030184.001521
- Benedetti, F., Vighetti, S., Ricco, C., Lagna, E., Bergamasco, B., Pinessi, L., & Rainero, I. (1999). Pain threshold and tolerance in Alzheimer's disease. *Pain, 80*, 337-382. doi:10.1016/S0304-3959(98)00228-0
- Bergman, S., Herrstrom, P., Hogstrom, K., Petersson, I. F., Svensson, B., & Jacobson, L. T. (2001). Chronic musculoskeletal pain, prevalence rates, and sociodemographic associations in a Swedish population study. *Journal of Rheumatology, 28*(6), 1369-1377.
- Bernardini Zambrini, D. A., Moraru, M., Hanna, M., Kalache, A., & Macias Nunez, J. F. (2008). Attitudes toward the elderly among students of healthcare related studies at the University of Salamance, Spain. *Journal of Continuing Education in the Health Professions, 28*, 86-90. doi: 10.1002/chp
- Blomqvist, K. (2003). Older people in persistent pain: Nursing and paramedical staff perceptions and pain management. *Issues and Innovations in Nursing Practice, 41*(6), 575-584. doi: 10.1046/j.1365-2648.2003.02569.x
- Boettcher, I. F., Kemeny, B., DeShon, R., & Stevens, A. B. (2004). A system to develop staff behaviors for person-centered care. *Alzheimer Care Quarterly, 5*(3), 188-196.

- Borenstein, D. G. (2001). Epidemiology, etiology, diagnostic evaluation, and treatment of low back pain. *Current Opinions in Rheumatology*, 13(2), 128-134.
- Braak, H., & Braak, E. (1997). Staging of Alzheimer-related cortical destruction. *International Psychogeriatrics*, 9 (Suppl. 1), 527-272. doi: 10.1017/S1041610297004973
- Brown, J. B. (1999). The use of focus groups in clinical research. In B. Crabtree & W. Miller (Eds.). *Doing Qualitative Research* (2nd ed, pp. 109-124). London: Sage Publications.
- Buron, B. (2008). Levels of personhood: A model for dementia care. *Geriatric Nursing*, 29, 324-332. doi: 10.1016/j.gerinurse.2007.11.001
- Canadian Nurses Association. (2004). Joint position statement: Promoting continuing competence for registered nurses. *Canadian Nurses Association & Canadian Association of Schools of Nursing*. Retrieved from http://www.cna-nurses.ca/CNA/documents/pdf/publications/PS77_promoting_competence_e.pdf
- Cason, C., Jones, T., Brock, J., Maese, P., & Milligan, C. (1999). Nurses' knowledge of pain management: Implications for staff education. *Journal for Nurses in Staff Development*, 15(6), 228-235.
- Cecchin, M. L. (2001). Reconsidering the role of being a daughter of a mother with dementia. *Journal of Family Studies*, 7, 101-107. doi: 10.5172/jfs.7.1.101
- Charlton, J. E. (2005). *Core curriculum for professional education in pain* (3rd ed.). Seattle: IASP Press.

- Chen, E., Cole, S. W., & Kato, P. M. (2004). A review of empirically supported psychosocial interventions for pain and adherence outcomes in sickle cell disease. *Journal of Pediatric Psychology, 29*, 197-209. doi: 10.1093/jpepsy/jsh021
- Chen, I., Goodman, B., Galicia-Castillo, M., Quidgley-Nevaras, A., Krebs, M., & Gliva-McConvey, G. (2007). The EVMS pain education initiative: A multifaceted approach to resident education. *The Journal of Pain, 8*, 152-160. doi: 10.1016/j.jpain.2006.06.008
- Chiu, L. H., Trinca, J., Lim, L. M., & Tuazon, J. A. (2003). A study to evaluate the pain knowledge of two sub-populations of final year nursing students: Australia and Philippines. *Journal of Advanced Nursing, 41*, 99-108. doi: 10.1046/j.1365-2648.2003.02511.x
- Cipher, D. J., Clifford, A., & Roper, K. D. (2006). Behavioral manifestations of pain in the demented elderly. *Journal of the American Medical Directors Association, 7*, 335-365. doi: 10.1016/j.jamda.2005.11.012
- Clarke, E. B., French, B., Bilodeau, M. L., Capasso, V. C., Edwards, A., & Empoliti, J. (1996). Pain management knowledge, attitudes and clinical practice: The impact of nurses' characteristics and education. *Journal of Pain and Symptom Management, 11*(1), 18-31. doi:10.1016/0885-3924(95)00134-4
- Closs, S. J. (1996). Pain and elderly patients: A survey of nurses' knowledge and experiences. *Journal of Advanced Nursing, 23*, 237-242. doi: 10.1111/j.1365-2648.1996.tb02662.x

- Coker, E. (1998). Does your care plan tell my story? Documenting aspects of personhood in long-term care. *Journal of Holistic Nursing, 16*, 435-452. doi: 10.1177/089801019801600405
- Cole, L. J., Farrell, M. J., Duff, E. P., Barber, J. B., Egan, G. F., & Gibson, S. J. (2006). Pain sensitivity and fMRI pain-related brain activity in Alzheimer's disease. *Brain, 129*, 2957-2965. doi: 10.1093/brain/awl228
- Cook, A. J., & Thomas, M. R. (1994). Pain and the use of health services among the elderly. *Journal of Aging and Health, 6*, 155-174. doi:10.1177/089826439400600202.
- Crabtree, B., & Miller, W. (1999). *Doing qualitative research* (2nd ed). London: Sage Publications.
- Crook, J., Weir, R., & Tunks, E. (1989). An epidemiological follow-up survey of persistent pain sufferers in a group family practice and specialty pain clinic. *Pain, 36*, 49-61. doi:10.1016/0304-3959(89)90111-5
- Damron-Rodriguez, J.A., Kramer, B.J., & Gallagher-Thompson, D. (1998). Effect of geriatric clinical rotations on health professional trainees' attitudes about older adults. *Journal of Gerontology and Geriatrics Education, 19*, 67-79. doi: 10.1300/J021v19n02_07
- Davies, E., Male, M., Reimer, V., Turner, M., & Wylie, K. (2004). Pain assessment and cognitive impairment: Part 1. *Nursing Standard, 19*(12), 39-42.
- De Rond, M. E. J., de Wit., R., van Dam, F. S., & Muller, M. J. (2000). A pain monitoring program for nurses: Effects on communication, assessment and

- documentation of patients' pain. *Journal of Pain and Symptom Management*, 20, 424-439. doi:10.1016/S0885-3924(00)00209-8
- De Rond, M. E. J., de Wit, R., van Dam, F. S., van Campen, B. T., den Hartog, Y. M., & Klievink, R. M. A. (2000). A pain monitoring program for nurses: Effects on nurses' pain knowledge and attitude. *Journal of Pain and Symptom Management*, 19, 457-467. doi:10.1016/S0885-3924(00)00128-7
- Desai, A. K., & Grossberg, G. T. (2001). Recognition and management of behavioral disturbances in dementia. *Primary Care Companion Journal of Clinical Psychiatry*, 3(3), 93-109.
- Descartes, R. (1967). The passions of the soul. In *The philosophical works of Descartes* (Vol. 1, pp 219-327, Trans. E. S. Haldane & G. T. R. Ross). New York: Dover. (original work published 1649).
- Ekman, P., & Friesen, W. (1978). *Investigator's guide to the Facial Action Coding System*. Palo Alto, CA: Consulting Psychologist Press.
- Edwards, L. C., Pearce, S. A., Turner-Stokes, L., & Jones, A. (1992). The pain beliefs questionnaire: An investigation of beliefs in the causes and consequences of pain. *Pain*, 51, 267-272. doi:10.1016/0304-3959(92)90209-T
- Farrell, M. J., Gibson, S. J., & Helme, R. D. (1996). Chronic nonmalignant pain in older people. In B. R. Ferrell & B. A. Ferrell (Eds.), *Pain in the Elderly*. Seattle: IASP Press.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149-1160.

