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EVALUATION OF SATISFACTION LEVEL OF HOSPITALIZED PATIENTS AT THE CITY TRAINING AND RESEARCH HOSPITAL LOCATED IN THE SOUTH OF TURKEY DURING COVID-19 PANDEMIC

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Abstract

Aim: The purpose of this research study was to evaluate the satisfaction level of hospitalized patients with regard to healthcare services as well as physical conditions of the hospital and investigate the socio-demographic variables in relate to the satisfaction level of inpatients at Adana City Hospital.

Methods: This study was conducted with 150 randomly selected patients thru face- to- to-face using a standard inpatient satisfaction questionnaire. The research was conducted between March 13-23, 2021 when the Covid-19 pandemic was the most intense. For the statistical analysis, SPSS 21 package was used.

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Findings: About 40% of inpatients reported a decrease the in a number of their admissions to the hospital due to Covid- 19 pandemic. Forty- percent of the respondents reported not using any mobile applications while 40% indicated using Life Fits Home. About 85% used ALO 182 for a physician appointment. While the mean score of inpatient satisfaction with healthcare services was found to be 4.35 and satisfaction with physical conditions of hospital was found to be 4.30 on a 5-point Likert scale.

Conclusion: Mostly, our findings were consistent with the findings of other studies. In our study, the majority of the hospitalized patients who participated in the study reported "satisfaction" with the healthcare services and the physical conditions of the hospital.

Keywords: Patient Satisfaction, City Hospital, Healthcare Services, Mobile Health Applications

Introduction

Consumer satisfaction plays an important role in the quality of healthcare reforms and healthcare delivery, particularly in the United States of America and Europe. However, consumer satisfaction studies are challenged by the lack of a universally accepted definition or measure (Bleich, Ozaltin, Murray, 2009). While some researchers focus on patient satisfaction with the quality and type of healthcare services, others focus on the satisfaction of individuals with the healthcare system more generally (Bleich, Ozaltin, Murray, 2009). The importance of both perspectives has been demonstrated in the literature. For example, satisfied patients are more likely to complete their treatment regimens and to be more compliant and cooperative than those who are not satisfied. Conversely, if patients are dissatisfied, patients are less likely to seek care when needed or refusing to comply with the treatment (Hudak, and Wright, 2000).

With respect to measuring quality and type of health care services, typically three major factors play an important role. Those factors are the physical conditions of the hospital, attitudes, and behaviors of healthcare personnel, and socio-demographic characteristics of patients. Patient satisfaction is the output of the expected and perceived quality of care, meaning patients have upfront expectations of healthcare services and after they received healthcare services patients will develop their own perception based on their experience. As a result of the evaluation between the expected quality and perceived quality, the patient shapes her or his own decisions according to whether her or his expectations are met. Patient satisfaction may have a positive effect on patient compliance and outcome. (Tukel *et al*, 2004). Physicians who treat their patients with respect, take the time to get to know their patients and their concerns, and who listen to their patients' needs

may result in higher patient satisfaction (Moore, Wright, Bernard, 2009). If patients are satisfied with the physician and his or her patient interaction, they are likely to be more compliant with their treatment plan, to understand their role in the recovery process, and to follow the recommended treatment. Subsequently, improved health outcomes are more likely to happen (Cowing, *et al*, 2009). Carr-Hill (1992) defines patient satisfaction as "the basic criterion that gives information about the level of meeting the values and expectations of the patient and shows the quality of care, where the main authority is the patient". In general terms, patient satisfaction, which depends on how patients perceive the service provided, is a concept that is difficult to express and measure, based on many factors (Ataman and Yarımoglu, 2018).

The factors affecting patient satisfaction are divided into two as patient-related factors and service-related factors. Among the factors related to the patient, the patient's age, gender, education level, social security status, income status, place of residence, diagnosis, treatment and length of stay may affect patient satisfaction. Among the factors related to the service, the most important ones are the attitudes and behaviors of healthcare personnel (Talmac and Soysal, 2021).

Researchers generally agree that measure the ent of patient satisfaction fulfills several distinct functions. Fitzpatrick (1984) put forward four—understanding patients' experiences of healthcare, promoting cooperation with treatment, identifying problems in healthcare, and evaluation of healthcare. One of the important concepts used to reveal the quality, efficiency, effectiveness and therefore performance of health services is patient satisfaction.

One of the important concepts is patient satisfaction which evaluates the quality, efficiency and effectiveness of healthcare services. Recently, health institutions are acting on patient needs and expectations as well as results of satisfaction studies. Since hospitals have put patients in the center, patient satisfaction and evaluation of patient satisfaction studies have become a necessity (Kirilmaz, 2013). Patient satisfaction is an important part of quality. Determining the satisfaction levels of the patients is a very important indicator to improve the quality of service and provide more qualified services that are in line with patient expectations (Soylemez, 2009). Limited evidence suggests that satisfaction is largely the result of fulfilled expectations and values. The patient who has been involved in the evaluation of healthcare for the last ten years' satisfaction has begun to be considered as an evidence to decide on the right use of existing resources due to the increasing cost of healthcare services (Williams, 1994).

