

## Araştırma makalesi

## Research article

# Evaluation of Patients' Health Literacy and Nursing Care Satisfaction Levels According to Some Descriptive Characteristics

Ertuğrul KARAKIZ<sup>1</sup>, Betül TOSUN<sup>2</sup>**ABSTRACT**

**Aim:** This descriptive Study aimed to determine the relationship between the level of health literacy and the level of nursing care satisfaction in patients and to evaluate it according to some descriptive characteristics.

**Materials and Methods:** This Study was conducted with 230 patients who were hospitalized in the internal medicine and general surgery inpatient ward of a city hospital and accepted to participate in the Study. The Newcastle Nursing Care Satisfaction Scale (NNCSS) and the Health Literacy Scale (HLS) were used to collect data.

**Results:** The NNCSS mean scores of the men, of the employees, those who hospitalized in that hospital before, those who use computers or smart phones, and those who use social media accounts were high ( $p<0.05$ ). When the patients' Health Literacy Scale mean scores were evaluated, a statistically significant difference was found in terms of education status, employment status, income status, and those who searched for their disease on the internet ( $p<0.05$ ). There was positive and moderate correlation between the NNCSS and HLS total scores ( $r=0.507$ ,  $p<0.001$ ).

**Conclusion:** It was found that as the level of health literacy increased, nursing care satisfaction increased, and the level of health literacy and patient care satisfaction changed according to some descriptive characteristics. It is recommended that nurses should be aware of the relationship between care satisfaction and health literacy levels and the factors that reduce it, and plan their interventions about the factors that can change this.

**Keywords:** Health literacy, nursing care, satisfaction

**ÖZ**

**Hastaların Sağlık Okuryazarlığı ve Hemşirelik Bakım Memnuniyet Düzeylerinin Bazı Tanımlayıcı Özelliklerine Göre Değerlendirilmesi**

**Amaç:** Araştırma, hastalarda sağlık okuryazarlığı düzeyi, hemşirelik bakım memnuniyeti düzeyi arasındaki ilişkinin belirlenmesi ve bazı tanımlayıcı özelliklere göre değerlendirilmesi amacıyla tanımlayıcı tipte yapıldı.

**Gereç ve Yöntem:** Bu araştırma, bir şehir hastanesinde iç hastalıkları ve genel cerrahi yataklı servisinde yatmakta olan ve araştırmaya katılmayı kabul eden 230 hasta ile tamamlandı. Araştırmanın verileri; Newcastle Hemşirelik Bakım Memnuniyet Ölçeği (NHBMÖ) ve Sağlık Okuryazarlığı Ölçeği (SOÖ)'nden oluşan anket formu ile toplandı.

**Bulgular:** Newcastle Hemşirelik Bakım Memnuniyeti Ölçeği puan ortalamaları değerlendirildiğinde erkeklerin, çalışanların, o hastanede daha önce yatanların, bilgisayar veya akıllı telefon kullananların ve sosyal medya hesaplarını kullananların puan ortalamaları yüksekti ( $p<0.05$ ). Hastaların Sağlık Okuryazarlığı Ölçeği puan ortalamaları değerlendirildiğinde, eğitim durumu, çalışma durumu, gelir durumu ve internetten hastalığını araştıranlar açısından istatistiksel olarak anlamlı fark bulundu ( $p<0.05$ ). Newcastle Hemşirelik Bakım Memnuniyeti ile Sağlık Okuryazarlığı Ölçeği toplam puanları arasında arasında pozitif ve orta düzeyde bir ilişki olduğu görüldü ( $r = 0.507$ ,  $p < 0.001$ ).

**Sonuç:** Bu çalışmada sağlık okuryazarlığı düzeyi arttıkça hemşirelik bakım memnuniyetinin arttığı, bazı tanımlayıcı özelliklere göre sağlık okuryazarlığı ve hasta bakım memnuniyeti düzeyinin değiştiği bulundu. Hemşirelerin bakım memnuniyeti ile sağlık okuryazarlığı düzeyleri arasındaki ilişkiyi ve bunu azaltan faktörlerin farkında olmaları ve bunu değiştirebilecek faktörler konusunda girişimlerini planlamaları önerilir.

