

Original Article

Pain Assessment Strategies in Home Care and Nursing Homes in Mid-Norway: A Cross-sectional Survey

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■ ABSTRACT:

The prevalence of pain ranges from 27.8% to 86.5% in nursing homes and 42% to 50% in home care. Pain assessment is the first step toward effective pain management. The aim of this study was to explore the use of pain assessment strategies (verbal, numeric, and observation rating scales and standardized questions) in home care and nursing homes. The study was a descriptive cross-sectional survey. Health care providers who were responsible for the patients' medications replied to a questionnaire. In-home care and nursing homes in 11 randomly selected municipalities in Mid-Norway were included. Three hundred ninety-two individuals were included in this study (70% response rate): 271 (69%) from nursing homes and 121 (31%) from home care. The respondents working in home care had a higher educational level than those in working in nursing homes. Pain assessment instruments were not used frequently in nursing homes and home care. Verbal and numeric rating scales were used significantly more frequently in home care than in nursing homes. Registered nurses (RNs) in nursing homes used standardized questions significantly more often than did RNs in home care. RNs and social educators in home care self-reported less competence in treating the patients' total pain experience than did those in nursing homes. Workplace (working in home care) and regular training in the use of pain assessment tools explained more than 20% of the variation in the use of pain assessment tools. Regular training in the use of pain assessment tools is needed for health care workers in home care and nursing homes.

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Pain is a common symptom among older people and can lead to decreased activities of daily living and quality of life (Weiner & Hanlon, 2001). The prevalence of pain increases with age, the number of comorbidities, and frailty (Cooper & Burfield, 2010; Rustøen et al., 2005). The prevalence of pain in older adults

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within the general population is estimated to range from 25% to 50% (American Geriatrics Society, 2002; Johannes, Le, Zhou, Johnston, & Dworkin, 2010; Rustøen et al., 2005). The prevalence of pain in patients living in nursing homes and community care is even higher (27.8%-86.5%). The highest rates are reported by patients who are able to self-report their pain (McClellan & Higginbotham, 2002; Nygaard & Jarland, 2005; Takai, Yamamoto-Mitani, Okamoto, Koyama, & Honda, 2010; Teno, Kabumoto, Wetle, Roy, & Vincent, 2004; Torvik, Kaasa, Kirkevold, & Rustøen, 2009; Weiner & Hanlon, 2001). Torvik et al. found a higher rate of pain among nonverbal patients when using the Doloplus-2, an observation-based pain assessment tool compared with self-reporting by patients in nursing homes. A previous study found that more than 80% of patients in nursing homes in Norway have dementia (Bergh, Holmen, Saltvedt, Tambs, & Selbæk, 2012). The prevalence of pain in home care patients ranges from 42% to 50% (Sørbye, 2009; Takai et al., 2010).

Pain is defined by the International Association for the Study of Pain (IASP) (2014) as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”. It is a sensory experience in the way that it is associated with tissue damage, but it is also an emotional experience in the sense that it is always unpleasant. Pain is a subjective experience, and each individual learns the application of the word through experiences related to injury early in life.

The IASP emphasized that “the inability to communicate verbally does not negate the possibility that an individual is experiencing pain and is in need of appropriate pain-relieving treatment” (2014).

The prevalence of pain differs between whether it is self-reported or if reported by staff or caregivers. In the state of North Carolina, staff reported that 20% of individuals in residential care/living centers and 23% in nursing homes experienced pain (Williams, Zimmerman, Sloane, & Reed, 2005). The pain prevalence reported by the residents was even higher; 40% in the residential care/assisted homes and 25% in the nursing home residents. The data were collected from 331 of 421 residents aged at least 65 years, and all residents had a diagnosis of dementia (Williams et al., 2005).

Pain is underreported in the geriatric population because they and health care personnel do not report pain fully and because of failure to perform regular and systematic pain assessment within the health care system (Miaskowski, 2000). Pain assessment can be challenging in this population because of impaired vision, hearing, memory, and verbal abilities and cognitive functions. The gold standard is a self-reporting system, which

should always be the first choice because pain is a subjective experience. When a patient is able to rate the pain, self-reporting is more reliable than observer-rated assessment (Hudchison, Tucher, Kim, & Gilder, 2006).

