

**The Validity and Reliability Study of the Quality of Nursing Care Scale (OPPQNCS-SF):
'Perception of Oncology Patients'**

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Abstract

Cancer one of the major causes of morbidity and mortality is on the increase throughout the world. The care needs of cancer patients are rather complicated. In the improvement of the quality of life of cancer patients, professional care plays a significant role. One of the determinants of quality of life is patient satisfaction. Patient satisfaction is a multi-dimensional healthcare construct which is affected by many variables. Systematic measurement of patients' perceptions of and satisfaction with their care by health care providers is gaining more and more importance day by day. This study was aimed at assessing the construct validity and reliability of the Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS) in Turkey.

Materials and Methods: This study is a cross-sectional study. Exploratory factor analysis was used to examine the construct validity. Its reliability assessed using coefficient alpha, a measure of internal consistency.

Results: The result for the internal consistency reliability of the scale was 0.91 for the total scale.

Conclusion: It was concluded that the Turkish version of the OPPQNCS-SF was a valid and reliable instrument for the evaluation of cancer patients.

Keywords: Nursing, Quality of care, Oncology patient, Patients' satisfaction and Reliability

Introduction

In the world, the number of patients diagnosed with cancer is rapidly increasing. According to the World Cancer Report released by the World Health Organization (WHO) International Agency for Cancer Research (IARC) in February 2014, 14 million new cases of cancer have been detected each year since 2012, and this figure is expected to reach 22 million within the next 20 years [1]. Cancer patients needs are many-sided. The relevant literature indicates that the provision of quality care is positively associated with better clinical outcomes, for example, increased health-related quality of life. Professional care plays an important role in the improvement of the quality of life of cancer patients [2,3,4]. Physical, psychosocial and spiritual symptoms of the patient are related to each other. Due to the complex care needs of these patients, quality nursing care is required. Moreover, holistic care is a comprehensive model of caring. Nurses have primary roles and responsibilities in the provision of holistic care to the patient. Every patient presenting to a health center should be diagnosed and provided with supportive care from a holistic point of view [5,6]. In coming years, the role of the oncology nurse will continue to develop, as changes in the delivery of health care systems and new scientific detection will be integrated into cancer care [4].

There is a close relationship between oncology patients and nursing quality [7], trust [8], health status and individual care [9,10]. As stated in the literature, patient satisfaction is accepted as an outcome of health care services and as an indicator of quality care [5,11,12]. Holistic care contains a broad perspective, including medication, education, communication, self-help, and complementary treatment [13]. To assess the quality of nursing care for patients diagnosed with cancer there is a need for precise measurement tools. Many instruments can be used to measure quality of life in cancer patients and patient satisfaction. On the other hand, individualized nursing care has been defined as patients' perceptions of nurses' activities and being cared for as an individual [13]. These findings are supported by many other studies [14,15,16,17,18]. The Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS) was developed by Radwin et al. (2003) specifically to assess oncology patients' perceptions of the quality of nursing care [12]. Furthermore, this scale represents a holistic approach to patient care and is a multidimensional concept consisting of various perspectives relevant to nursing care and quality of service [12,19]. Therefore, this study was conducted to assess the dimensionality, reliability and construct validity of the quality of nursing care scale for Turkish oncology patients.

Materials and Methods

This study designed as a cross-sectional study was carried out between October 2017 and December 2017. To collect the study data from volunteer patients, a random sampling method was used. Construct validity and reliability of the Nursing Care Quality (OPPQNCS-

SF) in Turkish community was assessed using data collected from 90 cancer patients hospitalized in hematology-oncology services in Turkey. The inclusion criteria of the study were as follows: (a) being an in-patient diagnosed with cancer (b) having spent at least 2 days in the hospital as an inpatient (c) having adequate mental capacity to respond the questionnaires independently (d) being able to communicate in the native language and (e) volunteering to participate in the study.

Instrument

Data was collected with the Oncology Patients' Perceptions of the Quality of Nursing Care Scale (OPPQNCS).

Procedure

The patients were informed about the research and their written informed consent was obtained. The data were collected at the hospital where the research was conducted. For data collection, the one-to-one interview method was used. Participation in this study was on a voluntary basis. Patients completed the OPPQNCS-SF on the day or previous day of discharge.

The questionnaire used has two parts: (1) Sociodemographic characteristics of patients and (2) satisfaction level measured using OPPQNCS-SF. Several questionnaires are available to measure patient satisfaction in oncology. One of them is the OPPQNCS-SF developed by Radwin et al. (2003) to evaluate oncology patients' perceptions of the quality of nursing care. The scale's short form has 18 items and 4 subscales [Responsiveness (5 items), Individualization (5 items), Coordination (3 items) and Proficiency (5 items) subscales]. The items of the instrument are scored on a Likert-type scale, with a higher score indicating more selfperceived quality of nursing care [12]. Ethical considerations In order to implement the OPPQNCS-SF, we obtained the author's permission via e-mail. The study was approved by the institutional ethical committee and written informed consent was obtained from all the study participants. Approval for the study was obtained from Manisa Celal Bayar University Dean of Faculty of Medicine the Ethics Committee of Health Sciences.

