
ORIGINAL ARTICLE

Cultural Validation and Reliability of the Turkish Version of the Geriatric Pain Measure in the Elderly

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■ Abstract

Background: Many pain problems and untreated pain are known to adversely affect the quality of life of the elderly. The aim of this study was to evaluate the psychometric properties of the Turkish version of the Geriatric Pain Measure (GPM) in the elderly.

Methods: This research was carried out on 244 elderly who were recruited from a university hospital. Content validity, criterion validity, and factorial construct validity were used to test the validity stages; internal consistency and item analysis were used to determine the reliability of the Turkish GPM.

Results: For content validity, the Kendall goodness-of-fit correlation test was performed (Kendall's $W = 0.275$, $P = 0.07$). The criterion validity of the GPM was determined by item analysis based on the differences between averages of upper-lower group item scores that were significant ($t = 38.597$, $P < 0.005$). According to the factor analysis results of the scale, factor loadings were significant, with standardized loadings ranging from 0.40 to 0.87. Cronbach's alpha was found to be reliable for the total scale (0.85), and subscale alpha coefficients ranged from 0.67 to 0.93. The item analysis of the scale showed that all of the correlations between the items of the scale were significant.

Conclusions: The Turkish version of the GPM was found to be a reliable and valid tool to measure the quality and severity of pain in the elderly. ■

Key Words: geriatric pain measure, pain, validity, reliability, Turkey

INTRODUCTION

Populations around the world are rapidly aging. The proportion of the world's population over 60 years of age is expected to double from about 11% to 22% between 2000 and 2050. The number of people 60 years of age and older is expected to increase from 605 million to 2 billion over the same period.¹ In 2012, according to the Turkish Statistics Institute, Turkey's population was 75.6 million. The population of 65 years of age and older was 5.7 million, with this population accounting for 7.5% of the total population. By 2023, this population is expected to increase to 8.6 million and account for 10.2% of the total population.²

In parallel to the growth of older people in the world and in our country, geriatric health problems have increased and are getting more important.^{3,4} In old age, morphological, physiological, and pathological changes combine with the effects of various illnesses, resulting in a deterioration of physical and mental skills and abilities.¹ In line with such changes, the elderly suffer from increased pain.^{3,4} Population-based studies indicate that the prevalence of pain in individuals over

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60 years of age is two times higher than that in individuals below 60 years of age.⁵ Small population-based studies have estimated that 25% to 50% of community-dwelling older people suffer significant pain problems and often underreport such problems in routine clinical settings.⁶⁻⁸ Higher prevalence estimates are obtained from institutionalized samples of older people. In this setting, 45% to 83% of patients report at least 1 current pain problem.^{9,10}

Many pain problems are known to commonly affect older people, including osteoarthritis, degenerative spinal disease, peripheral neuropathy, central poststroke pain, cancer, and peripheral vascular disease.¹⁰ Untreated pain adversely affects the quality of life of the elderly. Pain leads to increased pulmonary secretion due to repressed cough, physical problems such as decreased functional abilities, and psychological problems such as anxiety, depression, decreased cognitive abilities, sleep disorders, and social isolation. It is reported that the rate of resorting to healthcare institutions and the rate of healthcare costs associated with health problems that develop due to pain are on the rise.^{5,11,12} Although the elderly suffer from many chronic diseases, use multiple medicines, and have a high prevalence of pain, healthcare professionals do not carry out effective pain assessment and treatment.⁵

Elderly individuals tend to avoid any pain assessment and do not communicate their pain-related problems to healthcare personnel as they think that pain is a result of old age.¹² Furthermore, it is reported that the elderly are unwilling to communicate their pain to healthcare personnel due to reasons and concerns such as that pain is due to a serious pathology, death is drawing near, hospitalization may be required, side effects may be suffered due to diagnostic procedures or medicines taken, it may cause financial burden, and independence might be lost.^{10,12} Nevertheless, an elderly individual's avoidance of expressing his or her pain does not mean he or she is not suffering any pain.⁵

