The Italian version of the Nurses' Cancer Pain Management Competency Scale: a validation study

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Abstract

Background and aim. The Nurses' Cancer Pain Management Competency Scale is a tool to explore nurses' competencies and subjective experiences in cancer pain management, and to help nurses understand their current shortcomings in cancer pain management. Furthermore, based on the scale's specific score, nurses can evaluate their lack of understanding about cancer pain management, advance research into this area, and enhance their capacity to control cancer pain while providing patient care. The scale is currently available only in English and in Chinese. The aim of this study was to translate the new scale and measure its reliability and validity in the Italian context.
Study design. Methodological research model.
Methods. The population of this methodological study included Italian nurses working in the oncology departments of 21 hospitals in Northern, Southern and Central Italy; the sample involved 243 nurses who met the inclusion criteria.
Results. Cronbach's alpha of the scale was 0.814. The Guttman half-reliability of the scale was 0.819. Nurses' cancer pain management competency includes four factors, which accounted for 71.43% of the cumulative variance: the context of pain management, pain assessment and measurement, management of pain, and multidimensional nature of pain. On a 4-point scale for total competency, the mean score was 2.65 ±0.89. The multidimensional nature of pain (2.88 ±0.76) was the factor that showed the highest mean score, whereas the management of pain factor was the lowest (2.52 ±0.73).
Conclusion. Nurses' cancer pain management competency can be assessed using the Italian version of the Nurses' Cancer Pain Management Competency Scale, which has strong validity and reliability.

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Introduction

Pain is one of the most common symptoms experienced by cancer patients (1). In a recent review, a total of 52 studies were selected for the meta-analyses on pain and pain severity in the different stages of cancer disease (1). Pain prevalence rates were 39.3% after curative treatment, 55.0% during anticancer treatment and 66.4% in advanced, metastatic, or terminal disease. Moderate to severe pain was reported by 38.0% of all patients in studies that included all cancer stages (1). Cancer pain needs to be appropriately managed because pain interferes with patients' social and psychological wellbeing (2), and unrelieved pain causes negative clinical consequences (3).

Patients are greatly impacted by the physical and psychological suffering they experience as well as by fatigue and depression (4). As one of the most prevalent symptoms experienced by cancer patients, pain can impact a patient's life status, perceived quality of life, psychological well-being, and illness beliefs. In fact, patients with stage III and stage IV cancers generally report severe pain (5).

Pain is more prevalent (86%) among patients with stage III and IV cancer, who show anxiety (63%) and metastasis (76.4%) (5). Of the patients with cancer pain, 68%, 13%, and 19% experience mild, moderate, and severe pain, respectively. The highest proportion of cancer pain was seen in patients with gastrointestinal cancer (30%) followed by those with hematologic cancer (21%) (5).

Although currently no studies seem to describe well enough the association between pain and depression among cancer patients, cancer pain, if undertreated, worsens patients' psychological anguish and depressive feelings (6). It will also have a number of detrimental impacts, including the development of fear-avoidance beliefs, a drop in treatment compliance, and even an impact on patients' treatment and prognosis value (6).

An essential component of the pain management team are the oncology nurses, and as a result, managing cancer pain presents significant challenges for nurses (7). Assessing nurses' current cancer pain management competency and effectively developing personalized training programs are of great significance in improving nurses' cancer pain management competency and awareness (8). As of right now, the majority of cancer pain management research and investigation tools are patient-centered, and adequate instruments to assess nurses' cancer pain management proficiency are still lacking.

Oncology nurses should play a key role in optimal cancer pain management (9). Inadequately managed pain can lead to adverse physical and psychological patient outcomes for individual patients and their families. Of particular importance to nursing care, unrelieved pain reduces patient mobility, resulting in complications such as deep vein thrombosis, pulmonary embolus, and pneumonia. Complications related to inadequate pain management negatively affect the patient's welfare and the hospital performance because of extended lengths of stay and readmissions, both of which increase suffering and the cost of care (9).

Nurses' improper assessment and management of pain can lead to patient safety concerns and negative health outcomes. Knowledge of pain is influenced by specific work experience and training. In a recent Italian study (10), improved knowledge and attitudes were observed among nurses who attended a pain educational program in the last three years, providing further evidence of validity of a refresher course on pain. Participation in continuous professional development (in both formal and informal contexts) is an important component of clinical practice. However, nurses' cancer pain management competency is generally still insufficient (6).

