

Original Article

The Psychometric Properties of the Preparedness Scale of the Family Care Inventory: The Turkish Version

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Abstract

Objectives: The family members do not feel ready to provide care for their patient relatives at home, and that they need information, skills and support on many issues. The aim of this study was therefore to translate, adapt and psychometrically evaluate the Preparedness for Caregiving Scale for use in the Turkish context.

Methods: Data were collected via two different instruments: The "Introduction Form of the Caregiver" and "Preparedness Scale of the Family Care Inventory". The testing of the scale included: (1) translation and adaptation of The Preparedness for Caregiving Scale (PCS); (2) construct analysis by an expert group; and (3) pre-test and psychometric evaluation (factor analysis, reliability coefficient and inter-item correlations).

Results: The scales were translated into Turkish and were assessed by the authors and an expert group and a final version was formed. Pearson Correlation analysis of the results showed a significant positive relationship between test–retest scores of the scale ($r = .775$, $p < 0.001$; $t: .781$, $p: .439$). Cronbach alpha coefficient was $\alpha = .88$ and standardized α value was 0.89. For the total score correlations obtained over 8 items, the Pearson Product-Moment Correlation ranged between .62 and .83 and was statistically significant ($p < 0.001$). The Kendall W value of the scale was found to be 0.182 and the p value was 0.068. Factor analysis showed that the Kaiser-Meyer-Olkin coefficient (KMO) was .88 and the Barlett test results was $X^2 = 343.672$, $p < 0.001$. The scale explains the 56% of total variance.

Conclusion: The scales were found to be valid and useful in a population of family members of patients with cancer in Turkey.

Key Words: Psychometric Properties, Preparedness Scale of the Family Care Inventory, Turkish language.

Introduction

Developments in the health care system have prompted a shift from inpatient cancer treatment to ambulatory and home care (Given et al., 2001). Home care has increased the role of the family. After being discharged from hospital, most cancer patients are cared for by family members (Nijboer et al., 1999). Cancer can negatively affect the quality of life (QoL) not only of

patients but also of family caregivers (Nijboer et al., 2001; Sharpe et al., 2004; Papastavrou, 2012). In some countries in hospital informal care also applies (Yazicioglu et al, 2001, Sapountzi-Krepia et al. 2008, Sapountzi-Krepia et al., 2006, Lavdaniti et al 2011, Stavrouet al 2014). Providing care to a loved one with serious illness can place a great burden on family caregivers.

They may have to cope with a variety of physical, social, and economic problems during the caregiving process (Durme et al., 2012). The decrease in the caregiver's quality of life influences the quality of care and thus the QOL of the patient. Research on family caregivers have consistently demonstrated that increased caregiver burden is related to reduce mental and physical health (Morimoto et al., 2003; Hacialioglu et al., 2010; Durme et al., 2012; Ardahan & Yeşilbalkan, 2010). In the home, family caregivers may often be in the position of being the first to assess the patient's symptoms; if adequately prepared for this role, caregivers may contribute to the speed and appropriateness of patient referral to hospital when problems occur, and to the patient's subsequent quality of life (Ardahan & Yeşilbalkan, 2010).

However, caregivers who are expected to fulfill all these responsibilities are rarely evaluated in terms of their readiness and skill to provide care and their willingness to manage the current care of the patient (Atkins et al., 2010). In addition, caregivers try to meet patients' needs without getting sufficient information and guidance from health care professionals (William, 2003; Chen & Hu, 2002). In studies on the needs of the caregiver, it was found that the family members do not feel ready to provide in care for their patient relatives at home, and that they need information, skills and support on many issues (Hinds, 1985; Northouse, 2005, Stavrouse et al., 2014); they do not sufficiently prepare for the technological care the tech of the patient and thus their anxiety, fatigue and depression levels increase (Silver et al., 2004).

