Knowledge and Attitudes of Home Care Nurses in Cyprus in the Management of Cancer Pain

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Abstract

Pain is a common symptom for cancer patients. It is a problem for themselves and their relatives. Nurses are confronted with the treatment of cancer pain in their everyday clinical practice. Efficient management requires accurate and appropriate knowledge, positive attitudes, and competent evaluation skills. The aim is to explore the knowledge and attitudes of Cypriot home care nurses in pain management of cancer patients. Regarding methodology, a quantitative descriptive design was used and the data were collected with the Greek version of the McCaffery and Ferrell *Nurses' Knowledge and Attitudes Survey Regarding Pain* questionnaire along with a demographic questionnaire. The sample of the study consisted of home care nurses working in non-profit organizations in Cyprus ($n = 31$). For the analysis of data, the SPSSv.21. was used and the statistical significance was set to the $p = .05$. Results revealed of the total of 35 questions only 13 were answered correctly by the 80% of the participants. Limited knowledge was reported mainly on the duration of action, the effect and dosage of Pethidine, the risk of addiction and the use of non-medication interventions. Significant differences were found to the level of knowledge as regards the age and the experience of nurses. In the case study exercise, it was found that false assessment of pain was related to wrong decisions. Nurses' attitudes seemed to be positive. In conclusion, the study revealed the knowledge deficits and need for continuous education of home care nurses on the assessment and management of pain for patients with cancer. Empowering nurses with better skills to deal with pain, a most distressing symptom of cancer, will result in a better quality of life for patients. However, the integration of pain management within the national cancer strategies is also very important.

Keywords

nursing, home nursing care, cancer, pain management, knowledge

Introduction

Cancer incidents are expected to show an increase, from 10 million in 2000 to 15 million in 2020, which represents an increase of 50%.[1] Pain is a common symptom of cancer patients and one of the first complications of the disease and represents a major difficulty or both patients and caregivers.[2,3] Nurses are confronted with the problems of patients' and their families and particularly with the treatment of cancer pain in their everyday clinical practice. Non-effective management of cancer pain could have a serious impact on patients' physical, psychological, social, and financial status.[4]

It is estimated that pain is present between 50% and 70% of early stage cancer patients and between 60% and 95% of patients in the later stages of the disease.[5-9] Nurses are generally aware of the severity of symptoms in cancer patients,[3] but effective pain management is inextricably related to accurate and adequate knowledge, positive attitudes as well as assessment and evaluation skills.[10,11] Several studies highlighted shortcomings in the management of cancer pain, with reference to nurses' knowledge, attitudes and beliefs.[12-15]

The findings from relevant international studies, demonstrate a need for improvement with regards to effective pain management.[16] Most concerns are voiced over the educational needs of nursing personnel and the necessary interventions within the healthcare systems in order to better manage and alleviate pain.[17,18] It is essential for home care nurses for cancer patients, to possess a certain level of knowledge about the multidimensional aspect of pain in cancer care and display positive attitudes regarding cancer pain relief.[9,19] There are also concerns about the absence of evidence based standard guidelines and recommendations for the management of pain for patients with advanced cancer, leaving home care nurses unaided in their responsibility to support patients.[10] However, apart from knowledge and the personal aspect of

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health care professionals, pain management could be understood better within the general palliative care concept. This could be achieved with a good integration of palliative care into the health care systems and the national cancer strategy within the public health models.[10,20,21]

Still, knowledge that is the focus of this study is also important since it empowers nurses making them to feel confident, competent, and more efficient when providing care to cancer patients at home. Knowledge and competence alleviate potential fears about the side effects of various drugs, such as opioids and possibility of addiction. Nowadays, there is a strong effort in enhancing international cooperation on research and innovation related to caring for cancer patients.[22]

A review of the literature regarding the knowledge and attitudes of nurses regarding the management of cancer pain, revealed nurses' difficulty in effective management of cancer pain, possibly because of lack of knowledge, misconceptions, and misunderstanding of the specific features of cancer pain. Overall, studies highlighted the need of reinforcing training and education in pain management. Further, quality of cancer pain management is related to the knowledge, attitudes, and skills of those who provide care. Nurses especially, are the care professionals who are caring for patients continuously; they observe and act upon any needs the patient may have—for their comfort and relief of pain. Therefore, nurses are in a unique position to assist patients, since all individuals have the right to ultimate comfort, relief of pain and this includes among others training, evaluation, and management.[23,24]

The aim of this paper is to discuss the knowledge and attitudes of Cypriot home care nurses in pain management of cancer patients.