**Anahtar kelimeler:** Hemşirelik bakımı, memnuniyet, sağlık okuryazarlığı

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## INTRODUCTION

The health literacy concept is about people's health; it is the ability to search for information, find information, interpret information, seek appropriate health care, understand and approve health care, and evaluate and understand risks related to health care<sup>1</sup>. Factors such as advancing technology, intercultural differences, literacy level, the complexity of the diagnostic process, physical and cognitive changes affected by age can affect individuals' self-care and communication with healthcare personnel<sup>2</sup>. In this process, individuals' health literacy level is essential in seeking and understanding health information and establishing understandable communication with people who provide health information and services<sup>1,2</sup>. In individuals with low health literacy level leads to lack of health protection and improvement practices, inadequacy in managing their own health, difficulty in understanding and applying the health education given, incomplete or incorrect management of the disease, difficulty in complying with treatment, increase in hospital readmissions, and accompanying health problems. These situations create both an increase in financial burden and an obstacle in regaining health<sup>1-3</sup>. Since health literacy is considered among the factors that can affect patients' perception and satisfaction of nursing care, it is an issue that needs to be investigated together with other factors<sup>3</sup>.

In the provision of health services, nurses are the health professionals most frequently encountered by patients and their relatives, and the satisfaction of those receiving services from health services mainly stems from the nursing care services provided by nurses<sup>4,5</sup>. According to the American Nurses Association, patient satisfaction is the evaluation criterion of the patient's or patient's relatives' perception of the care taken from the nurse<sup>4</sup>. For this reason, it is essential to evaluate the nursing services they receive in the formation of the perception of the quality of health services in patients<sup>4-6</sup>. The positive communication between the patient and the nurse increases the quality of the nursing care services and provides satisfaction<sup>7,8</sup>. In addition to the communication between the patient and the nurse, many factors affecting patient satisfaction are defined<sup>4,7,8</sup>. The patient's age, gender, education level, sociocultural background, ethnic structure, getting clear answers to his/her questions, accessing information about his/her health status, and reaching the nurse are among the factors that affect the patient's satisfaction with nursing care<sup>4,7,8</sup>.

The patient's satisfaction in terms of health is based on the level of the quality of the service provided in health institutions meeting the expectations of the patients and the perception of this service by the patients<sup>9,10</sup>. In this context, patient satisfaction, an essential indicator of the quality of nursing services and therefore health services, should be evaluated regularly<sup>9-11</sup>. It is crucial to identify the situations that cause dissatisfaction and create appropriate solutions. Nurses' ability to make the necessary arrangements in nursing interventions is vital in increasing the quality of health care services and nursing services<sup>9-12</sup>.

As a result of these situations, although the expectations of individuals from health personnel change, dissatisfaction with the care they receive may also occur. As it can be understood from here, there is a serious relationship between health literacy and nursing care satisfaction<sup>9,10-12</sup>. Considering the problems experienced by individuals with a low level of education, health literacy will be a remarkable result in the literature.

### Aim

This descriptive study was conducted to determine the relationship between the level of health literacy and the level of nursing care satisfaction in patients and to evaluate it according to some descriptive characteristics. Study Questions were as below;

Do the descriptive characteristics of the patients affect their health literacy level?

Do the descriptive characteristics of the patients affect the satisfaction from nursing care?

Is there a relationship between the health literacy level of patients and nursing care satisfaction?

## MATERIAL and METHODS

### Study Design

#### Location, Type, and Time of The Study

The research was conducted in a state hospital's internal medicine and general surgery inpatient services between July-September 2019, using a descriptive design with a face-to-face interview method. Internal medicine and surgery services are preferred to determine the nursing care satisfaction of short-term inpatients in surgical inpatient services and long-term inpatients in internal medicine inpatient services. The state hospital, where the study was conducted, has a capacity of 21 beds in the general surgery inpatient services and 21 in the internal medicine inpatient services.