As the number of elderly individuals who suffer pain caused by old age and chronic diseases and whose quality of life is affected due to pain is increasing, the effects of pain on the elderly need to be addressed comprehensively.¹³ Pain has been referred to as the fifth vital sign. This emphasizes the importance of considering, measuring, and monitoring the presence of pain systematically.¹⁰

Although there are different pain assessment scales in the clinical and research fields, there is no scale that can be used in the geriatric assessment of the elderly in

Turkey. The Geriatric Pain Measure (GPM; Appendix 1), which was developed for this purpose, assesses the impact of pain on elderly individuals' functions, mood, activities, and quality of life. It was developed for use in comprehensive as well as elderly assessment in healthcare settings.^{12,14} However, no reports on translation or validation of the GPM to the Turkish language have been reported earlier. The aim of this study was to evaluate the validity and reliability of the Turkish version of the GPM in the elderly.

METHODS

Permission to use the GPM and translate it into Turkish was granted by the developer, Bruce A. Ferrell. Permission to conduct this study was received from the ethical committee of the university (B.30.2.AKD.0.20.05.05/21.09.2010/120) and the director of the hospital. All elderly participating in the study were asked to provide written informed consent. The elderly were informed about the purpose of the study and what should be expected of them. Participants were assured of rights of refusal to participate in or to withdraw from the study at any stage without any negative consequences, and all procedures were conducted according to the Declaration of Helsinki.

Participants

The study was performed in the Internal Medicine Polyclinic at a university hospital in Antalya, Turkey. In inventory adaptation studies in the literature, it has been stated that sample size can be taken as 3- to 10-fold the number of items in the inventory.^{15,16} In this study, in order to determine the sample size, 10-fold of the items in the scale was taken. In this regard, as there are 24 items in the scale, the scale was applied to a total of 244 elderly agreeing to participate in the study.

The sample of the study was designed to include individuals who were 60 years of age or above, scored at least 24 points on the Mini-Mental Test, had no physical or mental problems that would prevent them from answering the questions and no oral communication barriers such as hearing or speaking deficits, and accepted the request to answer the questionnaire form. A total of 295 elderly who had been receiving outpatient treatment in the Internal Medicine Polyclinic between March and June 2012 were recruited; 244 (82.7%) agreed to participate in the study. The major reasons for study refusal were as follows: (1) had physical or mental

problem that would prevent them from answering the questions ($n = 20$), (2) lack of time ($n = 12$), (3) lack of interest ($n = 10$), and (4) too weak to be interviewed ($n = 9$).

Geriatric Pain Measure

The GPM is a 24-item, multidimensional, easily applied scale developed by Bruce A. Ferrell et al.¹² for geriatric individuals receiving outpatient treatment. It consists of five subdimensions: withdrawal due to pain (items 6, 17, 18, 19, 20, 21, 24), severity of pain (items 1, 2, 3, 4, 5, 22, 23), pain due to motion (items 9, 10, 11, 12), pain due to strenuous activities (items 8, 13, 14), and pain due to other activities (items 7, 15, 16, 17, 22). Two items in the scale (17 and 22) are included in two subdimensions at the same time; there are three open-ended questions about pain, 22 items are yes/no questions, and two items are scored between 0 and 10. The score interval for each question in the scale is 0 to 2.38, except for questions 19 and 20. The total score is calculated by summing the “Yes” answers and multiplying them by 2.38. So, the final score is between 0 and 100.¹⁷ In the assessment of the GPM, a score of 0 to 29 indicates mild pain, a score of 30 to 69 indicates moderate pain, and a score greater than or equal to 70 indicates severe pain. The internal consistency of the original GPM was found to be 0.94. The GPM defines the pain suffered by patients and assesses the physical, emotional, cognitive, and behavioral responses caused by their pain.^{12,17}

Mini-Mental State Examination Form

The Mini-Mental State Examination Form (MMSE) is a scale developed by Folstein et al.¹⁸ that can be easily applied and provides information about the degree of cognitive impairment. It consists of the categories of orientation, registration, attention/calculation, recall, language, and construction.¹⁸ The MMSE and the Turkish MMSE for the uneducated were modified and formed by Ertan et al.¹⁹ Afterward, Güngen et al.²⁰ conducted a study on its validity and reliability for the diagnosis of slight dementia. There are 11 items in the test, with a total possible score of 30 points. Any score greater than or equal to 27 points (of 30) indicates normal cognition. Below this, scores can indicate severe (≤ 9 points), moderate (10–18 points), or mild (19–24 points) cognitive impairment.¹⁸ Our study participants scored at least 24 points on the MMSE.

