The Development of a Risk Evaluation Scale for Elderly Patients with Home Healthcare

Yaşlı Evde Bakım Hastaları Risk Değerlendirme Ölçeği Geliştirme Çalışması

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Abstract: Home healthcare is a service model for which there is a currently growing need, especially for elderly patients. The examination of the home healthcare requirement risks under certain headings is of great importance for institutions or units providing home healthcare and for individuals applying for these services. To fill this gap, a 2-grade (yes/no) scale has been developed comprising 21 items to measure the home healthcare requirement risks of elderly patients in Turkey. In the context of the development of the scale, following a pilot study, a trial form of the scale was applied to 506 elderly individuals in the province of Burdur. Explanatory and confirmatory factor analysis was applied to the data, using R program, SPSS vn 24 (IBM Statistical Package for Social Sciences) and Lisrel 8.7 software. The scale that emerged at the end of the analysis comprised two dimensions; "The General Health Status and Physical Autonomy of the Patient" and "The Suitability of the Living Area of the Patient and the Economic Status". The Kaiser-Meyer-Olkin value calculated for the scale was 0.603. the KR-20 internal consistency coefficient calculated was 0.895 for the first dimension, 0.680 for the second dimension and 0.840 for the whole scale.

Keywords: Aged, Homecare, Risk, Scale.

Öz: Evde bakım, günümüzde özellikle yaşlı hastaların sıklıkla ihtiyaç duyduğu bir hizmet modelidir. Evde bakım ve evde sağlık hizmeti veren kurum ve üniteler açısından bu hizmete başvuran bireylerin evde bakım ihtiyacı risklerinin belirli boyutlar altında incelenmesi büyük önem taşımaktadır. Bu boşluğun doldurulması amacıyla Türkiye'deki yaşlı hastaların evde bakım ihtiyacı riskini ölçmeye yönelik 21 maddeden oluşan 2 dereceli(evet/hayır) bir ölçek geliştirilmiştir. Ölçek geliştirme çalışması kapsamında pilot uygulamanın ardından, Burdur ilinden 506 yaşlı bireye ulaşılarak ölçeğin deneme formu uygulanmıştır. Veriler açımlayıcı ve doğrulayıcı faktör analizine tabi tutulmuştur. Veriler R programı, IBM Sosyal Bilimler için İstatistik Paket Programı (IBM Statistical Package for Social Sciences-SPSS 24) ve Lisrel 8.7 kullanılarak analiz edilmiştir. Analiz sonrasında ortaya çıkan ölçeğin, "Hastanın Genel Sağlık ve Fiziksel Özerklik Durumu" ve "Hastanın Yaşam Alanının Uygunluğu ve Ekonomik Durumu" olmak üzere iki boyuttan oluştuğu tespit edilmiştir. Ölçek için hesaplanan KMO değeri 0,603 olarak bulunmuştur. Ölçeğin birinci boyutu için hesaplanan KR-20 iç tutarlılık katsayısı 0,895; ikinci boyut için 0,680 ve tüm ölçek için ise 0,840 olarak hesaplanmıştır.

Anahtar Kelimeler: Yaşlı, Evde bakım, Risk, Ölçek.

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Introduction

In Turkey as in many countries throughout the world, home care and home healthcare services have become an important part of healthcare policies. In the framework of the existing healthcare policies in each country, home healthcare services are provided with different

models and there is a corresponding demand with increasing numbers of patients receiving home healthcare services.

Although different policies are applied throughout the world, home healthcare services are presented as "evaluation, observation and re-evaluation, the protection and development of health, the prevention of secondary disease or disability, the provision of personal care, medical care and nursing care, housework services, making the necessary adjustments to the home environment to meet the needs of disabled individuals, home rehabilitation service, to meet basic and special needs, the provision of supportive devices, equipment and drugs needs" (Işık *et al.,* 2016) and similar services. In the context of home healthcare services, patients benefit from various care and healthcare services in their home environment provided by those giving both formal and informal care. For these services to be able to be given effectively, the risks must be managed of the conditions in which the patient is located. Risk factors in home healthcare services vary according to the aim of the institution providing the care, the organisational structure, the personnel and the type of medical and nursing services provided (Brent 1994).

