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Turkish adaptation of Wilson-Sims psychiatric fall risk assessment scale

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Abstract

Purpose: This study aimed to adapt the Wilson-Sims Fall Scale to Turkish and assess the levels of sensitivity and selectivity.

Design and Methods: The scale consisting of two sections and 15 items including age, gender, mental and physical status, elimination, impairments, gait/balance, falls' history, medications, and detox protocol was administered to 750 patients in psychiatric clinic.

Findings: The kappa coefficient of the study (*K*: 0.44, $p < .000$) showed a moderate agreement. The sensitivity and selectivity rates of the scale were 78.5% and 77.6%, respectively. Positive and negative predictive values were 6.25% and 99.4%.

Practice Implications: The scale has acceptable sensitivity and selectivity values. It is best practice to use both Wilson-Sims and Itaki Scale simultaneously for identification of patients at risk of falling.

KEYWORDS

fall, health sciences, nursing, patient safety, psychiatry

1 | INTRODUCTION

Falls are one of the frequent major risk factors in hospitalized patients and threaten patient safety (Galbraith et al., 2011, pp. 3462–3468). Prevention of falling in hospitalized patients has been recognized as an indicator of qualified and high-quality healthcare; on the contrary, the falls prolong patient stay, decrease quality of life, and increase hospital costs (Korkmaz, 2018, pp. 10–19; Rose, 2016, pp. 1–24).

Fall is defined as an unplanned, sudden change of movement towards the ground that may cause physical injury (JCI, 2020). It is important to distinguish between expected and unexpected physiological falls and accidental falls, as developing prevention strategies in falls events differ in relation with the kinds of falls (Morse, 2008, p. 9). Hundreds of thousands of patients fall in hospitals, and 30%–50% of them are injured every year in the United States. It was found that falls resulting in injury prolonged the hospital stay by 6.3 days. In addition, the average cost of a fall, resulting in injury is about $ 14,000 (Fischer et al., 2005, pp. 822–827; Galbraith et al., 2011, pp. 3462–3468; Haines et al., 2013, pp. 1–12; Hitcho et al., 2004, pp. 732–739).

Falls constitute two of five events related to patient care, with rates varying from 1.4 to 13 falls per 1000 patient days (de Freitas Luzia et al., 2020, pp. 1–8). The rate of falling in different units of the hospital is 10.5%–46%: 14% in intensive care, 24% in rehabilitation, and 39% in geriatric rehabilitation units. The incidence of falls in the rehabilitation centers is 15.9 per 100 patient days (Mollaoğlu et al., 2013, pp. 24–34). The incidence of falls in psychiatry clinics has been estimated as 13.1–25 per 1000 inpatient days, and tends to be higher than in general acute care hospital units (Blair & Gruman, 2005, pp. 351–354).

In Turkey, a study on surgery patients reported that 67.7% of patients had a high risk for falls, and 6.6% of them expressed that fell in the previous month (Özlü et al., 2014, pp. 94–99). In the study conducted in Ege University Medical Faculty Hospital, 74.8% of the patients had a high risk of falling and fall case reporting rate was 0.33% (Tanıl et al., 2014, pp. 21–26). One-year fall prevalence was found as 33% in a study conducted in a nursing home for the elderly (Bıyıklı, 2006, p. 32).

Falls are more common in psychiatry clinics although falls are observed in all clinics in the hospital (Abraham, 2016, p. 1061; Rose, 2016, pp. 1–24). The risk of falling is higher in psychiatric patients due to cognitive function disorders, behavioral problems such as agitation, and use and side effects of psychotropic medications (Billeen & Kruszewski, 2013; Blair & Gruman, 2005, pp. 351–354). Therefore, identification of patients with high risk of falls, determination of risk factors, and taking precautions will reduce the falling rates.