In addition, studies in the literature report that insufficient preparation for the caregiver role decreases the quality of the relationship between the caregiver and the patient and increases the tension experienced by the caregiver (Schumacher et al., 2007; Scherbring, 2002). A study of the mutual relationship between caregiver and patient reported that caregivers feel moderately ready to provide care at six weeks after the patient's discharge (Archbold et al., 1990).

Another study found that 51% of caregivers feel uncomfortable during the caregiving process, and that they need information about managing the patient's care (Scherbring et al., 2002). Studies

report that positivity and flexibility of the caregiver, adaptation to his/her role, readiness to provide care, getting response from caregiving and similar factors affect the caregiving process and cause reduce stress (Given et al., 2006); and emphasize that these factors are important for the future comfort and care of the patient (Hudson et al., 2005).

It was reported that, in order to increase the adaptation of caregivers to their roles, it is necessary to define their needs, plan their efforts to this end, inform them about emotional changes and treatment received by the patient and provide support to them (Given et al., 2001; Hudson et al., 2005; Schumacher et al., 2007).

Therefore, caregivers who primarily provide care for cancer patients should accept the responsibility of caregiving and prepare for this role (William, 2003; Scherwood et al., 2004). Preparedness of caregivers for in-home patient care positively affects the caregiving process and their relationship with the patient, and reduces recurrent inpatient treatment (Kneeshaw et al., 1999). Such preparation is only possible with training programs for caregiver. Planned training programs enable caregivers to develop adaptation strategies focused on their weaknesses in caregiving; to find solutions for these weaknesses, and thus such programs help decrease stress and anxiety levels (Scherwood et al., 2004; Zwicker, 2010).

In Turkey, some studies have examined the QoL and care burden of caregivers; however, there is no scale to measure whether caregivers are ready for their roles or not.

The adaptation of the "Preparedness Scale of the Family Care Inventory" to Turkish society will determine the level of preparedness among careers for cancer patients, and contribute to the planning of effective initiatives for caregivers' needs.

Aims: The aim of the study is to translate, adapt and psychometrically evaluate the Preparedness for Caregiving Scale for use in the Turkish context.

The study questions are: Preparedness for Caregiving Scale is it Turkey a valid tool to use? Preparedness for Caregiving Scale is it Turkey a reliable tool to use?

Methodology

A descriptive design was used in this study.

Participants

The eligibility criteria were: (1) primarily providing care for patients under chemotherapy; (2) living in the same house as the patient; (3) aged 18 years or over; (4) able to read and understand the Turkish language; and (5) no history of psychiatric illness. *Caregivers exclusion criteria;* it is not willing to participate in the study.

Instruments

Data were collected via two different instruments: The "Introduction Form of the Caregiver" and "Preparedness Scale of the Family Care Inventory". The Introduction Form of the Caregiver includes socio-demographic variables such as age, gender, marital status, educational background, occupation, social security status, employment status, income level, degree of affinity with the patient, the presence of other people to be cared for, duration of caregiving, the presence of other people providing caregiving support.

The Preparedness for Caregiving Scale (PCS) was originally developed by Archbold et al. in the USA, for use among caregivers of frail elderly persons living at home. The scale was restructured in 1993 and 2000 (Schumacher et al., 2007). It assesses caregivers' readiness to provide care. Preparedness is defined as perceived readiness for multiple domains of the caregiving role, such as providing physical care and emotional support, setting up in-home support services, and dealing with the stress of caregiving (Zwicker, 2010).

The scale consists of eight items, each scores via a five-point Likert-type scale from (0) not at all prepared to (4) very well prepared. All items are shown in Table 1. A total score (range 0–32) is calculated by summing the responses for all items. Higher scores indicate that the caregiver feels more prepared for their role. The preparedness scale has demonstrated moderate to high internal consistency, with Cronbach's alpha coefficients ranging from 0.86 to 0.92 (Carter et al., 1998; Hudson, 2005; Zwicker, 2010). Several researchers recommend screening caregivers for preparedness in clinical practice (Archbold et

al., 1990; Hudson, 2005; Schumacher et al., 2007; Zwicker, 2010). Construct and validity of construct have been demonstrated between lack of resources and caregiver concern (Archbold et al., 1990; Zwicker, 2010; Henriksson et al., 2012).

