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Helen Laferriere

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ASSESSMENT OF PAIN IN THE OLDER ADULT WITH DEMENTIA

By

Helen Laferriere

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An Independent Study

Submitted to the Graduate Faculty

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PERMISSION

Title ASSESSMENT OF PAIN IN THE OLDER ADULT WITH DEMENTIA

Department Nursing

Degree Master of Science

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Abstract

Pain is common in the older adult as they continue to age regardless of their cognitive ability. Whether the older adult resides in the community, in a nursing facility or is hospitalized, pain is prevalent in this population. The assessment and management of pain in the older adult with cognitive impairment is a challenge for those in healthcare. Based on the severity of the dementia, the older adult may not be able to verbalize or describe their pain. Therefore, it is vital that healthcare providers are able to identify pain in this population. Observational assessment scales, such as the Abbey Pain Scale, CNPI, Doloplus-2, PAINAD, PACSLAC and NOPPAIN, can be utilized to better recognize pain in the older adult with cognitive impairment. This paper set out to answer the following questions: Is pain properly assessed in the older adult with dementia? and Which observational tools are found to be effective in the older adult with dementia? Throughout this paper, observational assessment scales will be evaluated and critiqued. Behavioral indicators of pain are also introduced. Implementations for healthcare providers and the development of an educational project will be discussed.

ASSESSMENT OF PAIN IN THE OLDER ADULT WITH DEMENTIA

Introduction

Pain is common in the adult who is 65 years and older. With the increase in age comes the increased possibility of chronic conditions that are related with pain (Gloth, 2000).

Regardless of where the older adult resides, pain is widespread in the community, with up to 50% of older adults reporting pain. Rates continue to increase with 70% to 80% of nursing home residents experiencing pain regularly (Horgas, Nichols, Schapson & Vietes, 2007). In the acute care setting, pain remains a problem and often goes undetected due to the lack of a biological marker for pain measurement (DeWaters et al., 2008). If pain goes undetected and untreated, it can have an effect on activities of normal daily living, limitation of a person's independence and ultimately affecting their quality of life (Ross & Crook, 1998, Lane et al., 2003).

Pain, being subjective in nature, becomes an especial problem for older adults with cognitive impairment, such as dementia and Alzheimer's disease, with limited ability to verbalize their pain (Lane et al., 2003). Research continues to show that pain is under identified and undertreated in older adults with dementia (Tsai & Chang, 2004, Kaasalainen, 2007). The American Geriatric Society findings agreed that those with dementia are at increased risk for under identification of pain more so than the cognitively intact older adult (Lane et al., 2003). Untreated pain in this population can lead to increased behaviors, exacerbation of cognitive impairment and functional impairment (Tsai & Chang, 2004). The recent development and analysis of observational pain assessment tools have shown to be effective in the assessment of pain and show promise to better identify pain in the older adult with cognitive impairment. This independent study will review the assessment of pain in the older adult with dementia and observational pain assessment tools and their effectiveness in this population.

Purpose

Pain assessment of the older adult with dementia is interdisciplinary including nursing assistants, nurses and primary healthcare providers. By using an interdisciplinary approach to assessing pain, the older adult has a greater chance for their pain to be identified and treated properly therefore maintaining their quality of life. The clinical questions for this literature review and independent study is as follows:

- Is pain properly assessed in the older adult with dementia?
- Which observational tools are found to be effective in the older adult with dementia?

With the above questions answered, it is important that healthcare providers are educated. Implications for healthcare providers and the development of an educational program will be discussed.

Significance

Many older adults are diagnosed with conditions that may result in pain and have an effect on their ability to perform activities of daily living and independent living (Murdoch & Larsen, 2004). It is estimated that 64% to 86% of older adults suffer from chronic pain (Tsai & Chang, 2004). This becomes a particular issue when looking at the growing population of adults that are over the age of 65 and growing incidence of Alzheimer's disease and other dementias. According to the Centers for Disease Control and Prevention (CDC), in 1980, 11% of the United States population was 65 years old or older. In 2007, the population increased to 12% and by 2050 it is estimated that 20% of the population will be 65 years old or older (CDC, 2009). According to the Alzheimer's Association, it is estimated that 5.2 million adults, 65 years and older, have Alzheimer's disease in the United States. It is estimated, of those that have

Alzheimer's disease, 6% are 65 to 74 years of age, 45% are 75 to 84 years of age and 45% are 85 years or older (Alzheimer's Association, 2011). With the elderly population growing as well as the incidence of Alzheimer's disease, it is important that the issue of pain is addressed.

The CDC, based on data from the 1999-2002 National Health and Nutrition Examination Survey and the 2003 National Health interview Survey, concluded that one fifth of older adults over the age of 65 had experienced pain that had lasted at least twenty four hours in the past month. Older adults were also at greater risk for their pain to last a long period of time with almost three fifths of those 65 years old and older stating that their pain had lasted one year or more. Reports of severe joint pain were also high among older adults, with women reporting more severe joint pain than men (Flaherty, 2008).

Pain in the older adult may be misunderstood because of myths such as pain is a part of growing old (Bird, 2005). Myths also exist that those with dementia experience less pain than their cognitively intact peers (Wheeler, 2006). Barriers such as these lead to the under identified and under treatment of pain in this population. There is also a lack of education in health care providers, including nurses, advanced practice nurses, and physicians, in dealing with pain as well as a lack of proper pain assessment tools appropriate for this population. Inadequate pain management also arises from healthcare provider's inattention to pain assessment and reluctance to prescribe opioid medications (Gloth, 2000). Everyone, regardless of age and cognitive ability, has the right to have their pain treated. Proper pain assessment must be used for effective pain treatment in the older adult (Bird, 2005).