The risk of falling in hospitalized adult patients is assessed with Itaki Fall Risk Scale and Morse Fall Scale in Turkey (Demir & İntepeler, 2012; Ministry of Health, 2020, pp. 57–71). The risk assessment performed with the Itaki Fall Scale revealed that most of the patients hospitalized in psychiatry clinics got high-risk scores. The majority of the psychiatric inpatients are in the high-risk group due to the fact that the scoring includes presence of a chronic disorder, not using bed rails, use of more than four drugs, balance problems while walking, and use of psychotropic drugs (Ministry of Health, 2020) and the patients have a score of 5 or above. The Morse Fall Scale, developed by Morse in 1985, consists of six criteria (presence of a fall history, secondary diagnosis, mobilization support, presence of intravenous line or heparin use, gait/transferring, and mental status) to evaluate the risk of falling. The low-risk group includes the patients that get less than 25 points, the medium-risk group includes the patients that are scored between 25 and 50, and high-risk group if the patients are scored 51 and above (Demir & İntepeler, 2012, pp. 57–71).

Use of a fall risk scale specific to psychiatric patients will help a much more effective identification of high-risk patients particularly in psychiatry hospitals, and will help taking precautions for falls. In the international literature, the Wilson-Sims Fall Risk Assessment Tool (WSFRAT) and the Edmonson Psychiatric Fall Risk Assessment Tool (EPFRAT) are used in the psychiatry clinics (Van Dyke et al., 2014, pp. 30–35). The studies have indicated that the Wilson-Sims Falling Scale is used more effectively in psychiatry clinics since it includes a comprehensive psychiatric evaluation and the clinical decision of the nurse (Rose, 2016, pp. 1–24).

In this study, we aimed to adapt the Wilson-Sims Falling Scale to Turkish, and to determine its sensitivity and selectivity levels. Thus, a special fall scale for hospitalized adult psychiatric patients will facilitate the identification of patients at high risk of falling, and contribute to the development of prevention strategies.

2 | METHODOLOGY

2.1 | Research design

This study is designed as an instrumental and clinimetrical study.

2.2 | The participants

This study was carried out in a 260-bed Training and Research hospital in Istanbul, serving in the field of psychiatry. Scale was applied to inpatients in three psychiatric clinics (80 female inpatients/closed ward, 65 male inpatients/closed ward, and 48 male inpatients/open ward) and an Alcohol and Drug Addiction Treatment and Research Center (AMATEM) (33 beds). Inpatients who give voluntarily consent for the study and who could communicate in the Turkish language were included in the study. Patients with organic brain diseases and physical comorbidities precluding their ability to provide consent in study procedures were excluded. The study was conducted between May 2019 and December 2020. The nurses work in two shifts in the hospital, there are an average of 10 patients per nurse. To calculate the sample size, the statistical power analysis and the fall rate in the literature (Blair & Gruman, 2005, pp. 351–354) were considered, and the sample size was calculated as 323 (α = .05, rate of fall [about % 2–3] and 0.05 sampling error). The fall rate of the inpatients was 0.28% in 2020. The scale was applied to a total of 750 patients. The scale was administered throughout the study period, every day, to all hospitalized patients, by the clinical nurse, during the day shift. The scale was filled in taking into account the evaluation of the patient at the time of hospitalization, daily clinical observations, notes and the symptoms of the patient. The scale was repeated in case of inter-clinic transfer of the patient, after Electro Convulsive Therapy, in case of any alteration in the patient's condition, and if the patient fell.

2.3 | Instruments

To collect data, the Wilson-Sims Fall Scale, the sociodemographic form including data such as age, gender, the name of ward and length of hospitalization, and the Itaki Fall Risk Scale were used in the study.