Procedures

After obtaining a consent from the authors of the GPM, employing a translation and back-translation procedure, the English version of the tool was translated into Turkish by 3 academic professionals. The final Turkish version was then given to three native English speakers to translate back to English. The English translation was then compared with the original English GPM by seven bilingual experts, including 2 PhD lecturers and five academic members in the field of faculty of medicine and nursing, who were independent from the research team. The last stage of the adaptation process is to test the prefinal version in a pilot study. The translated tool was pilot tested for understandability with 10 elderly, and at the conclusion, the instrument’s language and content validity were approved (Appendix 2). In this pilot study, it was determined that the questions could be understood, so no changes were made. All data were collected by the authors during face-to-face interviews. Information about diagnosis and treatment was noted from the medical records.

Statistical Analysis

Statistical analyses were completed using SPSS version 16.0 statistical program (SPSS Inc., Chicago, IL, USA), with significance set at $P \leq 0.05$.

RESULTS

Study Population

In this study, 244 elderly were interviewed. The elderly had a mean age of 69.9 (SD 5.2) years; 65.2% were male, 94.3% were married, 63.9% were retired, and 38.1% had completed primary education. The majority had chronic diseases (88.9%), 39.8% had hypertension, 28.3% had diabetes mellitus, and 40.6% were using two drugs daily (Table 1).

Validity Analysis

The validity study for the adaptation of the GPM to Turkish was conducted through the stages of content validity, criterion validity, and factorial construct validity.²¹ Expert opinion was sought for content validity. Kendall’s coefficient of concordance (W) correlation test was applied to determine the content validity of the scale. According to the W correlation test of the GPM,

Table 1. The Demographic and Medical Characteristics of the Elderly ($n = 244$)

	Mean \pm SD	Range
Age (years)	69.9 \pm 5.2 <i>n</i>	60–94 %
Gender		
Female	85	34.8
Male	159	65.2
Marital status		
Married	230	94.3
Single	14	5.7
Occupational status		
Retired	156	63.9
Housewife	65	26.6
Public servant	16	6.6
Self-employed	7	2.9
Education		
Illiterate	11	4.5
Primary	93	38.1
Secondary	40	16.4
High	43	17.6
University	57	23.4
Chronic diseases		
Yes	217	88.9
No	27	11.1
Types of chronic diseases ($n = 367$)*		
Hypertension	146	39.8
Diabetes mellitus	104	28.3
Hyperlipidemia	43	11.7
Chronic renal failure	40	10.9
Coronary artery disease	34	9.3
Daily used drug number		
1	74	30.3
2	99	40.6
3	53	21.7
≥ 4	18	7.4

*Calculated according to the percentage value.

the opinions of the seven experts regarding the applicability and comprehensibility of the items of the scale were found to be statistically concordant with each other (Kendall's $W = 0.275$, $SD = 23$, $P = 0.07$). The criterion validity of the GPM was determined by item analysis based on differences between averages of upper–lower group item scores. The differences between the average score of items in the upper–lower groups were significant ($t = 38.597$, $P < 0.005$).

Exploratory factor analysis was carried out using principal component analysis with varimax rotation and Kaiser normalization to examine the factor structure of the 24 items of the Turkish GPM. Before conducting the factor analysis, the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Barlett's test were conducted to evaluate whether the sample was large enough to perform a satisfactory factor analysis. A KMO value > 0.5 indicates that the sample size is adequate for factor analysis.²¹ The KMO score was 0.90, indicating that the sample was large enough to perform a satisfactory factor analysis. According to