Study design

The study was designed for testing the scale and the phases included were: (1) translation and adaptation of the Preparedness for Caregiving Scale (PCS); (2) construct analysis by an expert group; and (3) pre-test and psychometric evaluation (factor analysis, reliability coefficient and inter-item correlations).

Statistical Analysis

Data were analyzed using SPSS. Introductory data related to caregivers were analyzed via numerical and percentage tests. Kendall W analysis was used to test the construct validity of the scale. Pearson's Product-Moment Correlation was used for test-retest reliability. Cronbach's Alpha was used for internal consistency. Principle Component and confirmatory factor analyses were used to determine factor loads and Hotelling's T2 test was used to detect scale bias.

Ethical considerations

Before starting work, study has been approved by a suitably constituted Ethics Committee of the Institution with the work and that it was the undertaker Conforms to the provisions the of the Declaration of Helsinki.

Results

Research population

Of the caregivers included in the study, 68.9% were female and 31.1% were male; average age was 44.59; 82.2% of caregivers were married; 44.4% were university graduates; 87.7% had social security; and 63.3% were unemployed. It is found that 56.7% of caregivers were living with their patients and had been providing care for at least six months at the time of the study. 21.1% of patients had been diagnosed with lung cancer and 17.8% breast cancer (Table 1).

Test-Retest Reliability

The first application of the scale for reliability interviewed 90 caregivers; in the second application, 30 caregivers were interviewed face-

to-face twice, 15 days apart . Pearson Correlation analysis of the results showed a significant positive relationship between test–retest scores of the scale ($r = .775$, $p < 0.001$; $t = .781$, $p = .439$) (Table 2).

Table 1. Descriptive Characteristics of caregivers

Descriptive Characteristics	N	%
Age	X : 44,5889	
Gender		
- Men	28	31.1
- Women	62	68.9
Marital Status		
- Married	74	82.2
- Single	16	13.3
Education Status		
- Illiterate author	3	3.3
- Primary	47	52.2
- Higher Education / Faculty	44	44.4
Social Security Institution		
- You Have	79	87.8
- None	11	12.2
Working Status		
- Full day	29	32.2
- Half day	4	4.4
- Not Working	57	63.3
Income Status		
- Good	13	14.4
- Medium	66	73.3
- Poor	11	12.2
Degree Relatives		
- relatives	84	93.3
- Other (paid)	6	6.7
Living Together		
- Yes	51	56.7
- No	39	43.3
While the caregiver		
- 6 months to six	51	56.7
- 6-12 months	13	14.4
- 13-24 months	12	13.3
- 25-36 months	11	12.2.
- 36 months and over	3	3.3
Diagnosis of Patients		
- Lung cancer		
- Breast Cancer		

Table 2. Average Test–Retest Scores on the Preparedness for Family Care Inventory and Cronbach Alpha Values of the Scale

Scale	Average Score		Results of the Analysis				Cronbach Alfa	
	First Mean ±SD	Second Mean ±SD	r	p	t	p	α	Standartize e α
	25.89± 4.94	26.26± 3.80	.775	<.0010	.781	.439	.882	.886