Methods

Study Design

This study used a quantitative descriptive exploratory methodology. The collection of data was carried out in Nicosia, Cyprus in November, and December 2016.

Sample, Sampling, and Data Collection

A convenience sample was used. The sample ($n=31$) of the study consisted of home care nurses caring specifically for cancer patients working in the two biggest non-profit organizations, in the capital of Cyprus, Nicosia. The researcher distributed the questionnaires in person.

Tool

In this study the Nurses' Knowledge and Attitudes Survey Regarding Pain (GV-NKASRP by Betty Ferrell and Margo McCaffery)[25] questionnaire was used (internal consistency reliability Cronbach alpha [alpha $r > .70$]), translated in

Greek by Tafas et al.[26] The questionnaire is composed of 37 closed-ended questions and is divided in three parts. The first part consisted of 22 "True/False" type questions and the second part consisted of 13 multiple choice questions on knowledge and attitudes of nurses in regard to pain. The third part consisted of two case studies regarding pain assessment and management (in terms of morphine administration). Each case study is followed by two multiple choice questions. Additionally, an anonymous questionnaire of demographic data was used.

Data Analysis

Collected data were subsequently analyzed with the use of SPSSv.21 statistical software for social sciences. Frequency of correct answers to every question of the NKASRP tool was calculated and statements with over 80% or less than 50% success were presented. Correlation between demographic data and frequency or percentage of correct answers was studied. Correlation was investigated using the t-test statistical test (for sex, job position, training regarding pain management) and the ANOVA statistical test (for age, level of education, years of practice in nursing, and years of practice in current position). Finally, the correlation between accurate pain assessment and subsequent appropriate action taken regarding morphine administration (for the two case studies of the NKASRP tool) was investigated using Fisher's statistical test; statistical significance set at 0.05.

Ethical Considerations

Permission for the study was given by the Cyprus National Bioethics Committee and the Personal Data Protection Commissioner at the time. Participants were given an oral and written description of the aim and objectives of the study; and were assured of the confidentiality of the information. It was emphasized to participants that inclusion in the study was the result of their own free decision and their right to withdraw from the study at any time.

Results

Results showed that the level of knowledge regarding cancer pain was low among nurses that participated in the study, as measured by the NKASRP tool. More specifically, the average of correct answers to the questionnaire in terms of percentage was 45.47%, increasing to 51.14% if the two case studies are considered. Both numbers are extremely low. As far as their attitudes are concerned, results were very positive.

Demographic Characteristics

A total of 31 home care nurses participated, that is all home care nurses in the country. This high response is because of

Table 1. Demographic Characteristics of the Participants (*N* = 31).

Characteristics		*N*	%
Sex			
Men		8	25.8
Women		23	74.2
Level of education			
Diploma		3	9.7
Degree		23	74.2
Master's degree		5	16.1
Years of nursing practice			
<3		3	9.7
3-6		4	12.9
7-9		3	9.7
≥10		21	67.7
Attendance of educational programs	No	4	12.9
on pain management in the last	Yes	27	87.1
3 years			
Age			
21-30		7	22.6
31-40		11	35.5
41-50		7	22.6
51-65		6	19.3
Years of practice in current position			
		9	29
		5	16.1
		4	12.9
		13	41.9
Education through scientific articles		4	12.9
or books on pain management		27	87.10

the very small organization of home care and the researcher had a personal contact, explained the importance of the study. The participants were 23 female and eight male nurses, while 58% (*n* = 18) were between the age of 31 to 50. Most of them (74%, *n* = 23) had a bachelor's degree and more than 10 years of experience (68%, *n* = 21) (Table 1). Examination of the relation between successful and efficient provision of nursing care and demographic characteristics, based on the analytic and statistical data, showed that "age," "gender," and "years of practice in nursing" are not related to successful home nursing care. The characteristics "level of education," "position," and "years of practice in current position" are related to appropriate home nursing care to some extent.

