EVALUATION OF A PAIN ASSESSMENT AND MANAGEMENT QUALITY IMPROVEMENT INITIATIVE IN LONG TERM CARE FACILITIES

by © Danita Croucher

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Abstract

Background: In response to pain prevalence rates of more than double the national benchmark, Eastern Health implemented an initiative in 2018 to improve the quality of pain assessment and management among residents of its long term care (LTC) facilities. The initiative introduced standardized pain assessment tools to front-line Registered Nurses and Licensed Practical Nurses. A preliminary documentation audit, in 2019, showed that the use of these tools is limited.

Purpose: This evaluation was developed to determine if there has been a change in the utilization rates of the standardized pain assessment tools since the past audit, while also exploring the challenges and barriers to the use of such tools throughout Eastern Health Long Term Care (EHLTC).

Methods: A review of resident charts was conducted at four EHLTC facilities in St. John's, NL to determine if pain assessment was completed as per organizational policy. Data were compared to that of a past audit to determine if there was a significant change in the utilization rates of the assessment tools. An online questionnaire was designed to identify challenges and barriers to the use of the tools, from the perspectives of frontline staff, as well as suggestions on how to improve their uptake.

Results: A total of 39 charts were reviewed. Descriptive statistics and chi-square tests were used to analyze the data. Results showed no significant differences in the use of the pain assessment tools since the past audit. Rates of pain assessment among residents between 2019 and 2022 remained low. Seven questionnaire responses were received. Thematic analysis was used to examine the responses. Common barriers to the use of pain assessment tools were poor attitudes and inadequate staff knowledge, documentation difficulties, time constraints, and staff resources/staff turnover. Suggestions to increase the use of the assessment tools included education, improved staff ratios/staff consistency, and the involvement of Resident Care Coordinators (RCCs) in pain assessment.

Conclusion: Questionnaire results provided insight into the barriers of the use of pain assessment tools in EHLTC, allowing for the proposal of recommendations to enhance the overall effectiveness of the initiative.

Keywords: *Pain assessment, pain assessment tools, pain improvement initiatives, barriers, long term care, nursing homes*

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The prevalence of pain among residents of Eastern Health Long Term Care (EHLTC) facilities is rather high in comparison to the rest of the country. In 2017-2018, 14.9% of residents in EHLTC experienced pain, while 11.5% experienced worsened pain. The national average was 7.2% and 10.2% respectively (Canadian Institute for Health Information, CIHI, 1996-2021). In response to these results, the Pain Assessment and Management Working Group (PAMWG) was formed to design and implement an initiative to improve the quality of pain assessment and management among LTC residents. As a Clinical Nurse Specialist (CNS) within EHLTC, I am the facilitator of the PAMWG. Prior to my present role, I was a working member of the group.

In late 2018, the PAMWG implemented evidence-based clinical guidelines in relation to the assessment and management of pain among residents of four EHLTC facilities. At the forefront of the initiative was the introduction of standardized pain assessment tools to front-line Registered Nurses (RNs) and Licensed Practical Nurses (LPNs). Despite these efforts, documentation audits have shown that regular comprehensive pain assessment is lacking in routine clinical practice. A documentation audit, completed in June 2019, showed that only 47.9% of resident charts, for example, had a pain assessment documented within the three months prior to the audit. Since a thorough assessment of pain is a crucial first step to the overall management of pain in LTC residents (Horgas, 2017), I developed an evaluation project to further investigate the underutilization of the standardized pain assessment tools. The evaluation compared present utilization rates to those of 2019 and explored challenges and barriers to the use of pain assessment tools from the perspectives of front-line nursing staff. The results allowed for the proposal of recommendations to improve the assessment and management of pain in LTC, in hopes of improving pain outcomes and enhancing overall quality of life for residents.

Objectives

The overall goal for this practicum was to evaluate if there has been a change in the utilization rates of the standardized pain assessment tools, and, ultimately, if the initiative has impacted the rates of the quality indicators mentioned above.

The key practicum objectives were:

1. To evaluate the utilization of standardized pain assessment tools by front-line RNs and LPNs;
2. To identify challenges and barriers to the utilization of standardized pain assessment tools;
3. To develop recommendations which would improve the utilization of standardized pain assessment tools; and
4. To demonstrate advanced nursing practice competencies.

Overview of Methods

Several methods were used to meet the practicum objectives. To provide a basis for the development of an evaluation, a literature review was completed to examine the current evidence surrounding the outcomes of pain improvement initiatives and factors influencing their success. Results from the literature review provided valuable information and a strong foundation to assist in the development of a consultation plan. Individual interviews were conducted with key stakeholders to explore their perspectives on important outcomes for the evaluation and to obtain advice on how to best collect data to measure such outcomes. Findings from both the literature review and the consultations were used to develop a focused evaluation plan. The evaluation was completed in the final semester of the practicum through the use of two methods. Resident chart reviews were conducted to examine the utilization rates of pain assessment tools and a survey of

front-line nursing staff was completed to gain an understanding of the challenges to the use of such tools. Upon completion of the chart reviews and closure of the survey, data analysis was conducted and findings were generated. These findings were then used to develop recommendations to improve the assessment and management of pain throughout EHLTC facilities. A summary of each of the methods used throughout the project and their results are discussed below.

Summary of the Literature Review

The integrative literature review (see Appendix I) was conducted to answer two key research questions: Are interventions to improve pain assessment and management in LTC effective and what factors affect the successful implementation of efforts to improve pain management in LTC? Searches were performed using three databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Google Scholar. Key search terms included “pain assessment”, “pain assessment tools”, “pain improvement initiatives”, “effectiveness”, “barriers’, “long term care”, and “nursing homes.” After evaluation, using the Public Health Agency of Canada (PHAC, 2014) critical appraisal tool kit and the Critical Appraisal Skills Programme (CASP, 2018), 12 studies, nine quantitative and three qualitative, were included in the review. Of the nine quantitative studies, there were three each of weak, moderate, and strong design, while all were of medium to high quality. The three qualitative studies were all descriptive in nature, but of high credibility.

Two main themes emerged from the findings of the studies. The themes were: i) clinical effectiveness of interventions to improve pain management, and ii) factors that affect the assessment and management of pain. The literature supported the use of both quantitative and qualitative methods of evaluating pain improvement initiatives throughout LTC facilities.

Knowledge questionnaires and chart audits were utilized to determine the effectiveness of pain improvement protocols, while focus groups and interviews were used to identify barriers to optimal pain management from the perspectives of LTC staff (Brunkert et al., 2020; Ghandehari et al., 2013; Kaasalainen et al., 2016; Parkman et al., 2021; Veal et al., 2018). Results related to the two themes are discussed below.

Clinical Effectiveness of Interventions to Improve Pain Management

Findings related to the clinical effectiveness of interventions to improve pain management were examined in terms of resident-related and practice-related outcomes. Overall, findings revealed that efforts to improve pain-related outcomes in LTC, such as staff training, interdisciplinary pain management teams, and standardized pain assessment, can be effective in reducing pain levels for residents, as well as enhancing their functional status and quality of life. Two high-quality, controlled before-after (CBA) studies by Kaasalainen et al. (2012) and Kaasalainen et al. (2016) found that mean pain scores increased significantly more for the control group than the intervention group from baseline to post intervention. A medium-quality, cluster-randomized controlled trial (RCT), by Mamhidir et al. (2017), found an increase in ADL dependency scores, from pre to post intervention, in the control group compared to the intervention group. Savvas et al. (2014) conducted an uncontrolled before-after (UCBA) study and found a significant increase in the prevalence of analgesic use from baseline to post intervention, indicating that regular pain assessment resulted in measures to relieve pain experiences. Although Mamhidir et al. (2017) and Kaasalainen et al. (2016) also explored the effects of pain improvement protocols on indicators of residents' mental well-being and psychological disorders, such as depression and anxiety, no significant differences were found. It

was concluded that further examination of the literature would be required to determine the impact that pain management has on these indicators.

In terms of practice-related outcomes, the literature review revealed that training staff in the assessment and management of pain increases overall knowledge and enhances pain-related attitudes and beliefs. A high quality RCT by Ghandehari et al. (2013) showed increased scores on pain knowledge and beliefs questionnaires, from baseline to post intervention, among staff of the intervention group compared to the control group. Moreover, Kaasalainen et al. (2012) and Kaasalainen et al. (2016) found that pain education and skills training resulted in more positive changes in the mean use of standardized pain assessment tools in the intervention group compared to the control group.

Factors Affecting Pain Assessment and Management in LTC

The literature review shed light on many barriers to the successful implementation of clinical practice guidelines surrounding pain management in LTC. Barriers were identified at the resident, caregiver, and organizational levels. Resident related barriers included communication difficulties related to cognitive impairment, and reluctance to report pain and to take medications. In a medium-quality, cross-sectional descriptive study by Egan & Cornally (2013), nursing staff rated difficulty assessing pain in residents with communication deficits related to cognitive impairment as the most common barrier to pain management. This finding was supported in a qualitative study by Parkman et al. (2021), whereby interviews with staff revealed challenges in assessing pain in residents with dementia. Through the use of focus group methodology, staff in the study by Brunkert et al. (2020) identified that older adults may not report pain as they view it as a normal part of aging. Participants also stated that fear of

medication side effects and of addiction to certain pain medications is a significant barrier to pain management in the elderly.

The most common barriers at the caregiver level were inadequate knowledge, and poor documentation and communication. Parkman et al. (2021) found that that although nurses possessed some knowledge about pain from previous education, most stated that much of it had not been retained. Similarly, in one on one interviews with Veal et al. (2018), nurses reported that more pain-related education would be beneficial to them. Parkman et al. (2021) also found that poor documentation was perceived as a communication challenge between nursing staff. Some nurses expressed frustration with staff of opposite shifts for failing to document pain experiences in residents' records as well as lack of communication in shift reports.

At the organizational level, the most significant hindrances were identified as time constraints, and staffing resources and turnover. RNs in the study by Veal et al. (2018) expressed the desire to have more time for pain assessment and management, but identified competing priorities as a major impediment. Staff in the study by Brunkert et al. (2020) identified low staffing resources and high turnover as a hindrance to care quality as it impedes the development of therapeutic relationships between staff and residents. Participants expressed that residents are more likely to discuss their pain experiences with staff whom they feel comfortable with and have a sense of trust in.

The literature suggested that understanding factors that influence the implementation of pain management guidelines and taking steps to overcome identified obstacles is critical to the planning of strategies that are effective and sustainable (Ploeg et al., 2007). The literature outlined numerous suggestions to mitigate the above-mentioned barriers. First, ensuring that staff receive the necessary education to assess and manage pain, and that this knowledge is shared

with residents and families, are critical components to improving pain outcomes in LTC. Secondly, efforts to change pain management practices must include all members of the care team and incorporate clear documentation and communication guidelines for staff. Third, the use of Advanced Practice Nurses (APNs), who are well-equipped to lead pain teams and to oversee resident care, is an important consideration in the facilitation of best practice guidelines into routine clinical practice. Lastly, health authorities should take caution to develop protocols that can be realistically implemented in relation to existing staffing resources and the hectic schedules of front-line caregivers.

Summary of Consultations

Consultations (see Appendix II) were completed with members of the PAMWG. Five members were chosen based on their differing roles within EHLTC and the value that they could potentially add to the project. The chosen members were a Clinical Nurse Specialist (CNS), a Clinical Educator (CE), and three RAI-MDS Coordinators. Individual interviews, two in person and three virtually, were conducted using a semi-structured interview guide. Each interview lasted approximately 30 minutes. Questions focused on the original goals and expected outcomes of the pain improvement initiative, criteria for evaluation, methods to best collect data, and perceived barriers to the successful implementation of pain improvement efforts throughout EHLTC.

Findings from the consultations revealed that, while the PAMWG had successfully introduced standardized pain assessment to front-line nursing staff, the facilitation of a change in clinical practice required further investigation. Consultation results reflected many of the findings from the literature review in that outcomes, such as resident pain scores and quality indicator data, were identified by interviewees as key outcomes to determining the effectiveness

of the pain improvement initiative. In addition, participants expressed the need to examine barriers to the successful implementation of pain improvement efforts in LTC from the perspectives of front-line staff. While stakeholders identified poor attitudes and inadequate staff knowledge, time constraints, staff turnover, and staff resistance to change in practice as significant contributors, gaining a better understanding of barriers, as perceived by staff conducting the pain assessments, would help to identify why the uptake of the assessment tools is limited.

In terms of mitigation of the above-mentioned barriers, the most important factor expressed by all PAMWG members was the need for more enforcement and support from Resident Care Managers (RCMs). Participants agreed that RCMs need to invest more time into monitoring, auditing, and reinforcing organizational policies related to pain assessment by nurses.

Participants' suggestions for methods of data collection throughout the evaluation included audits for resident pain scores and quality indicators, and interviews, focus groups, or questionnaires to identify barriers from staffs' perspectives.

Summary of the Evaluation

The evaluation took place within four EHLTC facilities in St. John's, Newfoundland and Labrador. As previously mentioned, the PAMWG introduced three pain assessment tools to front-line RNs and LPNs in the fall of 2018. The tools included i) the PQRST method, used to assess precipitating factors, quality, radiation, severity, and timing of pain; ii) the Numeric Rating Scale (NRS), which is used to rate pain intensity on a scale of 0 to 10; and iii) the Pain Assessment in Advanced Dementia (PAINAD) Scale, used to assess pain in residents with cognitive impairment (Booker & Keela, 2016). The PQRST and the NRS are to be used with

residents who can self-report their pain experiences. The PQRST allows for a baseline assessment of pain, while the NRS is used for subsequent follow-up assessment. The PAINAD is used for both baseline and follow-up assessments in residents who are unable to self-report. Staff are responsible to choose a tool based on the context of the assessment and resident characteristics. EHLTC organizational policy states that pain assessment is to be completed on admission, quarterly, and before and after the administration of an "as needed" or PRN analgesic. The policy also states that pain assessment is the responsibility of frontline RNs and LPNs (Jacobs et al., 2016).

Methods

Two methods of evaluation were used for this project; i) resident chart reviews, used to examine the utilization rates of the pain assessment tools; and ii) a questionnaire for frontline staff, used to explore challenges to the use of pain assessments in routine clinical practice. These methods and their results are summarized below. A full evaluation report can be found in Appendix III.

Resident Chart Reviews

Chart reviews were completed for approximately 10 percent of the population of residents in each of the four facilities. A random number generator was used to select charts from a list of names of all residents throughout the four facilities. A portion of the chart reviews was completed electronically. Since residents' Medication Administration Records (MARs) are completed in paper form, I also visited the units at each facility. Data were collected through the use of an audit tool that was adapted from the tool previously used by the PAMWG. Questions reflected the expected frequency of pain assessment in LTC, as mentioned above. Data were hand-written and then typed directly into an Excel spreadsheet to be shared with members of the

PAMWG upon completion of the evaluation. SPSS statistical software was used to analyze the data via descriptive statistics and Pearson's chi-square tests. This allowed for the comparison of the proportion of charts for which pain assessment was completed, as per policy, between the previous audit and the present audit. Comparisons were made for pain assessment completed on admission, quarterly, and with the administration of PRN analgesics. The null hypothesis for each comparison was that there was no statistical difference between the two years.

Questionnaire

Since pain assessment in LTC is the responsibility of RNs and LPNs, the target population for the questionnaire was all frontline RNs and LPNs from the chosen four facilities. Participants were recruited by requesting that RCMs at each facility forward an invitation email to these staff. A reminder email was sent one week after the initial email. Seven questionnaires were received. Results were interpreted based on the feedback obtained. The questionnaire was completed online, via SurveyMonkey, and consisted of five multiple choice and five short answer questions. Questions were designed to elicit information on the barriers to the use of pain assessment tools in EHLTC and participants' thoughts on how to improve the uptake of these tools. Descriptive statistics and thematic analysis were used to analyze quantitative and qualitative data, respectively.

Ethical Considerations

Approval for this evaluation was obtained from Eastern Health's Evaluation Proposal Approval Committee (EPAC) and the Regional Manager of Quality and Clinical Education for LTC. As a CNS within EHLTC, I am authorized to access all data used for this project. Data were collected only by me. Hand-written data are locked in a filing cabinet in my office and electronic data are stored on an encrypted, password-protected laptop, used only by me in my

position with EHLTC. Resident chart numbers were used as identifiers on the Excel spreadsheet and combined data, with no identifiers, were entered into SPSS. The invitation email for the recruitment of frontline RNs and LPNs was sent through Eastern Health's secure email platform. Completion of the questionnaire was seen as consent to participate. All responses to the questionnaire were anonymous. In case of any allegations of academic misconduct, data will be kept for one year, as recommended by the University of Waterloo (1992-2021). Hand-written notes will then be shredded and electronic documents will be deleted from my laptop. As this project is a program evaluation activity for quality improvement purposes, it does not require review by the Health Research Ethics Authority (HREA). The HREA screening tool can be found in the full evaluation report (see Appendix III).

Results

Chart Review Results

Chart reviews showed that there were no significant differences between 2019 and 2022 when comparing the completion of pain assessment on admission (p=.755), in the past three months (p>.999), and before and after the administration of a PRN analgesic (p=.569). Overall, utilization of pain assessment tools, within EHLTC, has not significantly changed since the implementation of the quality improvement initiative. Despite efforts to improve the use of standardized pain assessment tools, the rates remain suboptimal. The percentage of resident charts that had a documented pain assessment on admission to LTC dropped from 79.2% in 2019 to 58.9% in 2022. Although not found to be statistically significant, given the small sample size, this result is concerning. Considering that about 40% of residents entering EHLTC facilities do not have a documented pain assessment, further investigation and action are warranted. Quarterly pain assessment remained comparably steady between the two years, at 47.9% in 2019 and

53.8% in 2022. However, these rates are still low, given that about half of residents do not have a regularly documented pain assessment. The results for pain assessment before and after the administration of a PRN analgesic are very concerning. In 2019, the rate was just 2.1% and remains at only 5.1% at the present time. Pain assessment is an integral step to the administration of pain-relieving medications. Without a baseline analysis of residents' pain experiences, staff cannot determine the effectiveness of the analgesic. This can result in poor care planning and the continuation of unnecessary medications for residents. Staff need to be aware of interventions that are both effective and ineffective in relieving pain for residents in order to provide high-quality, individualized care.

Questionnaire Results

As previously mentioned, participants were asked about the frequency of their use of standardized pain assessment tools, barriers to the use of these tools, and recommendations on how to improve their use. The results are discussed below.

Frequency of the Use of Standardized Pain Assessment Tools. Four of seven participants indicated that they "often" use the standardized pain assessment tools when assessing residents' experiences of pain. Of the remaining three participants, one responded with "always", another with "sometimes", and the other with "rarely" use the tools. These results are in line with findings from the chart reviews and the consultations in that pain assessment tools are not consistently being used in routine clinical practice. Hence, the importance of exploring the challenges to the use of such tools from the perspectives of frontline staff.