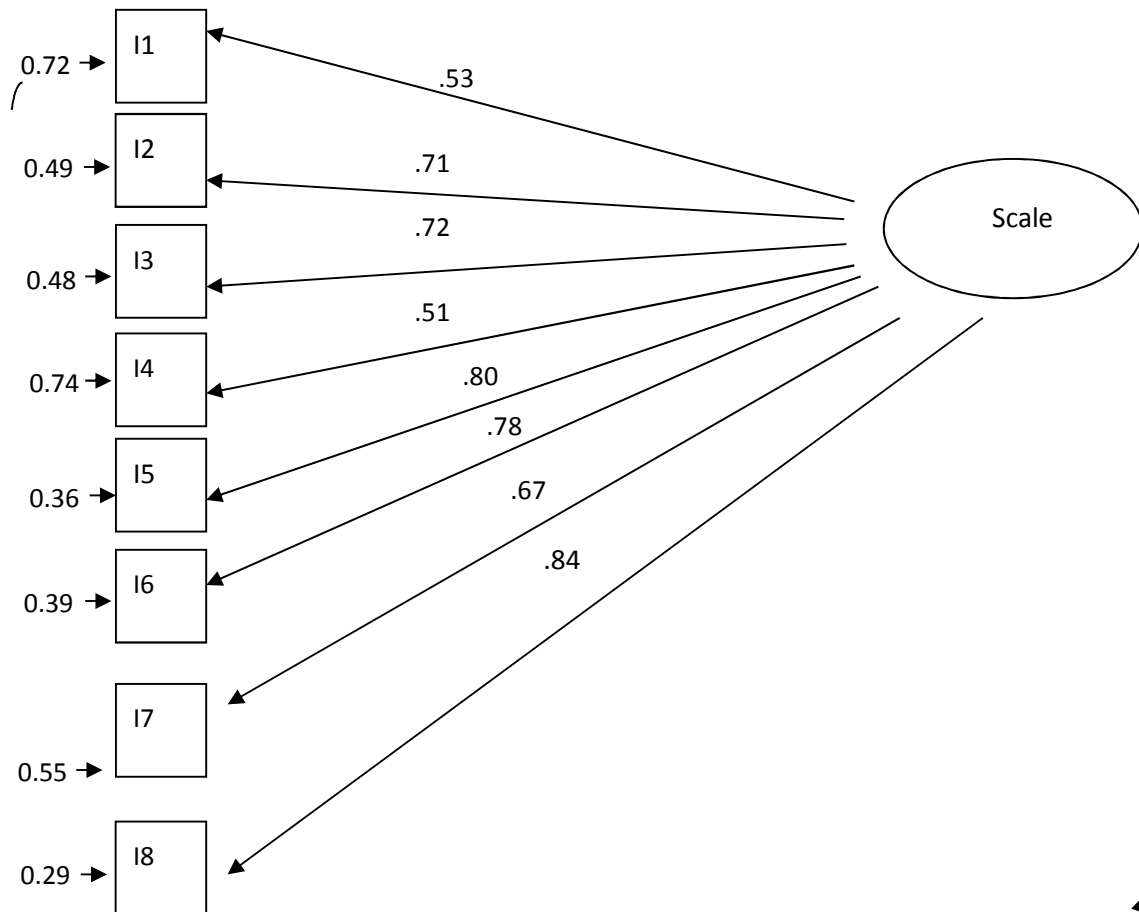
Table 3. Item Correlations of the Preparedness Scale of the Family Care Inventory and Reliability Results of Cronbach Alpha Values

Items of the Scale	Item-Total Score Correlations (n=90)		Item Test– Retest Correlation (n=30)	
	r	p	r	p
Item 1 (How well prepared do you think you are to take care of your relative/friend's physical needs?)	.65	.001	.58	p<0.001
Item 2 (How well prepared do you think you are to take care of your relative/friend's emotional needs?)	.79	.001	.60	p<0.001
Item 3 (How well prepared do you think you are to find out about and set up services for your relative/ friend?)	.73	<.001	.60	p<0.001
Item 4 (How well prepared do you think you are for the stress of caregiving?)	.62	.001	.84	. p<0.001
Item 5 (How well prepared do you think you are to make caregiving activities pleasant for both you and your relative/friend?)	.81	.001	.41	.006
Item 6 (How well prepared do you think you are to respond to and handle emergencies that involve your relative/friend?)	.81	.001	.57	p<0.001
Item 7 (How well prepared do you think you are to get the help and information you need from the health care system?)	.73	.001	.36	.019
Item 8 (Overall, how well prepared do you think you are to care for your relative/friend?)	.83	.001	.42	.005