exploratory factor analysis, items with factor loadings ≥ 0.40 were retained. Five factors with eigenvalues of over 1.00 were identified in our study. As a result of varimax rotation, the factors explained 62.81% of the total variance. Factor loadings were significant, with standardized loadings ranging from 0.40 to 0.87. However, some of the items were loaded on other factors in our samples. The first factor related to withdrawal due to pain (items 6, 17, 18, 19, 20, 21, 24) in the original version, and in the Turkish version, item 6 was included in severity of pain; item 17 was included in pain due to other activities; items 18, 21, and 24 were included in pain due to strenuous activities. The second factor related to severity of pain (items 1, 2, 3, 4, 5, 22, 23) in the English version, and in the Turkish version, items 22 and 23 were included in withdrawal due to pain factor. Factor 3 (items 9, 10, 11, 12) related to pain due to motion in the English version, and this was the same in the Turkish version. Factor 4 (items 8, 13, 14) related to pain due to strenuous activities in the original GPM, and in the Turkish version, items 13 and 14 were included in pain due to other activities. Factor 5 (items 7, 15, 16, 17, 22) related to pain due to other activities in the English version, but item 7 was included in the pain due to strenuous activities factor and item 22 was included in the withdrawal due to pain factor in the Turkish GPM (Table 2). As a result of the factor analysis, 5 factors were extracted, and the Turkish GPM included the withdrawal due to pain (items 19, 20, 22, 23), severity of pain (items 1, 2, 3, 4, 5, 6), pain due to motion (items 9, 10, 11, 12), pain due to strenuous activities (items 7, 8, 18, 21, 24), and pain due to other activities (items 13, 14, 15, 16, 17) subscales after the validity analysis (see Table 2).

Reliability Analysis

To determine internal consistency, Cronbach's alpha, the corrected item total correlations, and the total correlations were included in the analysis. Reliability coefficients range from 0.00 to 1.00, with higher coefficients indicating higher levels of reliability.²² The internal consistency analysis results of the Turkish GPM indicated that the Cronbach's alpha value of the subdimension withdrawal due to pain was 0.93, severity of pain was 0.83, pain due to motion was 0.79, pain due to strenuous activities was 0.70, and pain due to other activities was 0.67. The internal consistency coefficient of the scale was found to be 0.85 for elderly individuals, which is quite high (see Table 2). The results of this

Table 2. Factor Loading Values of the Turkish Version of the Geriatric Pain Measure

Item No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Withdrawal due to pain					
M19	0.74				
M20	0.76				
M22	0.51				
M23	0.62				
Severity of pain					
M1		0.63			
M2		0.67			
M3		0.63			
M4		0.62			
M5		0.73			
M6		0.65			
Pain due to motion					
M9			0.81		
M10			0.85		
M11			0.87		
M12			0.77		
Pain due to strenuous activities					
M7				0.55	
M8				0.40	
M18				0.64	
M21				0.60	
M24				0.60	
Pain due to other activities					
M13					0.61
M14					0.80
M15					0.65
M16					0.71
M17					0.48
% Explained variance	14.91	14.27	11.38	11.27	10.98
Aggregate %	51.54	25.65	11.38	62.81	36.63
Cronbach's alpha	0.93	0.83	0.79	0.70	0.67

analysis were found to be similar to those of the original scale.¹² The mean score \pm SD of the total GPM was 13.77 ± 9.85 . According to our results, 48.8% of the elderly ($n = 119$) had mild pain, 43% ($n = 105$) had moderate pain, and 8.2% ($n = 20$) had severe pain. The correlation values of the GPM were examined within the scope of the reliability study in order to check the mutual correlation of all items with each other (Table 3). The correlations of the items in the subdimensions of the scale with each other were significant ($P < 0.01$). A significant positive relationship was observed between the variables.

DISCUSSION

The main objective of this study was to determine the initial psychometric characteristics of the Turkish version of the GPM. The GPM is a scale that assesses the impact of pain on the functions, mood, activities, and quality of life of elderly individuals, and it has not yet been studied for reliability and validity in our country. The GPM has strong validity and reliability properties,

and this study showed that the GPM can be used to measure pain intensity in elderly individuals.