Previous studies measured pain management competency using a self-assessed instrument focused on self-efficacy and knowledge (8). The Self-Perceived Pain Assessment Knowledge and Confidence Scale (Self-PAC) was developed based on several evidence-based clinical practice guidelines (11). The scale consists of three factors: pain assessment tool knowledge, pain assessment knowledge, and self-confidence. Findings support content validity, construct validity, good face validity, predictive validity, and internal consistency (11). However, it focuses solely on the domains of pain assessment capabilities rather than comprehensive pain management competency. The Knowledge and Attitudes Survey Regarding Pain (KASRP) is a self-administered test developed based on the existing standards of pain management and is one of the most widely used instruments to assess nurses' knowledge and attitudes toward pain management (10). The KASRP includes items regarding pain assessment, opioid dosing and route of administration, and side effects (10). However, the KASRP questionnaire has a limitation in that it focuses only on factual knowledge recall among the multifaceted attributes of pain competency.

The Nurses' Cancer Pain Management Competency Scale (NCPMCS) is a recently created new scale

to explore nurses' competencies and subjective experiences in cancer pain management, and to help nurses understand their current shortcomings in cancer pain management. Furthermore, based on the scale's specific score, nurses can evaluate their lack of understanding about cancer pain management, advance research into this area, and enhance their capacity to control cancer pain while providing patient care. The scale is currently available only in English and in Chinese (12,13).

Based on the previous premises, the aim of this study was to translate the new scale and measure its reliability and validity in the Italian context.

Methods

Study design

Before starting with the study, a quick bibliographic review was conducted by the first three authors to evaluate whether the NCPMCS had already been validated in Italian (12,13). The bibliographic review was conducted on Pubmed, Cinhal, Ilisi and on Google Scholar.

After bibliographic review and before starting with the validation study of the NCPMCS, authorization was requested via-email contact from the author of the questionnaire (doctor Young Sook Roh) (12).

Sample and setting

A convenience sample was chosen to test the instrument and carry out the study.

Registered Nurses or Charge Nurse from Northern, Central and Southern Italy accepted and participated in the survey. Convenience sampling was performed by sending a link to twenty-one Charge Nurses familiar with the lead authors. Potential sample of 430 questionnaires to be administered based on the staff who carried out clinical or managerial assistance activities in the selected oncology departments.

The inclusion criteria for participating and answering the questionnaire were as follows: 1. Be a Registered Nurse or Charge Nurse; 2. Having experience in nursing care of cancer patients or having worked in the oncology department during the period of employment in the hospital; 3. Volunteer participation in the study.

The exclusion criteria were: not having given consent to complete the online questionnaire and having no experience in oncology or pain management.

Data collection

Nurses were selected from different hospitals in Northern, Central and Southern Italy to complete the questionnaires and collect relevant data in May 2024.

With permission from the hospital administrations, the research teams distributed questionnaires via computerized software (google modules). The authors provided the department group admitting cancer patients with an electronic questionnaire with a link.

The group completed the questionnaire anonymously, after being informed of the pertinent privacy principles and measures. To ensure the completeness and quantity of the questionnaire, the researchers checked whether there were omissions and errors in the completed questionnaires.

Low-quality data such as too short questionnaire filling time and excessive overlap of item frequency were excluded from the audit process. Furthermore, two weeks later, 61 nurses (25%) were again chosen using the convenience sampling approach to complete the questionnaire, and the results of the retest were acquired.

Questionnaires

An email was sent to all twenty-one oncology departments involved in the study.

Attached to the email was a short letter which explained the project and a link to click to access the compilation of the questionnaire was sent. The email was presented by the five main authors. The questionnaire was sent online via Google Forms Platform. Google Forms is a tool that allows you to collect information from users via a personalized survey or a set of quiz. The information is then collected and automatically connected to a spreadsheet. The spreadsheet is populated with the survey and quiz answers. The collection of the questionnaires took place between 1 May 2024 and 30 May 2024. The editors were V.D. and L.M. Participants responded to the survey on a voluntary basis. The answer to the survey was considered a written consent participate. The questionnaire is made up of individual and multiple choice questions and is structured in two sections.