Table 4. Explanatory Factor Analysis of Preparedness Scale of Family Care Inventory

<i>Scale Items</i>	<i>Factor loadings</i>
Item 1 (How well prepared do you think you are to take care of your relative/friend's physical needs?)	.635
Item 2 (How well prepared do you think you are to take care of your relative/friend's emotional needs?)	.789
Item 3 (How well prepared do you think you are to find out about and set up services for your relative/ friend?)	.748
Item 4 (How well prepared do you think you are for the stress of caregiving?)	.595
Item 5 (How well prepared do you think you are to make caregiving activities pleasant for both you and your relative/friend?)	.821
Item 6 (How well prepared do you think you are to respond to and handle emergencies that involve your relative/friend?)	.806
Item 7 (How well prepared do you think you are to get the help and information you need from the health care system?)	.711
Item 8 (Overall, how well prepared do you think you are to care for your relative/friend?)	.853

Figure 1. Confirmatory Factor Analysis of the Preparedness Scale of the Family Care Inventory



Chi-Square=27.40 , df= 19, p<0.001, RMSEA=0.07

Indicators of the adaptation to the model were detected as RMSA 0.070, GIF .93, NIF .95, NNFI .97, IFI .98 and CFI .98.

Internal consistency

Cronbach alpha coefficient was $\alpha=.88$ and standardized α value was 0.89 (Table 2).

Item Analysis

The validity and reliability of the scale were tested with data obtained from 90 caregivers. For the total score correlations obtained over 8 items, the Pearson Product-Moment Correlation ranged between .62 and .83 and was statistically significant ($p<0.001$). In addition, the test-retest reliability coefficients between the first and second applications ranged between $r=.36$ and $r=.84$ and were statistically significant ($p<0.05$) (Table 3).

Reliability Analysis

Translation and adaptation

Permission was obtained via e-mail from the original authors, Archbold and Steward to apply the scale to the Turkish context. The scales were translated into Turkish by two researchers and one bilingual person, and then back to English by another bilingual person. The translation and back-translation were assessed by the authors and an expert group, and a final version was formed.

Construct Validity

The scores given to the scale by the ten experts were evaluated via Kendall W analysis. The Kendall W value of the scale was found to be 0.182 and the p value was 0.068. In line with the result, it is found that there was no statistically significant difference between the scores of ten experts and these scores are compatible with each other.

Exploratory Factor Analyses

The construct validity of scales may be tested via many different approaches, one of which is factor analysis. Factor analysis showed that the Kaiser-Meyer-Olkin coefficient (KMO) was .88 and the Barlett test results was $X^2 = 343.672$, $p<0.001$. The scale explains the 56% of total variance. Principle Component factor analysis showed that the factor loads of the scale ranged between .595 and .82 (Table 4).

Confirmatory factor analyses

Figure 1 shows the Confirmatory Factor Analysis of the Preparedness Scale of the Family Care

Inventory. Indicators of the adaptation to the model were detected as RMSA 0.070, GIF .93, NIF .95, NNFI .97, IFI .98 and CFI .98, chi-square value was found to be less than five degrees of freedom. It has been determined that scale items are regularly distributed.

Scale Response Bias

Hotelling's T^2 test was used to evaluate whether participants gave consistent responses to scale items. The results (Hotelling $T^2= 46.620$, $F=6.211$, $p<0.001$) showed there was no response bias in the scale.