- Feldt, K. S. (2000). The checklist of nonverbal pain indicators (CNPI). *Pain Management Nursing, 1*, 13-21. doi: 10.1053/jpmn.2000.5831
- Ferrell, B. A., Ferrell, B. R., & Rivera, L. (1995). Pain in cognitively impaired nursing home patients. *Journal of Pain and Symptom Management, 10*, 591-598. doi: 10.1016/0885-3924(95)00121-2
- Ferrell, B. R., Novy, D., Sullivan, M. D., Banja, J., Dubois, M. Y., Gitlin, M. C., . . . Livovich, J. (2000). Ethical dilemmas in pain management. *The Journal of Pain, 2*, 171-180. doi: 10.1054/jpai.2007.21596
- Fordyce, W. E. (1976). *Behavioural methods for chronic pain*. Saint Louis, MO: Mosby.
- Fordyce, W. E., Shelton, J. L., & Dundore, D. E. (1982). The modification of avoidance learning pain behaviours. *Journal of Behavioral Medicine, 5*, 405-414. doi: 10.1007/BF00845370
- Fox, P. L., Raina, P., & Jadad, A. R. (1999). Prevalence and treatment of pain in older adults in nursing homes and other long-term care institutions: A systematic review. *Canadian Medical Association Journal, 160*(3), 329-333.
- Fox, P., Solomon, P., Raina, P., & Jada, A. R. (2004). Barriers and facilitators in pain management in long-term care institutions: A qualitative study. *Canadian Journal on Aging, 23*, 269-280. doi: 10.1353/cja.2004.0032.
- Francke, A., Lemmens, A., Abu-Saad, H.H., & Grypdonk, M. (1997). Nurses' perceptions of factors influencing the use of a pain program. *Journal of Pain and Symptom Management, 14*(5), 300-310. doi:10.1016/S0885-3924(97)00240-6
- Fuchs-Lacelle, S., & Hadjistavropoulos, T. (2004). Development and preliminary validation of the Pain Assessment Checklist for Seniors with Limited Ability to

Communicate (PACSLAC). *Pain Management Nursing*, 5, 37-49.

doi:10.1016/j.pmn.2003.10.001

- Fuchs-Lacelle, S., Hadjistavropoulos, T., & Lix, L. (2008). Pain assessment as intervention: A study of older adults with severe dementia. *Clinical Journal of Pain*, 24, 697-707. doi: 10.1097/AJP.0b013e318172625a
- Gagliese, L., & Katz, J. (2003). Age differences in postoperative pain are scale dependent: A comparison of measures of pain intensity and quality in younger and older surgical patients. *Pain*, 103, 11-20. doi:10.1016/S0304-3959(02)00327-5
- Gagliese, L., & Melzack, R. (1997). Age differences in the quality of chronic pain: A preliminary study. *Pain Research and Management*, 2(3), 157-162.
- Gagliese, L., Weizblit, N., Ellis, W., & Chan, V. W. (2005). The measurement of postoperative pain: A comparison of intensity scales in younger and older surgical patients. *Pain*, 117, 412-420. doi: 10/1016/S03043959(02)00327-5
- Ghandehari, O.O., Hadjistavropoulos, T., Williams, J., Thorpe, L., Alfano, D.P., Dal Bello Haas, . . . & Lix, L. (in press). A controlled investigation of continuing pain education for long-term care staff. *Pain Research and Management*.
- Geerlings, S. W., Twisk, J. W. R., Beekman, A. T. F., Deeg, D. J. H., & van Tilburg, W. (2002). Longitudinal relationship between pain and depression in older adults: Sex, age and physical disability. *Social Psychiatry and Psychiatric Epidemiology*, 37, 23-30. doi: 10.1007/s127-002-8210-2

- Gibson, S. J. (2003). Pain and aging: The pain experience over the adult lifespan. In J.O. Dostrovsky, D. B., Carr, & M. Koltzenburg (Eds.), *Proceedings of the 10th World Congress on Pain*. Seattle: IASP Press, 767-790.
- Gibson, S. J., & Chambers, C. T. (2004). An introduction to pain: Psychological perspectives. In T. Hadjistavropoulos & K. D. Craig (Eds.), *Pain: Psychological Perspectives* (pp. 113-153). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gorsuch, R. L. (1983). *Factor Analysis* (2nd ed). Hillsdale, NJ: Erlbaum.
- Grimby, C., Fastborn, J., Forsell, Y., Thorslund, M., Claesson, C. B., & Winblad, B. (1999). Musculoskeletal pain and analgesic therapy in a very old population. *Archives of Gerontology and Geriatrics*, 29, 29-43. doi : 10.1016/S0167-4943(99)00021-7
- Guardini, I., Talamini, R., Fiorillo, F., Lirutti, M., & Palese, A. (2008). The effectiveness of continuing education in postoperative pain management: Results from a follow-up study. *The Journal of Continuing Education in Nursing*, 39, 281-288. doi: 10.3928/00220124-20080601-08
- Hadjistavropoulos, T., & Craig, K. D. (2002). A theoretical framework for understanding self-report and observational measures of pain: A communications model. *Behaviour Research and Therapy*, 40, 551-570. doi:10.1016/S0005-7967(01)00072-9
- Hadjistavropoulos, T., Craig, K.D., Duck, S., Cano, A., Goubert, L., Jackson, P., . . . Dever Fitzgerald, T. (2011). A biopsychosocial formulation of pain communication. *Psychological Bulletin*, 137, 910-939. doi: 10.1037/a0023876

- Hadjistavropoulos, T., Craig, K. D., & Fuchs-Lacelle, S. (2004). Social influences and the communication of pain. In T. Hadjistavropoulos & K. D. Craig (Eds.), *Pain: Psychological Perspectives* (pp. 87-112). Mahwah, NJ: Lawrence Erlbaum Associates.
- Hadjistavropoulos, T., Craig, K.D., Martin, N., Hadjistavropoulos, H., & McMurtry, B. (1997). Toward a research outcome measure of pain in frail elderly in chronic care. *The Pain Clinic, 10*, 71-80.
- Hadjistavropoulos, T., Dever Fitzgerald, T., & Marchildon, G. P. (2010). Practice guidelines for assessing pain in older persons with dementia residing in long-term care facilities. *Physiotherapy Canada, 62*, 104-113. doi: 10.3138/physio.62.2.104
- Hadjistavropoulos, T., & Fine, P. G. (2006). Chronic pain in older persons: Prevalence, assessment and management. *Reviews in Clinical Gerontology, 16*, 231-241. doi:10.1017/S0959259807002201
- Hadjistavropoulos, T., Gibson, S., & Fine, P. (2011). Pain in older persons: A brief clinical guide. In M. Lynch, K.D. Craig, & P. Peng (Eds). *Clinical pain management: A practical guide* (pp. 311-318). London: Wiley.
- Hadjistavropoulos, T., Herr, K., Turk, D. C., Fine, P. G., Dworkin, R. H., Helme, R., . . . Williams, J. (2007). An interdisciplinary expert consensus statement on assessment of pain in older persons. *Clinical Journal of Pain, 23*(Suppl. 1), 1-43. doi: 10.1097/AJP.0b013e31802be869
- Hadjistavropoulos, T., Hunter, P., & Dever Fitzgerald, T. (2009). Pain assessment and management in older adults: Conceptual issues and clinical challenges. *Canadian Psychology, 50*, 241-254. doi: 10.1037/a0015341

- Hadjistavropoulos, T., Marchildon, G., Fine, P., Herr, K., Palley, H., Kaasalainen, S., & Beland, F. (2009). Transforming long-term care pain management in North America: The policy clinical interface. *Pain Medicine, 10*, 506-520. doi: 10.1111/j.1526-4637.2009.00566.x
- Hadjistavropoulos, T., Von Baeyer, C., & Craig, K. D. (2001). Pain assessment in persons with limited ability to communicate. In D. C. Turk & R. Melzack (Eds.), *Handbook of Pain Assessment* (2nd ed., pp. 124-149). New York, NY: Guilford Press.
- Hale, C., & Hadjistavropoulos, T. (1997). Emotional components of pain. *Pain Research and Management, 2*(4), 217–225.
- Harkins, S. W., Price, D. D., & Bush, F. M. (1994). Geriatric pain. In P. D. Wall & R. Melzack (Eds.), *Textbook of pain* (pp.769-787). New York: Churchill Livingstone.
- Harper, J. P. (2000). Nurses' attitudes and practices regarding voluntary continuing education. *Journal for Nurses in Staff Development, 16*(4), 164-167.
- Harrison C. (1993). Personhood, dementia and the integrity of a life. *Canadian Journal of Aging, 12*, 428-440. doi: 10.1017/S0714980800011983
- Helme, R. D., & Gibson, S. J. (2001). Pain management in the elderly. *Clinics in Geriatric Medicine, 17*, 1-11. doi: 10.1016/S0749-0690/2805/2970078-1
- Herr, K. (2002). Pain assessment in cognitively impaired older adults. *The American Journal of Nursing, 102*(12), 65-67.
- Herr, K. (2010). Pain in the older adult: An imperative across all healthcare settings. *Pain Management Nursing, 11*(Suppl. 1), 1-10. doi: 10.1016/j.pmn.2010.03.005