2.3.1 | WSFRAT

It is a scale developed by clinical nurses for adult psychiatric inpatients, in Michigan Oaklawn Hospital. The scale consists of two parts. The first part consists of objective data that are expected to be collected during the evaluation of the patient during hospitalization, and daily evaluations during the hospital stay, such as age, gender, mental and physical status, elimination, disability, walking/balance status, and any history of falling in the previous 6 months. The notes about the patient and reported symptoms are also taken in consideration. Uncontrollable risk factors such as age and gender are also included in the first section. For example, an elderly (71+) female patient who is walking with a cane and has forgetfulness will have a high-risk falls score (7 points) even if she does not have any previous history of falls or medication use. Every question is given a score between 0 and 3. For instance, in assessing the physical condition of the patient, “healthy” is given 0, “general muscle weakness” is given 1, dizziness-vertigo-syncope-orthostatic hypotension is given 2, and cachexia-weight loss is given 3 points. The second part is concerned with the medications that are known to increase the risk of falls in psychiatric patients, and the detoxification protocol. When evaluating the patients' medications (mood stabilizers, benzodiazepines, diuretics, narcotics, sedatives/hypnotics, and atypical antipsychotics),

0 point is given if they have not used any agents belonging to this group of medications before, 1 point is given if they used them before, and 2 points if they started using them after hospitalization. The risk of falling increases as the number of medications increases. The medications of the patient are noted as typed in the patient's file. If the patient is on the detoxification protocol, scored as the high risk of falling (7 points). A total score of 0–6 indicates low risk, and 7 points and above indicate high risk for falling (Abraham, 2016, p. 1061; Wilson et al., 2014).

2.3.2 | Itaki Fall Risk Scale

Itaki Fall Risk Scale was simultaneously applied to the patients. Itaki Fall Risk Scale which was developed by the Ministry of Health has being used in the scope of health quality requirement with all public hospital in Turkey since 2011. The cut-point for the scale is validated in Turkey. Through the receiver operator characteristic (ROC) analysis, the under the area of ROC curve was calculated as 0.58 (p = .006, 95% confidence intervals = 0.53–0.64). The Cronbach α coefficient of the scale was calculated as .46 by Barış et al. (2020, pp. 214–221). The scale consists of 11 minor, 8 major, and a total of 19 risk factors. The history of a chronic disease, use of more than four medications, lack of bed rails are scored as the minor risk factors while not conscious/not cooperative, balance problems while standing/walking, and use of medications with risk in the previous week are scored as the major risk factors (Ministry of Health, 2020).

2.4 | The ethical aspect of the study

Steve Wilson, the researcher who developed the scale, was contacted by e-mail, and necessary permissions were obtained. The study was started after the approval of the Ethics Committee (Date: March 04, 2019; Decree no: 20) and the study was carried out in accordance with the principles of Helsinki Declaration. The patients participating in the study were informed in relation with the Declaration of Helsinki, and their informed consents were obtained.

2.5 | Language validity

In this study, the six-step "serial approach" was used, which is one of the most frequently employed approaches in scale translation. The steps of this approach are; (1) translation of the scale by a committee, (2) assess clarity and equivalence, (3) back translation, (4) field testing (5) assess reliability, and (6) interpretation (Arslan & Yener, 2016, pp. 173–191). The translation of the original Wilson-Sims Falling Scale from English to Turkish was made by a committee consisting of two linguists graduated from English teaching, two academicians who know both languages, and four experts working in the field of psychiatry. The Turkish version was examined for comprehensibility and clarity of the sentences, then they were translated back into the original language by two academicians, a linguist, and two experts. The equality between the original scale and its translation shows that the language validity of the scale is high.

2.6 | Content validity

Content validity determines to what extent the whole scale and the individual items serves and reflects the purpose (DeVellis, 2017, pp. 59–72; Ercan & Kan, 2004, pp. 211–216). In the studies on the content validity of the Wilson-Sims Psychiatric Fall Risk Assessment Scale, Kendall's W concordance analysis was conducted to test the relevance of the items of the scale. Four specialist nurses working in the field of psychiatry were asked to evaluate the scale items with a score of 1–4 in terms of scope and language. When the responses of the experts were analyzed, it was found that there was no statistically significant difference between the scale items and expert opinions (Kendall's W: 0.520, p = .068), and therefore, it was seen that there was agreement among the experts (Aksoy et al., 2020, pp. 7–11).