Discussion

Preparedness to caregiver to the caregivers of cancer patients and it is important to diagnose their needs and the role of the caregiver to treat cancer in the family is reported to return gradually complexed (Given ve ark., 2001). Maintenance is as classic as the woman approached the women of responsibility and care is dominant. Women seeing it as a continuation of the former responsibilities of caregiving, while men focused on showing the outside world is alien to the needs socialization and caring. In addition, women are more dependent on others for social support, are more focused on their marital relationship and help actively in everyday life (Pruchhno &Resch, 1989). Altun in Turkey (1998) by 78% in a study of caregivers are women and that 34% are found to provide maintenance to their spouses and reputation were found to be similar to our study findings. In literature, it is emphasized that generate most of the family members who care for cancer patients (Honea et. al., 2008; Given ve ark.,2001; Altun, 1989). Horowitz (1985); According to gender differences in the aging parents of the girls in the study of transport explain the maintenance task, do the housework, meal preparation, while helping to care for shopping and personal care; while on the other hand, emphasizes that the sons and financially support maintenance decision-making. In our study, the literature likewise to be relatives of the patients, 93.3% of the caregivers (children, spouse, other relatives) were. In addition, it is at primary level of education of those caregivers in the study (52.2%), where the social security 87.8%, determined to live with patients of 56.7% and Ugur (2006) showed resemblance to the work. Cancer patient

caregivers' mania in the literature, which affect the caregiver's working process is said to be causing redundancy. Because caregivers often on a responsibility and that responsibility is assessed by measuring the time it takes to help the daily activities of caregivers. Because caregivers often on a responsibility and that responsibility is assessed by measuring the time it takes to help the daily activities of caregivers. Get medical materials that meet with the seller and with the insurer; equipment, materials must provide support and nutrition.

For example; those caregivers manage home parenteral nutrition, learning new situation-specific knowledge and skills and this application may be requested. Especially the patient's condition gets heavier; who arrive caregivers become more complex care given to reject the promotion business to cope with this situation, they are able to continue their studies at a lower occupational status (Pasacrate et al., 2000). Such changes in fulfilling its role in performance, can create a great source of stress in family members, caregivers group may cause anxiety (Sales, 2003).

In our study, 63.3% of those in the study of caregivers and patients determined that an average of 6 months, 56.7% of the caregivers and the results showed resemblance with the literature. As described above, caregivers who are at higher load required position and live traumatic experiences. Those caregivers; patient treatment process of this transition period, treatment, post-treatment requirements and appropriate referrals for continuity of care is needed to be done. Especially caregivers who, during active treatment is often the coordination of care and take responsibility for their role in the new maintenance activities; they learn new skills and knowledge, new information and skills they tried to integrate care. Routing insufficient maintenance and inadequate preparation of the caregivers during this period may cause more side effects in the treatment of patients living (Scherwood et al., 2004; Scherbing, 2002).

Caregivers, patient care management before handling the preparation must be determined to be prepared to provide adequate care. Therefore, this study was developed to evaluate the preparation to caregivers to caregivers of cancer patients in Turkey " Preparedness Scale of the

Family Care Inventory " the scale was performed to evaluate the validity and reliability of Archbold et al. developed by (1993, 2000) " Preparedness Scale of the Family Care Inventory " the scale of the test-was found to be significant statistically positive relationship between the re-test scores ($r = .775$, $p < 0.001$; $t: .781$, $p: .439$, Table 1).

The Turkish translated scale that has a high reliability and the similar results between repeated measurements (Cronbach's alpha coefficient = .88, standardized α value: .89, Table 2), the test-retest reliability coefficient was $r = .36$ and $r. 84$, was found to vary ($p < 0.05$; Table 3). The original study reported Cronbach's alpha internal consistency values of 0.67–0.92 and the time consistency was found to be high between $r: 0.81$ and 0.92 (Archbold et al., 1990). Other studies in the literature report that the scale has a high Cronbach alpha between .88 and .93 (Carter et al., 1998; Hudson et al., 2005).