Data analysis:

The data were obtained by using the sociodemographic characteristics questionnaire and the Nursing Care Quality (OPPQNCS-SF) and were analyzed by the descriptive statistics and exploratory factor analysis (EFA) using the SPSS version 15.0. The mean scores and standard deviations of the OPPQNCS-SF were calculated. When factor analysis is conducted, sample adequacy is a major issue. In order to determine whether or not the sample size was adequate, Kaiser-Meyer Olkin (KMO) measure of sampling adequacy and Barlett's (BS) test were used [20,21,22]. For all analyses, 0.05 and 0.001 respectively were considered as significant.

Results

The mean age of the study participants was 48.9 ±14.01 years (min-max 22-78). Of them, 54.4% were male. The mean score was 93.95±10.01 for the overall OPPQNCS-SF, and 26.64±3.12 for the responsiveness subscale, 25.94±3.55 for the individualization subscale, and 14.55±2.40 for the coordination subscale, and 26.73±3.20 for the proficiency subscale (Descriptive statistics for the scale are given in Table 1 and Table 2).

Table 1: Distribution of the mean score OPPQNCS-SF and of subscale’s (n=90)

Subscale	Minimum	Maximum	Mean	Std. Deviation
responsiveness	14.00	30.00	26.64	3.12
individualization	13.00	30.00	25.94	3.55
coordination	7.00	18.00	14.55	2.40
proficiency	16.00	30.00	26.73	3.20
OPPQNCS-SF (overall)	56.00	108.00	93.95	10.01

Table 2: The Turkish version of the OPPQNCS-SF of “Oncology Patients” item level descriptive statistics (n=90).

Item	Mean (SD)	Median
Responsiveness subscale	26.64 (3.12)	27.00
1. The nurses took time to answer my questions	5.16 (0.89)	
2. The nurses made sure I had what I needed	5.37 (0.88)	
3. The nurses comforted me when I needed it	5.22 (1.07)	
4. The nurses were genuinely concerned about me	5.32 (0.92)	
5. The nurses respected my dignity	5.58 (0.61)	
Individualization subscale	25.94 (3.55)	
6. The nurses helped me get the information I wanted	5.41 (0.87)	26.00
7. The nurses knew what I had been through	5.22 (0.85)	
8. The nurses discussed care options with me	5.00 (1.14)	
9. The nurses knew how to help me when things were bothering me	5.23 (1.00)	
10. The nurses encouraged me to actively participate in my care	5.16 (0.89)	

Coordination subscale	14.55 (2.40)	15.00
11. The nurses told me which nurse was taking over when they were not there	5.37 (0.88)	
12. The nurses arranged for the same nurses to care for me regularly	5.22 (1.07)	
13. The nurses told me which nurse was primarily responsible for coordinating my care	5.00 (1.14)	
Proficiency subscale	26.73 (3.20)	27.00
14. The nurses gave me accurate explanations about my care	5.10 (1.12)	
15. The nurses knew how to care for someone with my condition	5.16 (1.18)	
16. The nurses were skillful	5.34 (0.98)	
17. The nurses knew what they were doing	5.61 (0.55)	
18. The nurses knew how to help me	5.52 (0.76)	
Total scale-item (min.: 56.00; max.:108.00)	93.95 (10.01)	93.00

Validity

This scale was previously adapted by Can et al. for Turkish patients to assess the care provided by student nurses [14]. Therefore, language and content validity was not assessed in the present study Exploratory factor analysis was used to examine the construct validity.

Reliability

For the reliability of the instruments; Cronbach coefficient alpha was calculated as a measure of internal consistency. In order to determine the internal consistency reliability of the OPPQNCS-SF we calculated Cronbach’s coefficient alpha to establish the correlations between different the items (Coefficient alpha α ; criterion ≥ 0.70). To test the internal consistency of the scale, the Spearman-Brown formula and split-half reliability were used [20,21,22,23] . Item-total correlations and Cronbach alpha (α) values for the Turkish version of OPPQNCS-SF are given in Table 3.

Table 3 : The Turkish version of Oncology Patients’ Perceptions of the Quality of Nursing Care Scale-SF item-total correlations and Cronbach alpha (α) values (n=90).