- Herr, K., Coyne, P. J., Key, T., Manworren, R., McCaffery, M., Merkel, S., . . . Wild, L. (2006). Pain assessment in the nonverbal patient: Position statement with clinical practice recommendations. *Pain Management Nursing, 7*, 44-52. doi: 10.1016/j.pmn.2006.02.003
- Herr, K. A., & Mobily, P. R. (1991). Complexities of pain assessment in the elderly: Clinical considerations. *Journal of Gerontological Nursing, 17*(4), 12-19.
- Herr, K. A., & Mobily, P. R. (1993). Comparison of select pain assessment tools for use with the elderly. *Applied Nursing Research, 6*(1), 39-46.
- Holen, J. C., Saltvedt, I., Fayers, P. M., Hjermstad, M. J., Loge, J. H., & Kaasa, S. (2007). Dolopius-2, a valid tool for behavioural pain assessment? *BMC Geriatrics, 7*, 1-9. doi: 10.1186/1471-2318-7-29
- Horgas, A. L., & Tsai, P. (1998). Analgesic drug prescription and use in cognitively impaired nursing home residents. *Nursing Research, 47*(4), 235-242.
- Humphries, S. A., Johnson, M. H., & Long, N. R. (1996). An investigation of the gate control theory of pain using the experimental pain stimulus of potassium iontophoresis. *Perception & Psychophysics, 58*, 603-703. doi: 10.3758/BF03213101
- Hunter, P., & Hadjistavropoulos, T. (in preparation). The Personhood in Dementia Questionnaire.
- Husebo, B.S., Ballard, C., & Aarsland, D. (2011). Pain treatment of agitation in patients with dementia: A systematic review. *International Journal of Geriatric Psychiatry, 26*, 1012-1018. doi: 10.1002/gps.2649

- Husebo, B.S., Ballard, C., Sandvik, R., Nilsen, O.B., & Aarsland, D. (2011). Efficacy of treating pain to reduce behavioural disturbances in residents of nursing homes with dementia: Cluster randomised clinical trial. *British Medical Journal*, 343:d4065. doi: 10.1136/bmj.d4065
- Innis, J., Bikaunieks, N., Petryshen, P., Zellermeier, V., & Ciccarelli, L. (2004). Patient satisfaction and pain management: An educational approach. *Journal of Nursing Care Quality*, 19(4), 322-327.
- International Association for the Study of Pain. (2010). *IASP Pain Terminology*. Retrieved from [http://www.iasp-pain.org/AM/Template.cfm?Section=Pain_Definitions&Template=/CM/HTMLDisplay.cfm&ContentID=1728#Pain\](http://www.iasp-pain.org/AM/Template.cfm?Section=Pain_Definitions&Template=/CM/HTMLDisplay.cfm&ContentID=1728#Pain)
- Jean, A., Morello, R., Alix, M. (1998). Évaluation de la douleur du sujet très âgé hospitalisé en long séjour. *Revue Gériatrique*, 23(3), 253–256.
- Jensen, M. P., & Karoly, P. (2001). Self-report scales and procedures for assessing pain in adults. In D. C. Turk, & R. Melzack (Eds.), *Handbook of Pain Assessment* (pp. 15-34). New York, NY: Guilford Press.
- Jones, K. R., Fink, R. M., Clark, L., Hutt, E., Vojir, C. P., & Mellis, B. K. (2005). Nursing home resident barriers to effective pain management: Why nursing home residents may not seek pain medication. *Journal of the American Medical Directors Association*, 6, 10-17. doi: 10.1016/j.jamda.2004.12.010
- Jones, K. R., Fink, R., Pepper, G., Hutt, E., Vojir, C. P., Scott, J. C., . . . Mellis, K. (2004). Improving nursing home staff knowledge and attitudes about pain. *The Gerontologist*, 44, 469-478. doi: 10.1093/geront/44.4.469

- Julien, N., & Marchand, S. (2006). Endogenous pain inhibitory systems activated by spatial summation are opioid-mediated. *Neuroscience Letters*, *401*, 256–260.
doi:10.1016/j.neulet.2006.03.032
- Kaasalainen, S., Coker, E., Dolovich, L., Papaioannou, A., Hadjistavropoulos, T., Emili, A., & Ploeg, J. (2007). Pain management decision-making among long-term care physicians and nurses. *Western Journal of Nursing Research*, *29*, 561-580.
doi:10.1177/0193945906295522
- Kaasalainen, S., Middleton, J., Knezacek, S., Hartley, T., Stewart, N., Ife, C., & Robinson, L. (1998). Pain and cognitive status in the institutionalized elderly: Perceptions and interventions. *Journal of Gerontological Nursing*, *24*(8), 24-31.
- Kaempfer, D., Wellman, N. S., & Himburg, S. P. (2002). Dietetics students' low knowledge, attitudes, and work preferences toward older adults indicate need for improved education about aging. *Journal of the American Dietetic Association*, *102*, 197-202. doi:10.1016/S0002-8223(02)90048-9
- Kaiser, H. (1970). A second generation Little Jiffy. *Psychometrika*, *39*, 31-36.
- Kitwood, T. (1993). Person and process in dementia. *International Journal of Geriatric Psychiatry*, *8*, 541-545. doi: 10.1002/gps.930080702
- Kitwood, T., & Bredin, K. (1992). Towards a theory of dementia care: Personhood and Well-being. *Ageing and Society*, *12*, 269-287. doi: 10.1017/S0144686X0000502X
- Knight, R. (2005). Interviewing people with dementia using video. *Journal of Dementia Care*, *13*(3), 31-5.

- Kunz, M., Mylius, V., Scharmann, S., Schepelman, K., & Lautenbacher, S. (2009). Influence of dementia on multiple components of pain. *European Journal of Pain*, *13*, 317-324. doi: 10.1016/j.ejpain.2008.05.001
- Kunz, M., Scharmann, S., Schepelmann, K., Hemmeter, U., & Lautenbacher, S. (2007). The facial expression of pain in dementia. *Pain*, *133*, 368-376. doi:10.1016/j.pain.2007.09.007
- Lépine, J-P., & Briley, M. (2004). The epidemiology of pain in depression. *Human Psychopharmacology: Clinical and Experimental*, *19* (Suppl. 1), 3-7. doi: 10.1002/hup.618
- Lethem, J., Slade, P. D., Troup, J. D. G., & Bentley, G. (1983). Outline of a fear-avoidance model of exaggerated pain perception-I. *Behaviour Research and Therapy*, *21*, 401-408. doi:10.1016/0005-7967(83)90009-8
- Leveille, S. G., Guralnik, J. M., Furrucci, L., Hirsch, R., Simonsick, E., & Hockberg, M. C. (1998). Foot pain and disability in older women. *American Journal Epidemiology*, *148*(7), 657-665.
- Lints-Martindale, A. C., Hadjistavropoulos, T., Lix, L. M., & Thorpe, L. (2012). A comparative investigation of observational pain assessment tools for older adults with dementia. *Clinical Journal of Pain*, *28*, 226-237. doi: 10.1097/AJP.0b013e3182290d90
- Löfmark, A., Gustavsson, C., & Wikblad, K. (2003). Student nurses' ability to perform pain assessment. *Nursing Education in Practice*, *3*, 133-143. doi: 10.1016/S1471-5953(02)00091-4

- Loney, P. L., & Stratford, P. W. (1999). The prevalence of low back pain in adults: A methodological review of the literature. *Physical Therapy, 79*(4), 384- 396.
- Long, C. O. (in press). Pain management education in long-term care: It can make a difference. *Pain Management Nursing*.
- Long, C.O., Morgan, B. M. M., Alonzo, T. R., Mitchell, K. M., Bonnell, D. K., Beardsley, M. (2010). Improving pain management in long-term care: The “Campaign Against Pain.” *Journal of Hospice & Palliative Nursing, 12*, 148–55. doi: 10.1097/NJH.0b013e3181d94f1b
- Lukas, A., Schuler, M., Fischer, T. W., Gibson, S. J., Savvas, S. M., Nikolaus, T., & Denking, M. (2012). Pain and dementia: A diagnostic challenge. *Zeitschrift Für Gerontologie und Geriatrie, 45*, 45-49. doi: 10.1007/s00391-011-0272-4
- Malloy D. C., & Hadjistavropoulos T. (2004). The problem of pain management among persons with dementia, personhood, and the ontology of relationships. *Nursing and Philosophy, 5*, 147-159. doi: 10.1111/j.1466-769X.2004.00174.x
- Martin, R., Williams, J., Hadjistavropoulos, T., Hadjistavropoulos, H. D., & MacLean, M. (2005). A qualitative investigation of seniors’ and caregivers’ views on pain assessment and management. *Canadian Journal of Nursing Research, 37*(2), 142-164.
- McCaffery, M., & Ferrell, B. R. (1997). Nurses’ knowledge of pain assessment and management: How much progress have we made? *Journal of Pain and Symptom Management, 14*, 175-188. doi:10.1016/S0885-3924(97)00170-X
- McCaffery, M., & Robinson, E. (2002). Your patient is in pain: Here’s how you respond. *Nursing, 32*(10), 36-47.

