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INPATIENT SATISFACTION QUESTIONNAIRE: SCALE DEVELOPMENT AND RELIABILITY-VALIDITY STUDY

YATAN HASTA MEMNUNİYET ÖLÇEĞİ: ÖLÇEK GELİŞTİRME, GÜVENİRLİK VE GEÇERLİK ÇALIŞMASI

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Abstract

Objective: The aim of this study was to develop a valid and reliable measurement instrument to determine the satisfaction rates of inpatients.
Methods: This study was designed as a methodological research and the eight-step scale development principles developed by Devellis were followed. The sample size was calculated as 360, taking into account 10 times the number of items in the explanatory factor analysis. Exploratory and confirmatory factor analyses were applied to the scale and the reliability coefficients, Cronbach's Alpha and Composite Reliability values, were calculated for the subdimensions obtained.
Results: Since probability value was $p<0.05$ and Kaiser-Meyer-Olkin (KMO) value was determined as 0.939 for Bartlett's test, which was performed for factor analysis suitability of the results obtained from 36 items, the data set was found to be "perfectly" suitable for factor analysis. The scale was able to explain the concept of inpatient satisfaction to a large extent since the total variance explained was found to be 70.04% in factor analysis. In the confirmatory factor analysis of the scale which resulted in 32 items and five subdimensions, all of the covariance values drawn between the subdimensions were significant ($p<0.05$). Factor loadings of items were within the range of 0.62-0.95. Cronbach's Alpha reliability score of the Inpatient Satisfaction Questionnaire (ISQ) was found to be 0.911 for the whole scale.
Conclusion: The questionnaire that was developed exhibited a high level of reliability and validity. We suggest that it is suitable for measuring the satisfaction of inpatients, and the data obtained will aid and guide in the improvement of healthcare facilities.

Keywords: *Patient satisfaction, inpatient satisfaction, scale development, quality, health sciences.*

Öz

Amaç: Bu çalışmada, yatarak tedavi gören hastaların memnuniyet oranlarını belirlemek için geçerli ve güvenilir bir ölçme aracı geliştirmek amaçlanmıştır.
Yöntem: Metadolojik araştırma tipinde tasarlanan çalışmada, Devellis tarafından geliştirilen sekiz adımlık "ölçek geliştirme ilkeleri" takip edilmiştir. Açımlayıcı faktör analizinde madde sayısının 10 katı dikkate alınarak örneklem büyüklüğü 360 olarak hesaplanmıştır. Ölçeğe açımlayıcı ve doğrulayıcı faktör analizleri uygulanmış ve elde edilen alt boyutların güvenirlik katsayıları için Cronbach Alpha ve bileşik güvenirlik değerleri hesaplanmıştır.
Bulgular: Otuzaltı maddeden elde edilen anket sonuçlarının faktör analizi uygunluğu için yapılan Bartlett testi için olasılık değeri $p<0,05$ ve Kaiser-Meyer-Olkin (KMO) değeri 0,939 bulunduğundan veri setinin faktör analizinde "mükemmel" seviyede uygun olduğu anlaşılmıştır. Faktör analizinde toplam kavram açıklayıcılığı %70,04 bulunduğundan ölçeğin yatan hasta memnuniyeti kavramını büyük ölçüde açıklayabildiği anlaşılmıştır. Açımlayıcı faktör analizinde yatış ve tedavi süreci, hekim - hasta ilişkisi, fiziksel çevre, yemek hizmetleri ve hasta bakımı olmak üzere beş boyut ve 32 madde olarak sonuçlandırılan ölçeğin doğrulayıcı faktör analizinde alt boyutlar arasında çizilen kovaryans değerlerinin tamamı anlamlıdır ($p<0,05$). Maddelerin faktör yükleri (0,62;0,95) aralığında yer almaktadır. Yatan Hasta Memnuniyeti Ölçeği (YHM) Cronbach Alpha güvenilirlik puanı ölçeğin tamamında 0,911 bulunmuştur.
Sonuç: Çalışma sonucunda yatan hastaların memnuniyetini ölçmek için güvenirlik ve geçerlik düzeyi yüksek bir ölçek literatüre kazandırılmış olup elde edilen veriler sağlık tesislerinin yapacağı iyileştirme çalışmalarında yol gösterici olacaktır.