#### Dependent Variable of the Study

The scores obtained from the Newcastle Nursing Care Satisfaction Scale and the Health Literacy Scale constituted the study's dependent variable.

#### Independent variable of the Study

Patients' age, gender, education level, place of residence, marital status, social security, presence of children, income level, presence of chronic disease, duration of chronic disease, medication use due to chronic disease, the reason for hospitalization, number of hospitalized days, previously hospitalized in this service/hospital, progress in nursing care, computer or smartphone use, social media account presence, how many hours a day s/he spent on social media, and the status of researching his/her disease from the internet were the independent variables of the study.

#### Study Sample

While calculating the sample, no study was found that investigated the correlation between the Newcastle Nursing Care Satisfaction Scale and The Health Literacy Scale averages. The sample size of the study was calculated with the G\*Power 3.1 software program. The scale scores were predicted to have a weak positive correlation, and the effect size was calculated as 0.284605 with a 95% confidence interval, 95% power. The sample size was found to be 211

participants. The research population consists of all patients (N= 324 patients) hospitalized in internal medicine inpatient service and general surgery inpatient service between July and September 2019, when the study was conducted. 16 of 324 patients were not included in the study because they were under 18 years old, 48 were foreign patients, and ten were illiterate. In addition, 20 patients did not agree to participate in the study. The research sample consisted of 230 adult patients (70% of the population) who agreed to participate in the study, were able to communicate, and were literate. Patients who were hospitalized and treated in the internal medicine and general surgery inpatient services of the state hospital, participated in the study voluntarily, were over the age of 18, were literate, could write in Turkish, and could communicate verbally were included in the study.

### Verilerin Toplanması

#### Data Collection Tools

**Sociodemographic Characteristics and Descriptive Information Form:** A data collection form was created in the light of the literature to obtain information for the patients' sociodemographic characteristics and descriptives<sup>1-3,12-14</sup>. The form consists of 20 questions including the clinic where the patients were hospitalized, birth date, gender, place of residence, marital status, having child, education status, working status, income level, health insurance, their chronic diseases, the reason for hospitalization, the total number of hospitalizations, how many days he/she has been in the hospital. If the patient was hospitalized in this hospital before, progression in nursing care compared to the previous hospitalization was questioned. In addition, the status of using a computer or smartphone, the existence of social media accounts, and the number of hours a day spent using social media were investigated.

**Health Literacy Scale (HLS):** The Turkish validity and reliability of the Health Literacy Scale, which was first developed by Sorensen and later simplified by Sorensen, Toçi, Bruzari (2013), was carried out by Aras and Temel (2017). Health Literacy Scale consists of 25 items and four subscales (access to information, understanding information, the appraisal/assessment subscale, the application/use). The minimum score for the whole scale is 25, and the maximum score is 125<sup>15</sup>. Low scores indicate that the health literacy situation is inadequate, problematic, and poor, while high scores indicate sufficient and very good. The higher the score to be obtained, the higher the health literacy level of the individual<sup>15-17</sup>.

**Newcastle Nursing Care Satisfaction Scale (NNCSS):** First developed by Thomas et al. (1996)<sup>18</sup>, the Turkish validity and reliability of the Newcastle Nursing Care Satisfaction Scale was made by Akin and Erdoğan (2006)<sup>19</sup>. In the Newcastle Nursing Care Satisfaction Scale, a Likert-type scale, which is scored between 1-5, consists of nineteen items containing the satisfaction opinions of patients regarding nursing care; The lowest 19, the highest 95 points can be obtained. The high score indicates that the view on nursing care satisfaction is high/sufficient, while the low score indicates that the view about care satisfaction is low / inadequate<sup>19</sup>.