The first section concerned the collection of the nurses' general characteristics were surveyed using a self-administered questionnaire covering age, sex, academic degree, workplace location, position, duration of their nursing career, experience in the current department and pain management training.

The second section concerned the administration of the Nurses' Cancer Pain Management Competency Scale (NCPMCS) (12,13). The NCPMCS is designed to assess clinical nurses' competency in managing cancer pain. The scale is divided into 4 dimensions and 14 items. The 4 dimensions include Clinical conditions, Pain assessment and measurement, Management of pain, and Multidimensional nature of pain. There were 5 items describing nurses' competency to establish pain management strategy and carry out pain health education in time, 5 items describing nurses' competency to assess and measure cancer pain, 2 items describing their competency to manage cancer pain, and 2 items describing nurses' competency to understand the multidimensional nature of cancer pain. All items were assigned a score ranging from 0 to 4, with 1 representing very difficult (poor), 2 representing some what difficult (average), 3 representing almost complete (good), and 4 representing very good (excellent). A higher score indicated the nurse's competency to manage cancer pain. The Cronbach's α of the original scale was 0.890, and the Cronbach's α of each factor was 0.690-0.830 (12).

Statistical Analysis

A descriptive analysis was used to study the frequency distribution of all variables of interest. For normally distributed data, mean and standard deviation (SD) were applied.

Data were analyzed using SPSS 21.0 software package (IBM, Armonk, NY). The demographic data derived from the personal information form were analyzed using numbers and percentage.

Descriptive statistics were calculated to summarize quantitative data. The internal consistency reliability was identified using Cronbach's alpha (α). Exploratory factor analysis with principal component analysis and varimax rotation was used to investigate the construct validity of the NCPMCS.

Pearson correlation coefficient was calculated by the critical ratio method and correlation coefficient method for item analysis, and the scale reliability was described by Cronbach's α coefficient, Guttman split-half reliability, and retest reliability. Item level content validity index (I-CVI) and Scale level content validity index (S-CVI) in the expert evaluation were adopted. S-CVI evaluated the content validity of the scale and evaluated the structural validity of the scale through exploratory factor analysis and confirmatory factor analysis. The test level is α= 0.05.

Maximum likelihood method was used to conduct confirmatory factor analysis to verify the stability of the substructures (the NCPMCS includes 4 sections) and the model fit using: fitting index, comparative fit index, chi-square degree of freedom ratio, goodness of fit index, root mean square error of approximation, and Tuck-Lewis index.

No missing data and no sensitivity analyses were addressed.

Ethical considerations

Recruitment of nurses began immediately after the lead author's approval of the creation of the NCPMCS scale (12).

The approval email was sent to us on May 3, 2024 by Doctor Young Sook Roh.

Nurses who showed interest for the study were recruited and asked to sign the informed consent prior to participating in the study and completing the questionnaires. The study questionnaire was introduced to each participant, and for each participant was asked to answer the questions. The study protocol was in line with the Declaration of Helsinki, as revised in 2013, and the Oviedo Convention for the protection of human rights and dignity of the human being with regard to the application of biology and medicine (1996).

The nurses belonging to the three different geographical area and twenty-one oncological departments completed the survey and were offered the possibility to remain anonymous. Data were collected in completely anonymous form. Therefore, the approval of an Ethics Committee was not necessary and the GDPR EU 2016/678 in force in Italy since 2018 does not apply for our study design.

Results

Sample

We sent the questionnaires to a sample of 409 oncology nurses and 21 Charge Nurses of a total of 21 oncological department. A total of 228 nurses (55.7%) and 15 Charge Nurses (71.4%) responded. The sample was predominantly female (65%), the average age was 42 years and 90% had a Bachelor's Degree in Nursing. Work experience was approximately 15 years of which at least 11 in the oncological department (Table 1).

Pain Management Educational Needs/Resources.

Of the 243 nurses, 109 (44.8%) nurses had received cancer pain management training in the last ten years, and 42 (17.3%) had no available protocols related to

Table 1 - General Characteristics of Oncology Nurses (n = 243).