Anahtar Kelimeler: *Hasta memnuniyeti, yatan hasta memnuniyeti, ölçek geliştirme, kalite, sağlık bilimleri.*

Introduction

Efforts for improving quality in healthcare services have shown a significant increase within the last two decades. The report entitled "Overcoming the Quality Gap", which was published in 1996 by Institute of Medicine (IOM) played an important role in the stimulating these efforts, and the utility of measuring patient satisfaction gained importance.[1,2] Adoption of a patient-oriented approach in the context of quality improvement efforts in hospitals, and improvement of patient satisfaction from the perspectives of the patients have been the focus of much of these improvements.[3]

Patient satisfaction plays a key role in the evaluation of the performance of healthcare service providers and many studies have been published on health perception of the patients each year. An increase in patient satisfaction causes a decrease in the use of healthcare services, improvement in the course of disease, fewer malpractice cases and a high ratio of patient compliance.[4] Lower satisfaction scores may lead to a decrease in the revenues of hospitals and may affect salaries of the physicians.[5]

Patient satisfaction surveys are instruments that have been generally accepted for monitoring quality performance of hospitals from the patient perspective.[3,6] The need for a better and more useful questionnaire has been highlighted by healthcare professionals because of the adoption of this patient-centered approach and new types of patient profiles that has resulted in a day-to-day increase in demand and a requirement for continuity. At the same time, standardization and specialization are highly important in health systems. Therefore, the use of more detailed and informative measurement tools, in order to give voice to the patient, is warranted instead of using standard satisfaction surveys at organization level. This will allow more consistent evaluation of the effect of these instruments.[6]

This study was based on a patient-centered approach and the aim was to develop an inpatient satisfaction questionnaire that assesses all processes of inpatient services from the patient perspective and plans to render improvement studies from organization level to departmental base.

Methods

This research which was designed as a methodological study, based on the eight-step "scale development principles" by Devellis (2017), in order to develop an Inpatient Satisfaction Questionnaire and to conduct its validity and reliability studies. Clear identification of the structure to be measured, generation of an item pool, determination of measurement method, review of the generated item pool by experts, consideration of the inclusion of validity items, application of items to the sample group, evaluation of items and optimizing the scale length are the principles of scale development.[7]

It is important that the structure to be measured is clearly defined and that the limits of the structure are precisely determined in order to prevent the drift of scale content to unwanted dimensions.[7] It was decided to employ "Expectancy-Value Theory" which was developed by Linder-Pelz (1982) during development of this questionnaire. Expectations, which can be described as the scientific, executive and behavioral characteristics that patients seek or want to see in healthcare institutions, are among the most important psychosocial factors determining positive attitude of the individual.[8-11]

After determining the aim of the scale clearly, focus group interviews were carried out to create an item pool by bringing the items to be included in the scale together which were drawn from the expectations and requests of the patients during inpatient treatment services. Focus group interviews were conducted with 10 individuals who were getting inpatient health service, in line with the opinions of experts working on quality; and their hospital experiences, expectations, requests and demands were recorded. These records were evaluated by the experts and criticized by reviewing the literature. A question pool was generated within the framework of the headings that included: hospitalization and treatment process; physician-patient relationship; physical environment; food services; patient care; and safety. A Likert scale was used as the scoring format.[7] Response options were scored using a five-point Likert-type that included: "totally disagree"; "disagree"; "neither agree nor disagree"; "agree"; and "totally agree". The draft pool of 35 items created was applied to a group of 15 individuals within the framework of a pilot study. In the context of this pilot study, the question originally worded as "I think patients who do not have a companion experience more problems" was revised to "I think patients who do not have a companion also get sufficient and necessary care in the hospital". Moreover, a new question was suggested which was "I think that safety precautions of the hospital are sufficient". The item pool including 36 items was reviewed by a group of five people who were working on quality in healthcare. Suitability of each item was indicated as high.

In the exploratory factor analysis, sample size of the study was calculated as 10 times the number of items; and thus, sample size was calculated as 360. The questionnaire form which was generated using Google forms (forms.google.com) consisted of three parts, namely the sociodemographic data, informed consent and the scale itself, including the 36 items. Researchers shared the link of Google forms through several social media accounts and invited participants to fill in the questionnaire; and a sample group of 90 individuals was reached. Subsequently 275 individuals who were receiving inpatient health service were contacted by phone by a team of people specialized in making a survey; and the questionnaire was applied. This study was conducted with a total of 365 participants between January 2, 2020 and February 17, 2020.