The NKASRP Tool

As it can be seen by the following Table 2, of the total of 35 questions (excluding the two case studies), only 13 questions were answered correctly by the 80% of the participants and 10 questions were reported correctly by less than 52% of the participants. It is interesting to note that 94% of the participants did not know about the non-pharmacological interventions, and 90% have a knowledge deficit about the effect and the duration of action of Pethidine IM.

In relation to the level of knowledge and the demographic data, the following Table 3 shows that there are significant differences in the level of knowledge as related to age, where the oldest nurses at the age of 51 to 65 gave the more correct answers (29 correct answers from the 35). Also nurses with more experience in their present position (that is working at home care for patients with cancer) and generally over 10 years of experience in nursing gave more correct answers (26 from 35). It is also interesting that nurse managers gave the most correct answers at a level of 33 questions from the 35.

The Two Case Studies

The frequency (*N*) and percentage (%) of correct or false pain assessment and action taken, is presented in the following Table 4.

A Fisher analysis was conducted, in order to make a correlation between correct pain assessment and subsequent correct action taken for morphine administration. The analysis showed that if nurses make a correct pain assessment, they have a greater probability of taking the correct action regarding morphine administration, as presented in Table 5.

In the case of patient A, all 18 nurses that made a false pain assessment also made a false decision about morphine administration. Out of 13 nurses that assessed pain correctly, five of them (38.5%) made a correct decision about morphine administration. This difference in correct action taken, between nurses that made a correct pain assessment and those that made a false pain assessment, is statistically significant (*p* = .008). In the case of patient B, out of seven nurses that made a false pain assessment, only 1 (14, 3%) made a correct decision about morphine administration. Out of 24 nurses that assessed pain correctly, 16 (66.7%) made a correct decision about morphine administration. This difference in correct action taken, between nurses that made a correct pain assessment and those that made a false pain assessment, is statistically significant (*p* = .021).

Discussion

This study aimed to investigate the knowledge and attitudes of Cypriot home care nurses regarding cancer pain management. It was found that there is a lack of knowledge especially as regards the use of opiates, the dosage, the duration and the effect, the risk of addiction as well as the use of the complementary approaches to the relief of pain. It was also found that poor pain assessment skills may contribute to poor decisions in the administration of pain medication.

During the preparation of this study, several other studies were examined which give us insight on most of the aspects mentioned above. For example, there are studies in many parts of the world supporting that nurses have misconceptions and lack of knowledge on the management of cancer pain.[14,15]

Table 2. Frequency of Correct Answers.

Over 80% of the participants gave a correct answer	52%-80% of the participants gave a correct answer	Less than 52% of the participants gave a correct answer
30. The most likely reason a patient with pain. . . 100%	5. Similar stimulations in different people, produce pain. . . 77%	28. A patient with persistent cancer pain has been. . . 45%
16. Patients should be encouraged to endure as. . . 97%	2. Because their nervous system is underdeveloped. . . 74%	1. Vital signs are always reliable indicators of the. . . 42%
33. Which of the following describes the best. . . 97%	3. Patients who can be distracted from pain usually. . . 74%	24. The recommended route administration of opioid. . . 42%
25. Which of the following analgesic medications. . . 94%	6. Aspirin and other non-steroidal anti-inflammatory. . . 74%	4. Patients may sleep in spite of severe pain 35%
19. After an initial recommended dose of. . . 90%	8. Respiratory depression rarely occurs in patients. . . 74%	22. In order to be effective, cold and heat should be. . . 35%
20. Patients should be advised to use non-drug. . . 90%	10. WHO's pain scale suggests using one among various. . . 74%	35. Drug/opioid addiction is defined as the. . . 35%
14. Up to a certain dose of morphine, further. . . 87%	13. Opioids for pain control should not be used in. . . 74%	23. The recommended route of administration of opioid. . . 32%
15. Elderly patients cannot tolerate opioids for pain. . . 87%	32. The most accurate judge of the intensity of the. . . 74%	11. The usual duration of analgesia of meperidine. . . 23%
18. Patients' spiritual beliefs may lead them to think. . . 87%	21. Giving patients sterile water by intramuscular injection. . .65%	9. Aspirin 650 mg PO has roughly the same. . . 10%
17. Children less than 11 years old cannot reliably. . . 84%	26. Which of the following IV doses of morphine. . . 65%	7. Non-drug interventions (e.g., warmth, music. . . 6%
31. Which of the following is useful for treatment of cancer pain? 84%	27. Analgesics for post-operative pain should initially. . . 52%	
12. Research shows that promethazine. . . 81%	34. In your opinion, what is the percentage of patients who. . . 52%	
29. Analgesics for chronic cancer pain should. . . 81%		