Closs, Barr, Briggs, Cash, and Seers (2004) demonstrated that a verbal rating scale (VRS) was more successful than a numeric rating scale (NRS), a pictorial scale, a color analog scale, and a mechanical visual analog scale in a population with varying degree of cognitive impairment. The VRS was completed by 80.5% overall and by 36% of those with severe cognitive impairment (Closs et al., 2004). The mean Mini-Mental State Examination score for the 19.5% who were unable to complete the VRS was very low, at 2.3 (Closs et al., 2004). The British Pain Society and the British Geriatrics Society recommend that assessment of pain should routinely include a standardized intensity rating scale, preferably a simple VRS or NRS (Royal College of Physician, British Geriatrics Society, & British Pain Society, 2007).

Given that language loss is inevitable in the most advanced stage of dementia and sometimes after stroke, valid and reliable methods for pain assessment in nonverbal older adults are needed (Kaasalainen, 2007). In this population, other methods such as behavioral pain observation become more useful and necessary (Kaasalainen, 2007; Kaasalainen et al., 2007). Doloplus-2 and MOBID-2 are observational scales validated in nursing homes (Husebo, Strand, Moe-Nilssen, Husebo, & Ljunggren, 2010; Hølen et al., 2007; Hølen, et al., 2005).

There are no Norwegian guidelines for the assessment of pain in older people. Pain is a huge problem for fragile older individuals in home care and nursing homes. Pain assessment is the first step toward effective pain management. There is a lack of knowledge about the pain assessment strategies used in nursing homes and home care. It is therefore necessary to explore the strategies used to assess pain in this population.

The aim of this study was to explore the use of pain assessment strategies in home care and nursing homes in Mid-Norway. The following research questions were posed:

1. What are the self-reported frequency and utility of using NRS, VRS, and observation based pain assessment tools?
2. What is the self-reported competence in treating the total pain experience?
3. What variables are associated with use of pain assessment tools?

DESIGN AND METHODS

Study Design and Population

This was a descriptive cross-sectional survey. All health care providers in home care and nursing homes from

11 randomly selected municipalities in Mid-Norway were asked to complete a questionnaire. The data were collected during 1 week in May 2012.

Mid-Norway comprises three counties: Nord-Trøndelag, Sør-Trøndelag, and Møre og Romsdal. Nursing homes and home care are funded by municipalities, and their funding depends on the ranking of priorities in municipal budgets. This could lead to different staff qualifications and variations in the care, pain assessment, and pain management. To achieve a representative sample, municipalities were stratified into nine strata as small, medium, and large municipalities in each of the three counties. One municipality was drawn from each stratum. In Møre og Romsdal, two municipalities were included from medium and large municipalities because there were twice as many municipalities of this size in Møre og Romsdal than in Sør-Trøndelag and Nord-Trøndelag.

Data Collection Instrument

The questionnaire was based on one used in a study of acute pain in hospitals (Rognstad et al., 2012). Some of the items in this questionnaire were selected from the survey of chronic pain in hospital by Skauge, Borchgrevink, and Kaasa (1998). Because both chronic and acute pain in nursing homes and home care were the focus of the present study, additional items were included and some items were changed or updated. Researchers and experts in pain management participated in developing Rognstad's tool and assessed the face validity of the items (Polit, 1996). We collected the background information about the responders: their professional background, education, specialization, workplace and years of work with the geriatric population. The respondents were asked to self-report their use of pain assessment instruments and the utility of using these instruments. Additionally, we asked the health care workers to self-report their perceived competence in pain management and to appraise the conditions related to pain in nursing homes and home care. The response options included regular evaluation of pain intensity by asking the patient and by listening to the patient's own experience of suffering from pain. Establishing a contact person on the ward with special responsibility for knowledge about pain alleviation and annual update of staff knowledge about pain relief for pain in the geriatric population was also included. The responders were also asked about emphasis on individual treatment of patients' pain in the unit, and education in the use of tools/equipment for pain assessment in this age group.