- McGrath, P. A., Selfert, C. E., Speechley, K. N., Booth, J. C., Stitt, L., & Givson, M. C. (1996). A new analogues scale for assessing children's pain: An initial validation study. *Pain, 64*, 435-443. doi: 10.1016/0304-3959(95)00171-9
- Melzack, R. (1999). Pain and stress: A new perspective. In R. J. Gatchel & D. C. Turk (Eds.), *Psychological factors in pain* (pp. 89-106). New York: Guilford Press.
- Melzack, R., & Katz, J. (2004). The gate control theory: Reaching for the brain. In T. Hadjistavropoulos & K. D. Craig (Eds.), *Pain: Psychological Perspectives* (pp. 13-34). Mahwah, NJ: Lawrence Erlbaum Associates.
- Melzack, R., & Wall, P. D. (1965). Pain mechanisms: A new theory. *Science, 150*, 971-979. doi: 10.1126/science.150.3699.971
- Michielutte, R., & Diseker, R. A. (1985). Healthcare providers' perceptions of the elderly and level of interest in geriatrics as a specialty. *Gerontology & Geriatrics Education, 5*, 65-85. doi: 10.1300/J021v05n02_08
- Misson, L., Savoie, M., Aubin, M., Hadjistavropoulos, T., & Verreault, R. (2011). Les défis de l'évaluation de la douleur chez la personne âgée avec des capacités réduites à communiquer en raison d'une démence avancée. *Douleurs: Evaluation, Diagnostic, Traitement, 12*, 55-64. doi:10.1016/j.douler.2010.09.012
- Moody J. (2003). Dementia and personhood: Implications for advance directives. *Nursing of Older People, 15*(4), 18-21.
- Morgan, D. (1997). *Focus groups as qualitative research* (2nd ed.). London: Sage Publications.
- Morley, S., Eccleston, C., & Williams, A. (1999). Systematic review and meta-analysis of randomized controlled trials of cognitive behaviour therapy and behaviour

therapy for chronic pain in adults, excluding headache. *Pain*, 80, 1–13.

doi:10.1016/S0304-3959(98)00255-3

Morrison, R. S., & Siu, A. L. (2000). A comparison of pain and its treatment in advanced dementia and cognitively intact patients with hip fractures. *Journal of Pain and Symptom Management*, 19, 240-248. doi:10.1016/S0885-3924(00)00113-5

Nagy, Z., Vatter-Bittner, B., Braak, H., Braak, E., Yilmazer, D. M., Schultz, C., & Hank, J. (1997). Staging of Alzheimer-type pathology: An interrater-intrarater study. *Dementia and Geriatric Cognitive Disorders*, 9, 248-251. doi:

10.1159/000106639

Nygaard, H. A., & Jarland, M. (2005). Are nursing home patients with dementia diagnosis at increased risk for inadequate pain treatment? *International Journal of Geriatric Psychiatry*, 20, 730-737. doi: 10.1002/gps.1350

Ogle, K. S., McElroy, L., & Mavis, B. (2008). No relief in sight: Postgraduate training in pain management. *American Journal of Hospice & Palliative Medicine*, 25, 292-297. doi: 10.1177/1049909108315915

Overmeer, T., Boersma, K., & Linton, S. J. (2006). Psychosocial factors in back pain: A comparison of factors listed by healthcare providers with the evidence. In H. Florr., E. Kalso, & J. O. Dostrovsky (Eds), *Proceedings of the 11th World Congress on Pain* (pp. 575-584). Seattle: IASP Press.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed). Thousand Oaks, CA: Sage.

- Penrod, J., Yu, F., Kalanowski, A., Fick, D. M., Loeb, S. J., & Hupcey, J. E. (2007). Reframing person-centered nursing care for persons with dementia. *Research and Theory for Nursing Practice: An International Journal*, 21(1), 57-72.
- Penz, K., D'Arcy, C., Stewart, N., Kosteniuk, J., Morgan, D., & Smith, B. (2007). Barriers to participation in continuing education activities among rural and remote nurses. *The Journal of Continuing Education in Nursing*, 38(2), 58-66.
- Plaisance, L., & Logan, C. (2006). Nursing students' knowledge and attitudes regarding pain. *Pain Management Nursing*, 7, 167-175. doi: 10.1016/j.pmn.2006.09.003.
- Poyhia, R., Niemi,-Murola, L., & Kalso, E. (2005). The outcome of pain related undergraduate teaching in Finnish medical faculties. *Pain*, 115, 251-256. doi:10.1016/j.pain.2005.02.033
- Price, D. D., (2000). Psychological and neural mechanisms of the affective dimension of pain. *Science*, 288, 1769-1772. doi: 10.1126/science.288.5472.1769
- Prkachin, K. M., & Craig, K. D. (1995). Expressing pain: The communication and interpretation of facial pain signals. *Journal of Nonverbal Behavior*, 19(4), 191-205. doi: 10.1007/BF02173080
- Proctor, W. R., & Hirdes, J. P. (2001). Pain and cognitive status among nursing home residents in Canada. *Pain Research & Management*, 6(3), 119-125.
- QSR International Ltd. (2008). NVivo (Version 8.0) [Computer software]. Thousand Oaks, CA: Scolari-Sage.
- Quinn, F. M. (2000). *The Principles and Practice of Nurse Education* (4th ed.). London: Nelson Thornes.

- Reynolds, K. S., Hanson, L. C., DeVellis, R. F., Henderson, M., Steinhauser, K. E. (2008). Disparities in pain management between cognitively intact and cognitively impaired nursing home residents. *Journal of Pain and Symptom Management, 35*, 388–396. doi:10.1016/j.jpainsymman.2008.01.001
- Rich, B. A. (2000). An ethical analysis of the barriers to effective pain management. *Cambridge Quarterly of Healthcare Ethics, 9*(1), 54-70.
- Rosenthal, R. (1982). Conducting judgment studies. In K. Scherer & R Ekman (Eds.), *Handbook of methods in nonverbal behavior research* (pp. 287-361). New York: Cambridge University Press.
- Rub, U., Del Tredici, K., Del Turco, D., & Braak, H. (2002). The intralaminar nuclei assigned to the medial pain system and other components of this system are early and progressively affected by the Alzheimer's disease-related cytoskeletal pathology. *Journal of Chemical Neuroanatomy, 23*, 279-290. doi: 10.1016/S0891-0618(02)00007-8
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health, 23*, 334-340. doi: 10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G
- Scott, E., Borate, U., Heitner, S., Chaitowitz, M., Tester, W., Eiger, G. (2009). Pain management practices by internal medicine residents – A comparison before and after educational and institutional interventions. *American Journal of Hospice & Palliative Medicine, 25*, 431-439. doi: 10.1177/1049909108320884
- Shrivastav, M., & Musley, S. (2009). Spinal cord stimulation for complex regional pain syndrome. *Engineering in Medicine and Biology Society 2009, 31st Annual*

- International Conference of the IEEE* (pp. 2033-2036). doi:
10.1109/IEMBS.2009.5334418
- Sign B, & Orrell M. (2003). The development, validity and reliability of a new scale for rating pain in dementia (RaPID). Unpublished manuscript.
- Simons, W., & Malabar, R. (1995). Assessing pain in elderly patients who cannot respond verbally. *Journal of Advanced Nursing*, 22, 663-669. doi:
10.1046/j.1365-2648.1995.22040663.x
- Sloan, T. J., Gupta, R., Zhang, W., & Walsh, D. A. (2008). Beliefs about the causes and consequences of pain in patients with chronic inflammatory or noninflammatory low back pain and in pain-free individuals. *Spine*, 33, 966-972. doi:
10.1097/BRS.0b013e31816c8ab4
- Sloman, R., Ahern, M., Wright, A., & Brown, L. (2001). Nurses' knowledge of pain in the elderly. *Journal of Pain and Symptom Management*, 21, 317-322.
doi:10.1016/S0885-3924(01)00248-2
- Smith, D. H. (1984). Who counts? *Journal of Religious Ethics*, 12(2), 240-255.
- Snow, A. L., Weber, J. B., O'Malley, K. J., Cody, M., Beck, C., Bruera, E., . . . Kunik, M. E. (2004). NOPPAIN: A nursing assistant-administered pain assessment instrument for use in dementia. *Dementia and Geriatric Cognitive Disorders*, 17, 240-246. doi: 0.1159/000076446
- Statistics Canada. (2006). *Population Projections for Canada, Provinces and Territories* (Catalogue no. 91-520-XWE). Retrieved from <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=91-520-XWE&lang=eng>