Theoretical Framework

The middle range theory, the Theory of Comfort, was used as the theoretical framework for this literature review. The Theory of Comfort was developed by Katharine Kolcaba. In this theory, a philosophy of care is introduced where holistic comfort needs are provided for patients, families, and nurses. Comfort is defined as “the immediate experience of being strengthened by having needs for relief, ease, and transcendence met in four contexts (physical, psychospiritual, sociocultural, and environmental); much more than the absence of pain or other physical discomforts” (Peterson & Bredow, 2009, p 254). Kolcaba also saw human beings as having holistic responses to complex stimuli. Comfort was also viewed as a desirable holistic state that is a critical aspect of the discipline of nursing (Peterson & Bredow, 2009). By using the Theory of Care, it is evident the importance of assessment of pain in the older adult with dementia. Though comfort is defined as more than the absence of pain, once the issue of pain has been addressed then other needs are able to be met. This allows for holistic care to be provided by meeting all physical, psychospiritual, sociocultural and environmental needs.

Definition of Pain

Pain is complex in nature and is more than a physical sensation caused by a particular stimulus. Pain experience can involve physical, emotional and cognitive components. Exhausting and demanding a person’s energy, pain affects relationships and the meaning of life (Potter & Perry, 2005). The International Association for the Study of Pain (2011) defines pain as an “unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (p. 2). This definition is focused on the objective rather than subjective aspect of pain and requires tissue damage to be present which might not always correspond with patients’ complaints (Kaasalainen, 2007). In 1979, McCaffery defined

pain as “whatever the experiencing person says it is, existing whenever he says it does” (Potter & Perry, 2005, p. 1230). This is one of the most common definitions of pain used and incorporates a more subjective perspective. McCaffery’s definition of pain requires a person to have the ability to communicate their experience of pain, which can be a problem in the cognitively impaired older adults who can’t verbalize their pain (Kaasalainen, 2007). Kaasalainen (2007) developed a definition of pain for older adults with cognitive impairment which is as follows: “pain is an unpleasant subjective experience that can be communicated to others either through self-report when possible or through a set of pain-related behaviors” (p. 7). This definition incorporates the subjective nature of pain and allows the expression of pain through self-report or behavioral observation (Kaasalainen, 2007). This definition of pain is the best to be used in the older adult with cognitive impairment and should be utilized by healthcare providers when assessing pain in this population.

Review of Literature

The literature review analyzes research performed in the last ten years (2000-2010) concerning pain assessment methods to be used in the older adult with dementia. Self report and observational assessment tools were compared in order to determine the best indicator of pain for this population (Pautex et al., 2006, Cohen-Mansfield, 2008). Furthermore, articles were reviewed that discussed individual observation assessment tools. These observational assessments tools were tested in both cognitively intact and cognitively impaired older adults (Pautex et al., 2007, Horgas, Nichols, Schapson & Vietes, 2007, Feldt, 2000, DeWaters et al., 2008) in various settings in the community including acute and long term care (Feldt, 2000, DeWaters et al., 2008, Abbey et al., 2004, Horgas, Nichols, Schapson & Vietes, 2007, Pautex et al., 2007, Cohen-Mansfield, 2008). Table 1 shows the different observational assessment tools

evaluated for this review. Finally, articles that compared different observational tools will be analyzed.

Different designs were utilized in the literature review. Prospective studies used observational pain assessment tools in the older adult with dementia to monitor pain over a period of time (Pautex et al., 2006, Chen, Lin & Watson, 2010, Pautex et al., 2007). A descriptive correlational design was also reviewed (DeWaters et al., 2008). Research designs were also qualitative in nature in that subjects were interviewed for pain and observed for behavioral indicators of pain (Feldt, 2000, DeWaters et al., 2008, Abbey et al., 2004, Horgas, Nichols, Schapson & Vietes, 2007, Pautex et al., 2007, Cohen-Mansfield, 2008, Pautex et al., 2006, Chen, Lin & Watson, 2010, Snow et al., 2004, Fuchs-Lacek & Hadjustavropoulos, 2004).

Literature shows six main behavioral indicators of pain (Horgas, Nichols, Schapson & Vietes, 2007, Feldt, 2000). These behavioral indicators are used the basis for the development of many observational tools. Six behavioral pain indicators are as follows: "facial expressions, verbalization and vocalization, body movements, changes in interpersonal interactions, changes in activity patterns or routines and mental status changes" (Horgas, Nichols, Schapson & Vietes, 2007, p. 78).

Table 1

Description of Observational Pain Assessment Tools

Observational Scale	Research article	Description
Abbey pain scale	-Abbey et al., 2004 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006	6 item scale based on vocalization, facial expression, change in body, language, behavioral changes, physiological change and physical change
Checklist of	-Feldt, 2000	6 item scale based on verbal

Nonverbal Pain Indicators (CNPI)	<ul style="list-style-type: none"> -Nygaard & Jarland, 2006 -Van Herk et al., 2007 -Smith, 2005 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006 	complaints-“ouch,” “that hurts,” or “stop”; nonverbal vocalizations-sighs, gasps, moans, groans, or cries; facial grimacing-wincing, clenched teeth, furrowed brow, tightened lips or narrowed eyes; bracing behaviors-clutching, or holding an affected area during movement; massaging the affected area; restlessness-constant or intermittent shifting of position, rocking or inability to keep still
DOLOPLUS-2	<ul style="list-style-type: none"> -Pautex et al., 2007 -Chen, Lin & Watson, 2010 -Van Herk et al., 2007 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006 	10 item scale including somatic reactions (somatic complaints, protective body postures adopted at rest, protection of sore areas, expression, sleep pattern); psychomotor reactions (washing &/or dressing); psychosocial reactions (communication, social life, problems of behaviors)
Non-Communicative Patient’s Pain Assessment Instrument (NOPPAIN)	<ul style="list-style-type: none"> -Horgas, Nichols, Schapson & Vietes, 2007 -Snow et al., 2004 -Van Herk et al., 2007 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006 	4 sections including observation of daily activities; associated pain response (including 6 pain items: words, pain faces, noises, bracing, rubbing, restlessness); pain location scale; pain thermometer
Pain Assessment Checklist for Seniors With Limited Ability to Communicate (PACSLAC)	<ul style="list-style-type: none"> -Fuchs-Lacek & Hadjistavropoulos, 2004 -Van Herk et al., 2007 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006 -Zwakhaleh, Hamers & Berger, 2007 	60 items with 4 dimensions including facial expressions; activity/body movements; social/personality/mood; physiological/eating/sleeping changes/vocal behaviors
Pain Assessment in Advanced Dementia (PAINAD)	<ul style="list-style-type: none"> -DeWalters et al., 2008 -Smith, 2005 -Van Herk et al., 2007 -Zwakhaleh, Hamers, Abu-Saad & Berger, 2006 	5 items scale based on breathing, negative vocalization, facial expressions, body languages, consolability

The Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) was based on the six behavioral indicators. This scale was developed for the older adult with dementia through interviewing professional caregivers of long term care facilities to produce a list of observed pain related behaviors. The behaviors were reviewed by researchers and independent coders to generate validity (Fuchs-Lacelle & Hadjistavropoulos, 2004).

The Non-communicative Patient's Pain Assessment Instrument (NOPPAIN) was developed by a multidisciplinary team with an emphasis on pain assessment during routine daily care. This assessment tool was developed for nursing assistants and includes pictures and text to aid those who have poor reading skills or English as a second language. Behavioral pain indicators including in this tool are pain words, pain faces, bracing, pain noises, rubbing and restlessness. The person using the tool is shown different positions that may be present during daily activities and are asked if it was preformed and if they saw pain (Snow et al., 2004). Finally the tool includes these questions to be asked of the patient: "are you in pain?" and "do you hurt?" (Snow et al., 2004, p. 244).

The development of the Abbey pain scale also included six behavioral indicators. The Abbey pain scale differs in that it includes both physiological changes (temperature, pulse, or blood pressure outside normal limits, perspiring, flushing or pallor) and physical changes (skin tears, pressure areas, arthritis, contractures, previous injuries) as well as including four of the behavioral pain indicators mentioned including facial expressions, vocalizations, changes in body language and behavioral changes (Abbey et al., 2004). Finally, The Checklist of Nonverbal Pain Indicators (CNPI) also used behavioral indicators most found in research for the development of this tool. The behavioral indicators included in the CNPI are nonverbal

vocalizations, facial grimacing or wincing, bracing, rubbing, restlessness and vocal complaints (Feldt, 2000).

Pautex and colleagues (2006) performed self assessment pain scales in severely demented hospitalized patients. Self assessment pain scale results were compared to observational scales. Findings reported that two thirds of the hospitalized elderly patients utilized in the study were able to reliably report their pain with the use of a self assessment tool (Pautex et al., 2006). Self assessment tools, informant rating and observational assessment tools were also compared by Cohen-Mansfield (2008) in nursing home residents with dementia. Sixty percent of the sample population was able to use self report questionnaires to convey their pain. Self report of pain has the most direct access to the pain of the individual but may be subject to limitations due to dementia and the limitations the disease has on both communication and comprehension (Cohen-Mansfield, 2008). These studies demonstrate the importance of self assessment as the first step in the assessment of pain and also show the importance of observational tools used in this population.

The Doloplus-2 is an observational tool developed to assess pain in older adults with dementia who cannot self report their pain and cannot communicate. One study compared the visual analog scale with the Doloplus-2 in demented (n=131) and cognitively intact (n=49) older hospitalized patients. This study aimed to report the psychometric properties and measure the predictive values of the different dimensions of the Doloplus-2 scale. The findings indicated that nearly half of the participants were able to report their pain using direct questioning. There was a strong correlation found between self assessment and Doloplus-2 and the ability to report the intensity of pain (Pautex et al., 2007). Pautex et al. (2007) stated that there is a possibility that self assessment scales do not assess the same parameters of pain as observational scales. The

Dolophus-2 was found to be easy to use and complete even in the acute care setting. Chen, Lin & Watson (2010) also tested the assessment of pain using Dolophus-2 scale in both registered nurses and nursing assistants. Researchers set out to determine the validity of nurses and nursing assistants assessment of pain and investigate possible influencing factors of the cognitively impaired older adult who are institutionalized. The participants (n=304) of this study were first asked to self report their pain using the question "are you experiencing pain now?" and the verbal descriptor scale. Pain was then assessed using the Dolophus-2. Nurses were found to be more reliable in evaluating pain in older adults with dementia when compared to nursing assistants. Nursing assistants were thought to experience caregiver burnout or empathy burnout and may have a bias to pain perception in institutionalized older adults with cognitive impairment. Both nurses and nursing assistants were able to assess the presentence of pain but often struggled with rating the frequency and intensity of pain in the older adult with dementia. When the Doloplus-2 was used to observe and rate subtle changes in pain related behaviors, the pain assessment scale was found to have some limitations when used by clinical practitioners. Therefore, if assessors receive training, discrepancies may be avoided and pain in this population will be better detected (Chen, Lin & Watson, 2010).

Horgas and colleagues (2007) also compared the NOPPAIN with self report and other behavioral observational procedures. Their study included both cognitively intact (n=20) and cognitively impaired (n=20) subjects in the community, assisted living and nursing homes. Bracing and pain noises were the most commonly observed pain behavior among all subjects. Findings also resulted in no significant correlation between the NOPPAIN ratings and the pain ratings of the numeric rating scale and verbal descriptor scale in the cognitively impaired participants only. The NOPPAIN scale can be easily used to assess behavioral indicators of pain

without excessive training of staff (Horgas, Nichols, Schapson & Vietes, 2007). Snow et al. (2004) also found that the NOPPAIN could be utilized by nursing assistants with excellent accuracy rates. Nursing assistants, who worked in a nursing home, watched six three minute videos with a professional actress portraying a bedbound patient, with severe dementia, while they received daily cares from a nursing assistant. Nursing assistants, with little training, were able to achieve excellent accuracy rates. Although this study did use a simulated subject in the video tapes, a highly naturalistic setting for pain assessment in a nursing home setting was captured (Snow et al., 2004).