Donabedian (1980) proposed the healthcare quality theory, explaining (1) satisfaction as an integral component of a three-pronged structure of the medical market, (2) the process of provision of healthcare, and (3) the outcome of the treatment. Based on these studies, a comprehensive model of the patient satisfaction model was developed to incorporate all influences on satisfaction, thereby providing a holistic framework for exploring the interactions between variables that affect the evaluation of patients (Fig. 1)

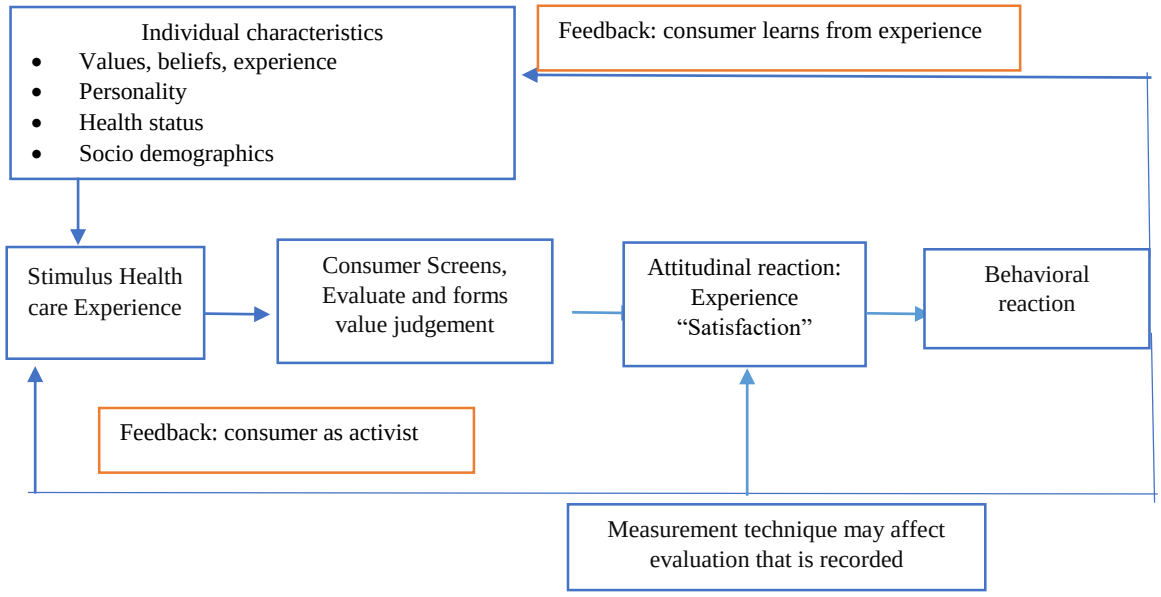

Figure 1: Comprehensive model of satisfaction with health care
Sources: Adopted from Strasser and Davis (1993), Strasser et al. (1993) and Crow, et al. (2002)

Patient satisfaction provides a baseline measurement for identifying patients, employees, and organizational outcomes. (Yildiz and Yalman, 2015). Therefore, patient satisfaction with healthcare services is an important measurement of performance (Cowing *et al*., 2009). It can be said that measuring the satisfaction of the patient with the health services periodically will contribute to the decision of how the healthcare services will be provided and increase the quality of service (Ahmad and Din, 2010). This measurement covers all the activities throughout the process from patient admission to the diagnosis, treatment, and care. The factors determining of quality of healthcare services are the environment of health care services, physical image of the hospital, timing of the service, the specialist who delivers health care services and the continuity

of healthcare services and the reality and flexibility of the healthcare services (Kidak and Aksarayli, 2008). Patient satisfaction is one of the important indicators in the measurement of health service quality. The main criterion that shows the quality of care in hospitals is patient satisfaction, and it is the main criterion that gives information about the level of meeting the needs and expectations of the patient. In this way, the quality of service in health institutions and the structure of the service process can be reviewed (Hekimoglu *et al*, 2015).