Home healthcare service risks were defined by Brueckner and Pace (1989) as an environment that cannot be controlled, services generally established on remote supervision and service outcomes varying according to the patient's and the carer's capabilities. According to another source, home healthcare service risks can be categorized as physical, chemical, ergonomic, biological and psychological (PQSA, 2013).

In a study by Markkanen *et al.* (2007), home healthcare service risks were defined as "an over-heated room, poor air quality, an unhealthy environment with the presence of insects and rodents, unreliable neighbours, unstable patient or family members, potentially dangerous domestic animals and infection risks". To be able to manage the various defined risks, potential incidents which may occur in the home must be evaluated, the

severity of potential incidents must be calculated and estimated, then based on these two factors, the priorities of controlling the risks must be investigated and steps taken to provide this (PQSA, 2013).

Home healthcare services in Turkey are in the form of examinations, tests, diagnosis, treatment, medical care, follow-up and rehabilitation for those who have difficulty accessing healthcare services because of advanced age and/or disease which is severely affecting social functionality and quality of life and including social and psychological counselling services in the family environment. As can be understood from the definition, home healthcare patients in Turkey can be evaluated in two groups. These are patients with a disease that is severely impairing quality of life and those who have difficulty accessing healthcare services because of age, irrespective of disease that impairs quality of life. There is a need for a risk evaluation tool related to the management of specific risks of how home healthcare services will be provided to these groups and for both social workers and healthcare personnel to be able to manage these risks.

According to the Turkish Statistics Institution, 52.3% of individuals with visual impairments, 48.7% of those with hearing problems, 71.4% of those who cannot walk unassisted and 84.7% of those who cannot go up and down stairs are aged >65 years. In addition, the elderly constitute the largest group within those who have received bedside treatment within the last year (TURKSTAT, 2016). In a study conducted in 2011 in the province of Burdur of elderly patients receiving home healthcare services, it was determined that 48.1% had disease involving hypertension, 39% had a full or partial stroke and 24% had heart disease, 37% required assistance with eating, 42.6% with going to bed and getting up, 65.7% with getting dressed and undressed, 36.1% with going to the toilet and 64.8% with washing and bathing. In addition, 97.2% reported that they were not able to perform daily housework, 95.4% could not go shopping, 99.1% were not able to undertake tasks outside the home

(paying bills, hospital visits) and 93.5% could not travel outside their own city (Çatak *et al.*, 2012).

To summarise, the elderly have a high rate of discomfort or disability that affects quality of life in comparison with other age groups. There is no comprehensive scale made with reliability and validity studies that measures the home healthcare requirement risk of the elderly. In the province of Burdur, where the scale in this study was developed, there were reported to be 12,378 elderly residents at the end of 2017 (TURKSTAT, 2017). The elderly population constituted 14% of the population of the province of Burdur, and this rate is much higher than the average of 8.5% for Turkey in general. Therefore, one of the reasons for conducting this study in Burdur was the high rate of elderly population in the province.

Material and Methods

In this section, the data are presented that were applied for the development of the Home Healthcare of Patients Risk Evaluation Scale, the study group is defined, then the development stages of the scale, data collection and validity and reliability studies are described.

Aim

The Home Healthcare of Patients Risk Evaluation Scale was prepared with the aim of measuring the physical, environmental and economic risks of patients to be evaluated in the context of home healthcare services.

Study group

The scale form defined the most recent status and the psychometric characteristics of patients aged ≥ 65 years who lived in the city centre and were receiving home healthcare services from a State Hospital (n=261) and individuals aged ≥ 65 years who lived in towns of the province of Burdur who had previously received home healthcare services because of restricted activity/disability (n=245). The mean age of the patients was 79 years (range,

65 – 98 years). Other descriptive information of the patients is given in Table 1.

Scale structure

The Risk Evaluation Scale for Elderly Patients with Home Healthcare comprised 2 dimensions with 21 items scored as 0 = Yes and 1 = No, thereby giving total points of minimum 0 and maximum 21. High points indicate a high risk. Items 5, 6, 8, 14, 27, 29, 35 and 37 were reverse coded. Sample items from the scale are given in Table 2.