Another observational scale used the behaviors obtained from caregivers in the generation of a 60 item checklist. This checklist, the PACSLAC, was found to distinguish among pain events, where there was clear and recognizable cause of pain, events in which there was no painful distress and calm events. The PACSLAC covers a wide range of behaviors that may be indicative of pain though more research is needed, including larger sample sizes, to optimize the validity of this scale (Fuchs-Lacelle & Hadjistavropoulos, 2004). Zwakhalen, Hamers & Berger (2007) utilized the PACSLAC in an observational study in nursing home patients who were observed receiving an influenza injection. A selection of this sample was additionally reviewed during patient specific pain moment including care activities, washing or mobilization. Researchers reduced items of the PACSLAC as part of the construction of the scale into a Dutch version, PACSLAC-D. Based on the internal consistency analyses, items were discarded if they were used in over ninety percent of recordings or not used in over ninety percent recordings in both observed pain circumstances. Twenty four items remained and were determined to have social emotional aspects, including mood, aggression and agitation, and are important behavioral cues for nurses and healthcare workers to be aware of. Two items removed

included open mouth and mumbling which can occur too frequently in this population in non painful situations. The PACSLAC and PACSLAC-D were found to be valid and reliable though the PACSLAC could reduce the number of scale items to make it more user friendly. More research is needed to examine the effectiveness of both scales in daily use (Zwakhaleh, Hamers, & Berger, 2007).

The CNPI was developed by Feldt (2000) in concern of cognitively impaired older adults who underwent surgical repair of a hip fracture and would not be unable to use the provided scaled instruments or answer reliably to the questions about pain. Hip fracture patients (n=88), both cognitively intact (n=35) and cognitively impaired (n=53) patients, were interviewed including the assessment of pain using the Ferrell Pain Experience Interview, which consists of the verbal descriptor scale and the Mini-Mental State Exam. Subjects were then observed for pain related behaviors while at rest and movement using the CNPI. One patient was not observed at rest due to interruption of therapeutic services and eight additional patients were not observed during movement for nonverbal signs of pain. Results showed that there was no significant difference between cognitively impaired and cognitively intact observed pain related behaviors. Although, cognitively intact patients showed fewer pain related behaviors during rest and movement than their cognitively impaired counterparts. Behaviors most common at rest included facial grimacing and restlessness in all subjects. Grimacing, verbal complaints, nonverbal vocalizations, and bracing were most commonly observed during movement in all subjects though cognitively impaired subjects percentages were higher. Fifty six percent of subjects showed no nonverbal behavioral indicators, which include sighs, gasps, moans, groans, or cries, at rest while sixty percent of patients showed nonverbal indicators of pain during movement. Finally, verbal descriptor scale scores were compared to CNPI scores at rest and

movement and were found to significantly correlate for the sample as a whole. The CNPI demonstrated its reliability and simplicity in the assessment of pain in the postoperative elders. Nygarrrd & Jarland (2006) also found the CNPI to be simple and can be utilized by all nursing staff. The CNPI was used in the seven Norwegian nursing homes by nurses, auxiliary nurses and nursing assistants. Among the cognitively impaired residents (n=46) used in the study, vocalizations, grimacing and verbal complaints were the most common behavioral pain indicators. Behavioral pain indicators were found to significantly correlate with pain intensity score in these subjects. Again, the CNPI proves to be a reliable and valid assessment tool to be utilized in the long term care setting (Nygarrd & Jarland, 2006).

The Pain Assessment in Advanced Dementia (PAINAD) was developed to assess pain for residents in long term care with advanced dementia. DeWaters and colleagues (2008) set out to determine the if an observational tool such as the PAINAD is able to detect pain in the older adult with cognitive impairment who is unable to report pain and the cognitive intact older adult who is reluctant to report pain. Participants (n=25) in this study were hospitalized patients on an orthopedic unit, 65 years or older, who had sustained a hip fracture from trauma and underwent surgical repair. Participants had to have the ability to verbally communicate and understand the 0-10 self reporting numeric rating scale. Two research assistants, master's prepared nurses, participated in training sessions including handouts, videotaped training vignette and simulations regarding the PAINAD. Participants were observed on two occasions, postoperative day one and postoperative day four. One of the research assistants and a principal investigator would observe the patient for five minutes during a time of unlikely pain and rate their findings using the PAINAD. Participants were then asked to rate their pain on the numeric rating scale. The second time participants were observed for five minutes while the participants were being

transferred from the bed to chair by staff. After the transfer, participants were asked to rate their pain on the numeric rating scale. Strong correlation between the PAINAD and numeric rating scale pain scores were found in both the cognitively impaired (n=12) and cognitively intact (n=13) participants. Discriminant validity was also determined by comparing the scores of the PAINAD during times of likely and unlikely pain. Scores were considerably higher during times of likely pain than times of unlikely pain. The PAINAD was found to be a valid and reliable tool appropriate for the assessment of pain in older adults who are unable to report pain or who are reluctant to report pain (DeWaters et al., 2008).