The test–retest method measures the stability of the measurement device and is one of the most frequently used reliability analyses. These measures are frequently evaluated with Pearson product-moment correlation. The closer the correlation coefficient to +1, the higher the reliability of the scale. It is recommended that the correlation coefficient between average test–retest scores should be at least 0.70 (Gozum & Aksayan, 2002; Sencan, 2005). Therefore, the results obtained from the application of the test every two weeks were examined via the t-test for dependent groups. There was no statistically significant difference between averages (25.89+ 4.94; 26.26+ 3.80, Table 1). It was concluded that the Turkish adaptation of the Preparedness Scale of the Family Care Inventory showed high reliability. The item- total scores of the items in the scale had Pearson product-moment correlations between .62 and .83 and were statistically significant ($p < 0.001$).

The test–retest reliability coefficients of the scale ranged between $r = .36$ and $r = .84$ and were statistically significant ($p < 0.05$; Table 3). Kneeshaw et al. (1999) in his study, the scale of the item-total correlations were found to vary between .22 and .67 and found that similar to our findings. In this study, ten experts were consulted to evaluate the conformity of the items in the version of the scale adapted to the Turkish

language and culture; experts' views related to statements and constructs of the items were taken into account and the statements describing some items were subsequently revised. Analysis of the expert recommendations showed that their views were consistent ($W: 0.182, p:0.068$). In the literature, the majority of experts agree that is considered as a positive indicator for the content validity of the scale (GOzum & Aksayan, 2002; Şencan 2005). However, no data was identified in the literature concerning the construct reliability of the scale.

In this study, according to the factor analysis, Kaiser-Meyer-Olkin coefficient was .88 and the result of Barlett test was $X^2 = 343.672, p < 0.001$. The results showed that the items of the scale used in this study were homogenous and collected under one factor (Archbold et al., 1990). These values confirmed that the number of samples was sufficient to conduct factor analysis, and that the data were homogenous.

According to the analysis, the factor distributions of the scale conform to the original scale. The Turkish version of the scale explains 56% of the total variance. The literature states that higher variance rate indicates more powerful factor construct of the scale, and variances of 40–60% are regarded as sufficient (Sencan, 2005). The analysis conducted in this study showed that the construct validity of the Turkish version of the scale is appropriate. In order to discuss that items are not sufficient to explain the original construct of the scale, confirmatory factor analysis is used.

In this study, explanatory factor analysis showed that factor loads ranged between .595 and .821 (Table 4). These values indicate that the data is compatible model illustrates one factor that is associated with the scale and the scale size of the material confirmed the structure. But literature has not reached the scale of the factor loadings are examined. The Explanatory Factor Analysis of the Family Care Inventory adaptation indicators were RMSA 0.070, GIF .93, NIF .95, NNFI .97, IFI .98 and CFI .98 (Figure 1). Another method of evaluating the conformity of the model is the value below five when the chi-square value is divided by degree of freedom (Şencan, 2005). In this study, dividing the chi-square value by the degrees of freedom gives a value less than five. These results demonstrate that data are in conformity with the model and

confirm the one-factor construct; item dimensions of the scale are associated with the scale and items sufficiently define their own factor. These results support the construct validity of the Preparedness Scale of the Family Care Inventory and confirm it as a valid instrument to be used with Turkish populations (Figure 1).

Response bias is an important concept affecting both the reliability and the validity of the scale. Response bias refers to a scenario in which a participant provides survey responses that comply with the views commonly accepted by their group or society rather than stating their personal views (Sencan, 2005). In this study, the Hotelling T^2 test was used to determine response bias. The results showed that participants answered the scale items according to their own views, and there is no response bias in the scales (Hotelling $T^2 = 46.620, F = 6.211, p < 0.001$).

Conclusion

This study investigated internal and construct validity as well as reliability. The Turkish version of the Preparedness Scale of the Family Care Inventory was found to have a unidimensional scale with good psychometric properties. Studies found that supportive care initiatives for caregivers reduce stress and the burden placed on caregiver. Nurses are in a pivotal position to evaluate caregiver preparedness prior to transitions to other health care settings, and may address the specific education and training needs of family caregivers in order to reduce potential adverse consequences of caregiving.

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