- Sterman, E., Gauker, S., & Krieger, J. (2003). A comprehensive approach to improving cancer pain management and patient satisfaction. *Oncology Nursing Forum*, *30*, 857- 864. doi: 10.1188/03.ONF.857-864
- Stolee, P., Esbaugh, J., Aylward, S., Cathers, T., Harvey, D. P., Hillier, L. M., . . . Feightner, J. W. (2005). Factors associated with the effectiveness of continuing education in long-term care. *Gerontologist*, *45*, 399-405. doi: 10.1093/geront/45.3.399
- Stolee, P., McAiney, C. A., Hillier, L. M., Harris, D., Hamilton, P., Kessler, L., . . . Le Clair, J. K. (2009). Sustained transfer of knowledge to practice in long-term care: Facilitators and barriers of a mental health learning initiative. *Gerontology & Geriatrics Education*, *30*, 1-20. doi: 10.1080/02701960802690233
- Strong, J., Tooth, L., & Unruh, A. (1999). Knowledge about pain among newly graduated occupational therapists: Relevance for curriculum development. *Canadian Journal of Occupational Therapy*, *66*(5), 222-228.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed). Boston, MA: Pearson Education.
- Tarzian, A. J., & Hoffmann, D. E. (2004). Barriers to managing pain in the nursing home: Findings from a statewide survey. *Journal of the American Medical Directors Association*, *5*, 82-88. doi: 10.1097/01.JAM.0000110648.46882.B3
- Teno, J. M., Weitzen, S., Wetle, T., & Mor, V. (2001). Persistent Pain in nursing home residents. *The Journal of the American Medical Association*, *285*, 2081. doi: 10.1001/jama.285.16.2081-a

- Thompson, P. M., Hayashi, K. M., de Zubicaray, G., Janke, A. L., Rose, S. E., Semple, J., . . . Toga, A. W. (2003). Dynamics of gray matter loss in Alzheimer's disease. *Journal of Neuroscience, 23*(3), 994-1005.
- Tolman, C. W. (1998). Sumus ergo sum: The ontology of self and how Descartes got it wrong. In W. E. Smythe (Ed), *Toward a Psychology of Persons* (pp. 3-24). Mahwah, NJ: Lawrence Erlbaum Associates.
- Tryssenaar, J., & Gray, H. (2004). Providing meaningful continuing education in a changing long-term care environment. *Journal for Nurses in Staff Development, 20*(1), 1-5.
- Tse, M., Leung, R., & Ho, S. (2012). Pain and psychological well-being of older persons living in nursing homes: An exploratory study in planning patient-centred intervention. *Journal of Advanced Nursing, 68*, 312-321. doi: 10.1111/j.1365-2648.2011.05738.x
- Turk, D. C., Meichenbaum, D., & Genest, M. (1983). *Pain and behavioural medicine: A cognitive-behavioral perspective*. New York: Guilford Press.
- Turk, D.C., & Monarch, E. S. (2002). Biopsychosocial perspective on chronic pain. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological Approaches to Pain Management: A Practitioner's Handbook*. New York: Guilford Press.
- Twycross, A. (2002). Educating nurses about pain management: The way forward. *Journal of Clinical Nursing, 11*, 705-714. doi: 10.1046/j.1365-2702.2002.00677.x
- Veerbeek, H., Zwakhalen, S. M., van Rossum, E., Ambergen, T., Kempen, G. I., & Hamers, J. P. (2010). Small-scale, homelike facilities versus regular psychogeriatric nursing home wards: A cross-sectional study into residents'

- characteristics. *BMC Health Services Research*, *10*, 30. doi:10.1186/1472-6963-10-30
- Villanueva, M. R., Smith, T. L., Erickson, J. S., Lee, A. C., & Singer, C. M. (2003). Pain assessment for the Dementing Elderly (PADE): Reliability and validity of a new measure. *Journal of the American Medical Directors Association*, *4*, 1-8. doi:10.1016/S1525-8610(04)70257-1
- Vlaeyen, J. W. S., & Linton, S. J. (2000). Fear-avoidance and its consequences in chronic musculoskeletal pain: A state of the art. *Pain*, *85*, 317-332. doi:10.1016/S0304-3959(99)00242-0
- Vlaeyen, J. W. S., & Linton, S. J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain*, *153*, 1144-1147. doi:10.1016/j.pain.2011.12.009
- Von Korff, M., Dworkin, S. F., & Le Resche, L. (1990). Graded chronic pain status: An epidemiologic evaluation. *Pain*, *40*, 279-291. doi:10.1016/0304-3959(90)91125-3
- Von Korff, M., Dworkin, S. F., Le Resche, L., & Kruger, A. (1988). An epidemiologic comparison of pain complaints. *Pain*, *40*, 279-291. doi:10.1016/0304-3959(88)90066-8
- Waddell, G. (1987). A new clinical model for the treatment of low back pain. *Spine*, *12*(7), 632-644.
- Waddell, G. (1991). Low back disability. A syndrome of Western civilization. *Neurosurgery Clinics of North America*, *2*(4), 719-738.

- Waddell, G. (1992). Biopsychosocial analysis of low back pain. *Baillière's Clinical Rheumatology*, 6, 523-557. doi:10.1016/S0950-3579(05)80126-8
- Waddell, G., Newton, M., Henderson, I., Somerville, D., & Main, C. J. (1993). A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance in chronic low back pain and disability. *Pain*, 52, 157-168. doi:10.1016/0304-3959(93)90127-B
- Warden, V, Hurley, A. C., & Volicer, L. (2003). Development and psychometric evaluation of the pain assessment in advanced dementia (PAINAD) scale. *Journal of the American Medical Directors Association*, 4, 9-15. doi:10.1016/S1525-8610(04)70258-3
- Walsh, D.A., & Radcliffe, J.C. (2002). Pain beliefs and perceived physical disability of patients with chronic low back pain. *Pain*, 97, 23-31.
- Wary, B. (1999). Doloplus-2, une échelle pour évaluer la douleur. *Soins Gériatrie*, 19, 25-27.
- Watt-Watson, J., Hunter, J., Pennefather, P., Librach, L., Raman-Wilms, L., Schreiber, Salter, M. (2004). An integrated undergraduate pain curriculum, based on IASP curricula, for six health science faculties. *Pain*, 110, 140-148. doi: 10.1016/j.pain.2004.03.019
- Watt-Watson, J., McGillion, M., Hunter, J., Choinière, M., Clark, A., Dewar, A., Webber, K. (2009). A survey of prelicensure pain curricula in health science faculties in Canadian universities. *Pain Research & Management*, 14(6), 439-444.

- Weiner, D., Peterson, B., Ladd, K., McConnell, E., & Keefe, F. (1999). Pain in nursing home residents: An exploration of prevalence, staff perspectives, and practical aspects of measurement. *Clinical Journal of Pain, 15*(2), 92-101.
- Weiner, D. K., & Rudy, T. E. (2002). Attitudinal barriers to effective treatment of persistent pain in nursing home residents. *Journal of American Geriatrics Society, 50*, 2035-2040. doi: 10.1046/j.1532-5415.2002.50618.x
- Weiner, D. K., Turner, G. H., Hennon, J. G., Perera, S., & Hartmann, S. (2005). The state of chronic pain education in geriatric medicine fellowship training programs: Results of a national survey. *Education and Training, 53*, 1798-1805. doi: 10.1111/j.1532-5415-2005.53508.x
- Weydert, J. A., Ball, T. M., & Davis, M. F. (2003). Systematic review of treatments for recurrent abdominal pain. *Pediatrics, 111*, e1-e11. doi: 10.1542/peds.111.1.e1
- Williams, C. S, Zimmerman, S., Sloane, P. D., & Reed, P. S. (2005). Characteristics associated with pain in long-term care residents with dementia. *The Gerontologist, 45*(Suppl.1), 68-73. doi: 10.1093/geront/45.suppl_1.68
- Won, A. B., Lapane, K. L., Vallow, S., Schein, J., Morris, J. N., & Lipsitz, L. A. (2004). Persistent nonmalignant pain and analgesic prescribing patterns in elderly nursing home residents. *Journal of the American Geriatrics Society, 52*, 867-874. doi: 10.1111/j.1532-5415.2004.52251.x
- Wright, J., Varholak, D., & Costello, J. (2003). Voices from the margin: The nurse aide's role in pain management of institutionalized elders. *American Journal of Alzheimer's Disease and Other Dementia, 18*, 154-153. Doi: 10.1177/153331750301800311