Zwakhaleh, Hamers, Abu-Saad, & Berger (2006) systemically reviewed twenty nine publications which comprised of twelve observational pain assessment tools including the Doloplus-2, CNPI, PACSLAD, PAINAD, Abbey Pain Scale and NOPPAIN. Researchers set out to find which behavioral pain assessment tool was available to assess pain in the older adult with dementia and determine the psychometric qualities of each tool. Each observational pain assessment tool was evaluated by criteria used to judge the overall quality based on validity, reliability and homogeneity. The PAINAD, PACSLAC, and Doloplus-2 were found to have the best psychometric qualities but further research is needed for additional refinement and development. The PACSLAC was the only scale reviewed that focuses on subtle changes in behavior and the Doloplus-2 has been most comprehensively tested. The conclusion was made that the PACSLAC and the Doloplus-2 are the most appropriate scales to be used in the older adult with dementia (Zwakhaleh, Hamers, Abu-Saad, & Berger, 2006). Smith (2005) also reviewed six observational pain assessment tools, including the CNPI and the PAINAD, to increase the awareness of pain scales and expand use and testing in clinical settings. The CNPI was found to have good face validity and reliability for periods of rest and movement though

detecting baseline pain at rest has a lower probability. The CNPI requires more research to further examine validity particularly with the nonverbal populations. The PAINAD was found to be a brief, easily administered tool which measured pain of nonverbal patients with advanced dementia well. More research is required to test the tool in different clinical settings, more diverse populations and utilized at different times of the day to determine its value in the clinical setting (Smith, 2005).

Van Herk and colleagues (2007) also reviewed literature in search of relevant pain observations pain scales and to review the psychometric qualities of each. Thirteen scales were reviewed. It was established that cutoff scores are essential in deciding whether interventions are needed to alleviate pain. The PACSLAC and the PAINAD were found to have the most promising outcomes in the assessment of pain in the older adult with cognitive impairment. The many items included in the PACSLAC and PAINAD assessment scales define them as the most feasible for clinical practice.

Limitations recognized by researchers and determined through the literature review include the small sample size of older adults utilized. Small sample sizes of less than hundred older adults represent a small fraction of this population. It can be argued that such a small sample size hardly represents the older adults with cognitive impairment as a whole. Another limitation that should be considered is the possible bias of those interviewing and observing pain in the older adult. Cultural differences may also arise and limit the universal applicability of the findings (Zwakhalen, Harmers & Berger, 2007, Chen, Lin & Watson, 2010). This demonstrated the need for more research on this topic.

Studies that included both cognitive intact and cognitively impaired older adult subjects (Pautex et al., 2007, Horgas, Nichols, Schapson & Vietes, 2007, Feldt, 2000, DeWaters et al.,

2008) allow for the comparison of pain assessment tools in the two populations and support the reliability of those tools. The reader is able to compare the results and establish what is best to be used in their practice. By using both groups of older adults, a better understanding of pain and the best pain assessment tools used for this population is derived. The prospective nature of the studies also allows for a better understanding of the topic due to the observance of pain over a period of time.

Methods

Literature utilized in this literature review was retrieved from Harley E. French Library of the Health Sciences at the University of North Dakota. Search engines used through the library included CINAHL and PubMed. Search topics included “cognitive impairment”, “pain”, “pain assessment”, and “older adult”. Articles were reviewed and analyzed to find their relevance to the topic. Reference lists of appropriate articles were examined by hand to find additional applicable articles. Throughout the literature review and educational project, articles that were found to be pertinent to the topic were included.

After review of many articles, an educational project was developed to instruct the nursing staff of an orthopedic unit on the proper assessment of pain in the older adult with cognitive impairment. Hip fractures are among one of the most painful event that occurs in the older adult. In the United States in 2003 it was estimated there were more that 300,000 hospitalizations annually and approximately 86% of those individuals were 65 years and older. Pain is an especial problem in the postoperative patient with cognitive impairment. Pain in this population of older adults often goes undetected due to the lack of an objective marker, such as a blood test or thermometer, that is a clear demonstration of the person’s pain (DeWaters et al., 2008). With these startling statistics and nurses expressing the desire to learn more about the

proper assessment tools utilized in this population, an educational power point presentation was developed.

The presentation included objectives that were reviewed throughout the presentation. The definition of pain was discussed, including the best definition to be used with the older adult with dementia. With pain properly defined, the effect that pain has on the quality of life in the vulnerable population was also discussed. Behavioral indicators of pain in this population were also discussed and reviewed. The proper steps of the assessment of pain in the cognitively impaired older adult were reviewed including questioning the older adult to report their pain through self report as the first step in pain assessment. If the older adult has limited communicative ability, three assessment tools, PAINAD, CNPI and NOPPAIN, were introduced. These assessment tools were found to be most appropriate for the postoperative cognitively impaired older adult and were most suitable for the learners.

Results

The independent study project was presented to thirteen nurses and four nursing assistants. The presentation was twenty minutes in length and included time for questions. Each participant was given time to give feedback to the presenter. Nursing staff were asked if the information presented was relevant to their practice. Both nursing and nursing assistants agreed that behavioral pain assessment tools would be beneficial to their practice. Nurses agreed that the proper assessment of pain would allow for better holistic care for the older adult patients with cognitive impairment. A copy of each observational assessment tool introduced and reviewed was put into an educational binder to be utilized for nursing staff during their practice. A copy of the power point presentation was also included in the educational binder for those who were

unable to attend the educational presentation. The educational binder is kept in a central location for all nursing staff to refer to as needed.

Discussion and Implications for Nursing

Pain is a common problem in older adults; it is essential that nurses are aware of this in order to provide competent nursing care as this population continues to grow. Healthcare providers need to be aware of pain in older adults and the effect it has on activity of daily living and the quality of life (Ross & Crook, 1998). Sofaer et al. (2005) states that older adults are more vulnerable than younger adults due to their life circumstances, but are just as entitled to have their well being considered. This shows the importance of the need for nurses to be aware of pain in this population and proper assessment tools that are most appropriate to be used in their institution.