In addition to patient-physician interaction and attitudes of healthcare personnel towards patients, bureaucracy is also one of the factors affecting patient satisfaction. Patients always want to access healthcare services without long waiting times. As the number of formalities in health institutions increases, the time loss of patients increases ,and their access to service gets delayed (Kavuncubasi and Yildirim 2012). Long waiting times can lead to patient dissatisfaction (Oche and Adamu, 2014). Determining the satisfaction levels of the patients is important to increase the quality of service and provide more qualified service in line with patient expectations (Soylemez *et al.*, 2009,). Generally speaking, patient satisfaction measures have an important role in the health system because they integrate patients' views on the health system; identify potential issues arising in the health sector; contribute in evaluating the health services (Mpinga and Chastonay, 2011). Moreover, patient satisfaction appears to play an important mediating role in increasing the strength of the association between healthcare quality and patient trust in healthcare service provider (Alrubaiee,2011). Patients' quality perceptions of the service are believed to influence patient satisfaction positively, which in turn positively influences the patient's decision to choose a specific healthcare provider (Andaleeb, 2001; Taylor, S., 1994). In early study Donabedian (1988) indicated that patient satisfaction is a key outcome of care (Lin and Kelly,1995). Patient satisfaction could therefore be considered as a valuable indicator to health professionals and health authorities allowing them to define better strategies and management procedures as well as training priorities and resource allocation options (Batbaar, *et all.* 2016).

As a result of transformation in healthcare services, the number of City hospitals across the country is increasing. To date there are 15 city hospitals operating across the country and 5 more chospitals are in the construction phase. City hospitals are defined as a cooperation between public and private sectors. When the transition process to PPP projects in Turkey is evaluated in terms of taxes, which is the main source of income for the public, the pressure of resource shortage is clearly seen (Sozer, 2014). City hospitals were built to increase the quality of healthcare services, to

respond to the requests of patients to a large degree and to combine the polyclinics under one roof (Talmac and Soysal, 2021).

Hospitals that incorporate patient satisfaction into their strategic stance which in turn translates into increased market share and competitiveness (Andaleeb, 1988). Satisfaction studies will enable hospital management to identify areas and factors that need attention and improvement, leading to higher patient satisfaction.

Evaluating the extent to which patients are satisfied with healthcare services is clinically significant, as satisfied patients are more likely to comply with treatment (Valentine *et al*, 2015). In contrast, the effect of Covid-19 has been reducing procedure and treatment adherence, increase treatment dissatisfaction, and discontinue their treatment follow-up (Bragazzi, et al .2020). With keeping all this in mind, we decided to include questions to find out whether the number of admissions to hospitals was affected, and what mobile applications patients used to make an appointment with their physicians and whether the satisfaction level of inpatients was impacted due to Covid-19 pandemic. In order to answer these questions we conducted this research study at Adana City Hospital.

2. Research Methodology

2.1. Design, Sampling and Data Collection

For this study the screening model was used.

In order to determine the level of satisfaction of patients and the areas that need for improvement, the patient satisfaction survey was developed by taking several studies conducted with inpatients into consideration (Hekimoglu, *et al.* 2015), (Kıdak and Aksaraylı, 2008). For this study we received an approval from Adana Provincial Health Organization and the Ethics Committee of the University (17.06.2021,74).

The total bed capacity of the Adana City hospital was about 1,600. We targeted over 500 inpatients in various clinics except psychiatry, oncology, and pediatrics. Easy-sampling method was used. In spite of several attempts to reach out 500 hospitalized patients, only 150 inpatients voluntarily accepted to participate in our research study due the severity of Covid-19 pandemic between March 13-23, 2021. In order to determine the level of inpatient satisfaction, a standard

satisfaction questionnaire was used. Overall patients' satisfaction results from the summation of the scores of individual questions (1 = extremely dissatisfied to 5 = extremely satisfied).

2.2. Research hypotheses

When the literature on patient satisfaction were reviewed, the factors affecting patient satisfaction; patients, service providers and environmental factors were determined. When the results from different studies were examined, the satisfaction levels of the patients may vary according to socio-demographic characteristics of the individuals. In this study, we wanted to examine how the mean of patient satisfaction was differed according to gender, age, education level, monthly income and type of insurance, employment and number of admissions. The research hypotheses developed based on these assumptions were shown below.

H1: There is a significant difference between the genders of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H2: There is a significant difference between the ages of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H3: There is a significant difference between the education levels of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H4: There is a significant difference between the employments status of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H5: There is a significant difference between the monthly income status of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H6: There is a significant difference between the number hospitalizations of patients treated in city hospitals and their perceptions of patient satisfaction and its sub-dimensions.
H7: There is a significant difference between the type of insurance of patients treated in city hospitals and their perception of patient satisfaction and its sub-dimensions.

2.3. Statistical analysis

For the validity of the scale the factor analysis was used. For the factor analysis the sample size should be minimum of 50 although the sample size of 500 was better, and the sample size of 1000 was even much better (Cokluk *et al*, 2018). In this study the sample size of 150 was considered to be sufficient for the factor analysis. In addition, one of the methods used to

determine the suitability of the data set for factor analysis was the Kaiser-Mayer-Olkin (KMO) sample adequacy criterion. The KMO was an index that compares the observed correlation coefficients with the partial correlation size. The KMO ratio should be 0.50 minimum (Kalayci,2014).