Variable	Results
Age (year)	
Mean, SD	41.7 (± 11.9)
Range, n, %	
24-29	42 (17.4)
30-39	65 (26.7)
40-49	65 (26.7)
50-59	54 (22.2)
≥ 60	17 (7)
Sex n, %	
Male	86 (35.4)
Female	157 (64.6)
Level of Education n, %	
Diplome in Nursing	25 (10.3)
Bachelor's Degree in Nursing	218 (89.7)
Master's Degree in Nursing Science	59 (24.3)
1st level Master degree	40 (16.5)
Philosophiae Doctor (PhD)	1 (0.4)
Workplace Location n, %	
Northern Italy	142 (58.4)
Center-Italy	45 (18.5)
South-Italy	56 (23.1)
Position n, %	
Staff nurse	228 (93.8)
Charge Nurse	15 (6.2)
Work experience (year)	
Mean (SD)	15.4 (+ 10.2)
Range n, %	
< 5	48 (19.7)
5-10	48 (19.7)
11-19	37 (15.2)
20-30	92 (37.9)
> 30	18 (7.5)
Current department experience (year)	10.8 (+ 7.2)
Range n, %	
< 4	46 (18.9)
4-10	77 (31.7)
11-15	53 (21.8)
> 15	67 (27.6)

cancer pain management in their work department. The most preferred educational modality was simulation-based learning for 116 nurses (47.8), followed by web-based learning for 52 nurses (21.4%), lecture for 38 nurses (15.6%), and skills practice for 37 nurses (15.2%).

Linguistic validity and adaptation

To test the validity of the NCPMCS in its adaptation to Italian culture and in its adaptation to major nursing skills context, the following process was performed. The NCPMCS was first translated into Italian by VD and GD and then by one academic member. After conducting a review of the translated forms, a single version of the questionnaire was developed and adapted to the nurses' cancer pain management competency context. The translated forms were then back-translated into English by a linguistic fluent (master's degree in languages with 5 years of experience in linguistic translations) in both languages and closely familiar with both cultures (author: LF). The original questionnaire and the Italian translation were compared, and it was determined that the meaning of the items did not change. The translations made in both of the forms, were selected and submitted to 10 specialists for their opinions. The ten specialists who contributed to the evaluation of the linguistic translation were 10 Italian registered nurses. Since the Italian version retranslated into English did not present any differences, the author of the scale was not contacted for his new opinion.

Scale Item Analysis

The critical ratio method was used to rank the scale scores from low to high. The first 25% of samples were classified as high group, and the last 25% of samples were classified as low group. Independent sample T-test was conducted on their data to test the average difference between the scores of each item in the two groups. When the entry critical ratio (*t*-value) is greater than 3.000, it indicates that the entry has good discrimination and can be retained. The results showed that the *t*-values of each item ranged from 5.851 to 17.321 ($p < .05$ for all values), indicating high discrimination among the items. In addition, Pearson's correlation coefficient between the scores of each item and the total score of the scale was 0.489-0.719 ($p < .05$ for all values). The items of the Italian version of the Nurse Cancer Pain Management competency scale were reserved (Table 2).

Scale Validity Analysis

The item content validity index (I-CVI) of this scale was 0.853 - 1.000, and the S-CVI value was 0.969, based on the results of the expert consultation. Additionally, the study's exploratory factor analysis revealed that the KMO test value was 0.856 and the Bartlett's spheroid test χ^2 value was 2361.254 ($p < .001$), meeting the requirements for the analysis. The factors were extracted using principal component analysis, then the maximum variance method was

Table 2 - Expolative Factor Analysis of Nurses' Cancer Pain Management Competency Scale (n 243). The bold part represents the number of factor loads for different items in each factor.