Challenges and Barriers to the Use of Pain Assessment Tools. Two of the main barriers to the use of pain assessment tools identified in the literature review and by stakeholders, during consultations, were poor attitudes and inadequate staff knowledge. Hence, participants

were asked several questions in relation to these perceived barriers. Questions focused on familiarity with the PQRST, NRS, and PAINAD methods of pain assessment, how often and in which situations to use each tool, and how helpful participants feel the tools are to the promotion of pain management among residents. Results indicated that inadequate staff knowledge is indeed a barrier. While six of seven participants indicated that they had been provided education about the assessment tools, only three stated that they were "extremely familiar" with them. Moreover, none of the participants gave a thorough account of how often and in what situations to use each tool. While most participant responses alluded to certain aspects of the organizational policy, no one provided a comprehensive account of how often pain assessment should be completed nor a thorough explanation of when to use each tool. There was also some indication of a possible correlation between staff knowledge and attitudes. When asked about the helpfulness of the assessment tools, the three participants who indicated that they were "extremely familiar" were the same three participants who rated the tools as "extremely helpful". Similarly, the participant who did not receive education about the tools and reported being "somewhat familiar" with them was the same participant who rated the tools as "not at all helpful". Hence, it can be concluded that further education and greater knowledge of the pain assessment tools could possibly improve staff attitudes regarding their usefulness in clinical practice.

There were three other challenges to the utilization of pain assessment tools identified by respondents. These included documentation difficulty, time constraints, and inadequate staffing resources/staff turnover. Participants indicated that the electronic documentation system used within EHLTC is outdated and not user-friendly. Some stated that writing a narrative note is easier than documenting electronically within the assessment tools themselves. Time constraints

were attributed to inadequate staffing levels. One participant indicated that there is no time to document pain assessment findings even if the tools are being used to guide pain assessment. Respondents also felt that staff turnover is having a negative effect on the recognition of pain among residents. One participant indicated that pain and other changes in status are more likely to be noted by staff who are familiar with the resident. Since staff are often moved around or floated to various units, there is little opportunity to get to know the residents well, resulting in poor continuity of care and less confidence in the recognition of pain.

Recommendations to Improve the Use of Pain Assessment Tools. The most prominent recommendation to improve the use of pain assessment tools was further education for staff. One participant suggested the delivery of education through in-services. However, growing increases in staffing shortages is presently making it difficult for staff to be able to attend such sessions. Alternatively, the distribution of educational materials and unit huddles were suggested by members of the PAMWG during consultations. One participant suggested the inclusion of personal care attendants (PCAs) in educational efforts, stating that PCAs most often provide bedside resident care and, therefore, need to know how to recognize the signs and symptoms of pain to be able to report to the RN or LPN.

Other recommendations included better staffing ratios/staff consistency and the use of Care Facilitators (CFs). Respondents indicated that every effort should be made to assign casual staff to consistent units. This would improve staff familiarity with residents and increase the continuity of care, in hopes of better recognition of the signs and symptoms of pain. One participant suggested using the CF to assist in the improvement of pain assessment throughout LTC facilities. The CF role is new to EHLTC. The CF is an RN who coordinates, supervises, and

evaluates resident care. This participant felt that the CF could provide consistency in care and help to ensure that pain assessment is being completed as per organizational policy.

Recommendations

Based on the evaluation results, three main recommendations to improve the assessment and management of pain throughout EHLTC were identified: i) enforcement of pain assessment by RCMs; ii) involvement of the CF in the evaluation of pain assessment and management; and iii) ongoing education for frontline staff.

Enforcement of Pain Assessment by RCMs

It is recommended that when RCMs conduct quarterly pain assessment audits, they use the results to address individual staff, directly, as a means to promote and enforce the completion of pain assessment. For example, if an RCM recognizes that a PRN analgesic was administered without completion of a pain assessment, the RCM can identify the staff member who administered the medication and speak to them about the issue. Such enforcement holds staff accountable and over time, could be effective in changing staff attitudes and practice.

Involvement of the CF

Involvement of the CF in ongoing evaluation of pain assessment and management is recommended to help increase the use of the pain assessment tools in routine practice. CFs can assist the RCMs in the auditing process and can also hold unit huddles to discuss audit results with staff as a means of reinforcing the completion of pain assessment. Involvement of CFs will also assist in the improvement of care continuity for residents as they are more consistently present on the units and can act as communication agents for staff who are not familiar with the residents they are caring for.

Ongoing Education for Staff

I suggest the development of an education module in LEARN, an online learning management system utilized by Eastern Health. Such education can be made mandatory for all newly hired nursing staff and required to be repeated at specific intervals for existing staff. Staff can complete this education on their own time, within the comfort of their own homes, if desired. This will help to ensure that all staff possess the required knowledge to appropriately assess pain among LTC residents. The PAMWG can work with Eastern Health's learning and development team to ensure the inclusion of all necessary resources.

Discussion of Advanced Nursing Practice (ANP) Competencies

There are six categories of advanced nursing practice competencies outlined by the Canadian Nurses Association (CNA, 2019). Through the completion of this practicum project, I have demonstrated proficiency in three of these categories: i) research; ii) leadership; and iii) consultation and collaboration.

Research

Research competencies are demonstrated when the nurse synthesizes and incorporates research into nursing practice. Advanced practice nurses are able to "identify, appraise, and apply research" and "evaluate current practice at individual and system levels in light of research findings" (CNA, 2019, p. 32). In completing this practicum project, I have collected and analyzed data, using a comprehensive literature review, consultations with the PAMWG, resident chart reviews, and a survey of frontline staff, to examine the effectiveness of efforts to improve pain management in LTC and factors that affect the success of such efforts. In light of my findings, I have been able to make several recommendations to assist in the overall improvement of pain assessment throughout EHLTC facilities.

Leadership

Advanced practice nurses "identify problems and initiate change to address challenges at the clinical, organizational or system level" (CNA, 2019, p. 33). As a former member and current facilitator of the PAMWG, I knew that there was a need for further investigation into the underutilization of pain assessment tools within EHLTC. Taking the initiative to conduct this evaluation greatly enhanced my leadership skills. I demonstrated these skills by actively engaging with key stakeholders, RCMs, and frontline nursing staff. Throughout these interactions, I was able to disseminate information regarding the issues surrounding pain assessment within LTC and make recommendations on how to improve the overall effectiveness of the pain assessment quality improvement initiative. It is the hope that implementation of these recommendations will help to improve pain outcomes and overall quality of life for LTC residents.

Consultation and Collaboration

An advanced practice nurse is one who is able to "consult and collaborate with members of the health-care team and stakeholders whose services impact the key determinants of health to develop quality-improvement and risk-management strategies" (CAN, 2019, p. 34). This evaluation involved consultation with key stakeholders and members of the healthcare team, including members of the PAMWG and frontline RNs and LPNs. I also consulted with Eastern Health's Evaluation Proposal Committee (EPAC) and the Regional Manager of Quality and Clinical Education to obtain approval for this project. These consultations made the project possible and provided valuable information to assist in the improvement of the underassessment of pain among LTC residents.

Next Steps

As facilitator of the PAMWG, my next step is to present the findings of this evaluation to members of the group as well as management of the four facilities chosen for this practicum. Given this project's small sample size and low response rate, I plan to work with the PAMWG to implement a more widespread review of resident charts, throughout other facilities, as well as further consultation with frontline RNs and LPNs. From there, I plan to work toward implementation of the above, and any other, recommendations, with the LEARN education module being first priority.

Conclusion

This evaluation consisted of four main components: an integrative literature review, consultations with key stakeholders, resident chart reviews, and a survey of frontline RNs and LPNs. Each component provided valuable contributions to the status of pain assessment and management throughout LTC facilities. The literature review presented quality research that outlined the effectiveness of interventions to improve pain outcomes for LTC residents, as well as factors that affect the implementation of such interventions. The consultation process allowed for relevant discussions and provided important information to aid in the development of a focused evaluation plan. The evaluation methods provided crucial information from a clinical perspective and allowed for the proposal of recommendations to help improve the overall effectiveness of the pain improvement initiative throughout EHLTC. Although limited in terms of sample size and response rate, the evaluation will be an important contribution to further implementation of interventions to improve pain outcomes and overall quality of life for LTC residents.

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Appendix I

Integrative Literature Review: Improving Pain Assessment and Management in Long Term care Facilities within Eastern Health, NL

Improving Pain Assessment and Management in Long Term care Facilities within Eastern Health, NL

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The underassessment of pain among older adults residing in long-term care (LTC) facilities has been recognized as a significant public health issue (Gallant et al., 2020). It is estimated that up to 80% of LTC residents experience persistent pain. Despite its high prevalence, pain in this population is often unrecognized and hence, unrelieved (Dirk et al., 2019; Hadjistavropoulos et al., 2009). Ultimately, the undertreatment of pain leads to decreased quality of life for residents and increased utilization and costs of health care resources (Horgas, 2017).

In an effort to change practice in pain management and to improve resident outcomes, LTC organizations are taking measures to decrease the percentage of residents experiencing pain within their facilities. However, the implementation of evidence-based clinical guidelines and quality improvement initiatives has produced little enhancement in pain outcomes for seniors in LTC. Research suggests that the translation of such evidence into clinical practice has been substandard, at best (Andrews et al., 2019; Long, 2013; Hadjistavropoulos et al., 2009).

This evidence-practice gap holds true within Eastern Health's Long Term Care (EHLTC) program in St. John's, Newfoundland. In late 2018, as a RAI-MDS Coordinator within EHLTC, I was part of an initiative to improve the quality of pain assessment and management throughout the organization's LTC facilities. The initiative was implemented in response to suboptimal pain prevalence rates among LTC residents, as reported by the Canadian Institute for Health Information (CIHI, 1996-2021). In the year 2017-2018, 14.9% of residents in EHLTC experienced pain, while 11.5% experienced worsened pain. This was above the national average of 7.2% for residents experiencing pain and 10.2% for residents experiencing worsened pain in the same year. The introduction of standardized pain assessment tools was at the forefront of the

initiative, as previous chart audits and environmental scans had revealed the absence of such tools from clinical practice. Pain assessment is a critical first step in effective pain management and standardized tools reduce the subjectivity of assessment outcomes (Gregory & Richardson, 2014; Jablonski & Ersek, 2009). Preliminary chart audits have since shown that the uptake of pain assessment tools in daily practice has been limited. After discussions with Resident Care Managers (RCMs), and front-line Registered Nurses (RNs) and Licensed Practical Nurses (LPNs), about the importance of pain assessment, the next step of the initiative is to reevaluate the prevalence of the use of pain assessment tools in the clinical setting. Hence, for my MSN practicum project, I have chosen to evaluate if there has been a change in the utilization rates of the tools, and, ultimately, if the initiative has impacted the prevalence of pain among LTC residents in St. John's.

With pain being such a significant factor in the overall quality of life for LTC residents, it is crucial to understand what interventions are effective in improving pain outcomes and the factors that impact the implementation of such interventions into routine clinical practice. Interdisciplinary approaches to pain improvement efforts in LTC, together with staff education and the use of standardized pain assessment tools are all crucial to relieving pain and increasing quality of life for LTC residents. The most significant barriers to the successful integration of evidence-based pain management guidelines into LTC clinical settings include residents' reluctance to report pain and to take pain medications, inadequate staff knowledge, poor documentation and communication among staff, as well as time constraints and insufficient staffing resources (Brunkert et al., 2020; Parkman et al., 2021; Veal et al., 2018). This integrative literature review will further examine these interventions and barriers as an essential first step in laying the foundation for a formal evaluation of pain assessment and management in EHLTC

facilities. The evidence will then be used to design an evaluation plan for four LTC facilities in St. John's.

Background

Pain is defined as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage" (International Association for the Study of Pain [IASP], 2020). Several key notes accompany this definition, two of which are integral to the effective assessment of pain. First, pain is a subjective experience that varies among individuals, according to differing biological, psychological, and social influences. Second, verbal report is not the sole method of expressing pain. Hence, the absence of verbal communication of pain does not mean that it is not present (Raja et al., 2020).

Although self-report is considered the 'gold standard' for identifying the presence, location, intensity, and duration of pain, cognitive impairment is common among LTC residents, often compromising their ability to verbally express pain experiences (Horgas, 2017). The inability to verbalize pain has been identified as a common barrier to assessing pain in cognitively impaired, elderly individuals (Egan and Cornally, 2013). However, the use of observational pain assessment instruments are reliable in determining the presence and intensity of pain in this population (Horgas, 2017). In a high-quality, cross-sectional descriptive study by Lukas et al. (2013), results indicated significant correlations between observer-rated and self-rated measures of pain in both cognitively well and cognitively impaired LTC residents, illustrating the validity and reliability of observational approaches to pain assessment.

Furthermore, comprehensive pain assessment is a crucial first step to the overall management of pain in LTC residents (Horgas, 2017). Kaasalainen et al. (2012) and Kaasalainen et al. (2016) conducted high-quality, controlled before-after (CBA) studies to determine the

impact of pain improvement protocols on the prevalence of pain assessment and pain outcomes among LTC residents. Results showed that as the use of standardized pain assessment tools increased, resident pain outcomes also improved. This illustrates that thorough assessment of pain is imperative to managing pain experiences in the LTC resident population.

EHLTC has adopted the use of several pain assessment instruments. For residents who are able to verbally report their pain experiences, organizational policy requires the use of the PQRST method of pain assessment (Jacobs et al., 2016). The PQRST acronym offers a means for healthcare providers to recall specific elements that are important to a thorough examination of pain. The method assesses provoking or precipitating and relieving factors, quality or description of the pain, radiation, severity, and timing (Booker & Keela, 2016). Once a baseline assessment has been obtained, staff are then expected to use the Numeric Rating Scale (NRS), as needed, to reevaluate pain severity (Jacobs et al., 2016). The NRS is a commonly used tool in which individuals are asked to select a number between 0 and 10, with 0 being no pain and 10 being the worst possible pain, to rate their pain intensity (Booker & Keela, 2016). For residents who are unable to self-report, EHLTC endorses the use of the Pain Assessment in Advanced Dementia (PAINAD) Scale (Jacobs et al., 2016). The PAINAD is an observational tool, developed by Warden et al. (2003), and focuses on five pain behaviors, including breathing, vocalization, consolability, facial expression, and body posturing. Each behavior is assigned a score ranging from 0 (not present) to 2 (completely present) for a total score of 0 to 10, with 1-3 being mild pain, 4-6 moderate pain, and 7-10 severe pain. The tool has been shown to possess good validity and reliability, while being easy to administer and adequate in the detection of pain and its intensity in the cognitively impaired elderly population (Lukas et al., 2013; Mosele et al., 2012).

In the fall of 2018, the PQRST method, the NRS and the PAINAD were introduced to front-line RNs and LPNs throughout four EHLTC facilities through PowerPoint presentations, followed by live demonstrations of the use of the instruments in the electronic documentation system. In addition, the organizational policy was reviewed, outlining when pain assessments were to be completed. Despite these efforts, documentation audits have shown that regular comprehensive pain assessment is lacking in routine clinical practice. This finding is congruent with the significant evidence-practice gap that was identified in a study conducted by Jablonski & Ersek (2009). Through a retrospective audit of 291 residents of 14 LTC facilities in Washington, D.C., the authors found that adherence to evidence-based pain assessment guidelines was low. Results showed that although all of the residents in the study had identified pain, 15% of charts had no evidence of pain assessment in the previous 30 days. The authors also noted that significant components of a comprehensive pain assessment, including location, quality, and intensity of pain, were also lacking.

In order to eliminate suffering and to improve quality of life for residents, we need to improve our understanding of the barriers to implementing best practice guidelines regarding the management of pain in LTC. To greater comprehend this important issue, this integrative literature review will discuss the evidence surrounding the effectiveness of efforts to improve LTC residents' experiences of pain, including factors that affect their outcome. The literature will be critically appraised and relevant conclusions will be drawn to improve our understanding of how to best integrate pain management guidelines into LTC clinical settings.

Method

A comprehensive literature search was conducted to answer two key research questions: Are interventions to improve pain assessment and management in LTC effective and what

factors affect the successful implementation of efforts to improve pain management in LTC? Searches were performed using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and Google Scholar databases. The search took place from September to October 2021. Key search terms included “pain assessment”, “pain assessment tools”, “pain improvement initiatives”, “effectiveness”, “barriers’, “long term care”, and “nursing homes.” The search was limited to journal articles published in English after 2011 to ensure the retrieval of up to date, credible evidence. Initial searches were restricted to studies published within North America. However, this yielded a limited literature base specific to the focus of this review and hence, the geographical restriction was eliminated. In order to be consistent with the setting of the practicum project, articles were excluded if they focused on pain among recipients of home care services rather than residents of LTC facilities or nursing homes. In addition, articles that centered on in-depth examination of specific pain assessment tools were not included due to their limited relevance to the research questions.

A total of 72 articles were identified using the above search terms and criteria. Abstracts were then read and analyzed for inclusion. After further application of the inclusion and exclusion criteria, only 22 articles remained. An additional 10 articles were removed due to their irrelevance to the focus of the review and the inability to retrieve the full text, leaving 12 studies to be included (see Appendices A and B for literature summary tables). These studies were evaluated, using the Public Health Agency of Canada (PHAC, 2014) critical appraisal tool kit and the Critical Appraisal Skills Programme (CASP, 2018) checklist, to ensure the inclusion of good quality information. Further reading of these articles was completed, and the body of evidence is summarized and presented below.

Overview of the Literature

Of the 12 studies chosen for inclusion, one had a cross-sectional descriptive design (Egan & Cornally, 2013); three used randomized controlled trial (RCT) designs (Ghandehari et al., 2013; Mamhidir et al., 2017; Rostad et al., 2018); three were CBA designs (Hadjistavropoulos et al., 2014; Kaasalainen et al., 2012; Kaasalainen et al., 2016); two were uncontrolled before-after (UCBA) studies (Long, 2013; Saavas et al., 2014); and three were qualitative designs including focus group and interview methodologies (Brunkert et al., 2020; Parkman et al., 2021; Veal et al., 2018). Quantitative studies were critically appraised using the PHAC (2014) critical appraisal toolkit. Qualitative literature was appraised using the CASP (2018) checklist. Overall evidence was medium quality and moderate design strength. Studies took place within Canada (Ghandehari et al., 2013; Hadjistavropoulos et al., 2014; Kaasalainen et al., 2012; Kaasalainen et al., 2016), the United States (Long, 2013; Parkman et al., 2021), Australia (Saavas et al., 2014; Veal et al., 2018), Ireland (Egan & Cornally, 2013), Norway (Rostad et al., 2018), Sweden (Mamhidir et al., 2017), and Switzerland (Brunkert et al., 2020).

Two main themes to address the key research questions were derived from the evidence. The themes were: i) clinical effectiveness of interventions to improve pain management, and ii) factors that affect the assessment and management of pain. Each main theme was further divided into several sub-themes. The evidence to support these themes is presented in the next section.

Clinical Effectiveness of Interventions to Improve Pain Management

Clinical effectiveness is defined as the extent to which an intervention achieves its intended effect in routine clinical practice (Burches & Burches, 2020). Examining the outcomes of efforts to improve pain assessment and management in LTC is crucial to determining the value of such endeavors. There were eight studies deemed relevant to this theme. Findings were

further divided into subthemes according to phenomenon of interest and include both resident and practice-related outcomes. Resident-related outcomes consist of pain level, functional status and quality of life, and medication use, while practice-related outcomes include staff knowledge and the use of pain assessment tools. Studies are appraised individually below. Given the abundance of tools used to measure the outcomes of interest in each study, specific results can be found in the literature summary tables in Appendix A.