Ethics approval of the study was obtained from Hamidiye non-Interventional Research Ethics Committee of the University of Health Sciences Turkey (date: 12.27.2019 and no:19/132); and the study was carried out in accordance with the principles of Helsinki Declaration.

Statistical Analysis

In this study, SPSS for Windows, version 22.00 (IBM Inc., Armonk, NY, USA) and AMOS for Windows, version 24.0 (IBM SPSS, Chicago, USA) programs were used for data analysis; and exploratory and confirmatory factor analyses were applied for inpatient satisfaction questionnaire. Kaiser-Meyer-Olkin (KMO) and the Bartlett Test were used for the suitability of the data for factor analysis. Reliability coefficients of the subdimensions obtained in the scale were calculated using Cronbach's Alpha and Composite Reliability values. The differences shown by the subdimensions obtained from the Inpatient Satisfaction Questionnaire, based on the demographic characteristics, were compared by using Independent Samples t test and One Way Analysis of Variance (ANOVA). Post-hoc Bonferroni test was used to detect the source of difference in

the subdimensions showing a difference in one way analysis of variance.

Results

Demographic Characteristics
The questionnaire was applied to 365 participants in this study. However, five (1.4%) were excluded from analysis due to inadequate response. Thus the final total of participants was 360. Data regarding sociodemographic characteristics of the participants is given in Table 1. It was found that 45.6% of the participants were women and 54.4% were men. Among the age groups, the highest ratio was in 46 years and older group by 54.8%; and 79.4% of the participants were found to be married. Considering education level, it was seen that 43.6% had elementary school, 36.1% had high school, 10.6% had graduate and 9.7% had undergraduate degree. More than half (57.5%) were not actively working and 87.8% of them relied on the Social Security Institution (SSI). In addition, 91.7% of the participants were provided health service by a public hospital.

Table 1. Percentage distribution of the demographic characteristics of the participants

		n	%
Sex	Women	164	45.6
	Men	196	54.4
Age Groups	25 years and younger	28	8.5
	26-30 years	38	11.5
	31-35 years	39	11.8
	36-40 years	44	13.3
	46 years and older	181	54.8
Marital Status	Married	286	79.4
	Single	74	20.6
Education level	Elementary school	157	43.6
	High school	130	36.1
	Undergraduate	35	9.7
	Graduate	38	10.6
Employment status	Yes	153	42.5
	No	207	57.5
Social Security	SSI	316	87.8
	No insurance	6	1.7
	Other	38	10.6
Hospital Group providing health service to participants	Public	330	91.7
	Private	30	8.3

Factor Analysis of Inpatient Satisfaction Questionnaire (ISQ)
Since probability value was $p<0.05$ and KMO value was determined as 0.939 for Bartlett's test, which was performed for factor analysis suitability of the results obtained from 36 items of Inpatient Satisfaction Questionnaire (ISQ), the data set was found to be "perfectly" suitable for factor analysis. The scale was able to explain the concept of inpatient satisfaction to a large extent since the total variance explained was 70.04% in factor analysis. In five subdimensions, the explanatory rates were: 25.84% for hospitalization and treatment process including 14 items; 17.77% for physician-patient relationship including six

items; 12.86% for physical environment including six items; 7.63% for food services including four items; and 5.92% for patient care including two items (Table 2).
Factor loadings of four items included in the questionnaire were below 0.50. Thus, they were excluded from the analysis. The items removed after factor analysis were the following: "I think that cleaning staff follow the hygiene rules", "I am happy with dinner hours", "The dishes that should be cold (such as olive oil dishes) are served at proper temperature" and "I think that hospital has sufficient safety precautions".

Confirmatory Factor Analysis in Inpatient Satisfaction Questionnaire (ISQ)
The final Inpatient Satisfaction Questionnaire (ISQ) contained the remaining 32 items in the exploratory factor analysis; and all covariance values drawn between the subdimensions were found to be significant in confirmatory factor analysis ($p<0.05$). Factor loadings of the items were within the range 0.62-0.95 (Figure 1).
All of the five dimensions included in the exploratory factor analysis were exactly preserved, and all 32 items included in the exploratory factor analysis were also included in confirmatory factor analysis. As factor loadings were found to be above 0.50, no item was removed. The details of confirmatory factor analysis are shown in Table 3.
Since model fit values were x2 (1305.981) and x2/df (2.948) in confirmatory factor analysis ($p<0.05$), the analysis was found to be statistically significant. As model fit index values including GFI (0.910), CFI (0.957), SRMR (0.0719), and RMSEA (0.0744) were within acceptable limits, it was determined that confirmatory factor analysis of the ISQ was valid.