- Wynne, C.F., Ling, S.M., & Remsburg, R. (2000). Comparison of pain assessment instruments in cognitively intact and cognitively impaired nursing home residents. *Geriatric Nursing, 21*, 20-23. doi:10.1067/mgn.2000.105793
- Yeatts, D. E., & Cready, C. M. (2007). Consequences of empowered CNA teams in nursing home settings: A longitudinal assessment. *The Gerontologist, 47*, 323-339. doi: 10.1093/geront/47.3.323
- Zwakhalen, S. M. G., Hamers, J. P. H., Abu-Saad, & Berger, M. P. F. (2006). Pain in elderly people with severe dementia: A systematic review of behavioural pain assessment tools. *BMC Geriatrics, 6*, 1-15. doi: 10.1186/1471-23318-6-3
- Zwakhalen, S. M. G., Hamers, J. P. H., & Berger, M. P. F. (2006). The psychometric quality and clinical usefulness of three pain assessment tools for elderly people with dementia. *Pain, 126*, 210-220. doi:10.1016/j.pain.2006.06.029.
- Zwakhalen, S. M. G., Hamers, J. P. H., Peijnenburg, R. H. A., & Berger, M. P. F. (2007). Nursing staff knowledge and beliefs about pain in elderly nursing home residents with dementia. *Pain Research & Management: The Journal of the Canadian Pain Society, 12*(3), 177-184.

Appendix A

Guidelines for Assessing Pain in Seniors with Limited Ability to Communicate

General Guidelines

1. Determine if Mini Mental Status Examination scores are available or can be obtained. This would facilitate determination of patient ability to provide valid self-report.
2. Always attempt self-report regardless of level of cognitive functioning.
3. Baseline scores should be collected for each individual (ideally on a regular basis which would allow for the examination of unusual changes from the persons typical pattern of scores).
4. Patient history and physical examination results should be taken into consideration.
5. If assessments are to be repeated over time, assessment conditions should be kept constant (e.g., use the same assessment tool, use the same assessor where possible and conduct pain assessment during similar situations).
6. Pain-assessment results should be used to evaluate the efficacy of pain management interventions.
7. Knowledgeable informants (e.g., caregivers) should be asked about typical pain behaviours of the individual.
8. Other aspects of the pain experience should also be evaluated including environmental factors, psychological functioning and social environment.

Recommendations Specific to Self-Report Measures

1. Use of synonyms when asking about the pain experience (e.g., hurt, aching) will facilitate the self-report of some patients who have limitations in ability to communicate verbally.
2. Self-report scales should be modified to account for any sensory deficits that occur with aging (e.g., poor vision, hearing difficulties).
3. Use self-report tools that have been found to be most valid among seniors (e.g., the Coloured Analogue Scale, Numeric Rating Scales, Behavioural Rating Scales, the 21 Point Box Scale³¹).
4. Use of horizontal visual analogue scales should be avoided, as some investigators have found unusually high numbers of unscorable responses among seniors

Recommendations Specific to Observational Measures

1. Observational tools that have been shown to be reliable and valid for use in this population include the PACSLAC and DOLOPLUS-2. The PACSLAC is the only tool that covers all six behavioural pain-assessment domains that have been recommended by the American Geriatrics Society. Nonetheless, clinicians should always exercise caution when using these measures because they are relatively new and research is continuing.
2. When assessing pain in acute-care settings tools that primarily focus on evaluation of change over time should be avoided.
3. Observational assessments during movement-based tasks would be more likely to lead to the identification of underlying pain problems than assessments during rest.
4. Some pain-assessment tools, such as the PACSLAC, do not have specific cut off scores because of recognition of tremendous individual differences among people with severe dementia. Instead, it is recommended that pain be assessed on a regular basis

- (establishing baseline scores for each patient) with the clinician observing score changes over time.
5. Examination of pain-assessment scores before and after the administration of analgesics is likely to facilitate pain assessment.
 6. Some of the symptoms of delirium (which are seen frequently in long-term care) overlap with certain behavioural manifestations of uncontrolled pain (e.g., behavioural disturbance). Clinicians assessing patients with delirium should be aware of this. On the positive side, delirium tends to be a transient state, and pain assessment, which can be repeated or conducted when the patient is not delirious, is more likely to lead to valid results. It is important to note also that pain can cause delirium, and clinicians should be astute in order to avoid missing pain problems among patients with delirium.
 7. Observational pain-assessment tools are screening instruments only and cannot be taken to represent definitive indicators of pain. Sometimes they may suggest the presence of pain when pain is not present, and at other times they may fail to identify pain.
-

© T. Hadjistavropoulos, reprinted with permission.

Appendix B



OFFICE OF RESEARCH SERVICES
MEMORANDUM

DATE: October 13, 2011

TO: Michelle Gagnon – Psychology Department
Dr. Thomas Hadjistavropoulos – Psychology Department

FROM: Dr. Bruce Plouffe
Chair, Research Ethics Board

Re: **Development, Implementation, and Evaluation of a Pain Assessment Training Program for Long-Term Care Staff (File #17S1112)**

Please be advised that the University of Regina Research Ethics Board has reviewed your proposal and found it to be:

- 1. **APPROVED AS SUBMITTED.** Only applicants with this designation have ethical approval to proceed with their research as described in their applications. For research lasting more than one year (Section 1F), **ETHICAL APPROVAL MUST BE RENEWED BY SUBMITTING A BRIEF STATUS REPORT EVERY TWELVE MONTHS.** Approval will be revoked unless a satisfactory status report is received. Any substantive changes in methodology or instrumentation must also be approved prior to their implementation.
- 2. **ACCEPTABLE SUBJECT TO MINOR CHANGES AND PRECAUTIONS (SEE ATTACHED).** Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.
- 3. **ACCEPTABLE SUBJECT TO CHANGES AND PRECAUTIONS (SEE ATTACHED).** Changes must be submitted to the REB and approved prior to beginning research. Please submit a supplementary memo addressing the concerns to the Chair of the REB.** Do not submit a new application. Once changes are deemed acceptable, ethical approval will be granted.
- 4. **UNACCEPTABLE AS SUBMITTED.** The proposal requires substantial additions or redesign. Please contact the Chair of the REB for advice on how the project proposal might be revised.


Dr. Bruce Plouffe

Appendix C

CONSENT FORM FOR LONG-TERM CARE STAFF

Development, Implementation, and Evaluation of a Training Program for Long-Term Care Staff

Principal Investigators:

Michelle Gagnon
Graduate Student in Clinical Psychology
Supervised by: Dr. Thomas Hadjistavropoulos
University of Regina
(306) 337-2537

Thomas Hadjistavropoulos, Ph.D., ABPP
Research Associate, Regina Qu'Appelle Health Region
University of Regina
(306) 585-4457

Sponsor:

This research is supported by the Canadian Institutes of Health Research (CIHR).

INTRODUCTION

You have been invited to participate in this research because you are involved in the care of older adults who reside in long-term care facilities.

YOUR PARTICIPATION IS VOLUNTARY

We hope that you will assist us with this research project, however, participation in this project is completely voluntary. You may withdraw from this study at any time without consequence. Choosing not to provide consent will in no way affect your position within your long-term care facility.

WHO IS CONDUCTING THE STUDY?

Dr. Thomas Hadjistavropoulos and Michelle Gagnon are conducting the study. They are from the University of Regina. This research is funded by the Canadian Institutes of Health Research.

BACKGROUND

Pain assessment and management have been identified as areas in which little education is provided to professionals during initial training programs or through continuing education programs. Pain assessment among older adults, in particular among older adults with dementia, can be challenging due to communication difficulties. We are interested in developing a training program that can be used to increase knowledge in this area and improve care.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this study is to evaluate a training program developed for the education of long-term care staff in pain assessment and management. We are investigating the learning that occurs from this program, as well as the influence of knowledge and attitudes on learning.

WHO CAN PARTICIPATE IN THE STUDY?

Long-term care nursing and care aide staff who have a good grasp of the English language are encouraged to participate in this study.

WHAT DOES THE STUDY INVOLVE?

Participants will be asked to attend a video viewing session. These sessions should be just under two hours in duration. At the beginning of the session, participants will be asked to complete a series of relevant questionnaires. They will then be shown the 45-minute training video. Upon completion of the video, participants will be asked to complete a questionnaire evaluating the video.

Four weeks after having watched the video, participants will be contacted by a member of the research team to arrange a convenient time to complete a follow-up questionnaire. This questionnaire should take no more than 15 minutes to complete.

WHAT ARE MY RESPONSIBILITIES?

You will be asked to complete a series of questionnaires and watch and evaluate a training video. A subsample of participants may be invited to participate in voluntary follow-up focus groups. If you are invited and decide to participate, you are giving consent to allow for the audio recording of focus group discussions. If you are not comfortable with this, you have the right to refuse to participate in the focus group sessions. A separate consent form will be used for the audio-recording of these focus groups discussions.