The linguistic validity of the Turkish version of the scale was determined through the method of translation and back-translation process, and opinions of relevant experts were sought to determine the content validity. Kendall's W test showed no statistically significant difference between the experts ($P = 0.07$). The insignificance detected at the $P > 0.05$ level as a result of Kendall analysis of the GPM indicates that there is no statistically significant difference between expert opinions for interpreting and understanding the inventory items.²³

According to the criterion validity of the Turkish GPM, the differences between the average score of items in the upper-lower groups were significant ($P < 0.01$). According to the results of our research, it is possible to say that the GPM is capable of measuring the behaviors desired to be measured in relation to the pains of the elderly.

Kaiser-Meyer-Olkin-Bartlett's test is a test that needs to be conducted prior to the factor analysis.²¹ In our study, the calculated KMO was 0.90, indicating that the sample size was large enough to perform a satisfactory factor analysis. According to the factor analysis results, the scale has a five-factor structure like in the original version.¹² As shown in Table 2, it is clear that all values related to the GPM are above 0.40, and the factor loading values obtained range between 0.40 and 0.87. The variance ratios explained by the items of the subscales under five factors are at an acceptable level.²² However, some of the items in factors 1, 2, 4, and 5 were loaded on different factors in our samples.

The results indicated some differences in the factor structures of the GPM between the English and Turkish samples. When the items contained in each factor are examined, it is seen that this difference is merely structural, but has significant consistency in terms of reflecting the social values. It is an accepted fact that perception of pain and reactions to pain may differ from individual to individual and culture to culture.¹² The reason for this seems to be a reflection of cultural, wording, and lifestyle differences between Turkish and English, including daily life activities, dietary habits, lifestyles, communication among family members, and relationship between wife and husband. In other words, considering that people with different cultural backgrounds may have different perceptions of health and its determinants, the findings of this study indicated that these determinants were perceived differently by both

Table 3. Mutual Correlation Between All Items of the Turkish Version of the Geriatric Pain Measure

	Md1	Md2	Md3	Md4	Md5	Md6	Md7	Md8	Md9	Md10	Md11	Md12
Md1	1											
Md2	0.660 [†]	1										
Md3	0.539 [†]	0.557 [†]	1									
Md4	0.372 [†]	0.390 [†]	0.413 [†]	1								
Md5	0.321 [†]	0.301 [†]	0.429 [†]	0.587 [†]	1							
Md6	0.395 [†]	0.347 [†]	0.396 [†]	0.515 [†]	0.541 [†]	1						
Md7	0.254 [†]	0.264 [†]	0.317 [†]	0.439 [†]	0.588 [†]	0.520 [†]	1					
Md8	0.228 [†]	0.264 [†]	0.226 [†]	0.290 [†]	0.247 [†]	0.291 [†]	0.353 [†]	1				
Md9	0.406 [†]	0.213 [†]	0.488 [†]	0.445 [†]	0.326 [†]	0.444 [†]	0.385 [†]	0.302 [†]	1			
Md10	0.458 [†]	0.343 [†]	0.439 [†]	0.396 [†]	0.270 [†]	0.393 [†]	0.326 [†]	0.348 [†]	0.802 [†]	1		
Md11	0.435 [†]	0.376 [†]	0.414 [†]	0.403 [†]	0.237 [†]	0.400 [†]	0.291 [†]	0.329 [†]	0.810 [†]	0.843 [†]	1	
Md12	0.442 [†]	0.370 [†]	0.364 [†]	0.385 [†]	0.304 [†]	0.380 [†]	0.360 [†]	0.336 [†]	0.661 [†]	0.760 [†]	0.785 [†]	1
	Md13	Md14	Md15	Md16	Md17	Md18	Md19	Md20	Md21	Md22	Md23	Md24
Md13	1											
Md14	0.398 [†]	1										
Md15	0.315 [†]	0.532 [†]	1									
Md16	0.378 [†]	0.488 [†]	0.611 [†]	1								
Md17	0.333 [†]	0.398 [†]	0.465 [†]	0.606 [†]	1							
Md18	0.189 [†]	0.185 [†]	0.339 [†]	0.355 [†]	0.472 [†]	1						
Md19	0.325 [†]	0.244 [†]	0.354 [†]	0.321 [†]	0.373 [†]	0.251 [†]	1					
Md20	0.362 [†]	0.299 [†]	0.389 [†]	0.359 [†]	0.420 [†]	0.268 [†]	0.779 [†]	1				
Md21	0.139*	0.136*	0.318 [†]	0.226 [†]	0.199 [†]	0.258 [†]	0.163*	0.178 [†]	1			
Md22	0.336 [†]	0.327 [†]	0.401 [†]	0.351 [†]	0.275 [†]	0.223 [†]	0.484 [†]	0.477 [†]	0.268 [†]	1		
Md23	0.296 [†]	0.284 [†]	0.405 [†]	0.364 [†]	0.413 [†]	0.282 [†]	0.464 [†]	0.562 [†]	0.165 [†]	0.481 [†]	1	
Md24	0.271 [†]	0.291 [†]	0.345 [†]	0.353 [†]	0.535 [†]	0.468 [†]	0.357 [†]	0.409 [†]	0.299 [†]	0.430 [†]	0.354 [†]	1