Table 1. Some descriptive statistics of participants.

	N	%
Gender		
Female	283	55.49
Male	223	44.1
Marital Status		
Married	284	56.1
Single	55	10.9
Widowed	167	33.0
Living Area		
Rural	75	14.8
Urban	431	85.2
Living Place		
Home	488	96.4
Nursing Home	18	3.6
Education Level		
Illiterate	103	20.4
Literate	49	9.7
Primary Education	183	36.2
High School	159	31.4
University and +	12	2.4

The first dimension of the scale is headed "The General Health Status and Physical Autonomy of the Patient", and the second, "The Suitability of the Living Area of the Patient and the Economic Status". The final form of the scale that was created after the related analyses is given at the end of this article.

Table 2. Some items of scale.

No	Item	Yes	No
1	The patient can walk independently without any assistive device.		
5	***The patient has badsores.***		
25	The living area of the patient has the necessary lighting and heating conditions.		
35	***There is a lack of income that puts the care of the patient in danger.***		

Development of the scale

The first draft of the scale was created by the researchers. This first form comprised 32 items and was reviewed by a total of 6 academicians in this field. Some language and technical corrections were made in accordance with the feedback obtained and 5 items were added to the scale. Thus, a pre-trial form was created of 37 items.

This pre-trial form was applied to a patient group of 80 individuals receiving services from Burdur State Hospital Home Healthcare Services Unit. During this procedure, 9 items were removed from the form as they were not understood, were misunderstood or were not compatible with psychometric characteristics. The remaining 28 items constituted the trial form of the scale. This form was applied to the study group defined in the sample section of the research.

Data collection

Data were collected for validity and reliability studies by administration of the form between 15.11.2017 and 15.03.2018 to patients aged ≥ 65 years who lived in the city of Burdur and were receiving home healthcare services from the State Hospital, and individuals aged ≥ 65 years who lived in towns of the province of Burdur who had previously received home healthcare services. The data were collected by the researchers in the patient's home by observation and in face-to-face interviews with the patient, the patient's carer or the patient's legal representative.

Ethical consideration

This study was approved by Ethics Committee of Mehmet Akif Ersoy University (GO2017/120). During the data collection, attention was paid to ethical rules. Potential participants were given a document explaining that participation was voluntary and the collected data would be used solely for scientific purposes. The informed consent was obtained from the respondents.

Analysis of data and validity and reliability studies of the scale

The content validity studies of the scale form were made in accordance with the feedback received from the 6 academicians. In the evaluation of the content validity made with the "Davis" technique for each item, the comments made by the experts for each item were evaluated as suitable or should be slightly reviewed. None of the experts evaluated any of the items of the scale as "the item should be seriously reviewed" or "the item is not suitable". The content validity index for all the items was calulated as between 0.83 and 1. This indicated an acceptable level as the minimum value is known to be 0.80 (Taşkin, 2010).

To determine the structure validity of the scale, explanatory and factor analysis was applied to determine the dimension structure of the scale. As the scale was scored in the form of yes/no, the explanatory and factor analyses were applied based on the tetrachoric correlation matrix. Chi-square analysis was applied to compare the effectiveness of the scale items in separating high and low-risk

group patients. For the reliability of the scale, the internal consistency of the total and sub-dimension points of the scale items were calculated using the KR-20 formula. The tetrachoric correlation matrix of the scale items was calculated using R program (R Core Team, 2017), polycor software (Fox, 2014). Analyses of the data were made using IBM SPSS version 24 (IBM Statistical Package for Social Sciences-SPSS) and Lisrel 8.7 software (Jöreskog and Sörbom, 2004).