Resident-Related Outcomes

Pain Level. Five studies explored the effectiveness of various pain improvement initiatives in reducing resident pain scores (Kaasalainen et al., 2012; Kaasalainen et al., 2016; Mamhidir et al., 2017; Rostad et al., 2018; Savvas et al., 2014). While these studies were of strong (Mamhidir et al., 2017; Rostad et al., 2018), moderate (Kaasalainen et al., 2012; Kaasalainen et al., 2016), and weak (Savvas et al., 2014) design strengths, they were all found to be methodologically sound and of medium (Mamhidir et al., 2017; Rostad et al., 2018; Savvas et al., 2014) to high (Kaasalainen et al., 2012; Kaasalainen et al., 2016) quality. With the exception of the study by Rostad et al. (2018), which included only LTC residents with dementia, participants in all other studies included residents with and without cognitive impairment. All studies used valid and reliable pain assessment instruments, in accordance with the cognitive abilities of participants, and displayed appropriate analysis of results.

The studies by Kaasalainen et al. (2012), Kaasalainen et al. (2016), and Savvas et al. (2014) all used interdisciplinary pain teams and staff education as the intervention. Kaasalainen et al. (2012) and Kaasalainen et al. (2016) used advanced practice nurses (APNs) to lead the pain teams in their intervention groups. Kaasalainen et al. (2016) also included a partial intervention group, which consisted of a pain team with no APN-lead. Kaasalainen et al. (2012) measured

resident pain levels using three assessment instruments: Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC), Pain Assessment in the Communicatively Impaired Elderly (PACI), and Present Pain Intensity (PPI). The PACSLAC, PACI, and PPI were also used by Kaasalainen et al. (2016), along with the NRS. Savvas et al. (2014) used four different tools, including Resident's Verbal Brief Pain Inventory (RVBPI), Abbey Pain Scale, PAINAD, and Non-Communicative Patient's Pain Assessment Instrument (NOPAIN). All studies used chart audits to determine differences in pain scores at baseline and after 12 months. Statistically significant results were found in all three studies. Kaasalainen et al. (2012) found that mean pain scores increased significantly more for the control group than the intervention group. Likewise, Kaasalainen et al. (2016) found that mean pain scores decreased significantly more for both the intervention and partial intervention groups in comparison to the control group. Similarly, Savvas et al. (2014) found a significant reduction in resident pain scores from baseline to post intervention.

In contrast to the above findings, Mamhidir et al. (2017) and Rostad et al. (2018) found no statistically significant results in their evaluations of the effectiveness of pain management interventions on resident pain scores. Both studies implemented a protocol consisting of regular, systematic pain assessment over the course of 12 weeks (Rostad et al., 2018) and six months (Mamhidir et al., 2017). Chart audits were conducted to determine differences in pain scores between intervention and control groups at baseline and post intervention. According to Rostad et al. (2018), although no significant changes in pain scores were found, evidence was not sufficient to infer that the regular use of pain assessment tools is not clinically pertinent. Since the intervention consisted of only observational pain assessment, it is possible that changes in

residents' behavior could have been misinterpreted by staff as having been caused by reduced cognitive function as opposed to an indication of pain.

Given the above results, it can be concluded that education related to pain assessment alone is not suffice, as evidenced in the studies by Mamhidir et al. (2017) and Rostad et al. (2018). However, when the establishment of pain teams was combined with staff education in the studies by Kaasalainen et al. (2012), Kaasalainen et al. (2016), and Savvas et al. (2014), significant improvement in resident pain scores resulted. It appears that the implementation of multidisciplinary pain teams to guide pain management protocols can be an effective means of improving pain outcomes for LTC residents.

Functional Status and Quality of Life. Poorly managed pain can have negative impacts on the functional status and quality of life of LTC residents (Herman et al., 2009; Herr, 2011). Functional status is defined as an individual's ability to perform activities of daily living (ADLs) and to maintain their overall health and well-being (Wang, 2004). The World Health Organization Quality of Life Group (WHOQOL, 1995) defines quality of life as "an individual's perception of his or her position in life in the context of the culture and value system where they live, and in relation to their goals, expectations, standards and concerns" (p. 3). Two studies (Mamhidir et al. (2017; Kaasalainen et al., 2016) examined the effect of pain assessment practices on ADL dependency, mental well-being, depression, and agitation among LTC residents. The studies were of moderate (Kaasalainen et al., 2016) to strong design strength (Mamhidir et al., 2017) and rated medium (Mamhidir et al., 2017) to high (Kaasalainen et al., 2016) quality. Both studies used valid and reliable measurement tools and appropriate analysis of results.

Interventions included an APN-led, interdisciplinary pain management team by Kaasalainen et al. (2016), and theoretical and practical training, and systematic pain assessment by Mamhidir et al. (2017). Controls groups continued with care as usual. Intervention periods were six months (Mamhidir et al., 2017) and 12 months (Kaasalainen et al., 2016). Kaasalainen et al. (2016) used the Older Americans Resources and Services (OARS) scale to assess functional status, the Cornell Scale for Depression in Dementia (CSDD) and the Cohen-Mansfield Agitation Inventory (CMAI) to measure depression and anxiety, respectively. Mamhidir et al. (2017) measured ADL dependency using the Katz-ADL hierarchy scale, while resident well-being was measured by using the Quality of Life in Late-Stage Dementia (QUALID) Scale and the World Health Organization-Five Well-Being Index (WHO-5). Chart audits were conducted to determine the effects of the protocols at baseline and post intervention.

Kaasalainen et al. (2016) found a significant improvement in functional status in the intervention and partial intervention groups in comparison to the control group, while Mamhidir et al. (2017) found a significant increase in ADL dependency in the control group compared to the intervention group. Both studies found no statistically significant differences in well-being, depression, or agitation within groups or between intervention and control groups over the course of the interventions. These findings suggest that an increased awareness of pain could lead to improved pain management and maintenance of functional status among residents. It is possible that even if pain management is altered, more focused interventions could be needed to address the unique needs of residents suffering from psychological illnesses, as evidenced by the insignificant differences between groups in terms of well-being, depression, and agitation (Mamhidir et al., 2017; Kaasalainen et al., 2016).

Medication Use. Three studies explored the effect of pain improvement efforts on analgesic and psychotropic medication use in LTC residents (Hadjistavropoulos et al., 2014; Rostad et al., 2018; Savvas et al., 2014). While the studies varied from strong (Rostad et al., 2018), moderate (Hadjistavropoulos et al., 2014), to weak (Savvas et al., 2014) designs, they were all methodologically sound and of medium quality. Although Hadjistavropoulos et al. (2014) used a small sample size, it was adequate to produce statistically significant results. Measurement tools were of good validity and reliability and analysis of results was appropriate.

Interventions in all studies included regular, standardized pain assessments. However, Hadjistavropoulos et al. (2014) also utilized a study physician to communicate sustained, elevated pain scores to residents' physicians over the course of the intervention. The study physician collaborated with residents' physicians on decisions about treatment plans. The control groups in the studies by Hadjistavropoulos et al. (2014) and Rostad et al. (2018) proceeded with care as usual, while Savvas et al. (2014) did not use a control group. Intervention periods were 12 weeks (Rostad et al., 2018), three months (Hadjistavropoulos et al., 2014), and 12 months (Savvas et al., 2014). Hadjistavropoulos et al. (2014) and Savvas et al. (2014) used the Medication Quantification Scale to monitor medication regimens, while Rostad et al. (2018) analyzed oral morphine equivalents (OMEQ) and paracetamol.

Saavas et al. (2014) reported a significant increase in the prevalence of analgesic use for residents from baseline to post intervention, indicating that the regular assessment of residents' pain levels resulted in measures to relieve pain experiences. Contrarily, Hadjistavropoulos et al. (2014) and Rostad et al. (2018) reported no significant differences in analgesic use between intervention and control groups. Hadjistavropoulos et al. (2014), however, did report that at the end of the intervention, residents in the assessment group were receiving significantly lower

amounts of benzodiazepine medication compared to those in the control group. The authors concluded that regular assessment of pain and communication of results to residents' physicians resulted in more appropriate prescribing of medication. When pain was identified, underlying causes were investigated and treated accordingly, reducing the administration of unnecessary medication and polypharmacy. The weak design and lack of a control group in the study by Saavas et al. (2014) is of importance to note. The inclusion of a control group would have allowed for comparisons of the effectiveness of the intervention, thus strengthening the study's results.

Overall, the preceding studies were of moderate quality and produced evidence of positive resident outcomes in terms of pain level, functional status, and medication use. The use of pain improvement initiatives in LTC appears to be promising to the improvement of pain assessment and management as well as to the maintenance of functional status among residents. Although two studies (Mamhidir et al., 2017; Rostad et al., 2018) showed no significant improvement in pain scores between intervention and control groups after the implementation of pain assessment interventions, both studies could not rule out diffusion across groups. Additionally, one study (Rostad et al., 2018) used only an observational pain assessment tool which could potentially result in inaccurate reflections of pain experiences. Further studies are needed to determine if efforts to enhance pain management impacts outcomes related to depression, agitation, and well-being of LTC residents.

Practice-Related Outcomes

Staff Knowledge. Knowledge, skills, and beliefs of care staff have a significant impact on the implementation of evidence-based practice (Yoo et al., 2019). Two studies examined staff knowledge, attitudes, and beliefs before and after education about pain management in LTC

residents (Ghandehari et al., 2013; Long, 2013). The study by Long et al. (2013) had a weak design and its quality was rated as medium. In addition to the absence of a control group, the study used a convenience sample with less than 80% of participants completing the study due to downsizing of the facility near the end of the intervention period. Nonetheless, the overall findings were positive and were corroborated by the work of Ghandehari et al. (2013) through a study of strong design and quality. Incorporating a control group and random assignment allowed the authors to overcome some of the challenges of Long's (2013) work and to better attribute the study's results to the pain education intervention.

Both interventions consisted of staff education sessions related to various components of pain management, including pain assessment, person-centered care, influence of pain on residents' behavior, and pharmacological and nonpharmacological pain management. The control group in the study by Ghandehari et al. (2013) received broad education unrelated to pain management, whereas Long (2013) did not use a control group. Participants in the study by Ghandehari et al. (2013) included nurses and care aides, while nurses, care aides, social workers, and dietary professionals participated in the study by Long (2013). Follow up periods were 2 weeks (Ghandehari et al., 2013) and 6 months (Long, 2013). Both studies used questionnaires to assess pain knowledge and beliefs of staff at baseline and post intervention. Staff knowledge and attitudes were measured by Ghandehari et al. (2013) using the Pain Knowledge and Beliefs Questionnaire (PKBQ), the Modified Pain Beliefs Questionnaire (PBQ), and a session content knowledge test (SCKT). Long (2013) used the Pain Questionnaire for CNAs and the Pain Questionnaire for Professional Staff. All tools were reported to be of good validity and reliability.

Findings from both studies showed significant improvement in pain related knowledge and enhancement in attitudes about pain management for all staff. The authors concluded that pain management staff education programs are an important component in the overall assessment and management of pain in LTC. Addressing knowledge gaps and attitudes of staff is a crucial first step in creating a culture of change that supports evidence-based pain management (Ghandehari et al. 2013; Long, 2013).

Use of Assessment Tools. Pain assessment instruments should be used to detect and document pain experiences of LTC residents. Thorough pain assessment forms the foundation for effective pain management as failure to recognize pain results in under-treatment (Herr, 2011; Horgas, 2017). Two studies examined the use of pain assessment tools following the implementation of interdisciplinary pain protocols in LTC (Kaasalainen et al., 2012; Kaasalainen et al., 2016). Both studies had moderate designs and were of high quality.

Interventions in both studies included interdisciplinary pain teams, led by APNs (Kaasalainen et al., 2012; Kaasalainen et al., 2016), as well as pain education for staff. The intervention period in both studies was 12 months and chart audits were conducted to determine the frequency of pain assessments at baseline and post intervention. Results from both studies showed a significant increase in the prevalence of the use of pain assessment tools in the intervention group compared to the control group. As previously discussed, findings from both studies also revealed improved pain outcomes in residents following the implementation of the pain protocols (Kaasalainen et al. 2012; Kaasalainen et al., 2016). Since pain outcomes improved as the use of pain assessment tools increased, it can be inferred that standardized pain assessment is imperative to the management of pain in LTC residents.

Overall, the evidence from the preceding studies illustrates the effectiveness of efforts to improve pain management on clinical practice outcomes. Enhancing staff knowledge and attitudes concerning pain and adopting evidence-based assessment tools are critical steps in improving pain experiences in the LTC population. The evidence also has significant implications for APNs. The use of APNs to lead pain teams in the studies by Kaasalainen et al. (2012) and Kaasalainen et al. (2016) illustrates the value of the role of APNs in reducing pain in LTC residents. Due to their advanced clinical skills, training in staff development, and enhanced leadership capabilities, APNs are uniquely positioned to facilitate improvement in resident outcomes. In addition, physicians in Canada often provide service to multiple LTC facilities, placing great demand on their workload, often resulting in challenges to meet the everyday care needs of residents. APNs are well equipped to oversee resident care and to respond to resident pain issues in a timelier fashion (Kaasalainen et al., 2012; Kaasalainen et al., 2016).

Factors Affecting Pain Assessment and Management in LTC

The literature outlines a number of barriers to the successful implementation of pain assessment and management guidelines in LTC facilities (Ersek & Jablonski, 2014). There were 4 studies that explored the perceptions of staff in relation to the assessment and management of pain in LTC residents. Egan & Cornally (2013) conducted a quantitative cross-sectional, descriptive study, Veal et al. (2018) used a qualitative exploratory and descriptive design, and mixed-methods investigations were carried out by Brunkert et al. (2020) and Parkman et al. (2021). Only the qualitative portions were included in the examination of evidence for this section of the review. The qualitative components of the mixed methods studies included focus group and interview methodologies. Each of the 4 studies were critiqued using the CASP (2018) checklist and found to be suitable for inclusion. All studies obtained voluntary, informed consent

from participants and included clear explanations of data collection, analysis, and findings.

Brunkert et al. (2020) used focus groups with RNs, LPNs, and nursing assistants (NAs) to facilitate general discussion surrounding their perceptions of difficulties in pain assessment and management. Egan and Cornally (2013) used a self-report, multiple choice questionnaire to study barriers to optimal pain management as perceived by staff nurses and clinical nurse managers. In the study by Parkman et al. (2021), RNs and LPNs participated in one-on-one interviews designed to obtain information about their experiences with standardized pain assessment tools. Veal et al. (2018) conducted semi-structured interviews with nurses and facility managers to gain insight into how pain is assessed and what factors hinder pain management. An important limitation to the evidence is the non-participation of physicians in all of the above-mentioned studies. Since physicians are an integral part of the care team and most often responsible for the prescribing of treatments to address pain, it is important to obtain their views on barriers to pain management. Further research into the perspectives of physicians would help strengthen the understanding of hindrances to optimal pain outcomes for LTC residents. Identified barriers were sub-divided into resident-related, caregiver-related, and organizational factors and are discussed below.

Resident-Related Barriers

Cognitive Impairment/Communication Difficulties. Assessing pain in residents with communication deficits, related to cognitive impairment, was identified as a significant resident-level barrier. In the study by Egan and Cornally (2013), participants reported this as the most common barrier to pain management. Staff in the studies by Brunkert et al. (2020) and Parkman et al. (2021) specifically reported challenges in deciphering whether behavioral cues are related to pain or other unmet needs. Even with the use of observational assessment tools, staff

communicated difficulty in interpreting the meaning behind residents' behavior. In the study by Parkman et al. (2021), RNs and LPNs preferred the Abbey Pain Scale (APS) over the PAINAD for use in residents unable to self-report pain experiences. The APS is used to measure pain in individuals with late-stage dementia. Assessment is based on six categories: vocalization, facial expression, change in body language, behavioral change, physiological change, and physical changes. Each category is assessed on a four-point scale with 0 being absent, 1 mild, 2 moderate, and 3 severe. The total score ranges from 0 to 18, with 0-2 being no pain, 3-7 mild pain, 8-13 moderate pain, and 14+ severe pain (Brown, 2011). Participants felt that the APS was more useful in recognizing changes in resident behavior. This is an important consideration when integrating pain assessment tools into routine clinical practice. There are a number of validated observational pain tools approved for use in persons with cognitive impairment. Since no one tool has been universally accepted for pain assessment in this population (Parkman et al. 2021), gaining staff insight into which ones work best in their practice setting could assist in successful uptake and assist in the facilitation of their use in routine clinical practice.

Reluctance to Report Pain/Take Medications. Residents' reluctance to report pain and resistance to taking medications were also noted as barriers to optimal pain management (Brunkert et al., 2020; Egan & Cornally, 2013; Veal et al., 2018). This finding is corroborated by other literature which suggests that older adults may not report pain as they view it as a normal part of aging and do not want to bother care staff (Schofield, 2007). Fear of medication side effects and of addiction to certain pain medications have also been cited as rationale for the underreporting of pain in the elderly population (Herr, 2011). To overcome this barrier, it is essential for LTC staff to encourage residents to verbalize their pain experiences, when able. For residents who are unable to verbally communicate, staff must be tuned into observational cues

that could be indicative of pain (Egan & Cornally, 2013). In addition, it is crucial to educate residents and families about pain medications as well as nonpharmacological forms of intervention. This can help to reduce the underreporting of pain related to fears about pharmacological management. Staff education is of utmost importance in overcoming this resident-related barrier. Caregivers must possess sound knowledge of pain assessment and management in order to accurately inform residents. Inadequate staff knowledge is further discussed below.

Caregiver-Related Barriers

Staff Attitudes/Beliefs. Staff assumptions and preconceptions regarding pain were reported as major barriers to its assessment and management. Participants in the study by Brunkert et al. (2020) talked about instances where coworkers sometimes dismissed residents' reports of pain, attributing it to attention-seeking behavior. In addition, some caregivers, like residents, believe that pain is a normal part of aging and hence, do not always take complaints of pain seriously (Egan & Cornally, 2013). Parkman et al. (2021) reported that some nurses admitted to undertreating residents' pain due to preexisting concerns about opioids, including tolerance, physical dependence, addiction, adverse effects, and fear of overmedicating. Poor attitudes and inaccurate staff beliefs can be addressed through education as outlined below.

Inadequate Knowledge. As mentioned above, staff attitudes and beliefs are directly correlated to inadequate knowledge about pain and its management. In the study by Veal et al. (2018), most nurses reported that more pain-related education would be beneficial to staff, particularly in the areas of pain assessment, medication management, and nonpharmacological treatment. In the interviews conducted by Parkman et al. (2021), nurses stated that although they possessed some knowledge about pain from previous education, much of it had not been

retained. This finding suggests that ongoing education is an important consideration in the implementation of efforts to improve pain management in LTC.

Poor Documentation/Communication. Poor documentation and lack of communication among care staff were identified as further barriers to the optimal management of pain in LTC residents. According to Parkman et al. (2021), poor documentation was perceived as a communication challenge between nursing staff. Some nurses expressed frustration with staff of opposite shifts for failing to document pain experiences in residents' records as well as lack of communication in shift reports. Nurses felt that having pain episodes accurately documented served as a good form of communication and allowed for future reference of residents' pain experiences. Embedding documentation and communication guidelines into organizational policies and procedures at the beginning of pain improvement initiatives is a critical component of successful implementation (Ploeg et al., 2007).