*Correlation is significant at 0.05.

†Correlation is significant at 0.01.

Turkish and English elderly. It is considered that the elderly withdraw when they feel pain and may perceive pain and aging symptoms as a secondary gain in our culture. In Turkish culture, all the family members support each other when a family member gets older, falls ill, or needs support. According to our results, only 9.4% of the elderly had lived alone, and the majority of them had lived with their family members. The social influences can play a role in patients' engagement in activity with pain and their willingness to manage pain.

Across three European populations of community-dwelling older adults, the GPM exhibited stable internal consistency and good validity.¹⁷ The GPM also produced stable pain measurements across populations with similar and differing demographic, health-related, and pain characteristics. However, factor analysis indicated differences in the GPM across sites, with discrepancies mainly related to items of a single subscale that failed to load appropriately.¹⁷ Nevertheless, our findings provide important information and a good starting point for future research evaluating the GPM 24-factor structure.

Cronbach's alpha value is utilized for internal consistency analysis. Cronbach's alpha value is a measure of the internal consistency or homogeneity of the

items in the scale.²² Cronbach's alpha was found to be reliable for the total scale (0.85), and subscale alpha coefficients ranged from 0.67 to 0.93, indicating satisfactory reliability (see Table 2). The internal consistency coefficient of the original scale is 0.94.¹² The results of our study indicated that homogeneity among the scale items was sufficient. Various studies conducted to test the reliability and validity of the GPM have produced satisfying results regarding Cronbach's alpha value, which was 0.94 in the United States, 0.91 in London, 0.91 in Hamburg, and 0.91 in Solothurn.¹⁷ These results were in line with the results of our study. However, Cronbach's alpha value may change due to cultural differences. Elderly individuals tend to avoid any pain assessment and do not communicate their pain-related problems to healthcare professionals because of a serious pathology, fear of illness or death, or fear of loss of independence.^{5,10,12} In Turkey, elderly individuals can communicate their pain problems to their family caregivers or healthcare professionals easily. In addition, pain medicines and topical creams can be used without doctor prescription, and many elderly have pain medicines and creams at their homes in Turkey.

The original study results of the GPM indicated that 48% of the elderly participants suffered mild pain, 42%

moderate pain, and 10% severe pain.¹² In the results of the studies where the GPM was used, the average scores were 42.5 ± 25.4 in the United States, 34.7 ± 21.6 in London, 38.7 ± 22.0 in Hamburg, and 32.7 ± 20.5 in Solothurn.¹⁷ According to our study, the average score of the elderly participants was 13.77 ± 9.85 , which indicates that they suffer mild pain. Our study results showed that 48.8% of the elderly ($n = 119$) had mild pain and 43% ($n = 105$) had moderate pain. Our sample was relatively younger, with an average age of 69.2 ± 5.2 years. They can buy and use pain medicines and creams without a doctor's prescription in Turkey. Also, family members help elderly for all daily living activities. Therefore, nearly half of them indicated that they had mild pain, and nearly the other half indicated that they had moderate pain. For these reasons, it seems elderly individuals suffer less pain in our country.