Kaiser-Meyer-Olkin of sample adequacy of the scale was determined as 89.5%. In order to reveal the factor structure of the scale, factor analysis was performed on the 14-item scale. As a result of performing factor analysis, the item no 14 was removed from the scale because it was an adjoining item. For the remaining 13 items of the scale, an explanatory factor analysis was applied. As a result, the scale was grouped under 2 dimensions with a variance of 66.7%. Table 1 demonstrated the results of factor analysis of the scale.

Table 1: **Explanatory Factor Analysis of Patient Satisfaction Scale**

	Burden	Eigen value	Explanatory variance	Mean	Alfa
1.Satisfaction with healthcare services		5.701	43.857	4.345	0.941
Nurse to follow- up and inform your treatment process	0.863				
Supply and follow-up on drugs for treatment	0.831				
Physician follow-up on your treatment process	0.804				
Physician's interest and attitudes toward you	0.776				
Quality of health care services	0.757				
Hospital admission procedures	0.742				
Attitudes and kindness of support personnel towards you	0.675				
Attitudes of health care personnel	0.658				
2.Satisfaction with physical conditions of the hospital		4.061	31.235	4.299	0.923
Cleanliness of the patient room	0.895				
General cleanliness of hospital	0.853				
Quality of food service	0.763				
Satisfaction with pre-hospital prepayment services	0.658				
Technology level of the hospital	0.644				

Factor eliminating method: Principal component analysis; Rotation method: Varimax
Kaiser-Meyer-Olkin adequacy of sample size: 89.5%
Chi-Square analysis for Barlett's Sphericity index: 1970,212, s.d: 78 p<0.001
Explanatory total variance: 66.797%
Reliability coefficient for the entire scale: 0.957
Overall satisfaction: 4.327

As a result of factor analysis, 13 items were grouped under two dimensions. First dimension includes 8- items and explains 43.85% of the total variance. The second dimension includes 5-items and explains 31.23% of the total variance. For the reliability of the scale Cronbach's Alpha Coefficient method was used (Ural and Kılıc, 2011). Cronbach's Alpha gets a value between 0 and 1. If the value gets a score between 0.70 and 0.90, this indicates higher reliability. If the score is 0.90, it indicates the highest reliability (Ozdamar, 2011). The Cronbach's Alpha Coefficient of the 13-item Patient Satisfaction scale was found 0.957, indicating the scale is highly reliable.

3. Analysis

3.1 Socio-demographic variables

In order to understand the inpatient profile, the socio-demographic questions were asked and the frequencies of those were outlined in Table 2. Following socio-demographic questions the patient satisfaction questionnaire was randomly administered to 150 inpatients. Table 2 outlines the characteristics of the respondents in frequencies.

Table 2: **Socio-demographic characteristics of inpatients**

Variable	n	%	Variable	n	%
Gender			**Health institute admitted generally**		
Male	70	46.7	Public hospital	99	66.0
Female	80	53.3	University hospital	4	2.7
Age breakdown			City hospital	37	24.7
20-29	29	19.3	Private hospital	7	4.7
30-39	26	17.3	Family Practitioner	3	2.0
40-49	47	31.3	**Number of admissions to any hospital within last year**		
50-59	27	18.0	2-3	57	38.0
60 and above	21	14.0	4-5	43	28.7
Education			6-7	12	8.0

Illiteral	12	8.0	8-9	9	6.0
Literate	12	8.0	10 and above	29	19.3
Primary education	61	40.7	**Frequency of admission to the hospital during Covid-19 pandemic**		
High school	37	24.7	Never admitted	17	11.3
University	26	17.3	No change	57	38.0
Graduate	2	1.3	Decreased	58	38.7
Profession			Increased	18	12.0
Public sector	16	10.7	**Frequency of admissions to this hospital**		
Private sector	7	4.7	First visit	34	22.7
Self-employed	29	19.3	Several times (1-4)	70	46.7
Student	13	8.7	Multiple times (5-10)	26	17.3
Retired	26	17.3	Continually	20	13.3
Other	59	39.3	**The clinic patient admitted to**		
Income (TL)			Neurosurgery	10	6.7
1.500 below	10	6.7	Internal Medicine	11	7.3
1501-2000	10	6.7	Endocrinology	13	8.7
2001-3000	33	22	Gastroenterology	10	6.7
3001-4000	25	16.7	General surgery	44	29.3
4001-5000	12	8	Ophthalmology	17	11.3
Insurance			Others	45	30
SGI (SGK)	108	72	**First admission to this clinic**		
Green card	20	13.3	Yes	118	78.7
Private insurance	1	0.7	No	32	21.3
No coverage	21	44	**Length of treatment in this clinic**		
The tool used most to obtain health information			Less than 1 week	61	40.7
Computer	10	6.7	1 week	56	33.7
Smart phone	140	93.3	2 weeks	17	11.3
Tablet	0	0.0	3 weeks	1	0.7
Smart watch	0	0.0	4 weeks	1	0.7
			More than 1 month	14	9.3
Total	150	100		150	100