Reliability and Validity in Structural Equation
Cronbach's Alpha reliability coefficient of the ISQ was 0.911 for the whole scale. In subdimensions, the values were 0.953 for Hospitalization and Treatment Process (HTP), 0.952 for the Physician-Patient Relationship (PPR), 0.880 for the Physical Environment (PE), 0.752 for Food services (FS) and 0.764 for Patient Care (PC) (Table 4).
According to these results, it was understood that the subdimensions of HTP, PPR and PE were "highly reliable" and FS and PC were "quite reliable". For composite reliability values, all CR values were found to be above 0.70 and the composite reliability condition was met. Since mean average variance extracted (AVE) values were found to be above 0.40, the required condition for convergence validity was also met. Square root values of AVE values, which were calculated to check decomposition validity, are given within parantheses in the table. As these values were found to be higher than all correlation values included in that column, decomposition validity was determined to be provided for all variables.

Comparison of the subdimensions of the ISQ based on demographic characteristics
In the evaluation of the ISQ based on sex (Table 5), significant differences were found in HTP, PPR and Total Satisfaction ($p<0.05$). Mean satisfaction of the women was found to be lower than the men in HTP and PPR. Moreover, the mean score of the women (3.781) was found to be lower than the score of men (3.901) in Total Satisfaction.
In the comparison of ISQ subdimensions based on marital status, statistically significant differences were observed in HTP and PPR ($p<0.05$). In both subdimensions, the mean

score of single patients was found to be lower than married individuals.

In the comparison of the subdimensions of ISQ based on the hospital providing health service, significant differences were found in all subdimensions including Total Satisfaction ($p<0.05$). Mean scores in each subdimension for public hospitals were significantly lower than the scores for private hospitals. Moreover, the total satisfaction score for public hospitals (3.796) was found to be significantly lower than the score for private hospitals (4.40).

In the comparison of ISQ subdimensions based on education level (Table 6), significant differences were found in the subdimensions of HTP, PPR and Total Satisfaction

($p<0.05$). In a multiple comparison test, mean scores of graduates were found to be lower in HTP and PPR subdimensions than the undergraduates and high school graduates. The mean score of high school graduates for Total Satisfaction (4.008) was found to be higher than the other participants.

In the comparison of ISQ subdimensions based on age groups, significant differences were found in HTP, PPR and Total Satisfaction ($p<0.05$). In multiple comparison test, mean scores of the ones who were 46 years and older were found to be higher than the mean scores of other age groups in these subdimensions.

Table 2. Summary Table of Explanatory Factor Analysis of Inpatient Satisfaction Questionnaire

Dimensions	Items included in Analysis	FL	VE
Hospitalization and Treatment Process	All of my tests and treatments were carried out in the same hospital during my hospitalization.	.863	25.84%
	During my hospitalization, all materials and medications required for my treatment were provided by the hospital.	.844	
	I could easily accomplish my hospitalization procedures.	.809	
	I was not waited for the treatment and surgery supplies.	.712	
	Food delivery staff were following hygiene rules.	.705	
	I am happy with the hospital's applications and rules for visitors.	.684	
	The attitudes of hospital staff towards me and my relatives were caring and respectful.	.681	
	I could reach hospital staff easily when I needed.	.679	
	I can recommend this hospital to the others.	.661	
	I was treated in a quiet and calm environment during my hospitalization.	.654	
	I am happy with the healthcare service of the hospital.	.650	
	It was taken care of my privacy during my hospitalization.	.642	
	The time past from the decision for my hospitalization in the outpatient clinic until my hospitalization was appropriate.	.642	
	My follow-up and treatment was carried out by the same physician who gave the decision for my hospitalization.	.610	
Physician-Patient Relationship	My physician informed me about my disease and treatment.	.878	17.77%
	My physician gave answers to my questions that I can understand.	.843	
	I could reach my physician easily when I needed.	.842	
	My physician came to see me often enough.	.837	
	My physician took the decisions together with me by introducing me the options about my treatment.	.831	
	I was adequately informed about my treatment process following discharge.	.602	
Physical Environment	I am happy with the frequency of sheet changing.	.809	12.86%
	I think that my room is clean and hygienic.	.800	
	The materials such as toilet paper, liquid soap and paper towel were supplied to my room in time.	.773	
	I think that the toilets are clean and hygienic.	.751	
	The devices and instruments found in my room (television, call bell, light, bed, etc.) were working.	.748	
	The opportunities offered to my companion (companion seat, food, sheets, etc.) were sufficient.	.657	
Food services	I am generally happy with the dishes.	.823	7.63%
	The amounts of dishes were sufficient.	.775	
	The dishes that should be hot were served hot enough.	.633	
	I am happy with breakfast hours.	.588	
Patient Care	I think that patients who do not have a companion also got sufficient and necessary care in the hospital.	.804	5.92%
	I think that the hospital presented me all necessary services without any need for a companion.	.726	
	Total		70.04%