### Data Collection

The researcher collected the data using the face-to-face interview method by giving sociodemographic characteristics and descriptive information form, NNCSS, and HLS to the patients. It took 15-20 minutes for the patients to fill out the data collection forms. To avoid bias, patients were allowed to mark the data collection forms themselves. When the data collection tools filled out by the patients were collected at the end of the filling process, attention was paid that they were completely filled.

### Data Analysis

The data were evaluated using the IBM SPSS (Statistical Package for the Social Sciences) for Windows 22.0 program package. Descriptive statistics of the research were presented as number, percentage, mean  $\pm$  standard deviation, or median. The normality of the data distribution was evaluated by Skewness and Kurtosis values. The significance test of the difference between the two means (Student's t-test) was used to compare the means according to sociodemographic characteristics. The one-way analysis of variance (One-way Anova) test was used to compare the mean scale of three or more groups. The relationship between the means of the scales was evaluated using Pearson Correlation. Tukey HSD test was used for advanced statistics to determine which group caused the difference. After the advanced statistics, the difference was shown as (a-b, c) when the scale mean scores of the three groups were compared to make the representation of which group the difference originated from in the table understandable. The meaning of this notation; is explained that the variable marked with "a" is a significant difference between the variables marked with "b" and "c", there is no statistically significant difference between "b" and "c" in itself.  $p < 0.05$  was considered statistically significant.

### Ethical Consideration

Before the implementation of the study, necessary permissions were obtained from the hospital where the study was conducted (approval number: 13511907-607.03; date: 18.07.2019) the ethical board of a university (decision no: 2019/84; date: 14.06.2019), and the provincial health directorate. The research principles and publication ethics stated in the Helsinki Declaration were complied with at all stages of the study. The data relating to the study were collected after obtaining written informed consent of the patients who met the acceptance criteria of the study and volunteered to participate in the study.

### Limitations

This research is a single-center study. The results obtained in the study are limited to patients admitted to the internal medicine and general surgery inpatient services of a state hospital between July-September 2019.

### RESULTS

It was found that 54.8% of the patients (n = 230) were hospitalized in the general surgery clinic, 61.7% were male, 68.3% were living in the city, 77.4% were married, and 76.1% had children. It was determined that 55.2% of the patients were primary school graduates, 43.5% were unemployed, 49.6% had expenses equal to their income,

and 88.3% had health insurance. It was determined that 51.7% of the patients did not have a chronic disease. It was determined that 55.2% of the participants were hospitalized due to medication, and 39.6% had previously been hospitalized for three days or more, including this hospitalization. In addition, 80% of the participants stated improvements in nursing services compared to the previous hospitalization, 70% of them were using computers or smartphones, and 57% had social media accounts (Table 1).

**Table 1. Descriptive Characteristics of the Patients (n=230)**

Characteristics of the Patients	n	%
<b>Age Ranges ( <math>\bar{X}</math>±SD:45.05±17.27 years)</b>		
18-45 years	130	56.5
46-65 years	64	27.8
66-99 years	36	15.7
<b>The clinic where the patient is hospitalized</b>		
General Surgery Clinic	126	54.8
Internal Medicine Clinic	104	45.2
<b>Gender</b>		
Male	142	61.7
Female	88	38.3
<b>Place of residence</b>		
City center	157	68.3
Suburban	35	15.2
Town	38	16.5
<b>Marital Status</b>		
Married	178	77.4
Single	52	22.6
<b>Having a child</b>		
Yes	175	76.1
No	55	23.9
<b>Education Level</b>		
Primary school graduated	127	55.2
High school graduated	73	31.7
University and postgraduate	30	13.0
<b>Working status</b>		
Unemployed	100	43.5
Retired	46	20.0
Employed	84	36.5
<b>Income level</b>		
Expenses less than income	84	36.5
Income is equivalent to expenses	114	49.6
Expenses more than income	32	13.9
<b>Health insurance</b>		
Yes I have	203	88.3
No, I have not	27	11.7
<b>Chronic Disease</b>		
Yes	111	48.3
No	119	51.7
<b>Chronic diseases*</b>		
No, I have not	119	51.71
Hipertansiyon	43	18.7
Diyabetes	46	20.0
Cancer	5	2.2
Heart Diseases	6	2.6
Pulmonary diseases	7	3.0
Others	8	3.5
<b>Reason for hospitalization</b>		
Medical treatment	120	52.2
Surgery treatment	110	47.8
<b>Total number of hospitalizations</b>		
1	66	28.7
2	73	31.7
Three or more	91	39.6
<b>How many days he/she has been in the hospital</b>		
1-5 days	158	68.7
Six days or more	72	31.3