Regarding the profile of inpatients who participated in this research, about 53% were female, 31% were between the age of 40-49, 41% had primary education, nearly 20% were self-employed; 34% reported no income, the respondents were asked which health institution they generally preferred to go, 66% reported public hospitals. With regard to number of visits to any hospital within last year, 38% indicated 2-3 times. In terms of number of admissions to any hospital during Covid-19, 38.7% reported a decrease in number of hospital admissions while 38% reported no change. Nearly, 72% of the inpatients indicated having some sort of health insurance while 14% reported not having any insurance. When the respondents were asked how many times they admitted to this hospital, 46.7% indicated several times (1-4). Approximately, 30% of the respondents reported being under the care of general surgery and 78% reported being first time in the clinic. About 41% reported hospitalizing less than one week in the clinic where they received treatment. Nearly, 47.3% of patients reported hospitals for their source of health information. About, 93% reported using smartphones for getting information on health.

Table 3 outlines the type of mobile applications that inpatients mostly use and to make a physician appointment.

Table 3: **Mobile applications used by patients**

Variable	**n**	**%**
Frequently used mobile applications by patients		
Life Fits Home (HES)	61	40.7
Do not use application	60	40.0
e-pulse	45	30.0
Central Physician Appointment System (MHRS)	43	28.7
Applications used by patients for physician appointment		
ALO 182	128	85.3
Central Physician Appointment System (MHRS)	28	18.7
e-pulse	9	6.0

Among the mobile applications Life Fits Home (HES) was used by 41% of the inpatients; on the other hand, 40% reported not using any application. For the physician appointment 85.3% of patients indicated using ALO 182.

3.2. Findings from the patient satisfaction scale

In this section the findings from the patient satisfaction questionnaire were outlined in Table 4. Patients rated the healthcare services and physical conditions on a 5-point scale during their stay at the hospital.

Table 4: Descriptive findings on the patient satisfaction scale

Scale items	**Mean**	**SD**
1. **Satisfaction level with healthcare services**	**4.35**	**0.676**
Physician interest and attitudes towards you	4.44	0.596
Attitudes and kindness of support personnel towards you	4.44	0.607
Physician follow-up on your treatment process	4.37	0.660
Quality of overall healthcare services	4.35	0.581
Hospital admission procedures	4.31	0.677
Supply and follow-up on drugs for treatment	4.31	0.695
Nurse follow- up and inform your treatment process	4.28	0.770
Attitudes of healthcare personnel	4.26	0.823
2. Satisfaction level with the physical conditions of hospital	**4.30**	**0.712**
Quality of food service	4.32	0,669
Technology level of the hospital	4,32	0.669
Cleanliness of the patient room	4.30	0.758
Satisfaction with pre-hospital prepayment services	4.29	0.698
General cleanliness level of hospital	4.27	0.766
Overall satisfaction	**4.33**	**0.563**
n= 150		

According to the descriptive findings of the patient satisfaction scale, all items in the table above received above the score of 4.00, thereby overall satisfaction level was found to be 4.33, meaning patients were satisfied with the healthcare services and physical conditions of the hospital. Among the healthcare services, physicians' interest and attitudes as well as attitudes and kindness of the support personnel were rated 4.44 that was the highest score on the scale. Satisfaction level regarding the attitudes of healthcare personnel was rated lower (4.26) than other scale items. Considering the two- sub dimensions of the scale, the level of satisfaction with

healthcare services was determined as 4.35 that was slightly higher than the satisfaction level with the physical conditions of the hospital that was rated as 4.30.

Difference tests

In this section, it was tested whether hospital satisfaction differed significantly according to the demographic variables included in the research study questions. First of all, the T-Test was conducted to determine whether the dimensions of the Patient Satisfaction scale differ significantly according to the hospitalization status for the first time. The results from the statistical analysis were illustrated in Table 5.

Table 5: Comparison of hospital satisfaction dimensions according to first time hospitalization

Patient Satisfaction	First hospitalization in this clinic	n	Mean	Standard Deviation	t Value	Significance
Patient satisfaction with healthcare services	Yes	118	4.2574	0.57649	-3.751	**0.001***
	No	32	4.6680	0.43022		
Patient satisfaction with physical conditions of the hospital	Yes	118	4.2458	0.60956	-2.015	**0,046***
	No	32	4.4938	0.64655		

***** p<0,05

As it was shown in Table 5, there was a statistically significant difference according to the number of hospitalization of the patient. Patients who were previously hospitalized in the clinic had a relatively higher level of satisfaction than those who were admitted to the same clinic for the first time.