Factor	Factor 1	Factor 2	Factor 3	Factor 4
I. Clinical conditions				
1. Implement an individualized pain management an that integrates the perspectives of patients, their social support systems, and health care providers in the context of available resources.	0.889	0.109	-0.028	0.116
2. Describe the role of the nurse as an advocate in assisting patients to meet treatment goals.	0.864	0.173	0.075	0.881
3. Explain how health promotion and self-management strategies are important to the management of pain.	0.875	0.115	0.115	0.131
4. Present theories and science for understanding pain.	0.847	0.126	0.141	0.191
5. Monitor effects of pain management approaches to adjust the plan of care as needed.	0.851	0.113	0.141	0.264
II. Pain assessment and measurement				
6. Assess patient preferences and values to determine pain-related goals and priorities.	0.134	0.878	0.113	0.611
7. Use valid and reliable tools for measuring pain and associated symptoms to assess and reassess related outcomes as appropriate for the clinical context and population.	0.081	0.884	0.109	0.109
8. Describe the unique pain assessment and management needs of special populations	0.134	0.876	0.176	0.102
9. Explain how cultural, institutional, societal, and regulatory influences affect assessment and management of pain.	0.116	0.888	0.135	0.156
10. Demonstrate the inclusion of patient and others, as appropriate, in the education and shared decision-making process for pain care.	0.147	0.836	-0.033	0.194
III. Management of pain				
11. Develop a treatment plan that considers the differences between acute pain, acute-on-chronic pain, chronic/persistent pain, and pain at the end of life.	0.251	0.201	0.151	0.871
12. Explain how to assess and manage pain across settings and transitions of care.	0.309	0.249	0.079	0.826
IV. Multidimensional nature of pain				
13. Describe the impact of pain on society.	0.139	0.148	0.885	0.108
14. Define terminology for describing pain and associated conditions.	0.168	0.149	0.876	0.085
Mean, SD	2.74 ±0.68	2.69 ±0.91	2.89 ±0.77	2.33 ±0.78
Cronbach's alpha	0.827	0.814	0.791	0.726
Eingenvalues	6.246	2.791	1.326	1.012
Percentage of variance (%)	22.416	19.038	17.426	12.558
Cumulative percentage of variance (%)	22.416	41.454	58.880	71.438

utilized to rotate the factors. They extracted common components with eigenvalue > 1 and factor load value > 0.400. Four common factors in all were extracted, according to the results, and no items were removed. The cumulative variance contribution rate was found to be 71.439%, and the factor load value of the 14 items in their dimensions ranged from 0.826 to 0.889, which was consistent with the original scale (Table 2).

In addition, the maximum likelihood method was used to conduct confirmatory factor analysis to verify the stability of the substructure and the model fit. The results showed that the chi-square degree of freedom ratio (2 /df) was 2.773, the goodness-of-fit index (GFI) was 0.856, the root mean square of approximate error (RMSEA) was 0.087, the value-added fitting index (IFI) was 0.899, the comparative fitting index (CFI) was 0.932 (Table 3). The Tuck-Lewis index (TLI) was 0.935, indicating a good degree of model fitting and the Italian version of NCPMCS had a high agreement with the original scale (Table 3).

Table 3 - Maximum likelihood method was used to conduct confirmatory factor analysis to verify the stability of the substructure and the model fit.

Index	Acceptable Value	Normal Value	Values Found
X^2/SD	< 5	< 2	2.773
GFI	> 0.90	> 0.95	0.856
RMSEA	< 0.08	< 0.05	0.087
IFI	> 0.90	< 1.0	0.899
CFI	> 0.90	> 0.95	0.932
TLI	< 1	> 0.90	0.935

X^2/SD, chi-square degree of freedom ratio;
GFI, goodness of fit index; RMSEA, root mean
square error of approximation; IFI, value-added fitting index;
CFI, comparative fit index; TLI, Tuck-Lewis index.

Reliability of the Scale

The Cronbach's alpha of the scale was 0.814 and ranged from 0.726 to 0.827. On a 4-point scale for total competency, the mean score was 2.65 ± 0.89. The multidimensional nature of pain (2.88 ± 0.76) was the factor that showed the highest mean score, whereas the management of pain factor was the lowest (2.52 ± 0.73).

The Guttman half-reliability of the scale was 0.819. Two weeks later, 61 nurses (25%) were selected to fill in the questionnaire twice, and the retest reliability of the scale was 0.922.

Discussion

In this study, the Italian version of the Nurses' Cancer Pain Management Competency Scale was introduced, as an effective assessment tool to provide reference for cross-sectional survey and intervention of cancer pain management and we also tested the scale's validity, reliability, and applicability. As of right now, the majority of cancer pain management research and investigation instruments in the world are patient-centered, and adequate instruments to assess nurses' cancer pain management proficiency are still lacking. The Italian version of the NCPMCS can be a useful tool for assessing nurses' competence in managing cancer pain. It can assess cognitive informations towards the creation of individualized intervention plans aimed at enhancing nurses' cancer pain management competency. Different departments can conduct individualized training to improve nurses' cancer pain management competency, enhance evidence-based pain management programs,

and support nurses in regularly self-evaluations of their cancer pain management competency, all in accordance with current pain management guidelines and the unique characteristics of cancer pain. Low cancer pain management competency among nurses may have detrimental effects on patients' outcomes and reduce the effectiveness of their cancer pain management practice (14).