Results

Results related to explanatory factor analysis

To test the suitability of the data obtained for factor analysis of the number and structure, the Kaiser-Meyer-Olkin (KMO) test and the Bartlett global test were applied before explanatory factor analysis. The KMO value was found to be 0.603 and the Bartlett global test value was 53613,179 (p=0.000). The data were seen to be suitable for factor analysis as a KMO value of >0.60 (Cerny and Kaiser, 1977) and a significant p value (p<0.05) are accepted as suitable for factor analysis (Field, 2013). To be able to apply explanatory factor analysis of the trial form consisting of 28 items, first the tetrachoric correlation matrix was obtained and then the explanatory factor analysis was performed. The varimax rotation method was used in the factor analysis. Items with a factor load value of <0.33, and items in different dimensions with a factor load value of <0.10 difference between these dimensions were removed from the scale. As a result of the analyses applied, a final form of 21 items was reached. The eigen value-component graph of the 21-item final version of the form is shown in Figure 1.
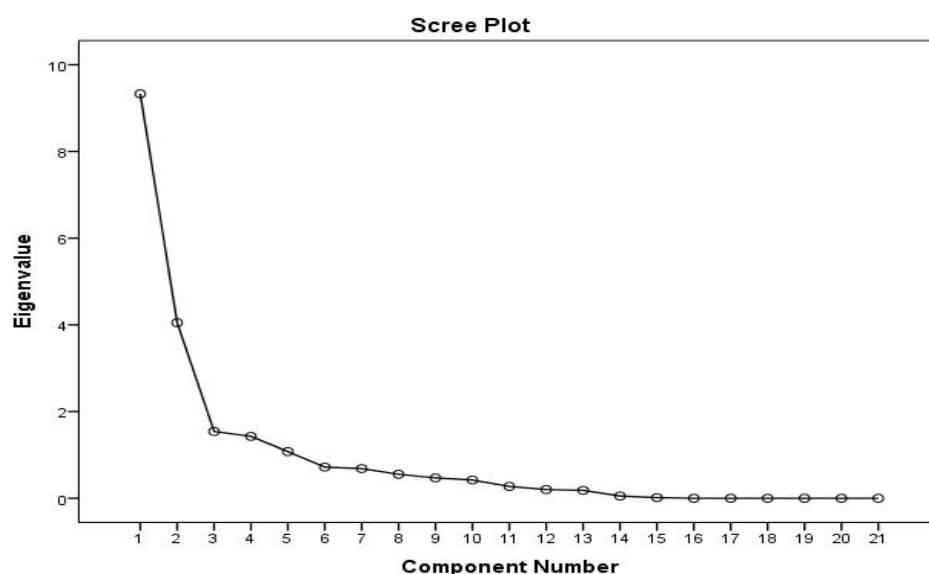

Figure 1. Eigenvalue-component graph.

When the eigen value-component graph was examined, there was seen to be a sharp drop in the first component in respect of eigen values and this fall continued with a slight reduction in the second component. From the second dimension, the reduction in eigen values became stable. It can be said that the scale has a 2-factor structure based on the scale being constructed as 2 dimensions from the beginning and the continued stabilisation of the change in eigen values in the second dimension. The Eigen Value-Explanatory variance rates obtained for the structure with 2 factors of the 21 items are shown in Table 3

Table 3. Eigen value- explanatory variance rates.

Factor	Eigenvalue	Explained Variance	Total Variance
1	9.315	44.356	44.356
2	4.050	19.288	63.707
3	1.542		
4	1.428		
5	1.077		

As a result of the analysis, there were 5 factors with an eigen value >1, but as explained above, as the scale was designed with 2 dimensions and the reduction in the amount of the decrease in the factor eigen values after the second component, factors were considered with 2 dimensions. The first factor explained 44.356% of the total variance and the second factor, 19.288%, as seen in Table 3. The 2-factor model obtained explained 63.707%

of the total variance. The variance rate explained by a model with more than 1 factor must be >40% to be able to provide structure validity (Büyüköztürk, 2009).

The factor load values obtained as a result of the rotation procedures applied to the final form of the scale are shown in Table 4.

Table 4. Results of the analysis of the rotated basic components.