The use and utility of using pain instruments were rated on a Likert scale ranging from 1 (*never*) to 5 (*very often*). Health care workers' self-reported competence

in pain management was rated on a 5-point Likert scale as 1 *highly competent*, 2 *competent*, 3 *basic understanding*, 4 *weak*, and 5 *incompetent*. The rest of the items were statements that were rated on a Likert scale from 1 (*unsatisfactory*) to 5 (*satisfactory*).

Ethics

The Norwegian Social Science Data Services approved the study. An instruction letter accompanied each questionnaire and emphasized the ethical principles of confidentiality and autonomy.

Statistical Analysis

The statistical software SPSS for Windows (v. 21; IBM SPSS, Armonk, NY, USA) was used for analyses. Differences between groups were analyzed using Pearson's χ^2 . Linear regression was performed to examine the associations between the total use of pain assessment tools and the workplace, employment of a pain specialist in the unit, compliance with national directions, access to regular training in the use of pain assessment tools, provision of individual pain treatment to the patients, and educational level (registered nurse [RN], social educator [SE], and licensed practical nurse [LPN]). A p value $\leq .05$ was considered significant.

RESULTS

Sample

Four hundred six questionnaires were completed, giving a response rate of 70%. Fourteen questionnaires were excluded from this analysis: eight were from medical doctors and six were from staff working in both nursing homes and home care.

Of the 392 responders included in this analysis, 271 (69%) were working in nursing homes, and 121 (31%) were working in home care. There were significantly more responders with higher education working in home care compared with nursing homes (72% vs 64%) (Table 1). As shown in Table 1, the number of years of caregiving for older people did not differ significantly between those working in nursing homes and home care. The responders had worked with older patients for 1 to 42 years (mean 15 years). About one-fourth of the staff had completed further education, such as geriatric nursing, cancer nursing, and pain nursing.

Frequency and Utility of Using Pain Assessment Instruments

As shown in Table 2, pain assessment instruments were not used frequently in nursing homes and home care. In nursing homes, the most frequent

TABLE 1.
Backgrounds of Personnel and Their Years of Caring for Older Patients

Professional	Total	Nursing Home		Home Care	
	n	n	%	n	%
Registered nurses and social educators*	260	173	63.8	87	71.9
Licensed practical nurses*	132	98	36.2	34	28.1
Years of Caring for Older Patients	Mean (SD) Range	Mean (SD) Range		Mean (SD) Range	
Registered nurses and social educators	13.7 (9) 1-40	13.6 (8) 1-37		13.7 (9) 1-40	
Licensed practical nurses	18.7 (10) 1-42	17.8 (10) 1-33		18.7 (10) 1-42	

* $p \leq .05$, Pearson's χ^2 .

responses about the use of the VRS/NRS and observation scales were *never* or *seldom*. The most frequently used pain assessment scales are standardized questions. The RNs and SEs in nursing homes use standardized questions significantly more often compared with RNs and SEs in home care (Table 2). The most frequent response about the use of the VRS/NRS and standardized questions in home care were *seldom* and *often*. The VRS and NRS were used significantly more often

TABLE 2.
Frequency of Using Pain Assessment Instruments in Nursing Homes and Home Care

Personnel	Nursing Home	Home Care	<i>p</i> value
	Mean SD	Mean SD	
Registered nurses and social educators			
Using VRS and NRS*	1.75 (± 1.1)	2.48 (± 1.3)	.00*
Using observation scales	1.46 (± 0.9)	1.39 (± 0.7)	.51
Using standardized questions*	2.85 (± 1.5)	2.50 (± 1.3)	.04*
Licensed practical nurses			
Using VRS and NRS*	1.68 (± 1.0)	2.50 (± 1.3)	.04*
Using observation scales	1.62 (± 1.0)	1.61 (± 1.0)	.78
Using standardized questions	2.79 (± 1.6)	2.73 (± 1.4)	.08

VRS = verbal rating scale; NRS = numerical rating scale.

Variables were rated as 1 = *never*, 2 = *seldom*, 3 = *sometimes*, 4 = *often*, 5 = *very often*.

* $p \leq .05$, Fisher's exact test.

in home care than in nursing homes (Table 2). Observation scales were used *never* or *seldom* in both settings. There were no differences in self-reported utility of using the pain assessment instruments between health providers in nursing homes or home care (data not shown). The health care providers estimated the utility of using the pain assessment scales as *very much/much* (data not shown).