Communication and collaboration between nursing staff and physicians is also an important consideration in the overall management of pain in LTC residents. In the study by Brunkert et al. (2020), nursing staff identified lack of communication with physicians as a barrier to optimal pain management. Participants reported that when residents are under the care of general practitioners outside of the LTC facility, these physicians are rarely present during unit rounds and can be difficult to reach. Other nurses felt that physicians who are regularly present in LTC facilities are not always receptive to exploring alternative options to pain management when prescribed treatments are ineffective. Some nurses reported that physicians often do not consider what is being reported to them by nursing staff, while others felt that physicians can be very reserved in their medication-prescribing practices (Veal et al., 2018). These findings suggest that including physicians in the planning and implementation of pain management efforts

is a key element in integrating changes into clinical practice. Ensuring that physicians are equipped with evidence-based knowledge and have a voice in pain management endeavors could contribute to their overall effectiveness.

Organizational Barriers

Time Constraints. Time restrictions were identified as the main barrier to pain assessment and management at the organizational level. Caregivers reported lack of time for proper pain assessment, for resident teaching, and for the implementation of nonpharmacological pain relief measures. Time constraints were attributed to heavy workloads, high resident to staff ratios, and high resident acuity (Brunkert et al., 2020; Egan & Cornally, 2013; Parkman et al., 2021). RNs in the study by Veal et al. (2018) expressed the desire to have more time for pain assessment and management, but identified competing priorities as a major impediment. Extending pain assessment to the role of unlicensed staff, particularly nursing assistants, is a worthwhile consideration when planning for pain improvement initiatives (Ersek & Jablonski, 2014). As these staff spend a considerable amount of time assisting with and performing daily resident care, they are well positioned to ask residents about pain and to observe for pain-related cues. Not only would this create more time for nurses to focus on the management aspect of pain, but it would also empower unlicensed staff to take an active role in the care team (Brunkert et al., 2020).

Staffing Resources/Staff Turnover. Another organizational barrier to effectively assessing and managing pain in LTC is inadequate staffing resources and high staff turnover. Caregivers in the study by Brunkert et al. (2020) identified low staffing resources and high turnover as a hindrance to care quality as it impedes the development of therapeutic relationships between staff and residents. Residents are more likely to discuss their pain experiences with staff

whom they feel comfortable with and have a sense of trust in. Moreover, effective pain assessment is often complemented by staff knowledge of residents, especially for those unable to self-report. Hence, new nurses who are unfamiliar with these residents tend to have more difficulty recognizing pain-related cues (Veal et al., 2018). Although staffing resources are more difficult to control as they often relate to budgeting constraints, it is an important component to consider when planning for changes in clinical practice. Designing guidelines that fit within the parameters of resource allocation is more likely to result in effective outcomes. Ensuring that new staff receive adequate education and training in pain assessment and management procedures is also key to the success of pain improvement initiatives.

Summary and Implications

This review has examined evidence surrounding the effectiveness of efforts to improve pain outcomes in LTC and attempted to gain insight into factors that influence the assessment and management of pain for residents. The inclusion of both quantitative and qualitative research, of multiple designs and methodology, provides a comprehensive summary of the complexity of achieving optimal pain relief for the LTC population.

The main themes outlined in this review are supported by other reviews of the literature, such as those carried out by Dirk et al. (2019) and Pringle et al. (2021). It is clear that efforts to improve pain-related outcomes in LTC can be effective in reducing pain levels for residents, as well as enhancing their functional status and quality of life (Kaasalainen et al., 2012; Kaasalainen et al., 2016; Mamhidir et al., 2017; Savvas et al., 2014). In addition, interventions to improve pain assessment have been shown to increase analgesic use and reduce the administration of unnecessary medications and polypharmacy (Hadjistavropoulos et al., 2014; Savvas et al., 2014). As previously mentioned, further examination of the literature is required to

determine the effect that pain management has on mental well-being and psychological disorders, such as depression and anxiety (Mamhidir et al., 2017; Kaasalainen et al., 2016). It is also clear that training staff in the assessment and management of pain increases overall knowledge and enhances pain-related attitudes and beliefs (Ghandehari et al., 2013; Long, 2013). Moreover, pain education and skills training has shown to result in increased use of standardized pain assessment tools, which is an integral first step to recognizing pain in LTC residents (Kaasalainen et al. 2012; Kaasalainen et al., 2016).

This review has revealed many barriers to the successful implementation of clinical practice guidelines surrounding pain management in LTC. Resident related barriers include communication difficulties related to cognitive impairment, and reluctance to report pain and to take medications (Brunkert et al., 2020; Egan & Cornally, 2013; Parkman et al., 2021). The most common barriers at the caregiver level are inadequate knowledge, and poor documentation and communication (Brunkert et al., 2020; Parkman et al., 2021; Veal et al., 2018). At the organizational level, the most significant hindrances have been identified as time constraints, and staffing resources and turnover (Brunkert et al., 2020; Veal et al., 2018). Understanding factors that influence the implementation of pain management guidelines and taking steps to overcome identified obstacles is critical to the planning of strategies that are effective and sustainable (Ploeg et al., 2007). Ensuring that staff receive the necessary education to assess and manage pain, and that this knowledge is shared with residents and families is a critical component to improving pain outcomes in LTC. Efforts to change pain management practices must include all members of the care team and incorporate clear documentation and communication guidelines for staff. The use of APNs, who are well-equipped to lead pain teams and to oversee resident care, is also an important consideration in the facilitation of best practice guidelines into routine

clinical practice. Moreover, health authorities should take caution to develop protocols that can be realistically implemented in relation to existing staffing resources and the hectic schedules of front-line caregivers.

Conclusion

Pain is an intricate problem in LTC facilities and necessitates the implementation of multidimensional interventions to improve the overall quality of life for residents. Numerous resources, including clinical practice guidelines, standardized assessment tools, and educational materials, are available to assist in the quality improvement of pain assessment and management for LTC residents. Nonetheless, best approaches to ensure successful integration of evidence-based pain knowledge into clinical practice remain largely undefined (Ploeg et al., 2007).

This review has formed the foundation for the evaluation of a pain assessment and management quality improvement initiative in EHLTC. Gaining an understanding of the factors that impede the success of pain improvement efforts provides a solid base to guide the consultation component of the practicum project. Understanding the evidence and comparing it to consultation results will assist in the development of an evaluation plan, customized to the four LTC facilities identified for the practicum. It is the intent that this evaluation will allow for recommendations to EHLTC, in hopes of improving pain-related outcomes and overall quality of life for residents.

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Appendix A: Literature Tables (Quantitative Studies)

Study/Design	Methods	Key Results	Comments

Authors:
Egan & Cornally (2013)
 	
Design:
Cross-sectional, descriptive
 	
Purpose:
To identify barriers to optimal pain management in LTC from a nursing perspective
	N: 138 staff nurses and clinical nurse managers (5 facilities)
	
	Country: Ireland
	
	Data Collection:
	• Self-report questionnaire
	• Multiple choice and Likert scale; validity & reliability (V&R) good
	• Looked at caregiver, patient, and organizational barriers to pain management
	
	Analysis:
	• Mean scores (M) and standard deviations (SD) calculated per barrier category
	• No use of regression or correlation coefficient reported
		Patient barriers rated highest:
		• Difficulty assessing pain due to cognitive impairment:
		  • M=4.90; SD=1.28
		• Older patients' difficulty completing pain scales:
		  • M=4.77; SD=1.16
		
		Organizational barriers rated 2nd highest:
		• Lack of opportunity to discuss pain management with palliative care team:
		  • M=3.74; SD=1.86
		• Inadequate time for health teaching with patients:
		  • M=3.71; SD=1.64
		
		Caregiver barriers rated lowest:
		• Antipsychotics considered before pain medication in agitated patients:
		  • M=3.44; SD=1.59
		• Physicians reluctance to prescribe adequate pain relief:
		  • M=3.39; SD=1.54
			Strength of Design: **Weak**
			
			Quality: **Medium**
			
			Issues:
			• Small-scale study
			• Convenience sample
			• One method of data collection

Study/Design	Methods	Key Results	Comments
Authors: Ghandehari et al. (2013) Design: Randomized controlled trial (RCT) Purpose: To investigate the effectiveness of a pain education program on improving staff knowledge and beliefs/attitudes concerning pain assessment/management in LTC residents	N: 131 LTC staff members (nurses and special care aids; 2 large health regions) • Participants randomly assigned to 1 of 12 groups (6 groups to intervention, 6 to control) Country: Canada Intervention group (IG): • 6 groups (# of staff not specified) • Pain assessment/management education sessions Control group (CG): • 6 groups (# of staff not specified) • Broad education unrelated to pain assessment/management Data Collection: • Questionnaires to assess pain knowledge, beliefs, and education session content knowledge were administered at baseline (T1) and after 2 weeks (T2)	• Increased knowledge and enhanced attitudes about pain management among staff of IG compared to CG: **PKBQ:** **CG:** M=43.22 SD=7.43 (T1); M=43.14 SD=7.01 (T2) **IG:** M=42.64 SD=5.85 (T1); M=37.68 SD=6.79 (T2) • p<0.001 (IG vs CG) **PBQ:** **CG:** M=17.08 SD=3.24 (T1); M=17.04 SD=3.37 (T2) **IG:** M=17.27 SD=3.65 (T1); M=18.46 SD=3.35 (T2) • p=0.009 (IG vs CG) **SCKT:** **CG:** M=10.95 SD=2.25 (T1); M=11.52 SD=2.34 (T2)	Strength of Design: **Strong** Quality: **High** Issues: • Assessors not blinded to participant groups

Study/Design	Methods	Key Results	Comments
	• Pain knowledge assessed using Pain Knowledge and Beliefs Questionnaire (PKBQ), pain beliefs measured with Modified Pain Beliefs Questionnaire (PBQ), and education session content knowledge assessed using session content knowledge test (SCKT); V&R good Analysis: Mixed model ANOVAs used to test differences between IG and CG	**IG:** M=11.57 SD=2.34 (T1); M=13.90 SD=2.73 (T2) • p<0.001 (IG vs CG)	
Authors: Hadjistavropoulos et al. (2014) Design: Controlled before-after (CBA) Purpose: To determine whether a pain assessment protocol (regular, standardized pain assessments) supplemented with communication of assessment results to physicians) affects prescribing of analgesic and psychotropic medication in LTC residents	N: 65 residents (2 facilities) Country: Canada IG: • 36 residents (1 facility) • Pain assessment protocol CG: • 29 residents (separate facility) • No pain assessment protocol Data collection: • Chart audits to assess medication regimens for residents with non-malignant,	• Mean amounts of regularly scheduled benzodiazepines post intervention lower for IG compared to CG: • **IG:** M=0.15; SD=0.46 • **CG:** M=0.44; SD=0.92 • p<0.05 (IG vs CG) • No significant difference in mean amounts of analgesics between groups • **IG:** M=0.41; SD=0.50 • **CG:** M=0.56; SD=0.51	Strength of Design: **Moderate** Quality: **Medium** Issues: • Small sample size • Less than 80% of participants completed study

Study/Design	Methods	Key Results	Comments
	chronic pain at baseline (T1) and after 3 months (T2) • Regimens monitored using the Medication Quantification Scale Version III (MQS III); V&R good Analysis: • Analyses of Variance (ANOVA) used to examine differences in regimens between IG and CG for analgesics and benzodiazepines	• p>0.05 (IG vs CG)	
Authors: Kaasalainen et al. (2012) Design: Controlled before-after (CBA) Purpose: To determine the effectiveness of an interdisciplinary pain protocol (pain education for staff; implementation of pain team) in reducing residents' pain and improving frequency of documentation of pain assessments in LTC	N: 200 residents (4 facilities) Country: Canada Intervention group (IG): • 99 residents (2 facilities) • Pain protocol Control group (CG): • 101 residents (2 different facilities) • No pain protocol Data collection: • Chart audits to determine pain scores and frequency of pain assessments at baseline (T1) and after 12 months (T2)	**Resident Pain:** • Pain increased significantly more for CG than IG using PACSLAC and PACI, but not PPI. • Differences in mean pain scores before and after intervention: **PACSLAC:** • Activity: F=6.35; p=0.013 • Rest: F=4.43; p=0.037 **PACI:** • Activity: F=9.33; p=0.003 • Rest: F=5.00; p=0.027	Strength of Design: **Moderate** Quality: **High** Issues: • Convenience sample • 30% dropout rate (due to resident deaths)

Study/Design	Methods	Key Results	Comments
	• Pain measured using Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC), Pain Assessment in the Communicatively Impaired Elderly (PACI), and Present Pain Intensity (PPI) scale with activity and at rest; V&R good Analysis: • Analysis of covariance used to examine differences in resident pain between groups • Differences between IG and CG for frequency of pain assessments calculated for positive change only	**PPI:** • Activity: F=0.70; p=0.404 • Rest: F=0.09; p=0.770 **Frequency of pain assessments:** • Significantly more positive changes in mean use of standardized pain assessment tools in IG compared to CG: • **IG**: M=19; SD=27.1 • **CG**: M=7; SD=9.9 $\chi 2$=7.00; p=0.009	
Authors: Kaasalainen et al. (2016) Design: Controlled before-after (CBA) Purpose: To determine the effectiveness of a NP-led, interdisciplinary pain management team in improving resident pain-related outcomes (pain scores, depression, agitation,	N: 345 residents (3 facilities) Country: Canada Intervention group (IG): • 139 residents (1 facility) • NP-led pain team Partial intervention group (PIG): • 108 residents (2nd facility) • NP but no pain team Control group (CG):	**Pain scores:** • Pain decreased during activity and at rest for both IG and PIG using all tools except for PPI score at rest for IG and PACI at rest for PIG • Changes in mean pain scores over intervention period (T3-T1): **NRS:**	Strength of Design: **Moderate** Quality: **High** Issues: • Lack of randomization of facilities to intervention or control groups

Study/Design	Methods	Key Results	Comments
functional status) and documentation of pain assessments in LTC residents	• 98 residents (3rd facility) • No NP and no pain team Data collection: • Chart audits to determine pain scores, indicators of depression, agitation, functional status, and prevalence of documented pain assessments at baseline (T1), after 6 months (T2), and after 12 months (T3) Measurement: • **Pain scores**: NRS, PPI, PACI, and PACSLAC with activity and at rest • **Depression**: Cornell Scale for Depression in Dementia (CSDD) • **Agitation**: Cohen-Mansfield Agitation Inventory (CMAI) • **Functional status**: Older Americans Resources and Services (OARS) • Good V&R of tools • **Frequency of pain assessments:** T3-T1 Analysis:	CG vs PIG: p=0.029 activity; p=0.006 rest CG vs IG: p=0.007 activity; p=0.013 rest **PPI:** CG vs PIG: p=0.010 activity; p=0.003 rest CG vs IG: p=0.013 activity; p=0.115 rest **PACI:** CG vs PIG: p=0.001 activity; p=0.127 rest CG vs IG: p=0.001 activity; p=0.002 rest **PACSLAC:** CG vs PIG: p=0.042 activity; p=0.002 rest CG vs IG: p=0.001 activity; p=0.010 rest **Depression**: • No significant differences in mean CSDD scores: p=0.113 (PIG vs CG); p=0.368 (IG vs. CG) **Agitation:**	• 25-30% dropout rate (due to resident deaths)

Study/Design	Methods	Key Results	Comments

	• Multilevel modeling analysis used to compare pain-related outcomes among groups
	• Differences between IG and CG for frequency of standardized pain assessments calculated for positive change only
		• No significant differences in mean CMAI scores: p=0.190 (PIG vs CG); p=0.515 (IG vs CG)
		
		Functional status:
		• Significant improvement in mean OARS scores in PIG vs CG and IG vs CG: p<0.001 (PIG vs CG); p=0.002 (IG vs CG)
		
		Frequency of pain assessments:
		• Significantly more positive changes in mean use of standardized pain assessment tools in IG compared to CG:
		  • **IG**: M=16; SD=15
		  • **CG**: M=3; SD=2
		  • $\chi 2$=12.46; p=0.010	

Author: Long (2013) Design: Uncontrolled before-after (UCBA) Purpose:	N: 91 LTC staff members (RNs, LPNs, CNAs, social workers, dietary professionals) of 1 facility Country: United States • No control group; participants served as their own controls	**Knowledge:** • Significant improvement in knowledge of CNAs: Correct # of knowledge questions: M=6.9 (58%) T1; M=7.8 (65%) T2 • t=-1.965; p=0.04	Strength of Design: **Weak** Quality: **Medium** Issues: • Small, convenience sample

Study/Design	Methods	Key Results	Comments

To determine if staff education and training in pain management improves knowledge and attitudes of staff caring for LTC residents	• Intervention included staff education sessions on various components of pain assessment/management
	
	Data Collection:
	• Questionnaires to assess pain knowledge and attitudes were administered at baseline (T1) and after 6 months (T2)
	• Knowledge was assessed using the Pain Questionnaire for CNAs (CNA Survey) and the Pain Questionnaire for Professional Staff (Professional Survey); V&R good
	• Attitudes were assessed using a 5-point Likert scale; good Cronbach's alpha (0.7)
	
	Analysis:
	• Generalized linear model of analysis used to calculate difference in percentage of knowledge items correct between CNAs and professional staff
		• Marginal improvement in knowledge of professional staff:
		Correct # of knowledge questions increased from 10 to 15 (50%)
		  • t=-1.325; p=1.0
		
		• Significant improvement in knowledge overall:
		  • F=12.26; p=0.002
		
		Attitudes:
		• Significant difference in attitudes of CNAs and professional staff:
		  • F=6.273; p=0.02
			• Less than 80% of participants completed the study

Authors: Mamhidir et al. (2017) Design:	N: 269 residents (10 facilities) Country: Sweden	**Pain/Well-being:** No significant differences between IG and CG; Median (Q1, Q3)	Strength of Design: **Strong** Quality: **Medium**

Study/Design	Methods	Key Results	Comments
Cluster-RCT <u>Purpose:</u> To determine the effects of a pain management intervention (theoretical/practical training and systematic pain assessment) on pain scores, well-being, and ADL dependency in LTC residents	<u>Intervention group (IG):</u> • 154 residents (6 facilities) • Pain management intervention <u>Control group (CG):</u> • 115 residents (4 facilities) • Usual care <u>Data Collection:</u> Chart audits to determine pain scores, indicators of well-being, and ADL dependency at baseline (T1), after 1 month (T2), and after 6 months (T3) <u>Measurement:</u> • **Pain scores:** NRS, Dolplus-2 scale • **Well-being:** QUALID-scale, WHO-5 wellbeing index • **ADL dependency:** Kats-ADL hierarchical scale • V&R of tools good <u>Analysis:</u> • Generalized estimating equation (GEE) models, controlling for baseline values	**NRS:** **IG:** 3 (1.0-5.25) T1; 2 (0-5.5) T3 **CG:** 3 (1-6) T1; 4 (1-6) T3 • p=0.309 **QUALID:** **IG:** 21 (17-27) T1; 22 (17-28 T3 **CG:** 23.5 (17.25-29.75) T1; 22.5 (17.0-27.75) T3 • p=0.733 **WHO-5:** **IG:** 64 (50-80) T1; 68 (46-83) T3 **CG:** 76 (56-88) T1; 76 (64-88 T3 • p=0.683 **ADL dependency:** Significant increase in CG compared to IG; Median (Q1, Q3): **Kats-ADL:** **IG:** 4 (2-6) T1; 5 (2-6) T3 **CG:** 3 (1-5) T1; 5 (2-6) T3 • p=0.001	Issues: • Small sample • Less than 80% of participants completed study • Possible threat of diffusion of the intervention to CG
<u>Authors:</u> Rostad et al. (2018)	N: 112 residents (16 facilities) <u>Country:</u> Norway	**Pain scores:**	<u>Strength of Design:</u> **Strong**