	Components	
	1st Component	**2nd Component**
Item 12	.959	
Item 4	.935	
Item 7	.905	
Item 6	.899	
Item 5	.892	
Item 8	.880	
Item 18	.854	
Item 9	.834	
Item 14	.778	
Item 13	.753	
Item 1	.700	
Item 2	.665	
Item 29	.627	
Item 10	.533	
Item 25		.875
Item 27		.807
Item 35		.764
Item 26		.762
Item 24		.724
Item 23		.713
Item 37		.552

Distribution of the items according to the dimensions is shown in Table 4. Of the 24 items in the final form, 14 items (1, 2, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 18, 29) were seen to remain in the first dimension and 7 items (23, 24, 25, 26, 27, 35, 37) in the second dimension. The load values of the

items ranged between 0.959 and 0.533 in the first dimension and between 0.875 and 0.552 in the second dimension. In the first dimension, the highest factor load was in item 12 and the lowest in item 10. In the second dimension, the highest factor load was in item 25 and the lowest in item 37.

Results related to the differentiating ability of the items

To test the scale items in respect of differentiation of the home healthcare patients as low and high

risk levels, groups were selected of 27% of the patients in the upper and lower level risk groups. The scale items were compared in respect of

differentiation of the upper and lower groups using the Chi-square test. The results obtained are shown in Table 5.

When Table 5 was examined it was seen that all the items in the scale significantly differentiated a 27% lower and upper group. With the exception of item 35, all the other items were significant at the level of 0.001 as a result of the Chi-square test. Item 35 was significant at the level of 0.05. The

results obtained demonstrated that the 21 items in the final form of the scale were able to differentiate those with a high risk of home healthcare from those at low risk. This indicates the structure validity of the scale.

Table 5. The Chi-square results related to the differentiating ability of the scale items

	Sub Group (n)	Upper Group (n)	P
Item 1 (Yes / No)	86/50	136/0	0.000*
Item 2 (Yes / No)	54/82	132/4	0.000*
Item 4 (Yes / No)	2/134	130/6	0.000*
Item 5 (Yes / No)	1/135	104/32	0.000*
Item 6 (Yes / No)	1/135	132/4	0.000*
Item 7 (Yes / No)	47/89	136/0	0.000*
Item 8 (Yes / No)	11/125	136/0	0.000*
Item 9 (Yes / No)	1/135	98/38	0.000*
Item 10 (Yes / No)	20/116	87/49	0.000*
Item 12 (Yes / No)	0/136	129/7	0.000*
Item 13 (Yes / No)	0/136	73/63	0.000*
Item 14 (Yes / No)	6/130	31/105	0.000*
Item 18 (Yes / No)	31/105	2/134	0.000*
Item 29 (Yes / No)	42/94	3/133	0.000*
Item 23 (Yes / No)	63/73	89/47	0.001*
Item 24 (Yes / No)	122/14	79/57	0.000*
Item 25 (Yes / No)	1/135	24/112	0.000*
Item 26 (Yes / No)	4/132	19/117	0.001*
Item 27 (Yes / No)	6/130	29/107	0.000*
Item 35 (Yes / No)	7/129	19/117	0.013**
Item 37 (Yes / No)	15/121	63/73	0.000*

* p<0,001 , ** p<0,05

Results related to confirmatory factor analysis

To examine the structure of the Home Healthcare of Patients Risk Evaluation Scale, confirmatory factor analysis was applied to the model obtained

after the explanatory factor analysis. To apply the confirmatory factor analysis, a tetrachoric correlation matrix was calculated, as in the explanatory factor analysis. As the scale items were scored in a paired form as yes/no, Diagonally

Weighted Least Squares (DWLS) were used in the estimations of the model parameters (Muthén, 1984; Muthén & Satorra, 1995). The diagram obtained as a result of the confirmatory factor analysis is shown in Figure 2.

The indexes and statistical compatibility of the model data obtained as a result of the confirmatory factor analysis of the model established with two factors are shown in Table 6.

Table 6. Scale model-data fit statistics and indexes.