Competence in Treating the Total Pain Experience

Health care providers judged their own competence in treating the patients' total pain experience as *quite good* or *good* (Table 3). Self-reported competence in treating the patients' total pain experiences differed significantly between respondents from nursing homes and those in home care (Table 3). RNs and SEs in home care reported less perceived competence in treating the patients' total pain experience compared with RNs and SEs in nursing homes. There was no significant difference in self-reported competence by LPNs in either setting (Table 3).

Variables Associated with Use of Pain Assessment Tools

We performed a linear regression to identify the associations between the total use of pain assessment tools as the dependent variable and the workplace, employment of a pain specialist in the unit, compliance with national directives, access to regular training in the use of pain assessment tools, provision of individual pain treatment to patients, and educational level or credentials (RN, SE, and LPN).

The R^2 was 0.21. The workplace (working in home care) ($\beta = 0.17$, $t = 3.69$; 95% confidence interval [CI], 0.28-0.92) and regular training in the use of pain assessment tools ($\beta = .36$, $t = 6.95$; 95% CI, 0.42-0.75) were significant ($p \leq .001$). The workplace (working in home care) and regular training in the use of pain assessment tools explained more than 20% of the variation in health care personnel use of pain assessment tools.

DISCUSSION

To our knowledge, this is one of the first studies to evaluate pain assessment strategies in both nursing homes and home care. The present study included 392 health care providers: 69% worked in a nursing home and 31% in home care. The health care providers had worked with older patients for a mean of 15 years. Pain assessment tools were not used frequently, and health care providers employed in nursing homes used the VRS and NRS significantly less frequently

TABLE 3.
Self-Reported Competence in Treating Patients' Total Pain Experience among Nurses Social Educators and Licensed Practical Nurses in Nursing Homes and Home Care

	Nursing Home		Home Care	
	Registered Nurses and Social Educators Mean (SD)	Licensed Practical Nurses Mean (SD)	Registered Nurses and Social Educators Mean (SD)	Licensed Practical Nurses Mean (SD)
How do you judge your own competence in treating the patient's total pain experience?	2.34 (0.7)*	2.68 (0.8)	2.59 (0.7)*	2.56 (0.8)

1 = very good, 2 = quite good, 3 = good, 4 = poor, 5 = very poor.

* $p \leq .05$, Pearson's χ^2 .

compared with those employed in home care. The RNs and SEs in home care used standardized questions more frequently than did RNs and SEs in nursing homes. RNs and SEs employed in home care self-reported significantly less competence in treating the patients' total pain experience compared with those employed in nursing homes.

The respondents were a competent group. Their average time working with this population of patients was high, but there was a wide range of experience—1 to 42 years—reflecting both the inclusion of long-time workers as well as the high turnover of health care providers in nursing homes and health care in Norway. Two-thirds of the respondents had a bachelor's degree and 25% of the staff had completed specialist education. The respondents working in home care had a significantly higher educational level compared with those working in nursing homes (Table 1). Unfortunately, we have no data about the nonrespondents in this study. Working in either setting has a low status in Norway, which makes it difficult to recruit health care workers, especially RNs. Fortunately, this seems to be changing because of an increasing focus on and attention to the care of older people in Norway.

Pain assessment tools are seldom used in nursing homes and home care. The VRS and NRS are sometimes used in home care, but are seldom used in nursing homes. The most frequent responses about their use were *never* and *seldom* in both nursing homes and home care (Table 2). Regular pain assessment and regular reassessment are essential components of good pain management (Herr, 2011). Given the high pain prevalence in nursing homes and

home care, pain assessment is the first step to adequate pain management. The VRS and NRS are tools for self-reporting pain, which is the gold standard for pain assessment. However, in many clinical circumstances involving older people, such as those with reduced cognitive function, self-report is not possible. About 80% of nursing homes residents in Norway have a form of dementia (Bergh et al., 2012) and 33% to 40% cannot self-report pain because of an inability to communicate (Boerlage et al., 2013; Torvik et al., 2009). The prevalence of dementia in Norwegian home care is 27% to 36% (Selbæk & Høgset, 2010). This necessitates the use of observational tools.