**Table 1. Descriptive Characteristics of the Patients (n=230) (continues)**

	n	%
<b>The progress in terms of nursing care compared to the previous hospitalization</b>		
Yes	184	80.0
No	46	20.0
<b>The status of using a computer or smartphone</b>		
Yes	161	70.0
No	69	30.0
<b>The presence of social media accounts</b>		
Yes	131	57.0
No	99	43.0
<b>How many hours a day he/she spend on social media.</b>		
Never	92	40.0
More than 1 hour	138	60.0
<b>Searching the disease from internet</b>		
Yes	127	55.2
No	103	44.8

Cronbach  $\alpha$  reliability coefficient of NNCS was determined as 0.97. The patients' mean NNCS score was  $71.7 \pm 18.06$  (min: 27, max: 95). The Cronbach  $\alpha$  reliability coefficient of the patients was determined as 0.92. It was determined that the mean scores of the patients from the HLS were  $102.5 \pm 20.44$  (min: 42, max: 125) points (Table 2).

**Table 2. Distribution of Cronbach  $\alpha$  Reliability Coefficients and Mean Scores of NNCS, HLS and HLS subscales**

Scale	n	Cronbach $\alpha$	Min-Max	Min-Max marked	$\bar{x}$ ±SD
*NNCS	230	0.978	19-95	27-95	71.7±18.06
**HLS	230	0.92	25-125	42-125	102.5±20.44
***AISS	230	0.925	5-25	5-25	20.64±4.82
****CISS	230	0.922	7-35	7-35	28.08±6.84
*****AESS	230	0.910	8-40	13-40	33.01±6.80
*****AUSS	230	0.911	5-25	5-25	20.76±4.51

\*NNCS: Newcastle Nursing Care Satisfaction Scale

\*\*HLS: Health Literacy Scale

\*\*\*AISS: Access to Information Subscale

\*\*\*\*CISS: Comprehension of Information Subscale

\*\*\*\*\*AESS: Appraisal / Evaluation Subscale

\*\*\*\*\*AUSS: Application / Use Subscale

When the NNCS total mean scores of the patients were compared according to gender, education level and employment status, the differences between the NNCS mean scores were found to be statistically significant (respectively;  $t = 3.815, p = 0.001$ ;  $f = 6.607, p = 0.002$ ;  $f = 6.326, p = 0.002$ ). In the correction statistics made with the Tukey HSD test, it was observed that the difference was due to the difference between the primary and high school graduate groups ( $p = 0.003$ ) and working and non-working participant groups ( $p = 0.001$ ).

It was found that the NNCS mean scores of those who have been hospitalized in this hospital/service before and those who experienced the improvement in nursing care were high and the difference was statistically significant ( $t = 2.865, p = 0.005$ ). The NNCS mean scores was found of the patients who use computers or smartphones, those who have a social media account, and those who spend time on social media for 1 hour or more were statistically significantly higher (respectively;  $t = 3.237, p = 0.001$ ;  $t = 2.684, p = 0.008$ ;  $t = -2.051, p = 0.041$ ).