ANOVA test was conducted to determine whether the satisfaction levels of inpatients differed according to age. The results of this test were summarized in Table 6.

Table 6: Comparison of patient satisfaction dimensions by Age

Patient Satisfaction	Age	n	Mean	Standard Deviation	F Value	Significance level
Patient satisfaction with healthcare services	20-29	29	4.0313	0.70696	3.158	**0.010***
	30-39	26	4.4808	0.53232		
	40-49	47	4.2473	0.50101		
	50-59	27	4.3565	0.48870		
	60 and above	21	4.6429	0.51733		
Patient satisfaction with physical conditions of hospital	20-29	29	3.8800	0.89772	4.321	**0,001***
	30-39	26	4.4615	0.54778		
	40-49	47	4.1872	0.53634		
	50-59	27	4.3111	0.49407		
	60 and above	21	4.6286	0.52644		

*p< 0.05

Since the variances of the dimensions were homogeneous (p>0.05) we wanted to see which groups were differed according to the test of homogeneity of variances (Levene) and Gabriel test (Mayers, 2013) (Table 7 and 8).

Table 7: Homogeneity of Variances Test

	Levene's Test p Value
Satisfaction with healthcare services	0.346
Satisfaction with hospital physical conditions	0.496

Table 8: **Patient Satisfaction Multiple Comparison (Gabriel) Table by Age**

Patient Satisfaction	Age		Difference in Mean	Significance level
Satisfaction with health care services	20-29	60 and above	-0.61161	0.008*
Satisfaction with hospital physical conditions	20-29	30-39	-0.58154	0.017*
		60 and above	-0.74857	0.001*

***** p<0,05

As it can be seen in Table 8, patients between the ages of 20-29 had a lower mean satisfaction score than the patients who are over age of 60 regarding the level of satisfaction with

healthcare services. For the dimension of satisfaction with the hospital physical conditions, patients aged 20-29 had a lower mean of satisfaction level than those patients aged 30-39 and patients over 60.

ANOVA test was conducted to determine whether the satisfaction levels of inpatients differed according to their education level. The results of ANOVA test were summarized in Table 9.

Table 9: Comparison of patient satisfaction dimensions according to education

Patient Satisfaction	**Education**	**n**	**Mean**	**Standard Deviation**	**F Value**	**Significance level**
Satisfaction with healthcare services	Illiteral	12	3.9792	0.4050	4.012	**0.002***
	Literal	12	4.0938	0.47412		
	Primary education	61	4.5410	0.47965		
	High school	37	4.3750	0.51958		
	Undergraduate	26	4.1587	0.73447		
	Graduate	2	3.9375	0,44194		
Satisfaction with physical conditions of hospital	Illiteral	12	3.9833	0.44687	3.194	**0.009***
	Literal	12	4.1667	0.38925		
	Primary education	61	4.4918	0.54354		
	High school	37	4.3243	0.55046		
	Undergraduate	26	4.0154	0.88710		
	Graduate	2	4.3000	0.14142		

p>0.05

For both sub-dimensions of patient satisfaction presented significant differences according to the level of education. According to the test of homogeneity of variances, the variance of satisfaction level with healthcare services was found to be homogenous (p>0.05). In order to determine differences between groups, Gabriel Test (Mayers, 2013) was utilized. The variance of satisfaction with hospital physical conditions was found to be non-homogenous (p<0.05) and for

that reason Games Howell test (Mayers, 2013:180) was used to see the differences between groups. Results of homogeneity of variances were shown in Table 10.

Table 10: Test of homogeneity of variances

	Levene Test p Value
Satisfaction with healthcare services	0.152
Satisfaction with physical conditions of hospital	0.034

Results of hospital satisfaction multiple comparisons by education were summarized in Table 11.

Table 11: Satisfaction level Multiple Comparison by Education (Gabriel - Games Howell)

Patient satisfaction	**Education**		**Mean Difference**	**Significance Level**
Satisfaction with healthcare services	Primary education	Illiteral	0.56182	0.009*
		Undergraduate	0.38233	0.039*
Satisfaction with physical conditions of hospital	Primary education	Illiteral	0.50847	0.028*

As it can be seen in Table 11, for the dimension of satisfaction with healthcare services patients who had primary education had a higher mean of satisfaction compared to illiteral patients and patients with undergraduate degree. For the satisfaction with hospital physical conditions patients with primary education reported a higher mean of satisfaction compared to illiteral patients.

ANOVA test was used to determine whether the satisfaction levels of inpatients differed according to the most preferred source for obtaining health-related information. ANOVA test results were summarized in Table 12.