Correlation values were examined for the reliability study of the Turkish GPM, and the results indicated that the correlations between the items of the scale were all significant, and a significantly positive relationship was observed between the variables. It is stated that the items with a correlation coefficient greater than or equal to 0.20 are acceptable in terms of reliability and that such items contribute positively to the total scale score.²² In our study, the Pearson correlation coefficient of the scale items was generally above 0.20 and significant ($P < 0.01$). These results indicated that the characteristic measured by each subgroup and the characteristic measured by the entire scale were concordant and consistent with each other. The item analysis conducted suggests that none of the items should be removed from the scale.

The study has a number of limitations that need to be mentioned. First, the generalizability of our results may be limited because our samples were collected from a single center in Turkey. Second, because the psychometric validation was performed post hoc using clinical trial data, test–retest reliability could not be assessed and should be evaluated in future studies.

In conclusion, the validation of translated scales improves cross-cultural utility of the source tool. Once a valid and reliable scale is ready for use, it can be used to measure outcomes in a study. In conclusion, the 24-item GPM has good validity and reliability findings for the Turkish sample of elderly individuals. Furthermore, the scale can be used as an appropriate tool to comprehensively assess the pain of elderly individuals in clinical follow-up procedures and studies by researchers and healthcare professionals.

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CONFLICT OF INTERESTS

The authors declared that they have no conflict of interest.

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Appendix 1. Geriatric Pain Measure (English Version)

Please answer each question	Answer		Score
1. Do you or would you have <i>pain</i> with vigorous activities such as running, lifting heavy objects, or participating in strenuous sports?	No	Yes	.....
2. Do you or would you have <i>pain</i> with moderate activities such as moving a heavy table, pushing a vacuum cleaner, bowling, or playing golf?	No	Yes	.....
3. Do you or would you have <i>pain</i> with lifting or carrying groceries?	No	Yes	.....
4. Do you or would you have <i>pain</i> with climbing more than one flight of stairs?	No	Yes	.....
5. Do you or would you have <i>pain</i> with climbing only a few steps?	No	Yes	.....
6. Do you or would you have <i>pain</i> walking more than 1 block?	No	Yes	.....
7. Do you or would you have <i>pain</i> walking 1 block or less?	No	Yes	.....
8. Do you have <i>pain</i> with bathing or dressing?	No	Yes	.....
9. Have you cut down the amount of time you spend on work or doing activities <i>because of pain</i> ?	No	Yes	.....
10. Have you been accomplishing less than you would like <i>because of pain</i> ?	No	Yes	.....
11. Have you limited the kind of work or other activities you do <i>because of pain</i> ?	No	Yes	.....
12. Does the work or activities you do require extra effort <i>because of pain</i> ?	No	Yes	.....
13. Do you have trouble sleeping <i>because of pain</i> ?	No	Yes	.....
14. Does <i>pain</i> prevent you from attending religious activities?	No	Yes	.....
15. Does <i>pain</i> prevent you from enjoying any other social or recreational activities (other than religious services)?	No	Yes	.....
16. Does or would <i>pain</i> prevent you from traveling or using standard transportation?	No	Yes	.....
17. Does <i>pain</i> make you feel fatigued or tired?	No	Yes	.....
18. Do you have to rely on family members or friends for help <i>because of pain</i> ?	No	Yes	.....
19. On a scale of 0 to 10, with 0 meaning no pain and 10 being the worst pain you can imagine, <i>how severe is your pain today?</i> 0 1 2 3 4 5 6 7 8 9 10	0 to 10		
20. In the last 7 days, on a scale of 0 to 10, with 0 meaning no pain and 10 being the worst pain you can imagine, how severe has your pain been on average? 0 1 2 3 4 5 6 7 8 9 10	0 to 10		
21. Do you have pain that <i>never completely goes away</i> ?	No	Yes	.....
22. Do you have <i>pain every day</i> ?	No	Yes	.....
23. Do you have <i>pain several times a week</i> ?	No	Yes	.....
24. Over the last seven days, has <i>pain</i> caused you to feel sad or depressed?	No	Yes	.....
Scoring: Give 1 point for each yes response and add the numerical responses			
Total score (0 to 42) _____ Adjusted score (Total score × 2.38) (0 to 100) _____			