When the clinic where the patients hospitalized, place of residence, marital status, having children, income level, health insurance, presence of chronic disease, duration of chronic disease, reason for hospitalization how many times they have been hospitalized before, regular medication

using due to chronic disease, number of days hospitalized before, age ranges and searching for the disease on the internet were evaluated, there was no statistically significant difference in terms of the mean scores they received from NNCSS ( $p > 0.05$ ).

When the HLS total mean score of the patients were compared according to their age, residence, having children, educational status, employment status, income level, computer or smartphone use, presence of social media accounts, spending more than one hour on social media and researching their diseases on the internet, statistically significant difference was found between the groups (respectively;  $f = 7.614$ ,  $p = 0.001$ ;  $f = 3.39$ ,  $p = 0.035$ ;  $t = -2.840$ ,  $p = 0.005$ ;  $t = -2.840$ ,  $p = 0.005$ ;  $f = 20.214$ ,  $p = 0.001$ ;  $f = 6.389$ ;  $p = 0.002$ ;  $f = 5.378$   $p = 0.005$ ;  $t = 5.055$ ,  $p = 0.001$ ;  $t = 4.643$ ,  $p = 0.001$ ;  $t = -5.546$ ,  $p = 0.001$ ,  $t = 3.779$ ,  $p = 0.001$ ).

In the correction statistics made with Tukey HSD test, it was seen that the difference originated from living in the city and living in the village groups ( $p = 0.042$ ), the primary-high school, primary-university and above groups ( $p = 0.001$ ), the working-non-working and working-retired groups (respectively;  $p = 0.003$ ,  $p = 0.022$ ), the age groups between (18-45) - (66-99) ( $p = 0.001$ ). In addition, it was seen that the difference originated from the groups of income less than expense-equal to expense and income less than expense-more than expense (respectively;  $p = 0.009$ ,  $p = 0.041$ ).

Clinics which patients were hospitalized, gender, place of residence, marital status, drug use due to chronic disease, reason for hospitalization, how many times patients have been hospitalized before, how many days patients have been in the hospital, if the patients have been in this hospital / service before, according to the previous hospitalization, there are any developments in terms of nursing care, there was no statistically significant difference between the mean scores they got from the HLS according to the variables ( $p > 0.05$ ). (Table 3).

## DISCUSSION

This research found that the mean NNCSS score of male patients was higher than female patients. In some studies in the literature, the mean NNCSS score of female patients was higher<sup>19-22</sup>. The fact that men had a higher mean NNCSS score in our study compared to women can be associated with the fact that women have a caregiver role in our society<sup>4</sup>. Our result can be explained by the fact that women pay more attention to details than men and are more difficult to please. Among the patients included in the research, it was found that the mean NNCSS score was higher in those who were single compared to those who were married and those who did not have children compared to those who had a child. As the needs of single individuals are met more by themselves, their expectations from nurses may not be so high. When there is no expectation about the need for nurses, there is an increase in the level of satisfaction with care in patients<sup>21</sup>.

It was found that patients with high education levels had higher mean NNCSS scores than patients with low education levels. Cerit (2016) and Kol et al. (2018)<sup>4</sup>, similar to this

research, found that patients with a high level of education had high satisfaction with nursing care. It is evaluated that patients with a high level of education have more information about their illnesses, use technology better, have access to information, understand and apply information easily. It is thought that when the education levels of the healthcare personnel and the patients included in the study are close, their communication will be more understandable, so their satisfaction with nursing care is also increased<sup>4,23</sup>.

The mean NNCSS score of the employed patients was higher than the unemployed and retired patients. It was found that mean NNCSS scores of those whose income is more than their expenses are higher than those whose income is equal to their expenses and whose income is less than their expenses. It can be said that individuals with good economic conditions have a high level of satisfaction with nursing care due to their living standards. In the literature, Arslan et al. found that patients with low-income levels had low satisfaction with nursing care, similar to our study<sup>24</sup>. The literature revealed that the income level did not affect the satisfaction of nursing care<sup>21,25</sup>.