Study/Design	Methods	Key Results	Comments

Design:
Cluster-RCT
 	
Purpose:
To determine if regular pain assessment is associated with changes in pain scores and analgesic use in LTC residents with dementia
	Intervention group (IG):
	• 50 residents (8 facilities)
	• Pain assessed twice weekly for 12 weeks
	
	Control Group (CG):
	• 62 residents (8 facilities
	• Usual care
	
	Data collection:
	• Chart audits to determine pain scores and analgesic use at baseline (T1) and end of intervention week (T2)
	
	Measurement:
	• **Pain scores:** Doloplus-2 scale; V&R good
	• **Analgesics:** included oral morphine equivalents (OMEQ) and paracetamol
	Analysis:
	• Performed using intention-to-treat principal
	• Linear mixed models used to estimate differences between groups
		• No significant effect of regular pain assessment on pain score:
		Diff IG-CG (95% CI):
		  • -0.13 (-1.35, 1.62)
		  • p=0.86
		
		Analgesic use:
		• No significant effect of regular pain assessment on analgesic use:
		OMEQ:
		Diff IG-CG (95% CI):
		  • -2.80 (-10.43, 4.83)
		  • p=0.47
		
		Paracetamol:
		Diff IG-CG (95% CI):
		  • 34.57 (-355.94, 427.08)
		  • p=0.85
			Quality: **Medium**
			
			Issues:
			• Analgesic use based on what was scheduled, not what was administered
			• No information on staff who completed assessments (e.g. age, sex, professional qualification)
			• No details of what usual care consists of

Authors: Savvas et al. (2014) Design:	N: 282 residents (5 facilities) Country: Australia	**Pain scores:** • Significant reduction in pain scores using all tools except RVBPI:	Strength of Design: **Weak** Quality: **Medium**

Study/Design	Methods	Key Results	Comments
Uncontrolled before-after (UCBA) <u>Purpose:</u> To determine the effect of a pain program (staff training/education and revised in-house pain management procedures) on resident pain scores and analgesic use in LTC	• No control group; participants served as their own controls • Intervention included staff education/training, regular pain assessment procedure, appointment of pain champions/pain team, and coordination of resources for pain management <u>Data Collection:</u> Chart audits to determine pain scores and analgesic use at baseline (T1) and after 12 months (T2). <u>Measurement:</u> • **Pain scores:** Resident's Verbal Brief Pain Inventory (RVBPI), Abbey pain scale, PAINAD, and Non-communicative Patient's Pain Assessment Instrument Scale (NOPAIN) • **Analgesic use:** Medication Quantification Scale • V&R of tools good <u>Analysis:</u> • Repeated-measures multivariate analyses of variance	**Abbey pain scale**: M=5.97 SD=2.63 T1; M=5.08 SD=3.19 T2 • F=7.99; p=0.005 **PAINAD**: M=3.90 SD=1.80 T1; M=3.19 SD=1.79 T2 • F=12.48; p=0.001 **NOPAIN**: M=9.33 SD=4.87 T1; M=7.13 SD=4.74 T2 • F=17.77; p<0.001 • **RVBPI**: M=1.15 SD=0.89 T1; M=1.14 SD=0.93 T2 • F=0.01; p=0.92 **Analgesic use:** • Significant improvement in prevalence of analgesic use: • **T1:** 15 % no analgesics; 24% regular/PRN • **T2:** 6% no analgesics; 43% regular/PRN • $\chi 2$=116.43; p<0.001	Issues: • No control group to allow for more direct comparison of effectiveness of intervention

Study/Design	Methods	Key Results	Comments
	(MANOVAs) with Wilk's lambda		

Appendix B: Literature Tables (Qualitative Studies)

Study/Design	Methods	Key Results	Comments
Authors: Brunkert et al. (2020) Design: Qualitative Purpose: To generate a comprehensive understanding of barriers and facilitators to pain management in nursing homes (NHs)	N: 17 care-workers (RNs, LPNs, NAs) across 3 nursing homes Country: Switzerland Data Collection: • 4 focus groups consisting of 3-5 participants each • Groups began with open discussion about general barriers and facilitators in pain management • Participants then prompted according to items listed as most problematic in quantitative portion of study Analysis: • Discussions audio-recorded • Emerging topics from each focus group added to a mind map • Topics summarized and feedback obtained from participants • Map from each group summarized and refined using content analysis approach	Key Barriers Identified: • Residents reluctant to report pain/take medication • Poor staff attitudes/beliefs • Difficulty assessing pain in residents with communication deficits • Insufficient time for nonpharmacological intervention • Lack of communication with physicians • Scarcity of resources	CASP Checklist (2018) Overall Appraisal (Include) Strengths: • Voluntary, informed consent • Clear explanation of data collection, analysis, and findings Limitations: • Participants limited to nursing staff • Results possibly influenced by group dynamics

Study/Design	Methods	Key Results	Comments
Authors: Parkman et al. (2021) Design: Qualitative Purpose: To examine nurses' perceptions regarding facilitators and barriers to pain scale use in LTC	N: 6 RNs & LPNs of 1 facility Country: United States Data Collection: • One-on-one interviews, digitally recorded • Interviews transcribed verbatim and checked for accuracy against recordings by two people Analysis: • NVivo qualitative software used to analyze data • Descriptive codes assigned to concepts expressed in interviews • Core themes shared with participants to ensure accuracy	Key Barriers Identified: • Challenges assessing pain in residents with dementia • Lack of time • Poor or inaccurate documentation • Poor communication among staff • Low staffing/high staff turnover • Poor staff attitudes/beliefs • Inadequate training/education	CASP Checklist (2018) Overall Appraisal (Include) Strengths: • Voluntary, informed consent • Clear explanation of data collection, analysis, and findings Limitations: • Small sample size • Only 1 LTC facility participated in study
Authors: Veal et al. (2018) Design: Qualitative, exploratory descriptive Purpose: To identify barriers to optimal pain management from the from the perspectives of staff	N: 23 nurses and facility managers across 5 facilities Country: Australia Data Collection: • One-on-one semi-structured interviews • Interview guide developed based on key research objectives	Key Barriers Identified: • Inadequate training/education • Challenges assessing pain in residents with dementia • Residents reluctant to take medication	CASP Checklist (2018) Overall Appraisal (Include) Strengths: • Clear explanation of data collection, analysis, and findings • Results consistent with several international studies

Study/Design	Methods	Key Results	Comments
working in aged-care facilities (ACFs)	• Questions related to residents with and without dementia <u>Analysis:</u> • Data transcribed verbatim, then divided into themes/sub-themes through coding process • Both inductive and deductive coding completed • NVivo qualitative software used to analyze data • Results tallied to identify most common themes/sub-themes	• Low staffing/high staff turnover • Lack of time • Poor nurse-physician communication/collaboration • Physicians reluctant to prescribe certain pain medications	<u>Limitations:</u> • Small sample size • Participants all from same geographic area

Appendix II:

Consultation Report:

Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care Facilities within Eastern Health, NL

Consultation Report:

Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care Facilities within Eastern Health, NL

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Project Introduction and Background

This practicum project consists of an evaluation of an initiative to improve the quality of pain assessment and management throughout Eastern Health's Long Term Care (EHLTC) program. The initiative was conceptualized in response to suboptimal pain prevalence rates among LTC residents, as evidenced in data from the Resident Assessment Instrument-Minimum Data Set (RAI-MDS). This instrument is used to monitor resident care and to assist in individualized care planning throughout LTC facilities. In late 2018, a Pain Assessment and Management Working Group (PAMWG) implemented evidence-based clinical guidelines in relation to the assessment and management of pain among residents of four EHLTC facilities. At the forefront of the initiative was the introduction of standardized pain assessment tools to front-line Registered Nurses (RNs) and Licensed Practical Nurses (LPNs). Despite these efforts, documentation audits have shown that regular comprehensive pain assessment is lacking in routine clinical practice. Since a thorough assessment of pain is a crucial first step to the overall management of pain in LTC residents (Horgas, 2017), the underutilization of pain assessment tools throughout EHLTC facilities warrants further investigation.

A review of the literature has revealed that efforts to improve pain-related outcomes in LTC can be effective in reducing pain levels for residents, as well as enhancing their functional status and quality of life (Kaasalainen et al., 2012; Kaasalainen et al., 2016; Mamhidir et al., 2017; Savvas et al., 2014). The literature review has also shed light on numerous barriers to the successful implementation of such efforts. Barriers include difficulty assessing pain in residents with cognitive impairment, poor attitudes and inadequate knowledge of staff, poor documentation and communication, time constraints, and high staff turnover (Brunkert et al., 2020; Parkman et al., Veal et al., 2018). The literature supports the use of both quantitative and

qualitative methods of evaluating pain improvement initiatives throughout LTC facilities. Knowledge questionnaires and chart audits have been utilized to determine the effectiveness of pain improvement protocols, while focus groups and interviews have been used to identify barriers to optimal pain management from the perspectives of LTC staff (Brunkert et al., 2020; Ghandehari et al., 2013; Kaasalainen et al., 2016; Parkman et al., 2021; Veal et al., 2018).

In addition to findings from the literature review, it is important to connect with the PAMWG concerning what methods to utilize in the evaluation of the pain improvement initiative and what factors might be influencing the assessment and management of pain throughout EHLTC facilities. Having a clear insight into the type of information stakeholders hope to gain from the evaluation is crucial to the development of an evaluation plan that will be both practical and relevant to those who have been involved in the initiative. Since the PAMWG has been responsible for the overall development and implementation of the pain improvement initiative, group members are invested in its overall success. They are also well positioned to provide information concerning the intended goals of the initiative, which will assist in evaluating if these goals have been met. Gaining input from stakeholders regarding what they would like to learn from the practicum project will help to determine outcomes for the evaluation. With that stated, this report summarizes the methods and results of consultations with five members of the PAMWG.

Consultation Objectives

The overall goal of the consultations was to gather information from stakeholders to assist in the development of an evaluation plan. The specific objectives for the consultations were:

1. To determine original goals and expected outcomes of the Pain Assessment and Management Quality Improvement Initiative;

2. To determine outcomes (e.g. satisfaction, effectiveness, barriers, etc.) for the evaluation based on stakeholder input;
3. To obtain feedback from stakeholders concerning how to best collect data to measure outcomes for evaluation of the effectiveness of the initiative.

Methods

The PAMWG is led by a Clinical Nurse Specialist (CNS) and core membership includes seven RAI-MDS Coordinators and two Clinical Educators (CEs), all of which are RNs. In the interest of time, five members were chosen for consultation based on their differing roles within EHLTC and the value that they could potentially add to the project. The chosen members were the CNS, the CE, and three RAI-MDS Coordinators. Emails were sent to these individuals, describing the project and inviting them to take part in consultations. Each person was asked to participate in a 30-minute interview to assist in the development of an evaluation plan. Members were advised that the interview questions would focus on the original goals and expected outcomes of the pain improvement initiative, criteria for evaluation, methods to best collect data, and barriers to the successful implementation of pain improvement efforts throughout LTC facilities. A copy of the invitation email can be found in Appendix A.

All five PAMWG members agreed to participate. Two interviews took place in person, while the other three interviews took place virtually, via Microsoft TEAMs. As expected, each interview was conducted over approximately 30 minutes, using a semi-structured interview guide. The majority of questions were common to all stakeholders, with additional questions posed to specific stakeholders according to their position within EHLTC and their role in the Pain Assessment and Management Quality Improvement Initiative. Interview questions can be found in Appendix B. A copy of the interview guide was used to hand-write notes during the

interviews. Responses were then typed into a Microsoft word document directly following each interview.

Upon completion of all of the interviews, thematic analysis was used to examine the responses. To ensure rigor, a step by step approach, as proposed by Nowell et al. (2017), was used to identify common themes across interviews. After reading and rereading the transcripts to become familiar with the data, codes were created based on items of interest and specific characteristics. Coded data were then organized into themes that were relevant to the development of an evaluation plan. Themes were then named, reviewed, and refined to ensure that coded data were pertinent and that each theme was adequately supported. The themes are presented in the results section below.

Ethical Considerations

Eastern Health's secure email platform was used to contact stakeholders. Each stakeholder was advised that their participation in the interviews was voluntary. Individuals' acceptance to be interviewed was seen as agreement to participate. Participants were advised that no personal identifiers would be used in reports related to the practicum project and that individual responses would not be shared with others. In-person interviews took place in the participants' private offices and virtual interviews took place in my private office. Participants' agreement for notes to be taken was obtained prior to the commencement of each interview. Hand-written notes, taken during each interview, are stored in a locked filing cabinet in my private office. Typed responses are saved on an encrypted, password-protected laptop which is used only by me in my position within EHLTC. All data will be destroyed, through shredding of hand-written notes and deletion of all typed documents from my laptop, one year after completion of the practicum project. The University of Waterloo (1992-2021) recommends that

data be kept for one year in case of academic misconduct allegations. Since this project is a program evaluation activity for quality improvement purposes, it does not require review by the Health Research Ethics Authority (HREA). The completed HREA screening tool is included in Appendix C.

Results

The process of thematic analysis of data collected from the interviews resulted in the identification of four themes applicable to the development of an evaluation plan: attainment of original goals, outcomes for evaluation, barriers to pain assessment and mitigation, and methods of data collection. Each theme is discussed below:

Attainment of Original Goals

The first consultation objective was to determine the original goals and expected outcomes of the pain improvement initiative and if these goals have been met. There were mixed responses among participants in relation to this question. One participant indicated that the goals have been met as frontline staff have been equipped with tools to complete standardized pain assessments as well as the necessary education to be able to utilize the assessment tools and to document findings. Two participants stated that the goals have not been met as staff are not consistently using the pain assessment tools and quality indicator reports show that the percentage of residents experiencing pain within EHLTC facilities remains above the benchmark set by the organization. Two participants responded that the goals were partly met. These individuals indicated that prior to the implementation of the initiative, standardized pain assessment tools were absent from clinical practice. The PAMWG was successful in choosing appropriate assessment tools, as well as developing these tools in the electronic documentation system and educating staff about their use. However, preliminary chart audits have indicated that

staff are not consistently using the assessment tools and, therefore, the PAMWG has not been successful in facilitating a practice change in relation to the assessment and management of pain throughout EHLTC.

Outcomes for Evaluation

When asked what outcomes they see as significant in the evaluation of the pain improvement initiative, all members of the PAMWG responded that quality indicator data are most important. The Canadian Institute for Health Information (CIHI, 1996-2021) reports on two indicators related to pain within LTC facilities: Experiencing Pain in Long-Term Care and Experiencing Worsened Pain in Long-Term Care. Pain scores that are calculated within the pain assessment tools are coded on residents' RAI-MDS assessments. These codes are then used to give rise to quality indicator data. Completed RAI-MDS assessments are sent to CIHI on a quarterly basis and reports of these indicators are compiled by an administrative assistant with EHLTC to be reviewed by management and the PAMWG. Participants suggested that if standardized pain assessments are being completed in accordance with organizational policy, then residents' pain scores should be accurately reflected in their RAI-MDS assessments, hence producing good quality indicator data. One participant indicated that it is particularly important to determine if pain assessments are being completed before and after the administration of treatments for pain. This would assist in determining if pain interventions are effective or if adjustments are needed.

One individual talked about residents' quality of life as an outcome for evaluation, but indicated that it would be difficult to assess as many residents would be unable to participate in the evaluation process due to cognitive impairment. This participant suggested the possibility of consultations with family members of such residents, but also stated that this might not provide

an accurate depiction. Families have varying levels of involvement with LTC residents and are not always aware of how residents are feeling on a daily basis.

Another participant suggested that staff perspectives on the usefulness of the pain assessment tools could be examined as an evaluation outcome. This interviewee was interested in learning if staff perceive the assessment tools as effective in assisting them to recognize pain among residents. The participant stated that if staff regard the tools as being ineffective, then they will be less likely to utilize them in clinical practice.

Barriers to Pain Assessment and Mitigation

As barriers to pain improvement protocols was a prominent theme in the literature review, participants were asked what they see as significant barriers to the uptake of pain assessment tools throughout EHLTC facilities. The most common responses were poor attitudes and inadequate staff knowledge, time constraints, staff turnover, and staff resistance to change in practice. Each of these barriers, along with suggestions for mitigation, are discussed below.

Poor Attitudes and Inadequate Staff Knowledge

Some participants suggested that staff are indifferent to the completion of pain assessments and do not perceive it as important. All interviewees stated that they believe residents are being treated for pain, but that staff are not always using the assessment tools to conduct a thorough assessment of pain. With the absence of completed pain assessments, pain scores are not readily available for RNs to refer to when coding for pain in residents' RAI-MDS assessments, potentially leading to inaccurate data within the organization's quality indicator reports. It is important to note that all participants strongly expressed that enforcement and support from Resident Care Managers (RCMs) are key to overcoming poor attitudes of staff. PAMWG members stated that there is not enough mentoring and direct supervision from RCMs

to ensure that staff are completing pain assessments as per organizational policy. Interviewees stated that without RCMs stressing the importance of pain assessment and ensuring that it is completed, many staff will not take it seriously. Participants all agreed that RCMs need to be invested in the process of pain assessment and management in order for a change in practice to occur.

In terms of inadequate knowledge, participants suggested that knowledge questions could be included on a staff questionnaire to determine if this is indeed a barrier. However, participants stated that CEs are limited in what they can do to mitigate this barrier, in terms of education, as there is only one CE for approximately every 400 LTC beds. Educational materials and unit huddles with front-line staff were proposed as possible solutions.

Time Constraints

Time constraints was another barrier that was mentioned by all interviewees. However, there were varying opinions regarding this matter. While all participants recognized that staff have hectic work schedules and numerous responsibilities, some stated that time constraints are often cited as a means to avoid utilizing the pain assessment tools. To mitigate this barrier, interviewees stated that it is important to ensure that all staff are fulfilling their responsibilities according to the roles of each discipline. For example, the role of the RN in EHLTC is intended to be a lead for the unit and for other nursing staff, including LPNs and personal care attendants (PCAs). The RN is responsible for resident assessments and care planning, among numerous other directorial duties, while LPNs and PCAs are responsible for more hands-on care. Oftentimes, this is not the case and RNs can be found completing the tasks of other nursing staff. This leaves less time for their own responsibilities, including the completion and documentation of a thorough pain assessment.

Appropriate placement of residents was also cited as a means to assist with time constraints that nursing staff are facing. One participant stated that it is not unusual for a new resident to be moved to several different nursing units after being admitted to a LTC facility. This creates further time restrictions for other duties as nurses are forced to spend a considerable amount of time preparing residents and their records for transfer. Taking more caution to ensure that residents are assigned to units most appropriate for their care needs would decrease the number of necessary transfers and preserve time for staff.