Appendix 2. Geriatrik Ağrı Ölçeği (Turkish Version)

Lütfen her bir soruyu cevaplayınız	Cevap	Skor
1. Koşma, ağırlık kaldırma, yorucu spor yapma gibi şiddetli aktivitelerden sonra <i>ağrınız</i> oluyor mu?	Hayır	Evet
2. Spor yaparken, elektrik süpürgesi iterken, ağır bir masayı iterken gibi orta derecede ağır aktiviteleri yaparken <i>ağrınız</i> oluyor mu?	Hayır	Evet
3. Alışveriş malzemelerini taşıırken ya da kaldırırken <i>ağrınız</i> oluyor mu?	Hayır	Evet
4. Birden fazla merdiveni çıkarken <i>ağrınız</i> oluyor mu?	Hayır	Evet
5. Sadece birkaç basamak çıkarken <i>ağrınız</i> oluyor mu?	Hayır	Evet
6. Bir bloktan öteye yürüdüğünüzde <i>ağrınız</i> oluyor mu?	Hayır	Evet
7. Bir blok ya da bir bloktan az yürüdüğünüzde <i>ağrınız</i> oluyor mu?	Hayır	Evet
8. Banyo yaparken ya da giyinirken <i>ağrınız</i> oluyor mu?	Hayır	Evet
9. <i>Ağrıdan dolayı</i> işe ya da diğer aktivitelere ayırdığınız zaman azalıyor mu?	Hayır	Evet
10. İsteddiğiniz başarınız <i>ağrıdan dolayı</i> azalıyor mu?	Hayır	Evet
11. Aktivitelerinizi ya da yaptığınız işi <i>ağrınızdan dolayı</i> sınırlandırdığınız oluyor mu?	Hayır	Evet
12. Yaptığınız iş ya da aktiviteler <i>ağrıdan dolayı</i> ekstra çaba gerektiriyor mu?	Hayır	Evet
13. <i>Ağrıdan dolayı</i> uyku problemlerinizi oluyor mu?	Hayır	Evet
14. <i>Ağrı</i> dini aktivitelerinizi yapmanıza engel oluyor mu?	Hayır	Evet
15. <i>Ağrı</i> sizin sosyal ya da eğlence aktivitelerine katılmanızı engelliyor mu? (dini aktiviteler dışında)	Hayır	Evet
16. <i>Ağrı</i> sizin seyahat ya da standart ulaşımınızı engelliyor mu?	Hayır	Evet
17. <i>Ağrı</i> sizin yorgun ve tükenmiş hissetmenize neden oluyor mu?	Hayır	Evet
18. <i>Ağrıdan dolayı</i> aile üyelerine ve arkadaşlarınıza bağımlı olmak zorunda kalıyor musunuz?	Hayır	Evet
19. 0 to 10 arası bir skalada "0"; ağrı yok, "10" hayal edebileceğiniz en kötü ağrı anlamında ise sizin <i>ağrınız bugün hangi şiddettedir?</i> 0 1 2 3 4 5 6 7 8 9 10	0 to 10	
20. Son 7 günde, 0–10 arası bir skalada "0" hiç ağrı yok, "10" hayal edebileceğiniz en kötü ağrı ise sizin <i>ağrınız ortalama ne kadar şiddetlidir?</i> 0 1 2 3 4 5 6 7 8 9 10	0 to 10	
21. <i>Tamamen bitmeyen ağrınız</i> var mı?	Hayır	Evet
22. <i>Her gün ağrınız</i> var mı?	Hayır	Evet
23. <i>Haftada birkaç kez ağrınız</i> oluyor mu?	Hayır	Evet
24. Son 7 gün içinde, <i>ağrınız</i> sizin üzgün ve depresif hissetmenize neden oldu mu?	Hayır	Evet
Puanlama: Her evet yanıtı için bir puan verilir ve sayısal yanıtlara eklenir		
Toplam puan (0 to 42) _____ Dönüştürülmüş puan: (Toplam puan × 2.38) (0 to 100) _____		

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