WHAT ARE THE POSSIBLE HARMS AND SIDE EFFECTS OF PARTICIPATING?

There are no known risks involved in this study. Participants may withdraw from the study at any time without penalty.

WHAT ARE THE BENEFITS OF PARTICIPATING IN THIS STUDY?

By participating in this study, you may learn new techniques of pain assessment and management for individuals living in long-term care. As the goal of this study is to evaluate a training program, if the program is found to be successful it may be used as a tool to provide additional pain assessment training to long-term care staff or to nursing students. This may lead to an increase in knowledge of pain assessment and management among long-term care staff which, in turn, may improve the quality of care received by long-term care residents.

WHAT IF NEW INFORMATION BECOMES AVAILABLE THAT MAY AFFECT MY DECISION TO PARTICIPATE?

At this time, we are not aware of any additional information that may affect your decision. However, if this changes, this information will be made available to you.

WHAT HAPPENS IF I DECIDE TO WITHDRAW MY CONSENT TO PARTICIPATE?

We hope that you will assist us with this research project, however, your decision to participate is completely voluntary. Your refusal to provide consent will in no way affect your position at your long-term care facility.

AFTER THE STUDY IS FINISHED

We will send summaries of the results of this study to each participating long-term care facility. If you would like to receive a summary of these results, you may request a copy of the results from

the facility, or you may contact the Health Psychology Laboratory (585-4428 or 337-2537) at the University of Regina. Results from this study will be available in the spring of 2012.

WHAT WILL THE STUDY COST ME?

There is no cost to participate in this study.

WILL MY TAKING PART IN THIS STUDY BE KEPT CONFIDENTIAL?

Your privacy will be respected. No information that discloses your identity will be released or published without your specific consent to the disclosure. There will be no identifying information provided or detailed in any reports or publications that may result from this study. Only group results will be presented in our reports. Data will be anonymized and will be stored according to professional standards. The data will be shredded when it is time to destroy it.

WHO DO I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY DURING MY

PARTICIPATION?

If you have any questions or would like more information about this study, you may contact Michelle Gagnon at (306) 337-2537 or the Health Psychology Lab at (306) 585-4428.

WHO DO I CONTACT IF I HAVE ANY QUESTIONS OR CONCERNS ABOUT MY RIGHTS AS A SUBJECT DURING THE STUDY?

If you have any questions or concerns about your rights or treatment as a research participant, you may contact the Chair of the University Research Ethics Board by phone at 306-585-4775 or by e-mail at research.ethics@uregina.ca.

SUBJECT CONSENT FOR SUBJECT TO PARTICIPATE

Subject's name: _____

Please check all statements that are true:

- I have read and understood the subject information and consent form.
- I have had sufficient time to consider the information provided and to ask for advice.
- I have had the opportunity to ask questions and have had satisfactory responses.
- I understand that all of the information collected will be kept confidential and that the result will only be used for scientific objectives.
- I understand that my participation in this study is voluntary and that I am completely free to refuse my participation or to withdraw myself from this study at any time without changing in any way my position within the facility that I work in.
- I understand that I am not waiving any of my legal rights as a result of signing this consent form.
- I understand that there is no guarantee that this study will provide any benefits to me.
- I have read this form and I freely consent to my participation in this study.
- I have been told that I will receive a dated and signed copy of this form.

Having read the consent form, I agree to participate in this study and consent to the above. I also consent that the researchers may collect information from me or about me that is relevant to this study.

Your name (please print): _____

Your Position:
(e.g., care aid, nurse) _____

Signature: _____

Date: _____

Witness: _____

Signature: _____

Date: _____

Researcher: _____

Signature: _____

Date: _____

Appendix D

Nurse/ Care Aide Demographic Information Sheet

1) What is your age? _____

2) What is your sex?

- Male
 Female

3) Are you a:

- | | |
|---|--|
| <input type="checkbox"/> Special Care aide | <input type="checkbox"/> Registered Nurse |
| <input type="checkbox"/> Licensed Practical Nurse | <input type="checkbox"/> Psychiatric Nurse |
| <input type="checkbox"/> Registered Practical Nurse | <input type="checkbox"/> Other |
- _____

4) How many years/months experience do you have as a nurse or care aide? _____

5) How many years/months experience do you have working in long-term care?

6) Using the following scale, please rate how much formal training on pain assessment you have had:

| | | | | | | |
|--------------------|----------|----------|----------|----------|----------|--------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| No Training | | | | | | A lot of Training |

7) If you have received formal training on pain assessment, please tell us briefly about the type of formal training you have had:

8) Using the following scale, please rate how much formal training you have had, specifically focusing on the assessment of pain in elderly populations with dementia.

| | | | | | | |
|--------------------|----------|----------|----------|----------|----------|--------------------------|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| No Training | | | | | | A lot of Training |

9) If you have received formal training specifically focusing on the assessment of pain in elderly populations with dementia, please tell us briefly about the type of formal training you have had:

Appendix E

Knowledge Test

Please answer the following questions by choosing the most appropriate answer.

1. Individuals with severe dementia are:
 - a. Treated more effectively for pain than individuals without dementia
 - b. Treated less effectively for pain than individuals without dementia
 - c. Treated as effectively for pain as individuals without dementia
 - d. Research has not yet been conducted in this area
2. Regular use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) has been found to do which of the following:
 - a. Reduce caregiver burnout
 - b. Increase caregiver stress
 - c. Increase communication with physicians
 - d. Reduce caregiver workload
3. Which of the following is true:
 - a. Patients with dementia are always unable to self-report pain
 - b. Self-report measures of pain assessment should always be attempted
 - c. Mini-Mental Status scores obtained within the last 12 months are reliable
 - d. It is not necessary to write down a pain assessment score in the chart, as long as others on shift are aware that the pain assessment was conducted and what score was obtained.
4. Which of the following measures covers all six domains that, according to the American Geriatrics Society, should be considered when conducting pain assessment in older adults:
 - a. The PACSLAC
 - b. The DOLOPLUS-2
 - c. The McGill Pain Questionnaire
 - d. The PAINAD
5. Observational pain assessment measures are most likely to identify pain:
 - a. When the patient is at rest
 - b. During movement
 - c. In the morning
 - d. In the evening
6. Which of the following is NOT a reason that supports the use of regular pain assessment:
 - a. It can allow for better communication with patients
 - b. It can help with the monitoring of pain over time
 - c. It can allow for better communication between staff members

- d. It can help evaluate the effectiveness of an intervention (e.g., administration of analgesics)
7. Which of the following is/are true about pain diaries:
- a. They allow you to examine pain over time
 - b. They help decide if a pain intervention is effective
 - c. They allow for better communication between staff members
 - d. All of the above
8. Which of the following is/are recommended for pain assessment in long-term care:
- a. Pain should be assessed a minimum of once a week
 - b. All patients should be assessed upon admission
 - c. If pain is found, a treatment plan should be implemented within 24 hours at the latest.
 - d. All of the above
9. Which of the following statements about the PACSLAC is false:
- a. The PACSLAC is an observational checklist that can be used by long-term care staff to assess pain in residents with severe dementia and limited ability to communicate
 - b. The developers of the PACSLAC recommend that the PACSLAC be used before and after the administration of analgesics
 - c. The developers of the PACSLAC recommend that the PACSLAC be used weekly, and more frequently when pain is suspected
 - d. There are specific cut-off scores on the PACSLAC that definitely signal the presence of pain
10. Which of the following statements is true:
- a. People with dementia can never self-report pain
 - b. People with mild to moderate dementia can usually provide a valid self-report of pain
 - c. If people cannot self-report pain, care staff cannot assess the severity of the pain
11. Which of the following is/are reasons for increased pain in long-term care:
- a. An increase in illness among this population
 - b. Old age directly causes an increase in pain
 - c. Falls are more frequent among this population
 - d. Answers (a) and (c)
12. Which of the following is not a recommendation for the use of self-report measures in individuals with cognitive impairment:
- a. Synonyms such as “hurting” or “aching” should be used
 - b. Self-report scales should be modified (e.g., using a large font) to account for sensory deficits that occur with aging

- c. Family members and/or guardian should be present when conducting self-report assessments
 - d. Validated self-report measures should be used when assessing pain in older adults
13. Which of the following is false about the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC):
- a. The PACSLAC takes approximately 5 minutes to complete
 - b. The PACSLAC examines facial expressions, activity and body movement, social, personality, and mood factors.
 - c. The PACSLAC should not be used with patients who have severe dementia
 - d. PACSLAC scores are most useful when compared to previous PACSLAC scores from the same patient.
14. Which of the following statements about pain assessment in long-term care is true:
- a. Pain assessment in long-term care is not possible
 - b. Pain assessment measures take too much time for use in long-term care
 - c. Valid measures of pain exist and can be used with patients who have severe dementia
 - d. Pain assessments conducted with dementia patients are not valid because these patients are not able to properly report their pain

Appendix F

Video Evaluation Questionnaire

Now that you have completed watching “Pain-Management in Long-Term Care: A Training Video for Long-Term Care Staff, please answer the following questions using the scale provided.