The methods used for pain assessment are random and not systematic in nursing homes (Velva, 2012). Health care professionals report uncertainty about interpreting pain behaviors, especially in individuals with dementia disease (Kaasalainen et al., 2007). Because of the high proportion of nonverbal patients in nursing homes and home care, there has been increased attention on behavior-based pain assessment tools. However, such behavior-based pain assessment tools are seldom used. Torvik et al. (2010) found that significantly more patients were categorized as having pain when assessed with a behavior-based pain assessment scale compared with nurses' estimation of pain without the use of such tools. The nurses in Torvik et al.'s (2010) study could not report whether one-third of the patients were in pain without using any tools. This supports the claim that behavior-based pain assessment tools are useful supplements for estimating pain in nonverbal populations. However, nurses must use their clinical experience in addition

to the use of behavior-based pain assessment tools because behavior can have different meanings for different patients (Torvik et al., 2010). It is therefore encouraging to see that the RNs and SEs in this study had long experience working with this patient population.

The RNs and SEs working in home care judged their own competence in treating the patients' total pain as significantly lower compared with those working in nursing homes (Table 3). This is surprising given that working in home care is associated with more frequent use of pain assessment tools and a higher educational level. The ability to identify pain expression depends on knowledge about patients. The RNs and SEs in nursing homes see the patients more regularly than do RNs and SEs in home care. This could provide the RNs and SEs in nursing homes with a more thorough understanding of the patients' pain behaviors and therefore may reduce the need to use pain assessment scales. Pain is a subjective experience and there are both agreements and disagreements between health care providers' and patients' pain assessment (Kaasalainen et al., 2007; Nygaard & Jarland, 2005). It has also been reported that the health care providers reported lower pain intensity compared with patient self-reports (Williams et al., 2005).

Studies have shown that health care providers do not always discover pain in older people because this population may not report pain (Herr, 2011; Miaskowski, 2000) because they believe that pain is a normal part of aging or because they do not want to worry health care providers. Older individuals also may use different words to describe their pain compared with younger people (Herr, 2011; Miaskowski, 2000). The RNs and SEs in home care usually worked alone with the patients and therefore had a limited ability to discuss and consult with other health care providers. This could lead to uncertainty for the RNs and SEs in the home care setting.

We found that regular training in the use of pain assessment tools was a predictor of the use of pain assessment tools and that the RNs and SEs in home care used pain assessment tools significantly more often than did the RNs and SEs in nursing homes. Despite this finding, the RNs and SEs in nursing homes self-reported more competence in treating patients' pain than did RNs and SEs in home care. This could reflect a gap between the staff's real knowledge and their self-reported knowledge. RNs and SEs working in home care underestimated their knowledge, whereas the RNs and SEs in nursing homes

overestimated their knowledge. Our result shows that respondents in home care had a higher educational level compared with those in nursing homes. Working in home care and receiving regular training explained 20% of the variation in health care staff's use of pain assessment scales. These findings suggest that, although we cannot change the workplace, we can provide more regular training in the use of pain assessment scales in nursing homes especially and particularly in home care.

One limitation of the present study is that the sample might not be representative of other nursing homes or home care settings. The strengths in this study are that 11 municipalities from three counties were included and that they were selected on a random basis according to the municipality's size. The high response rate of 70% may also be a strength, but a limitation is that we have no information about the nonrespondents.

CONCLUSION AND IMPLICATIONS FOR NURSING

Pain assessment scales are not used frequently in either setting. The VRS and NRS are used more often in home care, and standardized questions are used more frequently in nursing homes. RNs and SEs working in home care self-reported less competence in treating the patients' total pain experience compared with RNs and SEs working in nursing homes. Respondents working in home care had a higher educational level compared with those working in nursing homes. The workplace (working in home care) and access to regular training in the use of pain assessment tools explained more than 20% of the variation in health care use of pain assessment tools. These findings suggest that more regular training in the use of pain assessment tools is needed in both nursing homes and home care. Pain management is a great challenge when treating older people and systematic pain assessment is an important part of pain management. More research into pain assessment is needed to understand why health care providers do not use systematic pain assessment and how to implement a systematic approach to pain assessment.

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