2.7 | Data analysis

The data were analyzed with SPSS for Windows 22.00 program. Cronbach's α coefficient was calculated for the reliability analysis of the scales. The cut-off values of Wilson-Sims and Itaki scales were determined with ROC analysis. The reliabilities of the scales were determined with Cronbach's α coefficient, and the total correlation values of the items were also calculated. Kappa coefficient was used to measure interobserver consistency according to the fall risk groups of the patients. The differences of the participants' demographic characteristics were analyzed with χ^2 test of independence. The normality analyzes of variables were performed with Kolmogorov–Smirnov test. The significance level was set at p = .05.

3 | RESULTS

Among the patients, 62% were males and 38% were females (Table 1). The age groups were as follows: 93.3% in 18–59 years age group, 5.6% in 60–70 years age group, and 1.1% were 71 and older. 38.8% of the patients were in female closed ward, 28.7% were in male open ward, 16.4% were in AMATEM, and 16.1% were in male closed ward.

3.1 | Reliability analysis

The obtained correlation coefficient is a value used to show the relationship between the variables. To determine the reliability of the Wilson-Sims Psychiatric Fall Risk Assessment Scale, the relationships among the item-total scores of 15 items were analyzed with Spearman Correlation analysis, and it was found that the correlation

TABLE 1 The demographic characteristics of the participants

	n	%
Age		
18–59	700	93.3
60–70	42	5.6
>71	8	1.1
Gender		
Male	465	62.0
Female	285	38.0
Ward		
Male open ward	214	28.7
Female closed ward	289	38.8
AMATEM	122	16.4
Male closed ward	120	16.1

reliability coefficients ranged between 0.287 and 0.643, and were positively significant ($p < .05$).

When the results of the interobserver consistency according to the fall risk groups of the patients ($n = 30$) were evaluated with the Kappa statistic, there was a moderate agreement between the results of the two observers (K: 0.44, $p < .000$).

3.2 | Internal consistency

The reliability of internal consistency is related to the homogeneity of the items in a scale. The higher the correlation among the items in a scale, the higher is its internal consistency. The principal analysis used for reliability is determination of the Cronbach α. The Cronbach α reliability coefficient of Wilson-Sims Psychiatric Fall Risk Assessment Scale was determined as 0.913. These value shows that the scale has a "high reliability" (DeVellis, 2017, pp. 31–58). On the contrary, this value was found at the "low reliability" level for the Itaki scale (0.542).

3.3 | Results of the sensitivity and selectivity analysis of the Wilson-Sims Psychiatric Fall Risk Assessment Scale

Sensitivity and selectivity analyzes are needed to determine the power of the methods to measure the real situation accurately. Sensitivity is defined as the power of a test to find positive ones for the event examined (e.g., the patients, if the event examined is disease), and selectivity is the power to find negative ones (the healthy ones) (Hayran & Özbek, 2017, pp. 100–103).

The falls risk levels of the patients hospitalized in the psychiatry clinics and the occurrence of falls are presented in Table 2. As a result of the fall risk assessment performed on 750 patients, 14 falling events were determined. Among a total of 176 patients determined to have a high risk of falling, only 11 falls occurred. Only three falls were determined among 574 patients identified as low-risk patients for falls.

TABLE 2 The sensitivity and specificity rates of Wilson-Sims Scale

	Wilson-Sims Scale Group					
	High risk of falling (≥7)		Low risk of falling (0-6)		Total	
	n	%	*n*	%	*n*	%
Has the fall occurred?						
Yes	(GP) 11	78.6	(YN) 3	21.4	14	100.0
No	(YP) 165	22.4	(DN) 571	77.6	736	100.0

Note: Sensitivity = GP/(GP + YN) 11/(11 + 3) = 0.785. Specificity = DN/(YP + DN) = 571/(165 + 571) = 0.776. Positive predictive value = GP/(GP + YP) 11/(11 + 165) = 0.0625. Negative predictive value = DN/(YN + DN) 571/(3 + 571) = 0.994.