Healthcare providers should also be aware of definition of pain in the older adult with cognitive impairment. In demented patients, especially those with severe dementia, nursing staff play a key role in pain assessment, identification and treatment (Nygaard & Jarland, 2005). All healthcare providers should be educated about the importance of understanding that pain is an unpleasant subjective experience that is reported through self report or behavioral assessment tools (Kaasalainen, 2007). The interpretation of behavioral pain symptoms is essential in order to properly assess pain (Nygaard & Jarland, 2005). Lists of behavioral indicators of pain, which are included in many of the pain assessment tools, are included in Table 2. Healthcare providers should be familiar with this list and have the ability to apply the presence of these indicators to the pain assessment tool at hand. Continued research and education on this topic including appropriate assessment tools and treatment methods is needed for all healthcare providers.

Table 2

Pain Behaviors and Indicators

Facial Expressions	Slight frown, sad, frightened face, grimacing, wrinkled forehead, closed or tightened eyes; a distorted expression, rapid blinking;
Verbalizations	Sighing, moaning, groaning, grunting, chanting, calling out, noisy breathing, asking for help, verbally abusive;
Body Movements	Rigid, tense body posture, guarding, fidgeting; increased pacing, rocking; restricted movement; gait or mobility changes;
Changes in Interpersonal Interactions	Aggressive, combative, resting care; decreased social interactions, socially inappropriate, disruptive, withdrawn;
Changes in Activity Patterns	Refusing food, appetite change, increase in rest periods or sleep, changes in rest patterns, sudden cessation or common routines, increased wondering;
Mental Status Changes	Crying or tears, increased confusion, irritability or distress (While & Jocelyn, 2009, p. 439).

The American Geriatric Society recommends that self report be the first step in the assessment of pain of any individual (Wheeler, 2006). Those with mild to moderate dementia are able to answer simple questions about their pain (Horgas, Nichols, Schapson & Vietes, 2007). The number scale and faces scale were found to be effective for this population. Pautex and colleagues (2006) and Cohen-Mansfield (2008) found self report of pain to be the most direct access to the pain of the individual. Self report may have limitations due to the progression of dementia and the limitations the disease has on both communication and comprehension (Cohen-Mansfield, 2008). Nonetheless, if the older adult is still able to verbally communicate, self report scales should be used initially in the assessment of pain.

Observational pain assessment scales are to be utilized if the older adult with cognitive impairment is unable to self report their pain or if they have limited communicative ability. Pain assessment scales include the PACSLAC, Abbey Pain Scale, PAINAD, CNPI, Doloplus-2 and

the NOPPAIN. All have been utilized in the cognitively impaired older adult population in a variety of settings and show promise in better identifying pain. The PACSLAC was found to discriminate between pain and other distress, utilize a wide range of behaviors that may be related to pain, demonstrate good validity and reliability and be the most feasible for clinical practice (Zwakhaleh, Hamers, & Berger, 2007, Fuchs-Lacelle & Hadjistavropoulos, 2004, Van Herk et al., 2007, Zwakhaleh, Hamers, Adu-Saad & Berger, 2006). The PAINAD is easy to administer, effective in a variety of settings including acute and long term and it provides a standardized approach to assessing pain (Smith, 2005, DeWaters et al., 2008, Van Herk et al., 2007). NOPPAIN is a brief scale that can be utilized by all healthcare providers, especially nursing assistants, in evaluating pain in mild to moderate dementia. The Abbey Pain Scale is also easy to administer but needs to be tested further for reliability and validity (Zwakhaleh, Hamers, Adu-Saad & Berger, 2006, Abbey et al., 2004). A short, simple assessment tool that was utilized in both acute and long term care setting, the CNPI is most effective when patients were being transferred or participating in activities (Feldt, 2000, Nygaard & Jarland, 2006). Finally, the Doloplus-2 is an easily administered scale and is effective in the acute care setting. The Doloplus-2 also has been comprehensively tested demonstrating its validity and reliability (Zwakhaleh, Hamers, Adu-Saad & Berger, 2006, Pautex et al., 2007). Pain thresholds and pain tolerances in older adults should be further explored in future research. Further exploration of this topic will allow for better validation of all observational assessment tools (Van Herk et al., 2007)

In the practice setting, policies should be initiated to properly utilize pain assessment tools for all age groups. It is important that all healthcare settings, including clinics, acute care and long term care facilities, are aware of pain assessment tools that were created for the elderly

population. Pain assessment tools that are utilized should also be evidence based and appropriate to the setting. Introducing standardized pain scoring in nursing care protocols would allow for nurses to assess pain more consistently. This would allow for nurses to assess pain more frequently, record it properly, and then initiate the proper intervention if necessary. As a result of the use of standardized pain scoring, better pain assessment and treatment would take place which is in the best interest of the older adult with dementia (Zwakhalen, Hamers, Berger, 2007). All policies put into practice should reflect the importance of pain assessment for the cognitively impaired, which are a particularly vulnerable population due to the possible limitation of communicative abilities and debilitating effects of pain.

It is vital that nurses are aware of the commonality of pain in the elderly. Education should focus more attention toward recognizing the presence of pain in the population. Healthcare providers should allow the older adult to express their concerns about pain and take care in the development of plan of care (Higgins et al., 2004). Myths that exist about pain and the elderly must be eradicated. Older adults, regardless of cognitive ability, are entitled to proper pain assessment and management. Understanding the multidimensional aspects of pain and the perception of pain will allow for better nursing interventions (Sofaer et al., 2005).

Education should also be focused toward the older adult regarding pain which may be a challenge in the cognitively impaired older adult. The importance of notifying healthcare providers of pain must be stressed and these patients should be continually asked if they are experiencing pain. Due to cognitive impairment, those individuals might forget they experienced pain during a particular activity or may be distracted easily (Tsai & Chang, 2004). It is critical that healthcare providers are aware that pain is not synonymous with growing old and though pain may exist it does not mean that it must be dealt with in silence.