Staff Turnover

Staff turnover was also seen as a significant barrier to pain assessment throughout EHLTC. Participants discussed the abundance of casual staff who are often placed on different nursing units as the need for replacement of staff arises. While it was recognized that this is sometimes unavoidable given the shortage of staff within LTC, interviewees expressed that attempts to assign casual staff to consistent units would increase the continuity of care for residents. This would allow staff to become more familiar with residents and to be better able to recognize signs and symptoms of pain. In addition, residents might be more likely to express pain experiences to staff with whom they know and are comfortable with. Continuity of care is particularly important for residents with cognitive impairment who are unable to verbalize pain. As staff get to know these residents well, the ability to recognize nonverbal pain cues would improve.

Resistance to Change

PAMWG members stated that resistance to change is another barrier to the uptake of pain assessment tools throughout EHLTC. Prior to the pain improvement initiative, standardized pain assessment tools were absent from routine clinical practice. Nursing staff relied on their

professional judgement to assess pain and were accustomed to writing narrative notes to document their findings. This often led to subjective assessments of pain and inaccurate data being coded on residents' RAI-MDS assessments. With the implementation of the standardized tools, staff can now document directly within the tool, using the electronic documentation system. This helps to ensure the inclusion of all components of a thorough assessment of pain. However, some staff fail to recognize the value in this method of documentation and still feel the need to write a narrative note. This results in double documentation, viewed by staff as taking too much time to complete, hence adding to the underutilization of the assessment tools.

As previously mentioned, interviewees stated that the only real solution to staffs' resistance to change is support from RCMs. Participants discussed the need for RCMs to be more cognizant of the practices of staff and to enforce the correct means of pain assessment and documentation of findings. It was suggested that periodic audits of resident records by RCMs could be beneficial in this matter.

Methods of Data Collection

Members of the PAMWG were asked how they would go about obtaining data on the evaluation outcomes and barriers identified in the previous sections. All participants indicated that they would use audits to obtain data in relation to resident pain scores and quality indicators. Each interviewee suggested an audit of resident records to determine if pain assessments are being completed in accordance with organizational policy. In addition, they stated that it is important to compare resident pain scores to the data that are being recorded in their RAI-MDS assessments. This would determine if quality indicator reports are accurately reflecting the prevalence of pain throughout EHLTC. Quality indicator data from before the pain initiative can

then be compared to the present time to determine if the initiative has been effective in reducing pain for residents.

In terms of residents' quality of life, participants suggested interviews or focus groups with residents and/or families. As previously mentioned, interviewees recognized the challenges associated with this process due to the cognitive impairments of many residents and the varying levels of family involvement.

A questionnaire or survey was suggested as a means to explore staff perspectives on the usefulness of the pain assessment tools as well as barriers to the uptake of the tools. All interviewees stated that direct questions, consisting of brief, multiple-choice answers would be most efficient. Participants recognized that front-line staff have hectic, often fluent, schedules, therefore making it difficult to commit to specific times for an interview or focus group session. They indicated that a questionnaire would allow for a more widespread reach of staff and direct questions would help to ensure the obtainment of specific data. In terms of the delivery of the survey, participants had mixed responses. Some indicated that using an online tool, such as SurveyMonkey, would be an effective means to reach staff, whereas others stated that it would be best to distribute paper questionnaires to individual nursing units as not all staff are comfortable with technology use.

Implications for the Evaluation

Consultations with members of the PAMWG produced valuable discussions to assist in the development of an evaluation of the Pain Assessment and Management Quality Improvement Initiative within EHLTC. Overall, it is pertinent to conclude that while the PAMWG has successfully introduced standardized pain assessment to front-line nursing staff, the facilitation of a change in clinical practice requires further investigation. Results of the consultations reflect

many of the findings from the literature review in that outcomes, such as resident pain scores and quality indicator data, must be examined to determine the effectiveness of this initiative. In addition, barriers to the successful implementation of pain improvement efforts in LTC must be explored from the perspectives of front-line staff. While poor attitudes and inadequate staff knowledge, time constraints, staff turnover, and staff resistance to change in practice are all thought to be significant contributors, gaining a better understanding of barriers, as perceived by staff conducting the pain assessments, will help to identify why the uptake of the assessment tools is limited. Participants' suggestions for methods of data collection, including chart audits, interviews, focus groups, and questionnaires, will all be considered during the development of an evaluation plan. Consideration will also be given to the use of instruments to assess quality of life of residents with dementia as this was also indicated as an outcome for evaluation.

Overall, members of the PAMWG have taken a supportive stance in the evaluation of the Pain Assessment and Management Quality Improvement Initiative within EHLTC. Reconnecting with members, as needed, will be taken into account during the planning and implementation of the evaluation. It is the intent that the evaluation will assist in making recommendations to help strengthen the initiative and to improve pain experiences and quality of life for LTC residents.

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Appendix A: Consultation Invitation

Hello,

As you are aware, I will be completing an evaluation of the Pain Assessment and Management Quality Improvement Initiative, implemented by our Pain Assessment and Management Working Group (PAMWG), as part of a practicum project for the completion of the Master of Science in Nursing (MSN) Program at Memorial University. As a key stakeholder in the planning and implementation of the above-mentioned initiative, I am asking if you would be willing to participate in an interview to assist me in the development of an evaluation plan.

Interview questions will focus on the original goals and expected outcomes of the initiative, criteria for evaluation, methods to best collect data, as well as barriers to the successful implementation of pain improvement efforts throughout LTC facilities. Interviews will take approximately 30 minutes and are preferred to be completed in-person, or virtually, via TEAMs, at a mutually convenient time. If you cannot participate in-person or virtually, a telephone meeting can be arranged. Alternatively, if you are unable to commit to an interview, then questions can be emailed to you and sent back to me at XXX. Hand-written notes will be taken during interviews and locked in a filing cabinet in my private office at XXX. Notes will then be typed into a Microsoft Word document and stored on an encrypted, password-protected laptop that is used only by me for my current position within EHLTC. All responses will be summarized and individual names will be removed to ensure confidentiality. No identifying information will be used in any of the practicum-related reports. However, responses only (not names) will be shared with my practicum supervisor for the purpose of designing the evaluation.

Your input will significantly contribute to the evaluation of the Pain Assessment and Management Quality Improvement Initiative. By evaluating this initiative, it is my intent to make recommendations to Eastern Health Long-Term Care (EHLTC), in hopes of improving pain-related outcomes and overall quality of life for residents. At the end of the practicum, information collected during this project will be presented in a practicum report.

Participation in these consultations is voluntary. It would be appreciated if you could respond by **November 19th** to indicate if you are able to participate in an interview. You can contact me via email or by telephone at XXX. Thanks in advance for your assistance with this project.

Regards,

Danita

Danita Croucher BNRN
XXX

Appendix B: Interview Questions

1. What has been your role in the Pain Assessment and Management Quality Improvement Initiative?

2. Thinking back to the original goals and expected outcomes of the Pain Assessment and Management Quality Improvement Initiative, have these goals been met? Why or why not?

3. Researchers have used various outcomes, including resident pain scores, frequency of pain assessments, and changes in analgesic use to determine if pain improvement efforts have been successful in LTC settings. What outcomes do you see as significant in the evaluation of the Pain Assessment and Management Quality Improvement Initiative? Prioritize outcomes in terms of importance.

4. A review of the literature has outlined several methods of data collection for the evaluation of pain improvement initiatives in LTC, such as questionnaires, chart audits, interviews, and focus groups. What methods can be used to elicit data on the outcomes you identified in question #3. In other words, how would you collect data to measure these outcomes?

5. The literature has identified numerous factors that affect the uptake of methods to improve pain assessment in long-term care (LTC) facilities, including difficulty assessing pain in residents with cognitive impairment, poor attitudes and inadequate knowledge of staff, poor documentation and communication, time constraints, and high staff turnover. A major focus of the Pain Assessment and Management Quality Improvement Initiative was the introduction of standardized pain assessment tools (i.e. PQRST, Numeric Rating Scale (NRS), and PAINAD). What do you see as significant barriers to the uptake of these assessment tools in EHLTC facilities? How can these barriers be mitigated?

6. Please list any other suggestions, questions, or comments in relation to the evaluation of the Pain Assessment and Management Quality Improvement Initiative.

In addition, the following questions will be posed specifically to the various groups of stakeholders:

For the CNS (PAMWG lead):

- As facilitator of the PAMWG, what concerns/questions regarding the Pain Assessment and Management Quality Improvement Initiative do you see as outstanding? How would you suggest incorporating these concerns into the evaluation?

- A review of the literature has indicated that Advanced Practice Nurses (APNs) are well-positioned to assume a significant role in efforts to improve pain assessment and management in LTC. Do you think APNs within EHLTC could be utilized to assist with pain management? If yes, how can their skills be utilized? If no, why not?

For the CE:

- The literature has identified inadequate knowledge of staff as a significant barrier to pain assessment and management in LTC. As a CE, how would you go about determining whether this barrier is pertinent to the assessment and management of pain in EHLTC facilities? What could be done to overcome this barrier?

For the RAI-MDS Coordinators:

- The literature has identified poor documentation/completion of pain assessment tools as a significant barrier to pain assessment and management in LTC. As a RAI-MDS Coordinator, how would you go about determining whether this barrier is pertinent to the assessment and management of pain in EHLTC facilities? What could be done to overcome this barrier?

Appendix C: Health Research Ethics Authority (HREA) Screening Tool

Student Name: Danita Croucher

Title of Practicum Project: Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care (LTC) Facilities.

Date Checklist Completed:

This project is exempt from Health Research Ethics Board approval because it matches item number **3** from the list below.

1. Research that relies exclusively on publicly available information when the information is legally accessible to the public and appropriately protected by law; or the information is publicly accessible and there is no reasonable expectation of privacy.
2. Research involving naturalistic observation in public places (where it does not involve any intervention staged by the researcher, or direct interaction with the individual or groups; individuals or groups targeted for observation have no reasonable expectation of privacy; and any dissemination of research results does not allow identification of specific individuals).
3. Quality assurance and quality improvement studies, program evaluation activities, performance reviews, and testing within normal educational requirements if there is no research question involved (used exclusively for assessment, management or improvement purposes).
4. Research based on review of published/publicly reported literature.
5. Research exclusively involving secondary use of anonymous information or anonymous human biological materials, so long as the process of data linkage or recording or dissemination of results does not generate identifiable information.
6. Research based solely on the researcher's personal reflections and self-observation (e.g. auto-ethnography).
7. Case reports.
8. Creative practice activities (where an artist makes or interprets a work or works of art).

For more information please visit the Health Research Ethics Authority (HREA) at https://rpresources.mun.ca/triage/is-your-project-exempt-from-review/

Appendix III

Evaluation Report: Report of an Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care Facilities within Eastern Health, NL

Report of an Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care Facilities within Eastern Health, NL

Danita Croucher

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Faculty of Nursing

N6661

Supervisor: Hrag Yacoubian

October 24, 2022

Updated: November 8, 2022

Report of an Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care Facilities within Eastern Health, NL

The underassessment of pain among residents of long-term care (LTC) facilities is a significant public health issue (Gallant et al., 2020). It is estimated that chronic pain affects up to 80% of LTC residents. Despite its high prevalence, pain in this population is often unrecognized and hence, unrelieved (Dirk et al., 2019; Hadjistavropoulos et al., 2009). The undertreatment of pain in LTC leads to decreased quality of life for residents and increased utilization and costs of health care resources (Horgas, 2017). In an effort to change practice in pain management and to improve resident outcomes, LTC organizations are taking measures to decrease the percentage of residents experiencing pain within their facilities.

In late 2018, Eastern Health Long Term Care (EHLTC) implemented an initiative to improve the quality of pain assessment and management throughout its facilities. The initiative was implemented in response to suboptimal pain prevalence rates among residents, as reported by the Canadian Institute for Health Information (CIHI, 1996-2021). There are two quality indicators related to pain currently being reported: Experiencing Pain in Long-Term Care and Experiencing Worsened Pain in Long-Term Care. In the year 2017-2018, 14.9% of residents in Eastern Health Long Term Care (EHLTC) experienced pain, while 11.5% experienced worsened pain. This was above the national average of 7.2% for residents experiencing pain and 10.2% for residents experiencing worsened pain in the same year. Hence, a Pain Assessment and Management Working Group (PAMWG) was formed to design and implement an initiative to improve the quality of pain assessment and management in LTC residents. As a Clinical Nurse Specialist (CNS) within EHLTC, I am the facilitator of the PAMWG. Prior to my present role, I was a RAI-MDS Coordinator and a working member of the group.

The PAMWG implemented evidence-based clinical guidelines in relation to the assessment and management of pain among residents of four EHLTC facilities. At the forefront of the initiative was the introduction of standardized pain assessment tools to front-line Registered Nurses (RNs) and Licensed Practical Nurses (LPNs). Despite these efforts, a documentation audit, completed in June 2019, showed that regular comprehensive pain assessment is lacking in routine clinical practice. Only 47.9% of resident charts, for example, had a pain assessment documented within the three months prior to the audit. Since a thorough assessment of pain is a crucial first step to the overall management of pain in LTC residents (Horgas, 2017), the underutilization of pain assessment tools throughout EHLTC facilities warranted further investigation.

Hence, this evaluation was developed to determine if there has been a change in the utilization rates of the standardized pain assessment tools. In 2019, for example, only 2.1% of resident charts had a documented pain assessment before and after the administration of a pain-relieving medication. The evaluation also explored challenges and barriers to the use of pain assessment tools throughout EHLTC. Based on the evaluation findings, recommendations are proposed to improve the assessment and management of pain in LTC in hopes of improving overall quality of life for residents.

Background

Research related to the clinical effectiveness of interventions to improve pain management in LTC has shown that standardized pain assessment can be effective in reducing pain levels for residents, as well as enhancing their functional status and quality of life (Kaasalainen et al., 2012; Kaasalainen et al., 2016; Mamhidir et al., 2017). Evidence also suggests that training staff in the assessment and management of pain increases overall

knowledge and enhances pain-related attitudes and beliefs (Ghandehari et al., 2013; Long, 2013). Moreover, pain education and skills training has been shown to result in increased use of standardized pain assessment tools, which is an integral first step to recognizing pain in LTC residents (Kaasalainen et al. 2012; Kaasalainen et al., 2016).

The literature suggests that understanding factors that influence the implementation of pain management guidelines and taking steps to overcome identified obstacles is critical to the planning of strategies that are effective and sustainable (Ploeg et al., 2007). Research related to the evaluation of pain improvement protocols has included both quantitative and qualitative methods. Questionnaires and chart audits have been utilized to assess the effectiveness of efforts to improve pain-related outcomes among LTC residents (Ghandehari et al., 2013; Kaasalainen et al., 2016). Focus groups and one-on-one interviews have been used to shed light on barriers to the implementation of such efforts from the perspectives of LTC staff. The most commonly identified barriers are poor staff attitudes, inadequate knowledge, poor documentation and communication, time constraints, inadequate staffing resources, and high staff turnover (Brunkert et al., 2020; Parkman et al., 2021; Veal et al., 2018).

In preparation for the development of an evaluation plan, the above findings were shared in consultation interviews with five members of the PAMWG. Results of these consultations reflected the literature review. The completion of standardized pain assessments was identified, in the consultations, as an outcome that is important to determining the effectiveness of the Pain Assessment and Management Quality Improvement Initiative in EHLTC. Interviewees also agreed that barriers to the successful implementation of pain improvement efforts in LTC should be explored from the perspectives of front-line staff. While poor attitudes and inadequate staff knowledge, time constraints, staff turnover, and staff resistance to change in practice were all

thought, by interviewees, to be significant contributors, gaining a better understanding of barriers, as perceived by staff conducting the pain assessments, would help to identify why the utilization of the assessment tools is limited. Participants' suggestions for methods of data collection included chart audits, interviews, focus groups, and questionnaires.

Evaluation Project

The evaluation took place within EHLTC in St. John's, Newfoundland and Labrador. There are 13 LTC facilities within this program, designed to provide care for people who require moderate to total assistance with daily functioning and daily nursing care. This project focused on the assessment and management of pain in residents of four of these facilities.

As previously mentioned, the PAMWG was formed to design and implement an initiative to improve the quality of pain assessment and management in LTC residents. Core group membership consists of seven RAI-MDS Coordinators, two Clinical Educators, and one CNS. Other stakeholders, such as Resident Care Managers (RCMs), physicians, and pharmacists, are invited to meetings on an ad-hoc basis. The initiative began with chart audits and consultations with LTC staff and management to assess possible reasons for the high rates of pain among residents. As a result, it was determined that standardized pain assessment tools were not being utilized in LTC facilities, leading to subjective pain assessment and, oftentimes, incorrect responses to questions on the RAI-MDS assessments. Thus, the need for implementation of standardized pain assessment tools was identified. In the fall of 2018, three pain assessment tools were introduced to front-line RNs and LPNs throughout four LTC facilities in St. John's. The tools included 1) the PQRST method, used to assess precipitating factors, quality, radiation, severity, and timing of pain; 2) the Numeric Rating Scale (NRS), which is used to rate pain intensity on a scale of 0 to 10; and 3) the Pain Assessment in Advanced Dementia (PAINAD)

Scale, used to assess pain in residents with cognitive impairment (Booker & Keela, 2016). Staff were instructed to use the PQRST, for a baseline assessment of pain, and the NRS, for subsequent follow-up assessment, with residents who can self-report their pain experiences. The PAINAD was instructed to be used with residents who cannot self-report. The choice of tool would depend on the context of the assessment and resident characteristics. RNs and LPNs received education about the assessment and management of pain and were introduced to the standardized pain assessment tools through PowerPoint presentation, followed by a live demonstration of the use of such tools in the electronic documentation system. Applicable organizational policies were reviewed, outlining when standardized pain assessments were to be completed.

A previously mentioned chart audit, in June 2019, revealed limited use of the standardized pain assessment tools in daily practice. For example, 37.5% of resident charts had no pain assessment documented in the previous three months and 29.2% of charts had no pain assessment documented before and after the administration of analgesics. Members of the PAMWG met with management of the four facilities to share audit results and to explore options to increase utilization of the newly implemented tools. PAMWG members, in collaboration with RCMs, participated in discussions with front-line RNs and LPNs to reiterate the importance of completing pain assessments as per organizational policy. Pain assessment was then added to a standardized bundle of documentation audits, completed by RCMs on a quarterly basis. Since completion rates for this audit have been below 50%, the PAMWG identified the need to reevaluate. Given the Covid-19 pandemic, the evaluation was delayed. Hence, this practicum project was a good opportunity to help address a significant problem in EHLTC, and, ultimately, to improve the pain experiences of residents.

Evaluation Objectives

The overall goal for this practicum was to evaluate if there has been a change in the utilization rates of the standardized pain assessment tools, and, ultimately, if the initiative has impacted the rates of the quality indicators mentioned above in EHLTC.

Specific objectives for the evaluation were:

5. To evaluate the utilization of standardized pain assessment tools by front-line RNs and LPNs;
6. To identify challenges and barriers to the utilization of standardized pain assessment tools; and
7. To develop recommendations which would improve the utilization of standardized pain assessment tools.

Evaluation Methods

There were two methods of evaluation for this project: resident chart reviews and a questionnaire for frontline staff. Resident chart reviews were used to examine the utilization rates of the standardized pain assessment tools. The questionnaire was used to explore barriers to the use of pain assessment tools from the perspectives of frontline staff.