Table 2 presents the sensitivity and selectivity rates calculated in relation with a score of 7 and above indicating high risk, and a score of 0–6 indicating low risk, as used in the Wilson-Sims Psychiatric Fall Risk Assessment Scale.

The Wilson-Sims Fall scale was calculated to have a sensitivity of 78.5%, specificity of 77.6%, positive predictive value of 6.25%, and negative predictive value of 99.4%. This finding showed that positive predictive value of the scale was lower. In this study, the Itaki Fall Risk Scale was simultaneously applied to the patients together with Wilson-Sims Psychiatric Fall Risk Rating Scale. According to the Itaki Fall Risk Scale, there were 721 patients with a high risk of falling, and 13 of them fell. Of the 29 low-risk patients, one patient fell.

Table 3 presents the sensitivity and selectivity rates calculated in relation with a score of 5 and above indicating high risk, and a score of 0–4 indicating low risk, as used in the Itaki scale.

The Itaki scale was calculated to have a sensitivity of 92.8%, specificity of 3.8%, positive prediction of 1.8%, and negative prediction of 96.5%.

The comparison of Wilson-Sims Psychiatric Fall Risk and Itaki Scales revealed that Wilson-Sims scale was advantage over the Itaki scale for specificity. The Itaki scale was found to be far more superior in terms of sensitivity.

3.4 | The ROC analysis for Wilson-Sims and Itaki Scales

ROC analysis is a statistical method to investigate and employ the relationship between sensitivity and specificity a binary classifier. ROC curve analysis gives the optimum limit in terms of sensitivity and selectivity, and this is called the "cut-off point." It is a curve with the correct positivity (sensitivity) on the vertical axis, and false positivity (1-specificity) on the horizontal axis for different

cut-off values. Each point on the ROC curve reveals sensitivity and 1-specificity values corresponding to different cut-off values (Flach, 2016, pp. 1–8; Hayran & Özbek, 2017, pp. 100–103; Unal, 2017, pp. 1–14).

The area under the ROC curve was found to be statistically significant (0.797 [0.720–0.875]) when the relationship between the Wilson-Sims scores of the patients and the occurrence of falls was analyzed with ROC analysis ($p < .01$) (Figure 1).

The cut-off point of the scale's score, and the possible alternative cut-off points are presented in Table 4. Accordingly, the most suitable cut-off point was determined as 6.80, with 78.6% sensitivity and 77.6% specificity.

*The most suitable cut-off point was determined as 6.80, with 78.6% sensitivity and 77.6% specificity.

The ROC analysis of the relationship between the Itaki scores and the occurrence of falls (Figure 2) revealed that the area under the curve (0.582 [0.720–0.875]) was not statistically significant ($p > .05$).

The cut-off point of the Itaki score and the possible alternative cut-off points are presented in Table 5. Hence, the most suitable cut-off point was determined as 5.950, with 85.7% sensitivity and 20.5% specificity.

*The most suitable cut-off point was determinedas 5.950, with 85.7% sensitivity and 20.5% specificity.

The comparison of gender and the fall risk groups determined with the Wilson-Sims and Itaki scales found significant correlations for both scales ($p < .05$) (Table 6). In the Wilson-Sims scale, 26% of men and 19.3% of women were identified as high-risk patients. In the

TABLE 3 The sensitivity and specificity rates of Itaki Scale

	Itaki Scale Group					
	High risk of falling (≥5)		Low risk of falling (<5)		Total	
	n	%	*n*	%	*n*	%
Has the fall occurred?						
Yes	(GP) 13	92.9	(YN) 1	7.1	14	100.0
No	(YP) 708	96.2	(DN) 28	3.8	736	100.0

Note: Sensitivity = GP/(GP + YN) 13/(13 + 1) = 0.928. Specificity = DN/(YP + DN) = 28/(708 + 28) = .0380. Positive predictive value = GP/(GP + YP) 13/(13 + 708) = 0.0180. Negative predictive value = DN/(YN + DN) 28/(1 + 28) = 0.965.