<i>Item</i>	<i>rs</i>	<i>p</i>	<i>Cronbach alpha</i>
Responsiveness subscale $\alpha=0.89$			
1.The nurses took time to answer my questions	0.51	0.001	0.90
2. The nurses made sure I had what I needed	0.55	0.001	0.90
3. The nurses comforted me when I needed it	0.62	0.001	0.90
4. The nurses were genuinely concerned about me	0.56	0.001	0.90
5. The nurses respected my dignity	0.30	0.001	0.90

Individualization subscale $\alpha=0.76$			0.90
6. The nurses helped me get the information I wanted	0.49	0.001	0.90
7. The nurses knew what I had been through	0.46	0.001	0.90
8. The nurses discussed care options with me	0.51	0.001	0.89
9. The nurses knew how to help me when things were bothering me	0.47	0.001	0.90
10. The nurses encouraged me to actively participate in my care	0.49	0.001	0.90
Coordination subscale $\alpha=0.79$			
11. The nurses told me which nurse was taking over when they were not there	0.55	0.001	0.90
12. The nurses arranged for the same nurses to care for me regularly	0.66	0.001	0.90
13. The nurses told me which nurse was primarily responsible for coordinating my care	0.68	0.001	0.89
Proficiency subscale $\alpha=0.73$			
14. The nurses gave me accurate explanations about my care	0.33	0.001	0.90
15. The nurses knew how to care for someone with my condition	0.53	0.001	0.90
16. The nurses were skillful	0.64	0.001	0.90
17. The nurses knew what they were doing	0.62	0.001	0.90
18. The nurses knew how to help me	0.32	0.001	0.90
Total scale-item $\alpha=0.91$			

Discussion

Patients’ satisfaction levels

Individualized care has a positive effect on patient outcomes, and support for individualized care has become an important strategy for improving health care quality [14,1516]. In this study, the highest mean score for subscales was obtained from the “proficiency” subscale and the lowest one from the “Coordination” subscale. In addition, 54% of patients are generally stated to have good nursing care. Finally, individualized care showed good correlation with patient satisfaction.

Construct validity

The KMO measure of sampling adequacy for the sample was 0.89 with a statistically significant BS ($\chi^2 =592.540$, $p < 0.0001$). Thus, the data obtained were suitable for the factor analysis [20,23]. Test-retest reliability coefficients were assessed by Pearson Correlation. A statistically significant positive correlation ($p < 0.001$) was found between OPPQNCS-SF and test-retest scores obtained from the sub-dimensions [23]. For the reliability of the instrument; Cronbach’s coefficient alpha was calculated as a measure of internal consistency: values from 0.6–0.7 are acceptable, whereas values greater than 0.7 are good [23,24]. For the Explanatory Factor Analysis, the analysis of the principal components was applied on an 18-point scale and for

factors exceeding one of the true values were obtained. The biggest factor that emerged after the Varimax rotation was 1 factor that can explain the 41.55% of the variance. Variances of the other factors were 12.63%, 9.86% and 7.02% respectively.

Reliability

The split-half and Spearman Brown were also used to test the internal consistency of the scale. In the validity and reliability study in the development of the OPPQNCS-SF, the Cronbach alpha value for the total scale was 0.97, and for the subscales, the values were 0.95, 0.93, 0.87, and 0.95, respectively [12]. In another survey conducted by the student nurses in Turkey, another Turkish version of the scale developed by Can et al. was used and the OPPQNCS-SF's item score correlation coefficients were found to be $r_s = 0.38-0.85$ ($p < 0.05$). The Cronbach values of the scale were 0.91 for the total scale, 0.74, 0.79, 0.66, and 0.87 for the subscales [14]. This current research was carried out with nurses working in a hematology-oncology service. In this study the Cronbach alpha value for the total scale was 0.91, for the subscales the values were 0.89, 0.76, 0.79 and 0.73, respectively. The OPPQNCS-SF's item score correlation coefficients in this Turkish version were $r_s = 0.32-0.68$ ($p < 0.001$). A similar result was obtained in another study in Turkey (Can et al). The results indicate that the scale is a valid and reliable instrument, and thus can be administered to Turkish patients to assess their level of satisfaction with nursing care (Table 3).

Limitations

The limitation of this study is that the sample comprised only the patients admitted to one hospital. This may lead to selection bias. It is recommended that studies should be conducted on different samples to test the validity and reliability of the scale.

Conclusion

Psychometric features demonstrate that the OPPQNCS form measures cancer nursing quality appropriately from the patient's point of view. The quality of nursing care scale (OPPQNCS-SF) in cancer patients was regarded as valid and reliable for use in the Turkish population. It is also a suitable tool for use in adult patients diagnosed with various types of cancer.

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Conflicts of Interests

The authors declare no conflict of interest. There is no conflict in the design of the study; data collection, analyses, or interpretation of data; writing of the manuscript, and final decision to publish the results.

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