This study found that the mean NNCSS score was higher for those who use a computer or smartphone than those who did not. Similar to our study, Cerit et al. (2016) stated that those who used a computer or smartphone had a higher mean NNCSS score than those who did not. It is suggested that those who use computers or smartphones have more information about the care given by following the technology increased their satisfaction levels in terms of nursing<sup>4</sup>.

This study found that the mean NNCSS score of those who had previously been hospitalized and said that there were improvements in terms of nursing care compared to their previous hospitalization was higher. In the studies of Yıldız et al. (2014)<sup>21</sup> and Arslan and Kelleci (2010)<sup>22</sup> those who were previously hospitalized were found to have lower levels of satisfaction with nursing care than those hospitalized for the first time. Yıldız et al. (2014) attributed this finding to the increased expectations of previously hospitalized patients with each hospitalization<sup>21</sup>. In the studies conducted by Şişe (2012)<sup>25</sup> and Demir et al. (2012)<sup>26</sup>, it was stated that there was no statistically significant difference between the mean NNCSS scores according to hospitalization status. In this study, those who said that there were improvements in terms of nursing care had a higher mean NNCSS score. Their view of the service provided was positive due to their satisfaction at the previous hospitalization. In addition, there may be a noticeable improvement in the care services of the hospital. In the research, the mean NNCSS score of those who had a social media account and spent 1 hour or more on social media per day was higher. There is no data on this subject in the literature. The higher mean NNCSS score of those with social media accounts may be associated with easy access to information and not having difficulty communicating while in the hospital. The use of social media may cause a decrease in the stress levels of the patients and causes an increase in their satisfaction with nursing care.

**Table 3. Comparison of Patients' Mean Scores of NNCSS and HLS according to sociodemographic and descriptive characteristics (n= 230)**