Kaiser-Meyer-Olkin (KMO): 0.9939 Bartlett's test and p value ($p<0.05$) FY: Factor Loadings VE: Variance Explained
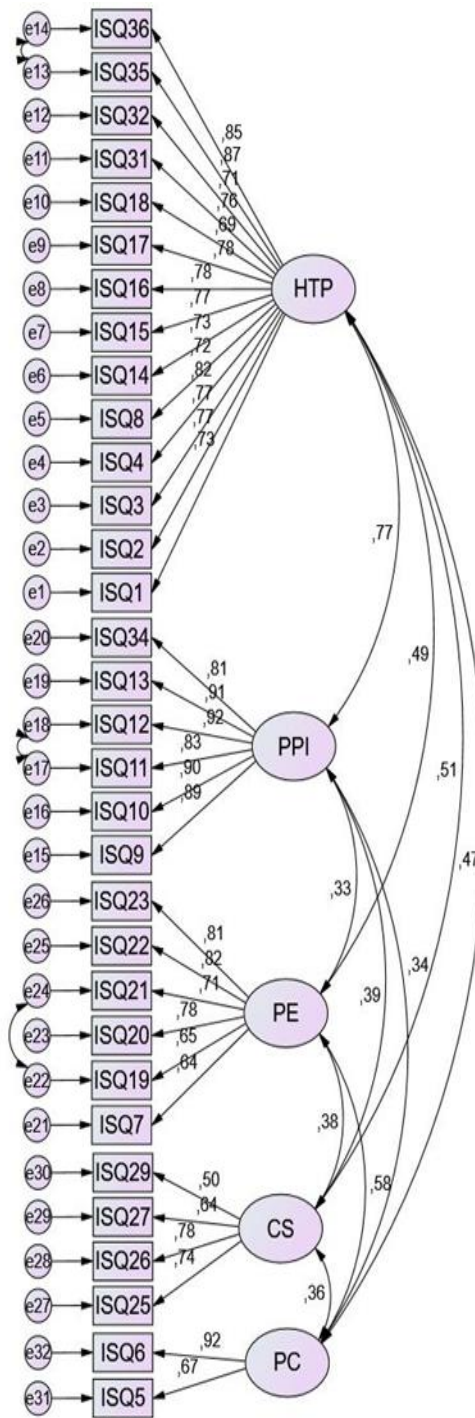
Figure 1. Confirmatory factor analysis of Inpatient Satisfaction Questionnaire

Table 3. Confirmatory factor analysis table of Inpatient Satisfaction Questionnaire (ISQ)

Item	Dimension	Estimate	Std Estimate	C.R.	P
IS1	HTP	1.000	.734		
IS2	HTP	.884	.774	18.686	<0.001***
IS3	HTP	1.104	.769	14.739	<0.001***
IS4	HTP	1.149	.820	15.812	<0.001***
IS8	HTP	.982	.725	16.348	<0.001***
IS14	HTP	.888	.732	13.998	<0.001***
IS15	HTP	1.235	.765	14.673	<0.001***
IS16	HTP	.915	.777	14.920	<0.001***
IS17	HTP	.851	.779	14.955	<0.001***
IS18	HTP	1.099	.686	13.044	<0.001***
IS31	HTP	1.115	.765	14.661	<0.001***
IS32	HTP	1.123	.706	13.452	<0.001***
IS35	HTP	1.194	.867	16.797	<0.001***
IS36	HTP	1.221	.853	16.483	<0.001***
IS9	PPR	1.000	.890		
IS10	PPR	1.066	.899	25.896	<0.001***
IS11	PPR	.851	.831	21.702	<0.001***
IS12	PPR	.956	.923	27.653	<0.001***
IS13	PPR	1.022	.905	26.353	<0.001***
IS34	PPR	.811	.806	20.550	<0.001***
IS7	PE	1.000	.638		
IS19	PE	.846	.647	10.452	<0.001***
IS20	PE	1.115	.783	12.162	<0.001***
IS21	PE	1.150	.707	11.239	<0.001***
IS22	PE	1.169	.816	12.526	<0.001***
IS23	PE	1.225	.809	12.539	<0.001***
IS25	IS	1.000	.738		
IS26	IS	.984	.780	11.987	<0.001***
IS27	IS	.892	.637	10.625	<0.001***
IS29	IS	.670	.500	8.371	<0.001***
IS5	PC	.685	.673	9.628	<0.001***
IS6	PC	1.000	.921		