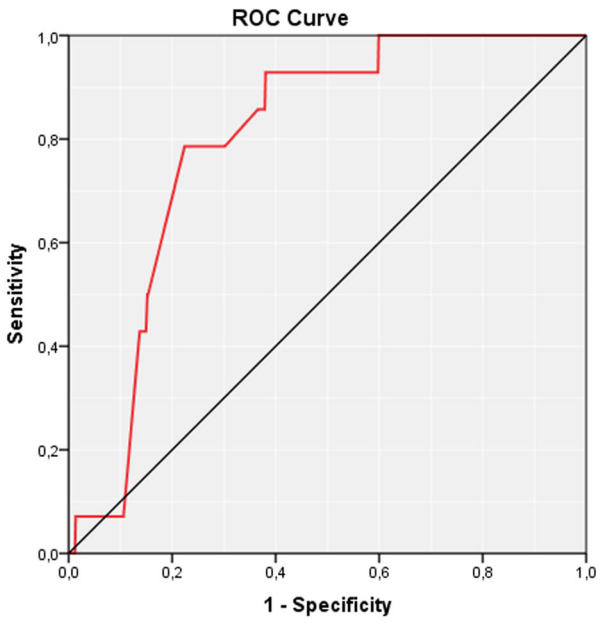

FIGURE 1 The ROC analysis graph for Wilson-Sims Scale. ROC, receiver operator characteristic

TABLE 4 The sensitivity and specificity rates for the cut-off point

Positive if greater than or equal	Sensitivity	1-Specificity
4.250	0.857	0.379
4.400	0.857	0.378
4.600	0.857	0.375
4.750	0.857	0.374
4.850	0.857	0.368
4.950	0.857	0.365
5.050	0.786	0.302
5.200	0.786	0.300
5.350	0.786	0.298
5.450	0.786	0.293
5.550	0.786	0.292
5.650	0.786	0.289
5.750	0.786	0.288
5.900	0.786	0.283
6.200	0.786	0.231
6.450	0.786	0.230
6.600	0.786	0.227
6.850*	**0.786***	**0.224***
7.050	0.500	0.154
7.200	0.500	0.152
7.350	0.429	0.149
7.450	0.429	0.148
7.600	0.429	0.144
7.750	0.429	0.141
7.900	0.429	0.137
8.050	0.071	0.106
8.200	0.071	0.105

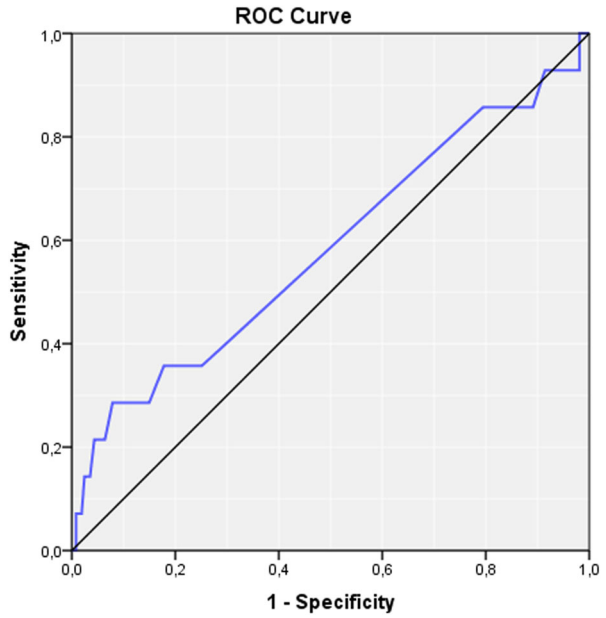

FIGURE 2 The ROC analysis graph for Itaki Scale. ROC, receiver operator characteristic

Itaki scale, 97% of men and 94.7% of women were identified as high-risk patients.