χ²/sd	GFI	AGFI	CFI	RMSEA
3.57	0.98	0.97	1.00	0.071

As seen in Table 6, χ²/sd=3.57; GFI=0.98; AGFI=0.97; CFI=1.00; N and RMSEA=0.071. According to Kline (2010), when χ²/sd is ≤5, RMSEA is <0.08, and GFI and AGFI values are >0.90, it can be said that the model shows acceptable compatibility. Accordingly, when the obtained values were compared with the scale values, the model-data compatibility was seen to be acceptable.

The confirmation of the structure formed with two factors of the model tested with confirmatory factor analysis showed that the Home Healthcare of Patients Risk Evaluation Scale can be used.
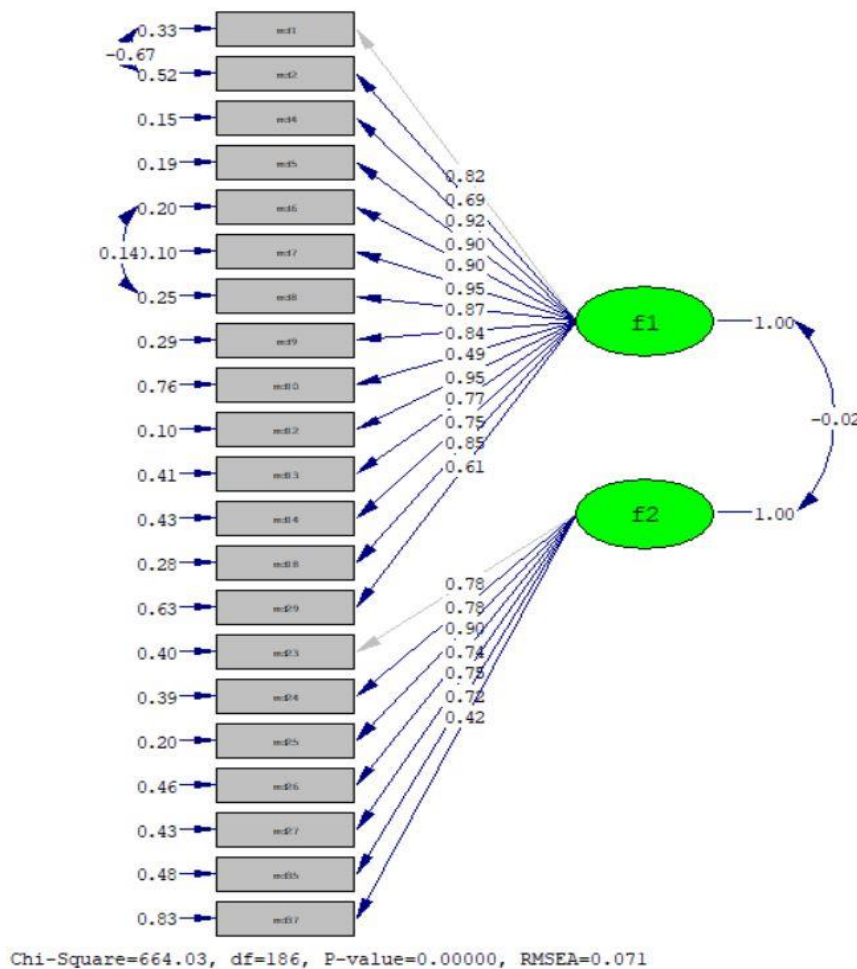

Figure 2. Diagram of the two-factor confirmatory factor analysis.

Reliability Studies of the Scale

To test the reliability of the Home Healthcare of Patients Risk Evaluation Scale, the Kuder Richardson-20 (KR-20) internal consistency coefficient (ICC) was calculated. The KR-20 ICC was calculated as 0.895 for the first dimension of the scale, as 0.680 for the second dimension and 0.840 for the whole scale. According to these obtained values, the whole scale can be said to have a sufficient level of reliability.

In conclusion, confirmatory and explanatory factor analysis was applied to the Home Healthcare of Patients Risk Evaluation Scale for structure reliability. The two- dimension model obtained in the explanatory factor analysis was confirmed by the confirmatory factor analysis. Then it was determined that the scale items differentiated patients in a 27% group of high and low risk of home healthcare. Finally, the internal consistency coefficient was calculated for each subdimension and all the scale items and the scale was determined to be reliable for each. As a result of the statistical analyses applied to the scale, it was seen to be sufficient in the context of reflecting the physical, environmental and economic risks of the patients to be evaluated and can be said to be a valid and reliable measurement tool.