Resident Chart Reviews

Chart reviews were performed for approximately 10 percent of the population of residents in each of the four facilities. According to Gregory et al. (2008), 10 percent of eligible charts is a good rule of thumb for more accurate audit results. This resulted in the auditing of 39 charts across the four facilities. Charts were randomly selected from RAI-MDS schedules, using a random number generator to choose from a list of resident names. The RAI-MDS schedules

cover a three month time period and since each resident has a RAI-MDS assessment completed at a minimum of every three months, each facility's schedule includes all residents within the facility. Pain assessment is expected to be completed with residents on admission, at least quarterly, and before and after the administration of PRN pain medication. Therefore, quarterly pain assessment coincides with residents' RAI-MDS assessment dates, with the schedules including a reminder for staff to complete pain assessment. The most recent, complete, three-month RAI-MDS schedule for each facility was used to select resident charts. New RAI-MDS schedules for each facility are not all due at the same time. Therefore, charts selected had RAI-MDS assessment dates ranging from May-August 2022. A portion of the chart audits was completed electronically. I also had to go to the units at each facility as residents' Medication Administration Records (MARs) are completed in paper form.

An audit tool, adapted from the tool previously used by the PAMWG, was used to collect data. Audit questions reflected the expected frequency of standardized pain assessment in LTC, including on admission, quarterly, and before and after the administration of 'as needed' or 'as requested' (PRN) pain medication. Audit guidelines and questions can be seen in Appendix A. I collected all data for the chart reviews myself. I have completed numerous audits as part of my role within EHLTC and I have previously used the pain assessment audit tool. The use of the audit tool and guidelines helped to ensure the consistency of data collection. Reviewing charts with RAI-MDS assessment dates from May-August 2022 provided up-to-date data.

Data collected from chart reviews were hand-written and then typed directly into an excel spreadsheet (see Appendix B) so that it can be shared with members of the PAMWG upon completion of the practicum project. Descriptive statistics and Pearson's chi-square tests were used to analyze data using SPSS statistical software. The percentage of charts for which pain

assessment was completed on admission, quarterly, and before and after PRN pain medication was compared between the previous audit and the present audit. The null hypothesis for each comparison was that there was no statistical difference in pain assessment between the two years. Since I was only interested in whether pain assessment was completed or not completed, the number of resident charts that were determined to be "Not Applicable (N/A)" were omitted from each comparison. Charts were deemed not applicable if the resident was admitted prior to electronic documentation, prior to creation of the intervention in the electronic documentation system, or if the admission was unavailable where there is paper based documentation. Data from the audit in June 2019 were compared to data collected for this project to assess if differences in proportions were statistically significant (alpha = 0.5).

Questionnaire

Participants chosen for the questionnaire were front-line RNs and LPNs from four facilities within EHLTC. These participants were chosen as the routine assessment and management of pain in EHLTC falls under the scope of practice of RNs and LPNs. Education around the introduction of standardized pain assessment tools, provided in 2018, was mandatory for all existing RNs and LPNs, and newly hired RNs and LPNs, since that time, have been introduced to the pain assessment tools during their electronic documentation training. Incorporating feedback from this group would help to strengthen the recommendations from the evaluation project given that they are the individuals expected to be using the assessment tools. Participants were recruited by requesting that RCMs at each of the four facilities forward an invitation email (see Appendix C) to all front-line RNs and LPNs at their sites. A reminder email was sent one week after the initial email. Despite these attempts, only seven questionnaires were

received for a response rate of about 3%. Results were interpreted based on the feedback obtained.

The questionnaire (see Appendix D) took place through SurveyMonkey, an online tool where questionnaires can be created, distributed, completed, and collected under one platform. There were 10 questions in total, five multiple choice and five short answer. Questions focused on the challenges and barriers, including staff knowledge and attitudes, to the use of pain assessment tools in EHLTC and participants' thoughts or ideas on how to improve the uptake of these tools. Conducting the questionnaire online allowed for distribution to a wider population of RNs and LPNs, while structured questions helped to ensure that data collected was relevant to the evaluation objectives.

Responses from the questionnaire automatically went to my SurveyMonkey account. This account is password-protected and is only accessed on my password-protected laptop. Descriptive statistics, specifically measures of frequency, were used to analyze quantitative data, such as the number of RNs versus LPNs who took part in the questionnaire. Content analysis, specifically thematic analysis, was used to examine qualitative data, including common barriers or challenges to the use of pain assessment tools.

Ethical Considerations

Approval for this practicum project was obtained from the Regional Program Manager of Quality and Clinical Education for EHLTC. Prior to distribution of the questionnaire, I discovered that approval was required from Eastern Health's Evaluation Proposal Approval Committee (EPAC). An application was submitted and written approval was obtained from the Regional Director of Privacy, Planning, and Performance. As a CNS within EHLTC and facilitator of the PAMWG, I have authorized access to data that were utilized for this evaluation.

As previously mentioned, chart reviews were completed only by me. Hand-written data has been locked in a filing cabinet in my office at Pleasant View Towers. Data entered into Excel is stored on an encrypted, password-protected laptop which is used only by me in my position within EHLTC. A facility-specific, resident chart number was used as the resident identifier on the Excel Spreadsheet (see Appendix B) and combined data (i.e. combined frequencies for the four facilities), with no resident identifiers, were entered into SPSS. A master list of resident identifiers, separate from the Excel sheet, has been stored on my laptop. Eastern Health's secure email platform was used to contact RCMs, who were asked to forward an email (see Appendix C) to front-line RNs and LPNs at their sites, inviting them to participate in the questionnaire. Completion of the questionnaire was seen as consent to participate. To ensure confidentiality, all responses to the questionnaire were anonymous, which is a feature of the SurveyMonkey platform. Data will be destroyed through shredding of hand-written notes and deletion of all electronic documents from my laptop one year after completion of the practicum project. The University of Waterloo (1992-2021) recommends that data be kept for one year in case of academic misconduct allegations. Since this project is a program evaluation activity for quality improvement purposes, it does not require review by the Health Research Ethics Authority (HREA). The HREA screening tool can be found in Appendix E.

Evaluation Results

Chart Review Results

The results of resident chart reviews are summarized in Table 1.

Table 1

Results of resident chart reviews: Completion of pain assessment on admission, in past three months, and before/after PRN analgesic

Time period	Completed?	2019 % (n)*	2022 % (n)*	p value**
On admission	Yes	**79.2**% (38)	**58.9**% (23)	.755
	No	14.6% (7)	15.4% (6)	
	N/A	6.2% (3)	25.7% (10)	
In past 3 months	Yes	**47.9%** (23)	**53.8%** (21)	>.999
	No	37.5% (18)	43.6% (17)	
	N/A	14.6% (7)	2.6% (1)	
Before & after PRN analgesic	Yes	**2.1%** (1)	**5.1%** (2)	.569
	No	29.2% (14)	25.7% (10)	
	N/A	68.7% (33)	69.2% (27)	

* % (n) represents the % and number of applicable charts that were completed or not
** p value calculated using chi squared

As outlined in Table 1, there were no significant differences between the two years when comparing the completion of pain assessment on admission (p=.755), in the past three months (p>.999), and before and after the administration of a PRN analgesic (p=.569). With regard to the comparison of before and after PRN analgesic, one chart had a documented pain assessment before and another chart had a documented pain assessment after the administration of the medication.

Overall, there has not been a significant difference in the utilization of pain assessment tools, within EHLTC, from implementation of the quality improvement initiative to the present time. The rate of routine, comprehensive pain assessment, as outlined in the organizational policy, remains substandard. In 2019, the percentage of resident records that had a documented pain assessment on admission to LTC was 79.2%. This rate dropped to 58.9 % in 2022. Although not found to be statistically significant, given the small sample size, this result is concerning and merits further investigation and action. Although pain assessment in the past three months

remained comparably steady between the two years, at 47.9% in 2019 and 53.8% in 2022, the rates are still low considering that about half of residents do not have a regularly documented pain assessment. Results for pain assessment before and after the administration of a PRN pain medication were significantly lower at 2.1% in 2019 and 5.1% in 2022. This is particularly concerning as pain-relieving medication should not be administered in the absence of a documented pain assessment. In order to understand why pain assessment tools are not being utilized by front-line staff and to make recommendations to increase their use, input from RNs and LPNs was imperative to this evaluation. Feedback from this group of staff is discussed below.

Questionnaire Results

Given that the questionnaire consisted of both multiple choice and short-answer questions, descriptive statistics and content analysis, specifically thematic analysis, were used to interpret the results. Since the PAMWG had previously determined that regular comprehensive pain assessment is lacking in routine clinical practice within EHLTC, participants were asked about the frequency of their use of standardized pain assessment tools when assessing residents' experiences of pain. The questionnaire also included items to elicit information about the challenges and barriers to the use of pain assessment tools in LTC, as well as recommendations on how to improve the use of such tools. The results are discussed below in relation to these themes.

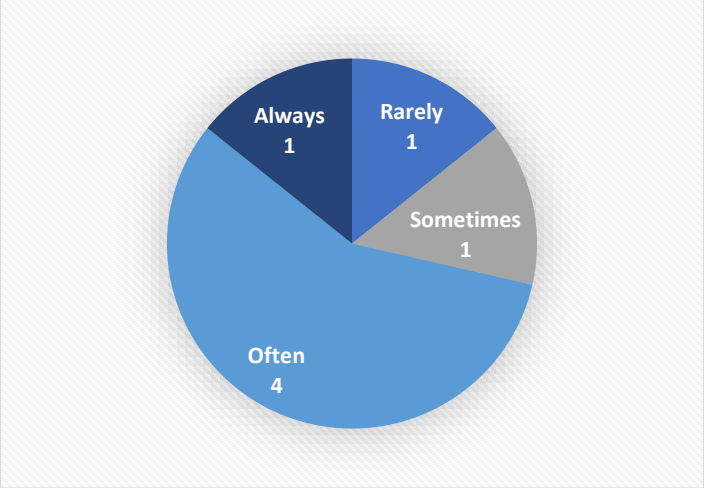
Frequency of the Use of Standardized Pain Assessment Tools

As shown in Figure 1, four participants indicated that they "often" use standardized pain assessment tools (i.e. PQRST, Pain Numeric Rating Scale, and PAINAD) when assessing residents' experiences of pain. The responses of "always", "sometimes", and "rarely" use pain

assessment tools were equally selected by the remaining three participants, resulting in selection by one participant each. The responses of front-line RNs and LPNs regarding the frequency of the use of standardized pain assessment tools in LTC are in line with findings from the chart reviews and the feedback of stakeholders, given during the consultation process. Although pain assessment tools have been introduced within EHLTC facilities and standardized pain assessment is an expectation of front-line RNs and LPNs, the assessment tools are not consistently being utilized in routine clinical practice. Given this finding, it is important to explore the barriers and challenges to the use of standardized pain assessment tools from the perspectives of front-line staff.

Figure 1

Participant responses: Frequency of use of pain assessment tools



Challenges and Barriers to the use of Pain Assessment Tools

As challenges and barriers to pain improvement protocols was a prominent theme in the literature review and the consultation process, participants were asked what they see as significant barriers to the utilization of pain assessment tools within EHLTC facilities. Since poor attitudes and inadequate staff knowledge was perceived to be a particularly notable

challenge among stakeholders, several questions were tailored to this perceived barrier. Other themes that were derived from the questionnaire results include difficulty of documentation, time constraints, and staffing resources/staff turnover. Each of these barriers is discussed below.

Poor Attitudes and Inadequate Staff Knowledge. Participants were asked several questions pertaining to their knowledge of and attitudes toward the utilization of standardized pain assessment tools. First, they were asked about their familiarity with the PQRST, Pain Numeric Rating Scale, and PAINAD methods of assessment. This was followed by asking if they had been provided education on these methods, and how helpful they feel the tools are to the promotion of pain management for LTC residents. Table 2 illustrates the responses to these questions. While six of seven participants indicated that they were provided education on the pain assessment tools, only three stated that they were "extremely familiar" with the tools. Two participants indicated that they were "very familiar" with the tools, while the other two participants rated their familiarity as "somewhat familiar." Although the majority of participants received education about the pain assessment tools, less than half exude high confidence in their familiarity with the tools. This indicates that further education is needed and repeating this education at certain time intervals could be beneficial. Since education around the pain improvement initiative was delivered in late 2018, staff knowledge is likely fading in the absence of regular use of the assessment tools.

Table 2

Participant responses: Familiarity with and attitudes about pain assessment tools

Questionnaire Items	Participant Responses: n
How familiar are you with the pain assessment tools (i.e. PQRST, Pain Numeric Rating Scale, and PAINAD) used in Eastern Health Long Term Care (EHLTC)?	• Extremely familiar: 3 • Very familiar: 2 • Somewhat familiar:2

Questionnaire Items	Participant Responses: n
Were you provided education on the use of the PQRST, Pain Numeric Rating Scale, and PAINAD tools?	• Yes: 6 • No: 1
How helpful do you feel the use of pain assessment tools is to the promotion of pain management for LTC residents?	• Extremely helpful: 3 • Very helpful: 1 • Somewhat helpful: 2 • Not at all helpful: 1

Table 2 also shows participant responses in terms of the helpfulness of the assessment tools to the promotion of pain management. Three of seven participants rated them as "extremely helpful", one participant felt that they are "very helpful", two participants rated the tools as "somewhat helpful", while one participant felt that they are "not at all helpful". The three participants who rated the tools as "extremely helpful" were the same three participants who rated their familiarity with the tools as "extremely familiar." This supports the idea that further education and greater knowledge of the pain assessment tools could improve staff attitudes about their usefulness to the promotion of pain management for LTC residents.

In addition to the questions in Table 2, participants were asked to indicate their understanding of how often pain assessment should be completed with a resident and when (i.e., in what situations) each of the assessment tools, PQRST, Pain Numeric Rating Scale, and PAINAD, would be used. Eastern Health's organizational policy on the screening and assessment of pain indicates that LTC residents are to be assessed for pain on admission, quarterly, and before/after the implementation of a pain-relieving intervention. For residents who can self-report their pain experiences, the policy endorses the use of the PQRST for a baseline, comprehensive assessment of pain. Subsequent assessments can then be performed using the Pain Numeric Rating Scale. For residents who cannot self-report, staff are to use the PAINAD for all initial and subsequent assessments of pain (Jacobs et al., 2016). Participant responses pertaining to these questions are outlined in Table 3.

Table 3

Participant responses: Understanding of how often to assess for pain and when to use each tool (i.e. PQRST, Pain Numeric Rating Scale, and PAINAD)

Questionnaire Items	Participant Responses
Please outline your understanding of how often pain assessment should be completed with a resident?	• Daily really but quarterly • With change in resident status • Whenever resident has pain • Every shift • PRN and every three months • Good understanding
Please outline your understanding of when (i.e. in what situations) you would use each of the following pain assessment tools: PQRST, Pain Numeric Rating Scale, and PAINAD.	• PQRST on admission and prn • Numeric scale is episodic • PAINAD for non-verbal assessment • When you have to administer pain meds • Pain numeric scale on admission • When providing care to resident or if you notice anything during regular surveillance • As needed • Good understanding of when to use

Although most participants alluded to segments of the organizational policy in their responses, no one provided a thorough account of how often pain assessment should be completed nor a full explanation of when to use each assessment tool, as outlined in the policy. One participant skipped the question about when to use each tool and another participant responded with "good understanding" when asked about comprehension of how often pain assessment should be completed, indicating a misinterpretation of the question. Overall, participant responses suggest that inadequate knowledge and poor attitudes, particularly attitudes regarding the usefulness of standardized pain assessment tools, is a contributing factor in preventing RNs and LPNs from routinely using the tools. These responses are congruent with the results obtained from consultation with stakeholders and with findings from the literature review.

Difficulty of Documentation. When asked what factors are believed to be preventing RNs and LPNs from routinely using pain assessment tools, two participants identified the

documentation of assessment findings as a barrier. When the pain improvement initiative was implemented in LTC, the PQRST, Pain Numeric Rating Scale, and PAINAD assessment tools were built, as interventions, within the electronic documentation system used by the facilities. One participant stated that the documentation of assessment findings, using these tools, is difficult. This participant indicated that the system is "outdated and not user-friendly," and felt that staff are using the tools to assess residents' pain experiences, but, in many cases, are not documenting their findings. Another participant stated that it is easier for staff to write a narrative note than to document using the standardized assessment tools. Given that the majority of assessments, including fall risk and skin integrity, are documented in the same manner as pain assessment, this particular response is surprising. Instead of writing a narrative note, staff can open an assessment and choose appropriate responses to various sections of the assessment simply by checking boxes or choosing from drop-down menus. Nursing assessments have been documented this way, in the electronic system, for quite a number of years. It would be beneficial to further explore if staff are having difficulty with documentation of pain assessment, specifically, or with electronic documentation in general.

Although the literature review alluded to poor documentation and lack of communication among care staff as a barrier to optimal pain management in LTC, difficulty of documentation was not identified, by stakeholders, as a challenge to the use of pain assessment tools during the consultation process. A possible explanation could be that, as mentioned above, the tools were designed for pain assessment findings to be documented in the same manner as various other longstanding, electronic assessments. Hence, difficulties with documentation were likely not anticipated.

Time Constraints. Two participants identified time constraints as a contributing factor to the underutilization of pain assessment tools in EHLTC. One participant indicated that even if staff are utilizing the tools to guide their assessment of pain with residents, there is insufficient time to document findings. One participant attributed time constraints to "staffing levels/working short," which is discussed below.

The literature review also found time constraints to be a barrier to pain assessment and management, particularly in relation to high resident to staff ratios. While all stakeholders talked about time constraints during consultations and recognized the hectic schedules and numerous responsibilities of front-line staff, some felt that inadequate time is often cited as a means to avoid utilizing pain assessment tools.

Staffing Resources/Staff Turnover. Inadequate staffing levels and lack of consistency in staff scheduling were cited as barriers to pain assessment by three participants. One participant stated that "RNs and often LPNs are moved around or floated often and so may not know the residents and then may not be confident in pain assessment." This participant indicated that pain and other changes in resident status are more likely to be noted by staff who are familiar with the resident. Two participants cited increased workload related to staffing shortages as a factor that is preventing RNs and LPNs from routinely using pain assessment tools.

This finding is expected, especially given the increasing difficulty with recruitment and retention of nursing staff throughout EHLTC. Findings from the literature review and from interviews with stakeholders support staffing resources/staff turnover as a barrier to pain assessment, particularly in relation to continuity of care for LTC residents.

Recommendations to Improve the Use of Pain Assessment Tools

In conjunction with the examination of barriers to standardized pain assessment, it is important to gain insight, from the perspectives of front-line staff, into how such barriers might be addressed. When asked about recommendations to improve the use of pain assessment tools among RNs and LPNs, participants' responses fell into three main themes: education, staffing ratios, and the use of Care Facilitators (CFs).

Education. Five participants cited education as a means to increase the utilization of pain assessment tools within EHLTC. While two participants did not elaborate on the type of education, one participant suggested the offering of in-services for staff. Another participant specified that education should be directed toward personal care attendants (PCAs). This participant stated that since PCAs are most often at the bedside, providing resident care, they need to know how to recognize the signs and symptoms of pain and ensure that they are reporting such information to RNs and LPNs for further assessment.