In the comparison of age and the fall risk groups determined with the Wilson-Sims and Itaki scales, $p > .05$ for both scales, and no significant relationship was found (Table 7). There was no significant relationship among the risk groups for age.

TABLE 5 The sensitivity and specificity rates for the cut-off point

Positive if greater than or equal	Sensitivity	1-Specificity
4.950	0.929	0.974
5.100	0.929	0.962
5.250	0.929	0.959
5.350	0.929	0.950
5.450	0.929	0.942
5.550	0.929	0.932
5.650	0.929	0.914
5.750	0.857	0.891
5.850	0.857	0.846
5.950*	**0.857***	**0.795***
6.050	0.357	0.251
6.150	0.357	0.219
6.250	0.357	0.178
6.350	0.286	0.149
6.450	0.286	0.122
6.550	0.286	0.109
6.650	0.286	0.095
6.750	0.286	0.079
6.850	0.214	0.064
6.950	0.214	0.053
7.050	0.214	0.043
7.150	0.143	0.035

4 | DISCUSSION

Falls are one of the important risk factors that threaten patient safety, and increase mortality and morbidity rates. Psychiatric patients are in the high risk group due to the presence of chronic disorders, medications with a high risk due to use of psychotropic drugs, and balance problems while walking. Therefore, identification of patients with high risk of falling, determination of risk factors, and taking precautions will reduce the falling rates.

In this study, the Wilson-Sims Psychiatric Fall Risk Assessment Scale was adapted to Turkish to evaluate the fall risk in adult psychiatric inpatients, its sensitivity and selectivity levels were determined, and a scale was added to our literature. In the internal consistency reliability analysis of the scale, the Cronbach α coefficient was found as .913, demonstrating high language and content validities. These values show that the scale has an "acceptable reliability" level. The Wilson-Sims Fall scale was calculated to have a sensitivity of 78.5%, specificity of 77.6%. The scale revealed low positive predictive value (6.25%), but high negative predictive value 99.4%). That is why; the current study may be a preliminary study for this scale due to low positive predictive value.

In this study, the Cronbach α reliability coefficient of the Itaki Scale was found as .542. The scale's sensitivity was 92.8%, specificity was 3.8%, positive predictive value was 1.8%, and negative predictive value was 96.5%. It is evident that the specificity value of Itaki scale is low. In the study conducted by Barış et al. (2020, pp. 214–221), The Cronbach α coefficient of the Itaki scale was determined as .46. The sensitivity of the scale was calculated as 0.91, specificity as 0.17, positive predictive value as 0.36, and negative predictive value as 0.78. The reliability coefficient in that study is in line with our results. The Itaki scale was found to be far more superior in terms of sensitivity.

In another adaptation study of the Wilson-Sims Psychiatric Fall Risk Assessment Scale, the Cronbach α coefficient of the scale was found as .63. As determined in relation with the cut-off score of the scale, which was 11, the sensitivity rate was 100% and the specificity rate was 80.2% (Morici et al., 2016, pp. 742–746). When the results of that study are taken into account, it is evident that the sensitivity and specificity levels are higher. In the study comparing the Wilson-Sims Psychiatric Fall Risk Assessment Scale and the Hendrick II Fall Risk scale, 319 observations were made on 50 patients in Atlanta, and a falls were observed in two patients; the sensitivity level of the Wilson-Sims scale was calculated as 100%, and the selectivity as

TABLE 6 The comparison of gender and fall risk groups determined with Wilson-Sims and Itaki scales

		Gender			
		Male	Female	Total	p^a
Wilson-Sims					
Low risk of falling	*n*	344	230	574	.041*
	%	74.0%	80.7%	76.5%	
High risk of falling	*n*	121	55	176	
	%	26.0%	19.3%	23.5%	
Itaki					
Low risk of falling	*n*	14	15	29	.002**
	%	3.0%	5.3%	3.9%	
High risk of falling	*n*	451	270	721	
	%	97.0%	94.7%	96.1%	

[a]χ^2 Fisher's exact test.
*$p < .01$; **$p < .05$.