In order to improve pain management, it is very important that nurses realize their role as cornerstone of the team charged with patient care and their direct responsibilities in relation to pain assessment and administration of opioid analgesics. It is also important for nurses to explore other approaches to the management of pain that are not so traditional, but they fit more to the needs of people in the contemporary society.[27,28]

As far as efficient and effective use of medication is concerned, the same research showed that nurses have insufficient knowledge regarding opioid analgesics, risks of addiction and tolerance to opioids and systematic pain assessment.[29] These shortcomings can be tackled with more education on pain management. It was emphasized that better education results in broader knowledge regarding medication for pain relief and effective pain management in general.[30] It is, therefore, necessary to provide more education in the field of pharmacology, especially in sections about the use and pharmacological properties of new medication, which can be effective in dealing with cancer pain. There are also interesting and promising training programs such as the "Power Over Pain" (POP) a structured educational intervention for nurses, patients and caregivers managing cancer-related pain at home,[31] that seems to have beneficial effects on nurses treating cancer patients at home, especially in

changing their knowledge and attitudes toward cancer pain management. However, the differences in knowledge levels found in this study as regards some demographic variables such as age and professional experience can be helpful in designing training programs for nurses.

It has been also recorded that in order to promote changes in attitudes regarding pain management, educational interventions alone are not enough. There are other equally important requirements, such as collaboration with colleagues as well as managerial support and the promotion of a caring and helpful professional practice environment.[32]

Based on the results of this study, Health Institutions could examine their practices of pain management for cancer patients, introduce continuous education programs and empower nurses in their role in order to improve the level of care for this sensitive patient group. These results can lead to improved quality of life and reduced stress for patients and their family. This study is especially important for homecare nurses, because they work alone and need to demonstrate an excellent level of knowledge regarding drug properties, dose and administration regimens, in order to effectively carry out their duties without any help. In addition to this, there is evidence from intervention studies, that more education may improve nurses' skills on pain management. In a randomized clinical trial in Greek nurses,[13] an

Table 3. The Level of Knowledge as Related to the Demographic Data.

Characteristics	N	Correct answers (35 questions)
Gender		
Men	8	22
Women	23	
Level of education		
Diploma	3	26
Degree	23	24
Master's degree	5	27
Years of nursing practice		
<3	3	26
3-6	4	23
7-9	3	15
≥10	21	26
Job position		
Nurse	29	24
Head nurse	2	33
Age		
21-30	7	25
31-40	11	22
41-50	7	25
51-65	6	29
Years of practice in current position		
<3	9	24
3-6	5	21
7-9	4	25
≥10	13	26

educational intervention regarding pain management was applied. Evaluation before the intervention had shown lack of knowledge among nurses regarding pain management, while, after the intervention was introduced, there was significant improvement. In accordance with that, it has been stated that it is necessary for nurses working as homecare providers, to gain more insight on pain management strategies and enhance their skills in this aspect.[32]

A research about nurses' level of education throughout Italy by Bernardi et al,[31] stated that nurses did not receive the same level of education regarding pain management, in different areas of the country. This resulted in patients receiving different levels of care. The need for conducting a more extensive information program, in university and post-graduate classes, was highlighted.