Findings from the literature review suggest that extending pain assessment to the role of unlicensed staff, particularly nursing assistants, is a worthwhile consideration when planning for pain improvement initiatives (Ersek & Jablonski, 2014). As these staff spend a considerable amount of time assisting with and performing daily resident care, they are well positioned to ask residents about pain and to observe for pain-related cues. This would create more time for nurses to focus on the management aspect of pain. While stakeholders also felt that education is important to the overall success of the pain improvement initiative in EHLTC, it was noted that there are very few clinical educators within the program. Hence, members of the PAMWG felt that there are limitations to the methods by which education can be delivered. Suggestions included huddles with front-line staff and the distribution of educational materials.

Staffing Ratios/Staff consistency. Consistency in staff and improved staffing ratios were specified by two participants as recommendations to improve pain assessment among LTC residents. One participant suggested that in the absence of LPNs, more PCAs could be utilized. This would allow LPNs more time to be able to properly assess residents for pain. This participant felt that replacing a LPN with a PCA would be more beneficial than no replacement, as a PCA could assume some of the duties that the LPN would otherwise be responsible for.

During consultation interviews, stakeholders also recognized staffing ratios and consistency in staff as an important factor in the improvement of pain assessment and management in EHLTC. Interviewees expressed that attempts to assign casual staff to consistent units would increase the continuity of care for residents, allowing for improved familiarity with residents and better recognition of the signs and symptoms of pain. Literature review findings suggest that although staffing resources are more difficult to control as they often relate to budgeting constraints, it is an important component to consider when planning for changes in clinical practice.

Use of Care Facilitators. Eastern Health has recently introduced a new role, known as Care Facilitator (CF) to the organization's LTC program. The CF is a RN who is responsible for the daily coordination, supervision, and evaluation of resident care. When asked about thoughts that could be helpful in improving pain assessment in EHLTC, one participant responded that "the new position will provide the consistency and improve continuity of care as the CF can ensure it's (i.e. pain assessment) being done consistently across care teams and track the results of interventions."

The new CF role was not mentioned during consultations with stakeholders as a recommendation to address continuity of care as a means of improving pain assessment and

management among LTC residents. This is likely because at the time of consultations, the role was in its initial stages of development and many of the responsibilities of the role had not been defined. Since that time, some CFs have been recruited and have started practicing within a number of EHLTC facilities.

Discussion

This evaluation has provided valuable information regarding efforts to improve pain assessment and management among residents of EHLTC facilities. Despite the introduction of standardized tools to assist in the assessment of pain, the utilization of such tools in routine clinical practice is limited. Eastern Health's organizational policy on the screening and assessment of pain requires the completion of a comprehensive pain assessment, with residents, on admission to a LTC facility, every three months after admission, and before and after the implementation of a pain-relieving intervention. The rates of standardized pain assessment on admission and every three months were found to be higher than those before and after the administration of PRN analgesics. However, these rates were still substandard, with just over half of residents having a documented pain assessment on admission and quarterly thereafter. This is concerning given that the expectation is that all residents have a documented pain assessment at those times. The reason for higher rates on admission could be because pain assessment is included on an admission checklist, used to ensure the completion of required interventions, when a resident enters LTC. Pain is also listed on each facility's quarterly RAI-MDS schedules as a reminder to complete an assessment every three months. These cues are likely assisting staff in keeping track of pain assessment at those particular times, leading to greater completion rates.

The low proportion of resident records that showed the completion of pain assessment before and after the administration of a PRN analgesic is also very concerning. Without a thorough analysis of residents' pain experiences before and after a pain-relieving intervention, staff cannot evaluate its effectiveness. The absence of evaluation could result in poor care planning, leading to the continuation of ineffective interventions, namely the unnecessary administration of certain medications. Staff need to be aware of interventions that are both effective and ineffective in relieving pain for residents in order to provide high-quality, individualized care.

Feedback from frontline RNs and LPNs provided crucial information regarding the underutilization of pain assessment tools in EHLTC. Survey responses were largely consistent with findings from the literature review and the results of consultations with stakeholders. Barriers to the use of pain assessment tools included poor attitudes and inadequate staff knowledge, documentation difficulty, time constraints, and staffing resources/staff turnover. The overall consensus was that further education, better staff ratios/staff consistency, and the use of the newly implemented RCC role would all be beneficial in improving pain assessment throughout EHLTC facilities.

While some participants suggested in-service sessions as a means of delivering education about pain assessment, it is important to note that present challenges related to staffing resources would likely make it difficult for staff to attend such sessions. With regard to difficulty of documentation, it would be beneficial to find out if staff are experiencing challenges with the documentation of other interventions as well. This would be helpful in determining if the difficulty is specific to the pain assessment interventions or with electronic documentation in general. While increasing staff ratios might not be possible as the organization struggles with the

recruitment and retention of nursing staff, heightening attention to the scheduling of individual staff could be beneficial to the improvement of consistency in staff and continuity of care for residents.

Examining challenges and barriers to the use of pain assessment tools, from the perspectives of frontline staff, is important to comprehend the underutilization of such tools in routine clinical practice. Doing so allows for the proposal of recommendations to assist in improving the overall effectiveness of the Pain Assessment and Quality Improvement Initiative within EHLTC.

Recommendations

Based on the results of this evaluation, I am proposing the following recommendations to improve the assessment and management of pain throughout EHLTC: Enforcement of pain assessment by RCMs, involvement of the CF in the evaluation of pain assessment and management, and ongoing education about pain assessment and management for frontline staff.

Enforcement of Pain Assessment by RCMs

During consultation interviews with stakeholders, participants strongly expressed that enforcement and support from RCMs are key to ensuring the completion of pain assessment and to overcoming poor attitudes of staff. PAMWG members stated that there is not enough mentoring and direct supervision from RCMs to ensure that staff are completing pain assessment as per organizational policy. Interviewees stated that without RCMs stressing the importance of pain assessment and ensuring that it is completed, many staff will not take it seriously. Participants all agreed that RCMs need to be invested in the process of pain assessment and management in order for a change in practice to occur.

Since RCMs are required to conduct an audit of pain assessment on a quarterly basis, they can use the results to speak with staff, directly, to promote and enforce the completion of assessment as per organizational policy. This could be particularly beneficial to ensuring the completion of pain assessment prior to and after the administration of a PRN analgesic. Upon review of residents' MARS, RCMs can identify staff who administered analgesics without the completion of a comprehensive pain assessment. This info can then be used to address individual staff and to reiterate the importance of assessment to the overall management of pain. Over time, such enforcement could be effective in changing the attitudes of staff and, hence, increasing the use of pain assessment tools in routine clinical practice.

Involvement of the CF

As previously mentioned, Eastern Health has introduced CFs, RNs that are responsible for the daily coordination and evaluation of resident care, to its LTC teams. As indicated in the survey results, one participant suggested that the CF will help to improve the continuity of care among residents. Involving the CF in ongoing evaluation of pain assessment and management throughout LTC facilities could be a means to help increase the overall effectiveness of the pain quality improvement initiative. I, as facilitator of the PAMWG, could meet with CFs to provide information about the initiative and its current state. CFs can be instructed in the area of auditing for the completion of pain assessment and can work with RCMs to ensure audits are completed. Results of pain assessment audits can be discussed, by CFs, in routine huddles with staff. Moreover, having the CF involved in pain assessment and management will increase the continuity of care for residents, in hopes of improving their overall pain experiences. CFs can also act as communication agents for casual staff or staff that are not familiar with the residents they are caring for, in an attempt to reduce inconsistencies in care.

Ongoing Education for Staff

Survey results showed that inadequate staff knowledge is a significant barrier to the use of pain assessment tools throughout EHLTC. The majority of respondents indicated that further education is needed to assist in the completion of routine, comprehensive pain assessment throughout LTC facilities. While some participants suggested in-servicing for staff, PAMWG members pointed out that current staffing issues would likely impact the ability of frontline RNs and LPNs to attend such sessions.

An alternative to in-person education is the use of LEARN, an online learning management system utilized by Eastern Health. All LTC employees have an account for the completion of courses within this system. The PAMWG can work with members of the organization's learning and development team to create learning modules about the screening and assessment of pain in LTC residents. Modules can include topics such as the importance of pain assessment, instructions on how to use the pain assessment tools endorsed by Eastern Health, as well as how to use pain assessment findings to help manage pain in residents. If feasible, the live demonstration of the completion of pain assessment in the organization's electronic documentation system, which was recorded during initial implementation of the quality improvement initiative, can be incorporated into the learning modules. This would help to address staff concerns around difficulty of documentation, as discussed above in the survey results. Pain education, in LEARN, can be made mandatory for all nursing staff, and managers can track the completion of learning modules within the system. This will help to ensure that staff are equipped with the necessary knowledge to appropriately assess pain among LTC residents.

Limitations

A major limitation of this evaluation is the low response rate of frontline staff. Such a small response rate makes it difficult to generalize the survey results to the entire population of RNs and LPNs throughout EHLTC. While RCMs at each of the four facilities were asked to forward an email to staff, inviting them to participate in the survey, I cannot say, for certain, that all frontline RNs and LPNs received the invitation. RCMs have hectic schedules, with many competing priorities, and it is not known if all RCMs forwarded the email to staff at their respective sites. In addition, not all frontline staff regularly check their work email. For staff who did receive the invitation, time constraints were a likely factor in completion of the survey for many staff. LTC, like other areas of health care, is experiencing great difficulty with staffing resources. RNs and LPNs are often working while short-staffed, leaving little time for matters other than bedside resident care.

Another limitation is that the audit tool used for resident chart reviews was not tested for validity and reliability. However, the tool had good face validity, as it was adapted from a previous tool used by the PAMWG and all four items were determined to be suitable to the objectives of the audit.

Lastly, while I collected all data for the chart reviews myself, data from the previous audit, in 2019, was collected by a number of different people. Although data collectors were RAI-MDS Coordinators, who are familiar with auditing procedures, and the audit tool was reviewed with them, data were not verified or reviewed for accuracy. Hence, inter-rater reliability could have been an issue in the 2019 audit.

Despite these limitations, the evaluation findings provided valuable insight into the challenges associated with pain assessment and have been helpful in identifying some next steps

for the PAMWG to consider in planning for improvement of pain assessment and management throughout EHLTC.

Conclusion

Overall, results from resident chart reviews showed that documentation of pain assessment remains substandard throughout EHLTC facilities, and is especially poor in relation to the administration of pain-relieving medications. This finding warrants further investigation and action by the PAMWG. Survey results were highly beneficial to understanding the barriers to the use of such tools from the perspectives of frontline RNs and LPNs, who are responsible for the assessment of pain among residents. Comprehension of these barriers has allowed for the proposal of recommendations that can be implemented in the future to help increase the utilization rates of pain assessment tools, in hopes of improving overall pain outcomes for residents.

Although the evaluation was limited in terms of generalizability of results, its findings were similar to those outlined in the literature and in consultations with stakeholders. The results of this practicum project will be shared with members of the PAMWG as well as RCMs of the four facilities in which the evaluation took place. From there, a plan for further consultations with frontline RNs and LPNs will be developed, given the low response rate during this evaluation. Then, the above recommendations, as well as any others, can be implemented to enhance the overall effectiveness of the Pain Assessment and Management Quality Improvement Initiative in EHLTC.

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Appendix A: Audit Guidelines and Questions

Audit 10% of the population per unit.

If the resident was admitted prior to electronic documentation or if the admission is unavailable where there is paper based documentation (i.e. Meditech downtime) select N/A.

Select N/A if the resident was admitted prior to creation of the intervention (i.e. November 2018) in Meditech Client Server.

PQRST & Pain Numeric Rating Scale should be used for residents who can communicate their pain. PQRST is completed on admission, quarterly, first report of a new pain. Pain Numeric Rating Scale is completed for re-assessments of the same pain.

PAINAD should be used for residents who cannot communicate their pain. PAINAD is completed for all assessments and re-assessments (admission, quarterly, PRN medication)

For Questions 3 & 4, review the resident's Medication Administration Record (MAR) to see if that resident received a PRN analgesic in the past 2 weeks.

If the resident received an analgesic follow the steps to see if the appropriate assessments were completed on the date the PRN analgesic was administered.

If the resident did not receive a PRN analgesic select Not Applicable (N/A).

1. Was the appropriate pain assessment (PQRST or PAINAD) completed with the resident on admission?
    - Yes
    - No
    - N/A (resident was admitted prior to November 2018)

2. Was the appropriate pain assessment (PQRST or PAINAD) completed with the resident in the past three months?
    - Yes
    - No
    - N/A (resident was admitted within three months but prior to the first expected quarterly assessment)

3. Was the appropriate pain assessment (Pain Numeric Rating Scale or PAINAD) completed prior to administering a PRN analgesic?
    - Yes
    - No
    - N/A (resident did not receive a PRN analgesic)

4. Was the appropriate pain assessment (Pain Numeric Rating Scale or PAINAD) completed post administration of a PRN analgesic?

- Yes
- No
- N/A (resident did not receive a PRN analgesic)

Appendix B: Audit Spreadsheet

Pain Assessment Audit Tool

Facility :

UNIT	RESIDENT IDENTIFIER	RAI-MDS ARD	WAS PAIN ASSESSMENT COMPLETED WITH THE RESIDENT ON ADMISSION?	WAS PAIN ASSESSMENT COMPLETED WITH THE RESIDENT IN THE PAST THREE MONTHS?	DATE OF PRN ANALGESIC (IF APPLICABLE)	WAS PAIN ASSESSMENT COMPLETED PRIOR TO ADMINISTERING A PRN ANALGESIC?	WAS PAIN ASSESSMENT COMPLETED AFTER ADMINISTERING A PRN ANALGESIC?
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A
			Y N N/A	Y N N/A		Y N N/A	Y N N/A

Appendix C: Invitation Email

Hello,

I am writing to invite you to participate in an online survey about our quality improvement initiative on pain assessment in Eastern Health Long Term Care (EHLTC). Since pain assessment is a key responsibility of front-line RNs and LPNs, I would like to hear from you.

I have chosen to complete an evaluation of the Pain Assessment and Management Quality Improvement Initiative, implemented by the Pain Assessment and Management Working Group (PAMWG), as part of a practicum project for the completion of the Master of Science in Nursing (MSN) Program at Memorial University. The initiative introduced standardized pain assessment tools, including the PQRST method, the Numeric Rating Scale (NRS), and the Pain Assessment in Advanced Dementia (PAINAD) Scale to front-line RNs and LPNs in late 2018. Preliminary documentation audits have shown that the use of these assessment tools in routine clinical practice is limited. Hence, this evaluation will determine if there has been a change in the utilization rates of the standardized pain assessment tools and explore the challenges and barriers to the use of these tools. Evaluation findings will be used to propose recommendations to help improve the effectiveness of the initiative.

The survey will take approximately 10 minutes to complete. Questions focus on the challenges and barriers to the use of pain assessment tools in EHLTC and thoughts or ideas on how to improve the uptake of these tools. Key findings will assist in making recommendations to improve the utilization of pain assessment tools throughout EHLTC facilities. **Please take a few minutes to complete the survey at https://www.surveymonkey.com/r/V6MQFPM.** All responses are anonymous and will be reviewed on an encrypted, password-protected laptop that is used only by me for my current position within EHLTC. Summarized data will be shared with my practicum supervisor. At the end of the practicum, information collected during this project will be summarized into a practicum report. The link to the survey will be available for commentary until **October 5th 2022**.

Your input will significantly contribute to the evaluation of the Pain Assessment and Management Quality Improvement Initiative. By evaluating this initiative, it is my intent to make recommendations to EHLTC, in hopes of improving pain-related outcomes and overall quality of life for residents.

Participation in these consultations is voluntary. If you have any questions or concerns, please contact me by phone or email. Thanks for your help with this project.

Regards,

Danita

Danita Croucher BNRN
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Appendix D: Questionnaire for RNs and LPNs

Pain Assessment in Eastern Health Long Term Care

Thank you for sharing your feedback. This survey will take about 10 minutes to complete. Please complete all questions. Your participation is voluntary. All responses are anonymous and will be reviewed on an encrypted, password-protected laptop.

Summarized data will be shared with my practicum supervisor. At the end of the practicum, information collected will be summarized into a practicum report.

Your input will significantly contribute to the evaluation of the Pain Assessment and Management Quality Improvement Initiative and assist me in making recommendations to improve pain-related outcomes and overall quality of life for residents.

1. Please indicate your discipline below.

    - Registered Nurse (RN)
    - Licensed Practical Nurse (LPN)

2. How familiar are you with the pain assessment tools (i.e. PQRST, Pain Numeric Rating Scale, and PAINAD) used in Eastern Health Long Term Care (EHLTC)?

    - Extremely familiar
    - Very familiar
    - Somewhat familiar
    - Not so familiar
    - Not at all familiar

3. Were you provided education on the use of the PQRST, Pain Numeric Rating Scale, and PAINAD tools?

    - Yes
    - No
    - Unsure

4. Please indicate your understanding of how often pain assessment should be completed with a resident.

5. Please outline your understanding of when (i.e. in what situations) you would use each of the following pain assessment tools: PQRST, Pain Numeric Rating Scale, and PAINAD.

6. How frequently do you use the pain assessment tools listed in question 5 when assessing your residents' experiences of pain?

- Never
- Rarely
- Sometimes
- Often
- Always

7. How helpful do you feel the use of pain assessment tools is to the promotion of pain management for LTC residents?

    - Extremely helpful
    - Very helpful
    - Somewhat helpful
    - Not so helpful
    - Not at all helpful

8. Audits have shown that the routine use of pain assessment tools in EHLTC is limited. What factors do you think are preventing RNs and LPNs from regularly using these tools?

9. What would you recommend to improve the use of pain assessment tools among RNs and LPNs?

10. Do you have any other thoughts or ideas that could be helpful in improving pain assessment in EHLTC?

Appendix E: Health Research Ethics Authority (HREA) Screening Tool

Student Name: Danita Croucher

Title of Practicum Project: Evaluation of a Pain Assessment and Management Quality Improvement Initiative in Long Term Care (LTC) Facilities.

Date Checklist Completed: September 6th 2022

This project is exempt from Health Research Ethics Board approval because it matches item number **3** from the list below.

9. Research that relies exclusively on publicly available information when the information is legally accessible to the public and appropriately protected by law; or the information is publicly accessible and there is no reasonable expectation of privacy.
10. Research involving naturalistic observation in public places (where it does not involve any intervention staged by the researcher, or direct interaction with the individual or groups; individuals or groups targeted for observation have no reasonable expectation of privacy; and any dissemination of research results does not allow identification of specific individuals).
11. Quality assurance and quality improvement studies, program evaluation activities, performance reviews, and testing within normal educational requirements if there is no research question involved (used exclusively for assessment, management or improvement purposes).
12. Research based on review of published/publicly reported literature.
13. Research exclusively involving secondary use of anonymous information or anonymous human biological materials, so long as the process of data linkage or recording or dissemination of results does not generate identifiable information.
14. Research based solely on the researcher's personal reflections and self-observation (e.g. auto-ethnography).
15. Case reports.
16. Creative practice activities (where an artist makes or interprets a work or works of art).

For more information please visit the Health Research Ethics Authority (HREA) at https://rpresources.mun.ca/triage/is-your-project-exempt-from-review/