As participative advocate for pain management, the nurse's comprehension of cancer pain and the position itself are especially crucial. A thorough evaluation of pain should concentrate on the degree of pain, its location, kind and quality, length, history, and its radiating effects to other body areas (14).

Medical services ask nurses to become more proficient in managing cancer pain, since the percentage of cancer patients is rising. It is still vital for clinical nurses to find solutions for enhancing patients' quality of life and encouraging their physical and psychological recovery when providing pain management (2). In order to provide cancer care, nurses must understand the clinical importance of cancer pain management.

The critical ratio of every item in the Italian version of the nurses' cancer pain management competency scale was more than 3 and p < .05, according to item analysis, showing a high degree of item difference. Furthermore, there was a significant degree of homogeneity and connection among the scale's items, as seen by the correlation coefficients, which ranged from 0.489-0.719 (all p < .05), between the scores of each item and the scale's overall score. Furthermore, item analysis revealed that there was a high degree of differentiation among the items in the Italian version of the nurses' cancer pain management competency scale, with each item's critical ratio being greater than 3 and p < .05.

Validity refers to the fact that the measurement tool can measure what it is intended to measure. The validity of the scale is assessed in this study using both content validity and structural validity. Among these, the inclusion of experts is linked to content validity, and the choice and quantity of experts will affect content validity. In previous studies, it was considered better to select more than 6 experts (15) who scored the scale content relevance, the experts were given a four-point scale (1 = not relevant, 2 = weakly relevant, 3 = strongly relevant, 4 = highly relevant) with items scoring 3 or 4 being more representative. Dividing the number of experts scoring 3 or 4 by the total number was the I-CVI for the item. When the I-CVI is ≥0.780, it indicates that the overall content validity of the

scale is good (15). Ten experts in all were contacted for this study; the experts were chosen from a broad range of backgrounds, including scientific researchers, instructional personnel, and clinical workers. This study's I-CVI ranges from 0.853-1.000, and S-CVI was 0.969, suggesting that the scale's content validity was good and that nurses' competency in managing cancer pain can be accurately measured using the Italian version of NCPMCS. Exploratory factor analysis yielded four dimensions, and the cumulative variance rate was 71.44%, suggesting structural stability for the Italian version of the nurses' cancer pain management competency scale. The RMSEA study's value was 0.087 and its χ^2 value was 2.773. Analysis revealed that the fitting model created using the scale factors had good goodness of fit, suggesting that the Italian version of the scale had strong structural validity. The Italian version of the NCPMCS scale items was consistent with the measurement dimensions, which verified that the preset dimension structure matched well with the actual data. The consistency and stability of the measured findings can be represented by the scale's dependability; the better the reliability, the more stable and dependable the measuring device (16). The higher the internal consistency, the more accurately the measured topic reflects the research topic, and the stronger the correlation between the items in each dimension. It is generally believed that the Cronbach's α coefficient of the total scale is >0.800, the Cronbach's α coefficient of the subscale is >0.700, and the broken half reliability is >0.800, indicating good reliability. In this study, Cronbach's α coefficient was 0.814, and the reliability of each dimension was 0.726 to 0.827, indicating high internal consistency of the scale and strong reliability of the scale for evaluating nurses' cancer pain management competency. At the same time, the retest reliability is 0.922, indicating that the scale has good stability across time.

In contrast to the Korean validation study (12), which showed the lowest score for the pain assessment and measurement factor, the lowest score was obtained for the management of pain factor. While the best score was always obtained for the multidimensional nature of pain factor in line with the results of Hu and colleagues (12).