Content Quality Scale:

1) The video improved my knowledge of pain assessment in long-term care

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

2) The video improved my knowledge of pain management in long-term care

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

3) The video provided valuable information

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

4) I feel more confident assessing pain in individuals with cognitive impairment than I did before watching this video

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

5) The video demonstrated tools that are practical for use with individuals with dementia in long-term care

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

6) Before watching this video, I was familiar with standardized self-report methods of pain-assessment

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

7) Before watching this video, I was familiar with standardized observational/behavioural measures of pain assessment (e.g., the PACSLAC, PAINAD, DOLOPLUS-2)

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

8) None of the material presented in this video was new to me

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

9) The video was helpful a helpful learning tool

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

10) I would recommend this video to other healthcare staff/students

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

11) The video provided information about pain assessment tools and practices that are not suitable for patients in long-term care

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

12) The information presented in this video is useful to me in my current job/position

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

13) If it were up to me, I would begin using the pain assessment measures demonstrated in this video

| | | | | |
|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

Strongly Disagree Disagree Neutral Agree Strongly Agree

14) All staff who work with long-term care patients should be provided with the information covered in the video

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

15) Before watching this video, I was using self-report methods of pain-assessment in my facility

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

16) Before watching this video, I was using a standardized observational/behavioural measure (e.g., the PACSLAC, PAINAD, DOLOPLUS-2) to assess pain in my facility

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

Technical Quality Scale:

17) The length of this video was just right

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

18) This video was too short

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

19) This video was too long

0 1 2 3 4
Strongly Disagree Disagree Neutral Agree Strongly Agree

20) The information in this video was presented clearly

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

21) The amount of information provided in this video was sufficient

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

22) The information in this video was presented in an interesting manner

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

23) The graphics/images presented in this video helped increase my understanding of the information presented

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

24) The graphics/images presented in this video were visually appealing

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

25) The audio/sound in this video was clear

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

26) The material covered in this video was presented at a comfortable pace

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

27) The information in this video was presented at a level that I could understand (i.e. not too complicated or complex)

0 1 2 3 4
Strongly Disagree Neutral Agree Strongly Agree
Disagree

28) More explanation/description should have been provided for each section

0 1 2 3 4
Strongly Disagree Neutral Agree Strongly Agree
Disagree

29) The explanations provided throughout this video were unclear

0 1 2 3 4
Strongly Disagree Neutral Agree Strongly Agree
Disagree

30) The material presented in this video was too basic or easy

0 1 2 3 4
Strongly Disagree Neutral Agree Strongly Agree
Disagree

31) The information in this video was presented in an organized manner

0 1 2 3 4
Strongly Disagree Neutral Agree Strongly Agree
Disagree

Open-ended Questions:

32) Please describe why you did or did not find the video helpful.

33) Please tell us about the parts of the video you found the most helpful.

34) Please tell us about the parts of the video you found the least helpful.

35) Was there anything missing from the video that you would have liked to have seen included?

36) Would you feel confident in implementing the practices described in the video? Please tell us why or why not.

37) Would you be willing to implement the practices described in the video in your workplace? Please tell us why or why not.

38) Please identify specific barriers that might interfere with your ability to implement the methods described in the video.

39) Do you have any additional comments you would like to share?

THANK YOU!

Appendix G

Follow-Up Questionnaire

Please answer the following questions using the response options provided.

1) The content of this video was helpful

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

2) The content of this video was valuable

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

3) The video influence they way I work with long-term care residents

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

4) The video influenced the way I assess pain with all residents

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

5) The video influenced the way I assess pain in residents with cognitive impairment

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

6) The video increased the likelihood that I would use self-report measures of pain assessment when assessing pain

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

7) The video increased the likelihood that I would use observational/behavioural measures of pain assessment when assessing pain

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

8) The video increased how often I think pain should be assessed in long-term care residents at my facility

| | | | | |
|-------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

9) The video increased the frequency with which I report pain in the chart

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

10) The video has lead me to be more systematic in assessing pain (i.e., using same method each time with a resident)

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

11) The video has had no effect on the way I assess pain with the residents in my facility

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

12) I found the content of this video helpful

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

13) Since having watched the video “Pain assessment in long-term care: A training video for long-term care staff,” I have used self-report measures when assessing pain

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

14) If you have been using self-report measures, which measures have you used? If no, why not?

15) Since having watched the video “Pain assessment in long-term care: A training video for long-term care staff,” I have used behavioural/observational measures when assessing pain

| | | | | |
|----------------------|----------|---------|-------|----------------|
| 0 | 1 | 2 | 3 | 4 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

16) If you have been using behavioural/observational measures, which measures have you used? If no, why not?

THANK YOU!

Appendix H

Moderator Guide

General Questions

1. What has been your experience with regard to training in pain assessment in long-term care among individuals with dementia?
2. Describe how you felt with regard to the level of training you received in pain assessment prior to watching this video?
3. Is pain assessment in long-term care an important topic to be covered in training programs or continuing education? Please explain.
4. Describe in what ways you believe pain to be adequately or inadequately addressed in your facility.
5. What role do you play in assessing pain among residents in your facility?

Video Quality and Value Questions

6. What are your opinions or thoughts about the training video?
7. Describe in what ways you did or did not find this video helpful.
8. How do you believe this video could have been improved?
9. In terms of your current position, how would you describe the usefulness of the information shared in this video?
10. At what stage of training would this video be most beneficial?
11. What group of individuals or staff members do you think would benefit most from viewing this video?

Implementation and Feasibility Questions

12. Why would you or why would you not consider implementing the practices described in the video?
13. Describe in what ways it would or would not be feasible to implement the practices described in the video in your facility?
14. What are particular barriers or challenges to changing or improving pain assessment practices within your facility?
Probes: Personal barriers? Barriers within the facility? Structural barriers?
15. What are supporting factors that assist in changing or improving pain assessment practices within your facility?
Probes: Personal factors? Facility factors? Structural factors?
16. How are decisions about changes in pain assessment practices made within your facility?
17. What role do you play in the decisions made about pain assessment practices?

Appendix I

List of Content Areas and Themes

- 1. CONTENT AREA: Current status of pain and pain assessment in long-term care**
 - 1.1THEME: Role in the assessment of pain in the facility
 - 1.2THEME: Reasons for assessing pain and the importance of knowing how to conduct a pain assessment
 - 1.3THEME: Challenges of working with people unable to communicate their pain
 - 1.4THEME: Importance of knowing the client when identifying pain
 - 1.5THEME: Charting, reporting, and communication between nurses and care aides
 - 1.5.1 SUBTHEME: Completion and consistency of charting among staff
 - 1.5.2 SUBTHEME: Perceived validity of care aide opinion and report (Care aide theme)
 - 1.5.3 SUBTHEME: Reliance on care aides to identify and report patients who may be experiencing pain (Nurse theme)
 - 1.6THEME: Family demands and family interference with pain management.
 - 1.7THEME: Physician involvement in pain assessment and management
- 2. CONTENT AREA: Training in pain assessment**
 - 2.1THEME: Training received
 - 2.2THEME: Level of comfort with training received
 - 2.3THEME: Importance of training and continuing education in pain assessment
- 3. CONTENT AREA: Video evaluation and utility**
 - 3.1THEME: Positive aspects of the training video
 - 3.2THEME: Weaknesses of the training video
 - 3.3THEME: Appropriateness of the level of difficulty of the training video
 - 3.4THEME: Perception of value of implementation of specific practices described
 - 3.5THEME: Level of staff most suited for viewing the video
 - 3.6THEME: Stage of training most appropriate for viewing the video
- 4. CONTENT AREA: Barriers, facilitators, and change process**
 - 4.1THEME: Insufficient time, insufficient resources, and overwhelming workload.
 - 4.2THEME: Co-workers' resistance to change, negativity, and perception of lack of time
 - 4.3THEME: Need to see the benefits
 - 4.4THEME: Standardization of tools and use of user-friendly tools
 - 4.5THEME: Initiation of change and support for the change must come from management
 - 4.6THEME: Necessity of follow-up and communication with management (Nurse theme)
 - 4.7THEME: Scope of participants' impact in decision making and change