Discussion

Due to the increased elderly population, longer life expectancy and increased prevalence of chronic diseases, home healthcare services have started to become more prominent and occupy a greater place in the healthcare system and healthcare insurance system. Home healthcare services in Turkey were introduced in the 2005 publication of "Management of Home Healthcare Services". However, definitive criteria have not been defined on the subject of the presentation of services, limitations or the identification of individuals to receive the services. This is because institutions are attempting to provide services to groups with broader needs in direct proportion to continuously increasing capacities. In Turkey, home healthcare services can be provided by state hospitals, private hospitals, family health centres and by the healthcare teams which have been established in

this field by some local authorities (Official Gazette, 2005).

As the majority of home healthcare patients are elderly individuals, reduced capability of movement and loss of physical function are frequently seen. Together with advancing age, orthopaedic problems and the risk of disability, and associated impaired general health and even confinement to bed are frequently seen problems. Moreover, the prevalence of chronic diseases in elderly patients is higher than in other age groups. Therefore, to be able to follow up the treatment of existing diseases in the elderly is of vital importance and all of these are risk factors for home healthcare of elderly patients (Akgün *et al.,* 2004; Karahan and Güven, 2002).

In a study conducted in the USA, it was reported that the frequency of the need for long-term care increased with age, at 1.4% in those aged <65 years, at 14% in those aged $\geq$ 65 years, and at 50% >85 years (Rogers and Komisar, 2003). In 1998, 83% of those receiving home healthcare services in Austria, 78% in Germany and 63% in the USA were known to be aged $\geq$ 65 years (Thome *et al.,* 2003). In studies in Turkey, Subaşı (2001) reported that 42.3% of those receiving care were aged > 65 years and Söylemez (2011) determined this rate as 25.8%. As the vast majorty of the patients are elderly, the requirement for home healthcare is a subject discussed throughout the world and supported by studies (Akgün *et al.,* 2004; Turkish State Planning Organisation, 1992). In the current study, the development of a home healthcare scale for use in the elderly population in particular was based on these reasons.

Home healthcare service is a service in which it is attempted to manage several pre-existing or potential patient-related risks. As every individual who receives home healthcare services is different in terms of general health status, physical autonomy, economic status and environmental conditions, the risks that could be encountered during home healthcare are also different from each other. As there is no scientific, objective evaluation procedure in Turkey, and no measurement tool with proven validity and

reliability that includes physical, environmental and economic risks, the identification of who should receive home healthcare services and in what dimension these should be weighted, is unfair and confusing. Japan is one of the most important countries applying targets to determine the requirements and risks of home healthcare and eliminating the unfairness in this area. In the Japanese model, an individual or their family completes a form requesting home healthcare and by measurement tools applied to the patient, the home healthcare patients are separated into 6 groups and thus the need for care is identified including specific services for their needs and the patients are categorized (Ikegami, 1997). In the ASIM system in Europe, the perceptions of the individual of personal safety, physical capabilities, autonomy, residence status and the quality of the place of residence, and functional utility are evaluated with specific scales and forms (Lagergren, 1993). The place where the patient lives is one of the factors directly affecting their health. In a previous study, it was determined that the majority of elderly individuals requesting long-term care preferred their own private place. The vast majority of elderly residents wanted a small private area rather than a large place. It is indisputable that better care will have a positive effect on health and this can be closely related to the physical autonomy of the elderly. Therefore, the physical, social and psychological results of individuals receiving home healthcare services have been found to be valuable (RL Kane and Kane, 2001).