In bibliographical research has revealed significant lack of knowledge among nurses, regarding the physiology of pain and the pharmacology of analgesia, as well as insufficient understanding of the properties, use and administration of opioid analgesics. Insufficient education on this field, subjectivity of pain, inadequate pain assessment, lack of infrastructure, ignorance of basic pharmacokinetic principles, determination of pain as a symptom and not as a disease, fear of addiction or respiratory depression, bad interpersonal relationships between health professionals and

patients and their families, failure of health professionals to realize that patients are the most accurate judge of pain intensity, are the main causes of acute pain undertreatment. Insufficient pain management remains a major problem for public health. Physicians and nurses continue to sub-treat pain, even in cases of patients where there is room for significant pain relief.[33]

Among healthcare professionals, nurses have a central role in the provision of homecare for cancer patients. In comparison to hospital care, homecare aims to provide cancer patients with specific benefits: improved management of pharmacotherapy, improved management of the symptoms of the disease, improved compliance to medication, fewer visits to ER, reduced hospitalization and waiting time, improved quality of physical and psychological aspects of life.[34] According to the definition found on the official WHO website (https://www.who.int/cancer/palliative/definition/en/), "Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual." Pain management and pain alleviation can be achieved much more effectively, if nurses are adequately informed and trained regarding pain physiology and assessment.

Conclusion

This study has revealed the need for providing further education to nurses regarding cancer pain management, since there is significant lack of knowledge among nurses. This may affect caring leading to negative outcomes related to deficiencies in the assessment and understanding of pain leading to poor pain management. Sufficient knowledge regarding effective cancer pain management, on behalf of nurses, facilitates the work of the therapeutic team and contributes in the improvement of quality of life for patients and their families,[33] something of vital importance particularly to these patients. Insufficient pain assessment inevitably leads to ineffective pain control and management.[35]

This is the first study in Cyprus attempting an evaluation of nurses' knowledge and attitudes regarding cancer pain. As such, it can be a valuable tool for investigating this topic more extensively and for highlighting data which can be used to provide efficient palliative and homecare nursing services for the benefit of patients, family, and society in general. Detection of possible shortcomings regarding nurses' knowledge on pain management, will be the first step in devising strategies for better training and preparing healthcare professionals to comprehend, assess, and effectively treat cancer pain. Expected benefits for patients and society include improved quality of life and reduced spending for individuals and better allocation of available resources (both monetary and in terms of personnel) for public healthcare

Table 4. Pain Assessment and Action Taken in the Two Case Studies.

Patient	Pain assessment		Total	Action taken		Total
	False—*N* (%)	Correct—*N* (%)	*N* (%)	False—*N* (%)	Correct—*N* (%)	*N* (%)
A	18 (58.06)	13 (41.94)	31 (100)	26 (83.87)	5 (16.13)	31 (100)
B	7 (22.58)	24 (77.42)	31 (100)	14 (45.16)	17 (54.84)	31 (100)

Table 5. Correlation of Correct Pain Assessment and Correct Action Taken Regarding Morphine Administration.

		Action taken (patient A)		Total
		False	Correct (3 mg IV)	
Pain assessment	False	18 (100%)	0 (0%)	18
	Correct (pain = 8)	8 (61.5%)	5 (38.5%)	13
	Total	26	5	31

		Action taken (patient B)		Total
		False	Correct (3 mg IV)	
Pain assessment	False	6 (87.7%)	1 (14.3%)	7
	Correct (pain = 8)	8 (33.3%)	16 (66.7%)	24
	Total	14	17	31

structures. However, the results need to be interpreted with caution because of the very small sample and the fact that home care for cancer patients is a new and developing service in the country that needs to be improved and expanded. The experience and the knowledge gained in the management of pain from other parts of the world will facilitate smaller countries to advance their services to the benefit of patients with cancer.

Finally, it seems that there is a need for a more comprehensive studies focusing on the way in which nurses acquire knowledge of pain, pain management and pain assessment, and the techniques used to alleviate pain in patients. More important is to increase continuous training programs based on the education needs of nurses and other health care professionals, based on the needs of the particular patient group and most importantly based on a sound scientific evidence derived from robust research approaches.

Author's Note

Ifigeneia Christou Hadjisavva is also affiliated with Cyprus Association of Cancer Patients and Friends.

Declaration of Conflicting Interests

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