Table 12: Comparison of hospital satisfaction dimensions by health related information source

Patient Satisfaction	**Most preferred source to obtain health-related information**	**n**	**mean**	**sd**	**F Value**	**Significance level**
Satisfaction with healthcare services	Internet	46	4.2636	0.62651	1.394	0.239
	Hospital	71	4.4155	0.54763		
	Friends	23	4.4239	0.53928		
	Do not need information	7	4.0893	0.44904		
	Others	3	3.9167	0.62915		
Satisfaction with physical conditions of hospital	Internet	46	4.2348	0.58318	4.204	**0.003***
	Hospital	71	4.3944	0.52478		
	Friends	23	4.4261	0.57935		
	Do not need information	7	3.7143	1.25357		
	Others	3	3.4000	0.52915		

As it was shown in Table 12, the dimension of satisfaction level related to healthcare services did not differ according to the source of health-related information ($p>0.05$), while the other dimension satisfaction related to hospital physical conditions, differed according to the source of health-related information ($p<0.05$). According to the homogeneity of variance test (Levene), the variance of dimension of satisfaction with hospital services was found to be homogenous ($p>0.05$). In order to identify the differences among groups, Gabriel test (Mayers, 2013) was conducted. Homogeneity of variances was outlined in Table 13.

Table 13: Homogeneity of variance test

	Levene Test p Value
Patient satisfaction with physical conditions of hospital	0,182

Summary of multiple comparison of satisfaction with hospital physical conditions according to source of health-related information was outlined in Table 14.

Table 14: Multiple comparisons of satisfaction with hospital conditions according to source of health- related information

Patient Satisfaction	Most preferred source to obtain health-related information		Mean Difference	Significance Level
Patient satisfaction with physical conditions of hospital	Hospital	Do not need information	0.68008	0.015*
		Other	0.99437	0.009*

P<0.05

As it was displayed in Table 14, regarding the dimension of satisfaction of hospital physical conditions, the most preferred source by the patients to obtain health-related information was hospital. Patients who used hospitals for the source of health information had a higher mean of satisfaction with physical conditions of the hospital than those patients who do not need information.

In other tests of difference conducted within the scope of the study, the satisfaction of the inpatients did not show any statistical differences for other demographic variables (p>0.05).

4. Conclusion and Recommendations

Covid-19 pandemic has become a major concern of countries due to its severity and burden of the disease. World Health Organization (WHO) announced the ways of minimizing the community transmission of Covid-19 thru social distance, frequent hand washing, and reduced population density in a healthcare setting in March 2020. In our study these issues were not addressed, assuming this was a more concern of outpatients than inpatients. We only asked the questions regarding cleanliness of the hospital and the patient room. Patients reported satisfaction with these items.

Deriba et al. (2020) studied satisfaction of patients who have chronic diseases, in their study, only 44.6% of the patients reported satisfaction. They concluded that in their country patients satisfaction who have chronic conditions decreased due to the number of factors including ordering drugs, social distancing status in the healthcare facility, availability of alcohol, and

sanitizer for hand cleaning at the healthcare facility entrance to prevent and control Covid-19. In our study more than 50% of inpatients reported satisfaction despite the risk of Covid-19 associated with being in the hospital.

In our study the majority of patients who were hospitalized at Adana City Hospital reported "satisfaction" with healthcare services as well the physical conditions of the hospital. Patient satisfaction with healthcare services was determined as 4.35 while satisfaction with physical hospital conditions was determined as 4.30. In spite of Covid-19 pandemic, the level of inpatient satisfaction level was comparable to other satisfaction studies that was run in non-pandemic periods.

According to the study that was conducted in the same hospital by Talmac and Soysal (2021), inpatients reported higher satisfaction with the healthcare services as compared to ours. The reason of this difference may be the result of the satisfaction scale used by Almac and Soysal.

Although various patient satisfaction studies showed a significant difference in satisfaction with respect to gender of patients, we did not observe any significant difference with respect to gender in this study. Accordingly, it could be said that satisfaction of the patients was generally similar to each other in terms of gender, that was, close to each other. Other research studies conducted by Talmac and Soysal (2021), Kidak and Aksarayli (2008) and Gokkaya, *et al.* (2018) indicated that there was no significant difference in patient satisfaction according to the gender. The results of our research were consistent with the findings of those researchers listed above. Therefore, H1 Hypothesis was rejected.