In discussions of long-term care for the elderly, safety and protection have been more emphasized. Professionals, families and even the elderly themselves want extraordinary freedom and independence to receive even normal care. Residential homes do not show any similarity to an individual normal life. Put simply, there are no specific limitations in bedtimes for an individual receiving home healthcare and therefore the suitability of the living areas is of great importance for individuals receiving home healthcare (RL Kane and Kane, 2001). In a study by Donald (2009), a relationship between poor

accommodation and health was determined to be seen in the majority of the elderly as 90% of those over 85 years of age spent their time at home. The elderly are most exposed to the effects of poor housing. In the UK, most houses were not built with the changing needs over a lifetime in mind, but most people prefer to stay in their own home when ageing and ill. Therefore, the second dimension of the scale developed in this study will be of assistance to healthcare personnel and social workers in respect of evaluating the suitability of the living area of the elderly and will cover the deficiencies of the measurement tool to be used in the evaluation of home healthcare patients in Turkey.

Although the scale developed by Gökler *et al.* (2015) in Turkey to identify the requirement for home healthcare services is the only scale that has been developed to identify the requirement for home healthcare of the elderly, it does not sufficiently evaluate the risks related to home care and therefore it is formed of only 9 iteems and is limited to the physical dimension. As no other scale could be found, it is not possible to have a discussion by comparing the scale developed in this study with others. No other study could be found in Turkey that examines the physical autonomy, general health status, environmental and economic risk factors of individuals requesting home healthcare as a whole. Therefore, the scale formed of 21 items in 2 dimensions developed in this study to eliminate the deficiencies in this field is the first in Turkey and will play an important role in overcoming the problems experienced in the evaluation of home healthcare of patients.

In this study, a home healthcare risk evaluation scale was developed for elderly patients that can be easily used by all units providing home healthcare services. In the context of the statistical results, the first dimension of this newly-developed scale was determined to be suitable for the measurement of the general health status and physical autonomy of the elderly individual who is to receive home healthcare. The second dimension of the scale was found to be suitable for the identification and

measurement of physical, environmental and economic risk factors.

Conclusion

In the scale developed in this study of 21 items in 2 dimensions, as the points increase, so the risk in terms of the requirement for home healthcare of the elderly individual increases. Although the scale measures risks related to home healthcare for the elderly, with the application of further statistical studies, it could be investigated whether the scale is suitable for patients of different age groups who are receiving home healthcare services. In conclusion, this is a scale that can be used and is suitable for the identification of environmental and economic risk factors together with the evaluation of the general health status and physical autonomy of elderly individuals who are to receive home healthcare services.

Limitations

The region in which the study was conducted was limited to the province of Burdur. Individuals in other regions were not contacted. The study data only represent elderly individuals aged ≥65 years. Therefore, this research does not reflect the status of home healthcare of patients in all age groups.

Only individuals currently or previously receiving home healthcare services were included in the study.

Disclosure Statement

The authors declare they have no conflict of interest related to the research.

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Ethical considerations and Acknowledgements

Table 7. Risk Evaluation Scale for Elderly Patients with Home Healthcare.

*First Factor: General Health Status of the Patient and Physical Autonomy**	Yes	No
Item 1 The patient can walk independently without any assistive device.		
Item 2 The patient is mobile with some form of device (cane, wheelchair etc).		
Item 4 The patient can turn to the left and right unaided in their own bed.		
Item 7 The patient can meet their toilet and bathroom needs unaided.		
Item 6 Healthcare professionals have recommended that the patient uses an airbed.		
Item 5 The patient has bedsores.		
Item 8 The patient uses incontinence pads.		
Item 18 The patient is able to monitor their own medicines.		
Item 10 The patient can hear easily.		
Item 9 The patient can speak easily.		
Item 12 The patient can eat unaided.		
Item 14 The patient uses nutritional support products.		
Item 13 The patient can be fed orally.		
Item 29 The patient needs continuous care.		

Second Factor: The Suitability of the Living Area of the Patient and Economic Status*		
Item 25	The living area of the patient has the necessary lighting and heating conditions.	
Item 27	**The accommodation of the patient is a security risk.**	
Item 26	The living area of the patient has average hygiene.	
Item 24	The patient has their own private room.	
Item 23	The building where the patient lives has ease of necessary movement.	
Item 35	**There is a lack of income that puts the care of the patient in danger.**	
Item 37	**The patient receives economic support from a public, private or civil society organisation.**	

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