Summary

In conclusion, pain is indeed a problem in the elderly. Pain is a constant problem that many older adults, regardless of their residence or mental status, have to struggle with. Those with cognitive impairment are at greater risk for their pain to go without identification or treatment than those without cognitive impairment. Education about the assessment of pain in cognitively impaired older adults and observational assessment tools is often lacking. First, the older adult should be given the opportunity to identify their pain through self report. If the older adult has limited communicable abilities or understanding then an observational assessment tool should be utilized. It is important that an easy to use, reliable, and valid observational assessment tool exists for all healthcare providers to use in a variety of settings. The Abbey Pain Scale, CNPI, Doloplus-2, PAINAD, PACSLAC and NOPPAIN are examples of observational assessment tools that have been developed for and tested in the older adult with cognitive impairment. Each has limitations and requires more research but each has been proven to be effective in the assessment of pain.

If pain goes under identified and undertreated in the older adult with dementia, the consequences can be disastrous leading to increase disability and decreased quality of life. Therefore, educational programs should be provided for all healthcare providers to introduce and/or review the proper assessment of pain in the older adult with cognitive impairment. Policies should be put into practice to reflect the importance of the assessment of pain in this vulnerable population. Implementation of educational programs and policies will allow for better holistic care for the older adults with cognitive impairment who often solely rely on caregivers for identification of pain.

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Appendix A

Power Point Presentation

Helen Laferriere
Independent Study Project
University of North Dakota

Assessment of Pain in the Older Adult with Dementia

Objectives

- Define pain and how it relates to the older adult with cognitive impairment
- Evaluate pain in the older adult with dementia and the importance of assessment tools
- Identify the proper steps of pain assessment that should be taken with the older adult with dementia
- Differentiate behavioral observational tools discussed including the NOPPAIN, PAINAD, and CNPI

Defining Pain

- According to the International Association for the Study of Pain, pain is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage"
- McCaffery in 1979 defined pain as "whatever the experiencing person says it is, existing whenever the experiencing persons says it does" (Kaasalainen, 2007)

Defining Pain

- "Pain is an unpleasant subjective experience that can be communicated to others either through self report when possible or through a set of pain-related behaviors" (Kaasalainen, 2007)



Pain and the Older Adult

- Pain is common in the older adult as they continue to age regardless of their cognitive ability (White & Jocelyn, 2009)
- Pain is most often caused by musculoskeletal conditions including osteoarthritis, bone and joint disorders, and back problems (Gloth, 2000)
- Pain is prevalent in this population regardless of whether the person is a community dweller, a resident of a nursing facility or a hospitalized patient (Wheeler, 2006)



Pain and Dementia

- The assessment and management of pain in the older adult with dementia is a challenge for those in healthcare
- Those with advanced dementia cannot verbalize or describe their pain
- These older adults rely on caregivers to identify and assess their pain (Tsai & Chang, 2004)



Pain and Dementia

- ▣ According to the American Geriatric Society, those with dementia are at greater risk for under identification and under treatment of pain when compared to those without dementia (Lane et al., 2003)

Complications of Pain

- ▣ For those with dementia the under identification and under treatment of pain can be disastrous leading to increased disability and decreased quality of life (Lane et al., 2003)




Table 1. Pain behaviours and indicators

Facial expressions	Slight frown, sad, frightened face, grimacing, wrinkled forehead, closed or tightened eyes. Any distorted expression, rapid blinking
Verbalizations, vocalizations	Sighing, moaning, groaning, grunting, chanting, calling out, noisy breathing. Asking for help, verbally abusive
Body movements	Rigid, tense body posture, guarding, fidgeting, increased pacing, rocking, Restricted movement, Gait or mobility changes
Changes in interpersonal interactions	Aggressive, combative, resisting care. Decreased social interactions, socially inappropriate, disruptive, withdrawn
Changes in activity patterns or routines	Refusing food, appetite change, increase in rest periods or sleep, changes in rest patterns, sudden cessation of common routines, increased wandering
Mental status changes	Crying or tears, increased confusion, irritability or distress

(While & Jocelyn, 2009)

Indications of Pain in the Dementia Patient

Sleep Disturbances	Social Withdraw
Depression	Subtle Changes to Behaviors
Weight loss	Decreased mobility
Agitation	Resistance to Cares

(Lane et al., 2003, Kaasalainen, 2007, Tsai & Chang, 2004)

Assessment of Pain

- ▣ Beginning of pain assessment should start with direct questioning of all people with dementia (Lane et al., 2003)
- ▣ Direct report is the most accurate and reliable evidence of pain
- ▣ Responses to direct questions will become less reliable as dementia progresses but those with mild to moderate levels of impairment are able to report (While & Jocelyn, 2009)

Self Report of Pain

- ▣ Pautex et al (2006) preformed a study on the ability of the hospitalized patient with dementia to self report pain
- ▣ 61% of the patients with dementia were able to self report pain
- ▣ Verbal and Faces scales were found to be the most effective

Self Report of Pain

Figure:
 Numerical Rating Scale (NRS), Verbal Descriptor Scale (VDS), and Faces Pain Scale (FPS). Snow, D., Keeley, R.A., Chang, S.C., Miller, L., Zylber, J.H. The Faces Pain Scale for the self-assessment of the severity of pain experienced by children. Development, initial validation, and performance in routine clinical practice. Pain 119: 415-424 (2005). DOI: 10.1016/j.pain.2005.07.011

(Jones, Vojir, Hutt & Fink, 2007)

Behavioral Observational Scales

- If it is determined that the person lacks the ability to communicate their pain, an observational scale should be used
 - Non-communicative patients pain assessment instrument (NOPAIN)
 - Pain Assessment In Advanced Dementia (PAINAD)
 - Checklist of Nonverbal Pain Indicators (CNPI)

Non-Communicative Patients Pain Assessment Instrument

- Developed to be a nursing assistant administered instrument for assessing pain behaviors in patients with dementia (Snow et al., 2004)
- Research has shown it to be a reliable and easily used to assess behavioral indicators of pain without extensive staff or training (Hogrogis, Natchuk, Schapson & Vietes, 2009)

NOPAIN (Non-Communicative Patient's Pain Assessment Instrument) Activity Chart Check List

Name of Evaluator: _____
 Name of Resident: _____
 Date: _____
 Time: _____

DIRECTIONS: Nursing assistant should complete at least 5 minutes of daily care activities for the resident while observing for pain behaviors. Both pages of the form should be completed immediately following care activities.