***p<0.001 **p<0.01 *p<0.05   C.R: critical ratio

Table 4. Reliability values of the subdimensions of the scale used in the study

Scale	Dimension	Mean Value	SD	HTP	PPR	PE	FS	PC
ISQ	HTP (Hospitalization and Treatment Process)	4.20	.60	(.769)				
	PPI (Physician Patient Relationship)	4.12	.78	.726**	(.876)			
	PE (Physical Environment)	3.83	.81	.419**	.305**	(.736)		
	FS (Food services)	3.46	.91	.451**	.361**	.321**	(.672)	
	(PC) Patient Care	3.62	.87	.448**	.334**	.475**	.340**	(.806)
Cronbach's Alpha				.953	.952	.880	.752	.764
Composite Reliability (CR)				.845	.952	.876	.763	.784
Average Variance Extracted (AVE)				.592	.769	.543	.452	.651

SD: standard deviation

Table 5. Comparison of the subdimensions of Inpatient Satisfaction Questionnaire (ISQ) based on sex

	Sex	N	Mean Value	SD	t	*p*
Hospitalization and Treatment Process	Women	164	4.033	.6148		
	Men	196	4.333	.5517	-4.884	.000**
Physician-Patient Relationship	Women	164	3.971	.7648		
	Men	196	4.253	.7741	-3.472	.001**
Physical Environment	Women	164	3.846	.7441		
	Men	196	3.817	.8601	.331	.741
Food services	Women	164	3.433	.8965		
	Men	196	3.482	.9287	-.509	.611
Patient Care	Women	164	3.622	.8812		
	Men	196	3.617	.8602	-.050	.960
Total Satisfaction	Women	164	3.781	.6519		
	Men	196	3.901	.4989	-1.975	.049*

SD: standard deviation t: table value

Table 6. Comparison of the subdimensions of Inpatient Satisfaction Questionnaire based on education level

Graduation		N	Mean Value	SD	F	*p*
Hospitalization and Treatment Process	Elementary	157	4.082	.4660		
	High school	130	4.454	.5280		
	Undergraduate	35	4.020	.8093		
	Graduate	38	3.947	.7842	14.620	.000**
	Total	360	4.196	.5995		
Physician-Patient Relationship	Elementary	157	4.006	.6693		
	High school	130	4.391	.7409		
	Undergraduate	35	3.876	.8951		

		N	Mean	SD	F	p
	Graduate	38	3.930	.9914	8.726	.000**
	Total	360	4.125	.7816		
	Elementary	157	3.814	.6408		
	High school	130	3.853	.8971		
Physical Environment	Undergraduate	35	3.867	.9581		
	Graduate	38	3.785	.9764	.116	.951
	Total	360	3.830	.8083		
	Elementary	157	3.328	.7961		
	High school	130	3.625	.9423		
Food services	Undergraduate	35	3.450	1.1292		
	Graduate	38	3.447	.9918	2.544	.056
	Total	360	3.460	.9133		
	Elementary	157	3.589	.7283		
	High school	130	3.719	.8957		
Patient Care	Undergraduate	35	3.571	1.0720		
	Graduate	38	3.447	1.0767	1.170	.321
	Total	360	3.619	.8686		
	Elementary	157	3.764	.4428		
	High school	130	4.008	.5161		
Total Satisfaction	Undergraduate	35	3.757	.8271		
	Graduate	38	3.711	.8289	5.696	.001*
	Total	360	3.846	.5759		