TABLE 7 The comparison of age and fall risk groups determined with Wilson-Sims and Itaki scales

		Age				
		18–59	60–70	>71	Total	p^a
Wilson-Sims						
Low risk of falling	*n*	542	28	4	574	.124
	%	77.4%	66.7%	50.0%	76.5%	
High risk of falling	*n*	158	14	4	176	
	%	22.6%	33.3%	50.0%	23.5%	
Itaki						
Low risk of falling	*n*	29	0	0	29	.130
	%	4.1%	0.0%	0.0%	3.9%	
High risk of falling	*n*	671	42	8	721	
	%	95.9%	100.0%	100.0%	96.1%	

[a]χ^2 Fisher's exact test.

63.1%. The positive predictive value of Wilson-Sims scale was found as 1.7%, and its negative predictive value was determined as 100% (Mollaoğlu et al., 2013, pp. 24–34). The sensitivity level found in that study is higher than our value, while the level of selectivity is lower.

The κ coefficient was calculated to evaluate interobserver consistency. The κ expresses the extent to which the data collected in the study are correct representations of the variables measured. The κ coefficient of the current study (*K*: 0.44, $p < .000$) showed a moderate agreement between the results of the two observers. Compared with our findings, another adaptation study showed higher κ value for inter-rater reliability (0.44 vs. 0.92) (Morici et al., 2016, pp. 742–746).

4.1 | Study limitations

The current study has several limitations. First, due to low positive predictive value of the scale, our study may be a preliminary study. For this reason, this study should be replicated with a much bigger sample, including an enriched sample or a case–control study. Second, the feedbacks of clinical nurses who applied the scale revealed that the patient's medications were questioned in the scale under six item headings, and it took time to complete the scale.

5 | CONCLUSION

In this study, Wilson-Sims Psychiatric Fall Risk Assessment Scale was adapted into the Turkish, and its sensitivity and selectivity levels were determined to evaluate the risk of falling in adult psychiatric patients. Sensitivity and specificity values of Wilson-Sims scale are acceptable. It has advantage over the Itaki Scale is their specificity value, but the sensitivity of Itaki score is far more superior. Moreover, because of low positive predictive value (6.25%), the current study may be accepted the preliminary study for this scale. Therefore, it is best practice to use both Wilson-Sims and Itaki Scale simultaneously for identification of patients at risk of falling.

The use of a fall risk scale specific to psychiatric patients will provide an opportunity to be more effective in identifying high-risk hospitalized patients, and to take precautions for falls. Thus, the scale will contribute to the identification of patients with high risk of falls, determination of the risk factors, and taking appropriate precautions.

5.1 | Implications for nursing practice

Falls are one of the major risk factors that threaten patient safety, and increase mortality and morbidity rates. Falls are associated with decrease quality of life, increased lengths-of-stay and increased hospital costs. Psychiatric patients are in the high-risk group because of chronic disorders, medications with a high risk due to use of psychotropic drugs, and balance problems while walking. Therefore, identification of patients with high risk of falling, determination of risk factors, and taking precautions will reduce the falling rates. The Turkish version of Wilson-Sims Psychiatric Fall Risk Assessment Scale and the Itaki Scale will facilitate the identification of patients at high risk of falling, and contribute to the development of prevention strategies It is best practice to use both the Wilson-Sims and the Itaki Scale simultaneously for identification of patients at risk of falling. The Itaki Scale would make it possible to detect the cases with the highest risk of falls, and the Wilson-Sims Fall Scale would allow to know more precisely who is at lower risk and maybe need less preventive care for fallings, optimizing the time and resources of the nursing staff and the hospital itself.

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CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests.

AUTHOR CONTRIBUTIONS

Study design and manuscript writing: Fatma Kantaş Yılmaz and Selda Polat. *Data collection and analysis*: Fatma Kantaş Yılmaz, Selda Polat, and Rabia Bilici.

DATA AVAILABILITY STATEMENT

Data available in article supplementary material.

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