There was a significant difference between the ages of patients treated in city hospitals and their perceptions of satisfaction. When the findings related to the hypothesis were examined, it was concluded that there was a significant difference according to the age variable. According to the study that was run by Talmac and Soysal (2021), it was concluded that the significant difference determined in terms of patient satisfaction between the patients aged 46 and over, and patients who were younger than those. The level of satisfaction was found higher among the patients who were aged 46 and younger patients. In the same study, when the satisfaction of the patients according to the age was evaluated, it was observed that the satisfaction of the younger patients was lower than the other age groups. In conclusion, the level of satisfaction of the younger patients was moderate and above, while the satisfaction level of the older patients was at the level

of very satisfied and completely satisfied. In the studies of Kidak and Aksarayli (2008) and Kirilmaz, (2013), satisfaction of the patients differed statistically according to the age variable. In these studies, it was determined that the level of patient satisfaction increased with increasing age. In the same studies, it was observed that satisfaction of the patients aged 60 and over was higher than those in the other age groups, and satisfaction of the patients in this age group differed significantly compared to the patients aged 30 and under. In the study of Gokkaya *et al*. (2018), it was determined that satisfaction of the patients differed statistically according to the age variable. Additionally, satisfaction level of elderly patients was observed higher than younger patients. In our study regarding healthcare services, patients between the ages of 20-29 had a lower average satisfaction score than the patients over the age of 60. For the dimension of satisfaction with the hospital physical conditions, patients aged 20-29 had lower satisfaction levels than both patients aged 30-39 and patients over 60. Our findings were consistent with the results of the studies mentioned above. Therefore, the Hypothesis 2 was accepted.

Talmac and Soysal (2021) observed a statistically significant difference between satisfaction level and education level in their study. Patients with a lower level of education had higher perceptions of patient satisfaction than those with other education levels. In the study conducted by Kirilmaz (2013), it was determined that the level of satisfaction of the patients differed significantly according to the education level; the patient satisfaction increased as the education level decreased. In the study of Gokkaya et al., (2018), it was shown that the satisfaction of the patients did not differ statistically according to the education level, but the level of satisfaction of the patients with a lower level of education was higher than those with higher education level. When the study data describing the relationship between education level and patient satisfaction was examined as a whole, it could be said that there was an inverse correlation between patient satisfaction and education level. In other words, it can be summarized as the education level increases, patient satisfaction decreases or as the education level decreases, patient satisfaction increases. In our study, for the dimension of satisfaction with healthcare services patients with primary education had a higher mean of satisfaction compared to patients with university degree. Although a significant difference was obtained between illiteral patients and patients with primary education on the same dimension of satisfaction, the means of illiteral and primary education were close to each other. In term of satisfaction with hospital physical conditions, patients with primary education reported a higher mean of satisfaction compared to

illiteral patients. Therefore, H3 hypothesis was accepted except for the dimension of healthcare services for university students.

With respect to employment type, our study did not show that the satisfaction of inpatients differed statistically according to the type of employment. Therefore, Hypothesis 4 was rejected.

In the study of Talmac and Soysal (2021) it had been concluded that satisfaction of the patients earning low monthly income was lower than those patients who earned higher monthly income. It had been concluded that the level of satisfaction of patients with low monthly income was moderate and above, while the patients with high monthly income was very satisfied. Gokkaya *et al.,* (2018) found that the satisfaction of patients did not differ statistically according to level of monthly income; However, they determined that the level of satisfaction of the patients with a moderate monthly income (1500-2499 TL) was higher than the patients in other monthly income groups. In our study patient satisfaction did not differ statistically according to the level of monthly income. This could be explained that most of the patients who were hospitalized had some kind of social security coverage. Therefore, H5 Hypothesis was rejected.

Our study showed that the satisfaction of patients differed statistically according to the number of admissions to hospital. Patients who were previously hospitalized in the clinic had a relatively higher level of satisfaction than those who were admitted to the same clinic for the first time. This finding was very consistent with the study of Hekimoglu, *et. Al* (2015). Therefore, H6 hypothesis was accepted. With respect to type of insurance, the satisfaction of patients did not differ statistically and therefore H7 hypothesis was rejected.

City hospitals were built in order to increase the quality of the healthcare services in respond to the requests of the patients to a large extent, and to combine units that provide services for patients under one roof. In the past, some hospitals in Turkey had problems with disorganization of service units, lack of bed capacity, parking area, technological equipment, and number of personnel. It could be said that the construction of city hospitals in order to eliminate these problems had contributed to the increase of patient satisfaction. However, there is a need for further studies to assess City Hospitals with respect to efficiency and its cost to the society since government have entered into contracts with several private companies to pay a rent to the private company based on number of patients who are being treated on a yearly basis for the term of 25 years. To increase level of satisfaction there is always a room for improvement. Therefore, the mean of level of satisfaction can be raised from satisfaction to extremely satisfaction. Considering

the significant cost of public-private partnership the level of patient satisfaction is expected to be higher at the City Hospitals compared to public hospitals.

Limitations

We have several limitations. First, this study was limited to the number of inpatients who had voluntarily participated in our research. Second, our study was a part of a complex study that included technology assessment and satisfaction of inpatients and outpatients who were treated at the City Hospital. Therefore, we had to limit the number of questions to measure satisfaction of inpatients.There is a need for a widely used standardized questionnaire to measure patient satisfaction across the hospitals.

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Conflict of Interest

The author does not have conflicts of interest to declare.

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