SD: standard deviation, F: table value

Discussion

The components of patient satisfaction vary depending on the patient and service, with age, sex, marital status and education level being among the leading patient-associated characteristics.[12] The current study was based on a patient-centered approach and the ISQ assesses all processes of inpatient services from the beginning of the hospitalization period to the post-discharge period. The ISQ Scale included 32 items in 5 dimensions, including hospitalization and treatment process, physician-patient relationship, physical environment, food services and patient care. The authors are of the opinion that the current scale has a higher representative power in reflecting inpatient satisfaction, with a higher overall concept explanatory of 70.04%. In this respect, the current scale is highly comprehensive and informative to render improvement studies. Factor analysis of the ISQ developed by the investigators suggests that it can be utilized to assess the levels of inpatient satisfaction with high reliability and validity for all items and subdimensions.

Compared with our findings, an inpatient satisfaction questionnaire developed by Erdugan and Yörübulut,[13] including 397 patients and consisting of 22 items and four subscales, showed similar satisfaction levels for physical environment (3.83 vs. 3.78) and food services (3.46 vs. 3.50). It can be argued that the subscales in the present study might have been expressed more clearly and distinctly, namely physician-patient relationship, food services, physical environment seem to be more satisfaction-targeted

terms than physicians, food, and physical conditions, respectively. The components of patient satisfaction should also include overall patient care services. Therefore, a satisfaction scale should cover a broader area of services that a patient utilizes, including physician-patient relationship, food services, the physical environment, hopitalization and treatment process and patient care. In this respect, the current scale is highly informative and satisfactory. "The Scale of Patient Perception of Hospital Experience with Nursing" adapted by Çoban and Kaşıkçı was limited to only the quality of nursing care.[14]

Another satisfaction scale developed by Ercan et al. (2004) appears to be comprehensive with eight subscales including outpatient services, clinical services, bureaucratic procedures, staff services, patient rights, physical environment, café services and overall assessment. However, the Ercan et al. scale did not take into consideration the most influential factor in inpatient satisfaction, which is diagnosis and treatment.[15] To the best of our knowledge, the ISQ is most comparable to that developed by The Ministry of Health (2012) and validated by Vural et al.,[16] in that it covered even more dimensions than our scale, with additional safety and hospital reliability subdimensions. However, it contained half of the items in our scale (items 16 vs. 32).

When satisfaction levels measured by the ISQ were compared based on sex, women had lower scores than men in both Total Satisfaction and the subdimensions of HTP, and PPR. Sex-based satisfaction levels have varied in previous studies; some studies reported higher female

satisfaction levels while others lower.[17-20] Marital status was found as an influencial factor in inpatient satisfaction. As compared with married individuals, single inpatients had lower levels of satisfaction with HTP and PPR. This finding suggests that marital status may play a supportive and supplemental role in meeting the patients' needs. A study from Saudi Arabia reported similar results.[20]

Inpatient satisfaction levels also differed significantly between age groups of <46 and >46 years, with older individuals having higher satisfactions levels. Two previous studies from Qatar and Vietnam also reported age-based satisfactions levels, with younger individuals having lower satisfactions levels.[18,22]

In the current study, education status was also a significant factor associated with inpatient satisfaction. Expectedly, graduates had the lowest overall satisfaction as compared with undergraduates, high school and elementary school graduates. This finding was consistent with previous studies reporting decreased satisfaction level with increasing education status.[12,20-22]

Conclusion

Patient satisfaction should be handled as an essential indicator for the identification and development of better strategies, management procedures, education priorities and resource allocations for healthcare facilities.[22] In the current study, the "Inpatient Satisfaction Questionnaire (ISQ)" was found to be a valid and reliable instrument with comprehensive items and subdimensions.

Conflict of Interest

No conflicts of interests to disclose.

Compliance of Ethical Statement

Ethics approval of the study was obtained from Hamidiye non-Interventional Research Ethics Committee of the University of Health Sciences Turkey (date: 12.27.2019 and no:19/132); and the study was carried out in accordance with the principles of Helsinki Declaration.

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Author Contributions

MÖ, FKY, AUK: The hypothesis of the study; MÖ, FKY, AUK: Study design; MÖ, FKY: Data collection; MÖ, FKY, AUK: Accusation of resources, materials; FKY: Literature search; FKY: Data analysis and interpretation; MÖ, FKY, AUK: Manuscript drafting/writing/editing; MÖ, FKY, AUK: Experimental review; MÖ, FKY, AUK: Resources

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