Regarding the current practice and training needs, although 45% of all nurses had received cancer pain management training, a high percentage of nurses did not have a cancer pain management- related protocol in their work department. Although the perceived importance and interest in cancer pain management are increasing, there are still insufficient resources to support nurses' cancer pain management practice in clinical settings. As nurses play an integral role in assessing, managing, and evaluating cancer pain, it is critical for nurses to perform cancer pain management proficiently. Nurses performed better on pain management after participating in training using action learning (17) and online learning (11,18), and the presence of a protocol in the work setting was shown to improve nurses' pain management competency (19). Therefore, it is necessary to adopt an in-hospital protocol for cancer pain management that is based on current clinical practice guidelines or reviews (14,20,21) that nurses can refer to at any time, along with competency-based training that can promote nurses' cancer pain management competency. Furthermore, nurses in the present study preferred multi-component educational modalities with the highest simulation-based learning experience.

Limitations

The first and most important limitation is the convenience and non-random sampling model, which makes the results influenced by the strict selection of cases. Random sampling would have allowed the instrument to be validated in a more heterogeneous nursing group.

Approximately 44% of the hypothetical nurses invited to our validation study did not respond to the questionnaire. This may have influenced the averages that emerged in the responses, as it is likely that the respondents were the greatest number of nurses motivated by the management of cancer pain and therefore offered the best responses.

In the translation and back-translation process, the author of the scale was not included and it probably could have been useful to obtain his new opinion on the back-translation of the questionnaire from Italian to English. However, the retranslated sentences matched the original version as stated by the 10 experts involved in the translation process and the linguist expert involved in the validation process.

It is currently not possible to perform the criterion control verification of the local version of the scale, nor are there any other pertinent instruments or translated versions available to assess the cancer pain treatment competency of nursing personnel in Italy. We should broaden the sample size and geographical reach of nurses in the future, add to the validation analysis, and investigate the use of this scale in Italy.

Conclusion

The NCPMCS, which includes 14 assessment items and 4 dimensions in the *'Italian version'*, is appropriate for assessing clinical nurses' cancer pain management competency in the Italian context. It also has strong reliability and validity. There is no reliable tool today in Italy to evaluate clinical nurses' skills in treating cancer pain. In addition to be a useful tool for clinical settings, this questionnaire makes it easy for researchers to learn more about the general degree of cancer pain management competency that clinical nurses in Italy already possess. The NCPMCS measures competency and may be useful in assisting faculty in developing a pain management curriculum to promote pain management competency. Training programs are needed that employ multi-component education and experimental learning to achieve optimal cancer pain management competency in nurses.

Riassunto

La versione italiana della Nurses' Cancer Pain Management Competency Scale: uno studio di validazione

Introduzione e obiettivo. La Nurses' Cancer Pain Management Competency Scale è uno strumento nato per esplorare le competenze e le esperienze soggettive degli infermieri nella gestione del dolore da cancro e per aiutare gli infermieri a comprendere le loro attuali carenze nella gestione del dolore. Inoltre, sulla base del punteggio specifico della scala, gli infermieri possono valutare la loro mancanza di comprensione nella gestione del dolore da cancro, far avanzare la ricerca in quest'area e migliorare la loro capacità di controllare il dolore da cancro durante l'assistenza. La scala è attualmente disponibile solo in inglese e in cinese. Lo scopo di questo studio era di tradurre questo strumento e misurarne l'affidabilità e la validità nel contesto italiano.

Disegno dello studio. Modello di ricerca metodologica.

Metodi. La popolazione di questo studio metodologico comprendeva infermieri italiani che lavoravano nei reparti di oncologia di 21 ospedali del Nord, Sud e Centro Italia; il campione ha coinvolto 243 infermieri che soddisfacevano i criteri di inclusione.

Risultati. L'alfa della scala di Cronbach era 0.814. La semi-affidabilità di Guttman della scala era 0.819. La competenza infermieristica nella gestione del dolore oncologico comprende quattro fattori, che rappresentano il 71.43% della varianza cumulativa: il contesto della gestione del dolore, la valutazione e misurazione del dolore, la gestione del dolore e la natura multidimensionale del dolore. Su una scala a 4 punti per la competenza totale, il punteggio medio era 2.65 ±0.89. La natura multidimensionale del dolore (2.88 ±0.76) è stato il fattore che ha mostrato il punteggio medio più alto, mentre la gestione del fattore dolore è stata quella più bassa (2.52 ±0.73).

Conclusioni. La competenza infermieristica nella gestione del dolore da cancro può essere valutata utilizzando la versione italiana della Nurses' Cancer Pain Management Competency Scale, che ha una forte validità e affidabilità.

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