	Did you do this? (Check for no.)	Did you see pain when you did this? (Check for no.)		Did you do this? (Check for no.)	Did you see pain when you did this? (Check for no.)
1) Put resident in bed OR low resident lying down	YES NO	YES NO	8) Fed resident	YES NO	YES NO
2) Turned resident in bed	YES NO	YES NO	9) Helped resident stand OR low resident walk	YES NO	YES NO
3) Transferred resident (bed to chair, chair to bed, standing or wheelchair to bed)	YES NO	YES NO	10) Dumped resident, walk OR low resident walk	YES NO	YES NO
4) Set resident up (bed or chair) OR low resident sitting	YES NO	YES NO	11) Bathed resident OR gave resident sponge bath	YES NO	YES NO
5) Dressed resident	YES NO	YES NO			

ASK THE PATIENT: Are you in pain? yes no
 ASK THE PATIENT: Do you hurt? yes no

Pain Response (What did you see and hear during care?)

Locate Problem Areas

Please "X" the site of any pain
 Please "O" the site of any skin problems

FRONT BACK

A U.S. Veterans Affairs HETIC/THO Instrument. Snow, O'Malley, Runa, Coyle, Bruers, Beck, Ashton. Alteration of the instrument is prohibited. This instrument is copied and distributed free of charge for clinical or scholarly use. Development was supported by VA HSA&O and NIAH. Contact Dr. Snow at snow@bcm.tcu.edu

NOPAIN (Non-Communicative Patient's Pain Assessment Instrument) Activity Chart Check List

Name of Evaluator: _____
 Name of Resident: _____
 Date: _____
 Time: _____

Rate the resident's pain at the highest level you saw it at during care. (circle your answer)

Pain Assessment IN Advanced Dementia (PAINAD)

- Developed to assess pain in individuals with advanced dementia
- Requires 5 minutes of observation (Zwakhalen et al., 2006)
- Research has shown that this scale is effective for the cognitively impaired older adult after hip fracture surgery
 - Valid and reliable in the acute care orthopedic setting
 - Should be used when patients are moving to successfully assess pain (DeWaters et al., 2008)

PAINAD

Items*	0	1	2	Score
Breathing independent of vocalization	Normal	Occasional labored breathing. Short period of hyperventilation.	Noisy labored breathing. Long period of hyperventilation. Cheyne-Stokes respirations.	
Negative vocalization	None	Occasional moan or groan. Low-level speech with a negative or disapproving quality.	Repeated troubled calling out. Loud moaning or groaning. Crying.	
Facial expression	Smiling or inexpressive	Sad. Frightened. Frown.	Facial grimacing.	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting.	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted or reassured by voice or touch.	Unable to console, distract or reassure.	
Total**				

Checklist of Nonverbal Pain Indicators (CNPI)

- Simple, short assessment tool designed for non verbal residents with severe cognitive impairments (Zwakhalen, 2006, Nygaard & Jarland, 2006)
- Research has shown the CNPI scale to be effective in the acute setting, has been used on postoperative hip fracture elders, and can be managed by all nursing staff (Feldt, 2000)

CHECKLIST OF NONVERBAL PAIN INDICATORS (CNPI)

Behavior	Movement	At Rest
1. Vocal complaints: nonverbal Sighs, gasps, moans, groans, cries		
2. Facial grimaces/winces Furrowed brow, narrowed eyes, clenched teeth, tightened lips, jaw drop, distorted expressions		
3. Bracing Clutching or holding onto furniture, equipment or affected area during movement		
4. Restlessness Constant or intermittent shifting of position, rocking, intermittent or constant hand motions, inability to keep still		
5. Rubbing Massaging affected area		
6. Vocal complaints: verbal Words expressing discomfort or pain, e.g. "ouch," "that hurts," cursing during movement, exclamations of protest, e.g. "stop," "that's enough"		
Subtotal Scores		
Total Score		

More Research needed.....

- Many studies have been done on behavioral observational tools for assessment of pain in the older adult and there is still more research to be done

Summary

- Pain is defined as an unpleasant subjective experience that can be communicated to others either through self report when possible or through a set of pain-related behaviors
- Older adults, regardless of their cognitive ability, suffer from pain
- The pain of older adults with dementia might go under identified and under managed which can lead to disastrous complications for that individual

Summary

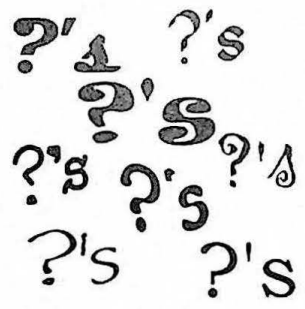
- Caregivers must be aware of the pain in older adults with dementia
- Cognitive impaired patients observed at rest may give misleading cues to staff in regards to pain
- It is important that nursing staff are attentive to pain-related behaviors during transfers and patients care activities because they are good indicators of the patients' discomfort

(Feldt, 2000)

Summary

- Behavioral observation methods offer a promising strategy to improve pain assessment in the older adult who is not able to communicate their pain verbally
- NOPPAIN, PAINAD and CNPI are useful and effective tools that can be utilized to assess the older adult with dementia

Questions




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