Characteristics	Newcastle Nursing Care Satisfaction Scale			Test (t, f) p	Health Literacy Status Scale	Test (t, f) p
	n	%	$\bar{X} \pm SD$			
<b>Age Ranges</b>						
18-45 years	130	56.5	73.83±17.61	f= 2.141 p= 0.120	106.20±19.43	f= 7.614 p= 0.001** (a-c)
46-65 years	64	27.8	69.31±18.95		101.00±21.89	
66-99 years	36	15.7	68.25±17.48		91.83±17.59	
<b>The clinic where the patient is hospitalized</b>						
General Surgery	126	54.8	70.30±17.57	t= -1.287 p= 0.200	102.69±19.04	t= 0.158 p= 0.875
Internal Medicine	104	45.2	73.38±18.59		102.26±22.12	
<b>Gender</b>						
Male	142	61.7	75.17±17.20	t= 3.815 p=0.001**	102.85±20.21	t= 0.327 p=0.744
Female	88	38.3	66.09±18.10		101.94±20.92	
<b>Place of residence</b>						
City center	157	68.3	71,56±18,75	f=0.164 p=0.849	104.77±20.14	f= 3.39 p=0.035* (a-c)
Suburban	35	15.2	70.77±15.92		99.51±19.56	
Town	38	16.5	73.10±17.34		95.89±21.22	
<b>Marital Status</b>						
Married	178	77.4	70.96±18.36	t= -1.140 p= 0.255	101.10±21.17	t= -1.929 p=0.055
Single	52	22.6	74.21±16.94		107.28±17.05	
<b>Having a child</b>						
Yes	175	76.1	70.57±18.30	t= -1.697 p= 0.091	100.63±21.21	t= -2.840 p= 0.005*
No	55	23.9	75.29±16.94		108.45±16.60	
<b>Educational Status</b>						
Primary school graduated	127	55.2	67.89±17.82	f=6.607 p=0.002* (a-b)	95.36±22.26	f=20.214 p=0.001**
High school graduated	73	31.7	76.60±16.51		111.10±13.60	
University/postgraduate	30	13.0	75.86±19.43		111.80±13.80	
<b>Employment status</b>						
Unemployed <sup>a</sup>	100	43.5	67.49±17.50	f= 6.326 p= 0.002* (a-c)	98.94±21.26	f= 6.389 p= 0.002* (c-a,b)
Retired <sup>b</sup>	46	20.0	71.56±18.00		98.91±20.44	
Employed <sup>c</sup>	84	36.5	76.78±17.65		108.71±18.06	
<b>Income level</b>						
Expenses less than income	84	36.5	68.55±18.14	f= 2.173 p= 0.116	96.82±22.44	f= 5.378 p= 0.005* (a-b,c)
Income is equivalent to expenses	114	49.6	73.07±17.67		105.43±19.28	
Expenses more than income	32	13.9	75.06±18.58		106.96±15.61	
<b>Health insurance</b>						
Yes I have	203	88.3	71.75±17.88	t= 0.123 p= 0.902	102.77±19.83	t= 0.556 p=0.579
No, I have not	27	11.7	71.29±19.75		100.44±24.92	
<b>Chronic Disease</b>						
Yes	111	48.3	72.63±18.40	t= 0.754 p= 0.452	100.99±22.43	t= -1.077 p=0.283
No	119	51.7	70.83±17.77		103.91±18.39	
<b>Reason for hospitalization</b>						
Medical treatment	120	52.2	71.69±19.06	t= -0.007 p= 0.994	101.30±22.06	t= -0.926 p= 0.355
Surgery treatment	110	47.7	71.70±16.99		103.80±18.53	
<b>Total number of hospitalizations</b>						
1	66	28.7	71.62±16.79	t= 0.038 p= 0.963	104.16±17.97	t= 0.369 p= 0.692
2	73	31.7	71.30±19.25		102.47±20.91	
Three and more	91	39.6	72.07±18.16		101.31±21.84	
<b>How many days he/she has been in the hospital</b>						
1-5 days	158	68.7	72.11±18.08	t= 0.514 p= 0.608	102.67±21.19	t= -0.005* p= 0.996
Six days or more	72	31.3	70.79±18.12		102.12±18.84	
<b>The progress in terms of nursing care compared to the previous hospitalization</b>						
Yes	184	80.0	73.38±17.48	t= 2.865 p= 0.005*	102.94±20.72	t= 0.654 p= 0.514
No	46	20.0	64.97±18.96		100.73±19.42	
<b>The status of using a computer or smartphone</b>						
Yes	161	70.0	74.17±17.39	t= 3.237 p= 0.001**	107.13±17.58	t= 5.055 p= 0.001**
No	69	30.0	65.92±18.39		91.69±22.61	
<b>The presence of social media accounts</b>						
Yes	131	57.0	74.44±17.31	t= 2.684 p= 0.008*	107.71±16.68	t= 4.643 p=0.001**
No	99	43.0	68.07±18.48		95.60±22.88	
<b>How many hours a day he/she spend on social media.</b>						
Never	92	40.0	68.72±18.57	t= -2.051 p= 0.041*	93.42±22.44	t= -5.546 p= 0.001
More than 1 hour	138	60.0	73.68±17.50		108.55±16.49	
<b>Searching the disease from internet</b>						
Yes	127	55.2	72.33±18.54	t= 0.587 p= 0.558	107.07±17.38	t= 3.779 p= 0.001**
No	103	44.8	70.92±17.52		96.86±22.52	

(SD: Standart deviation, p: Significance value, f: One Way Anova, t: Independent Samples t-Test, a-b-c: Tukey HSD comparison, \*p<0.05, \*\*p<0.001 statistical significance)

There was no statistically significant difference between the mean NNCSS scores according to age groups. The literature states that the higher mean NNCSS scores of young patients between the ages of 18-45 may have positively affected their satisfaction with nursing as a result of young people being more researcher and having more information about disease processes<sup>27</sup>. In the study of Yıldız et al. (2014), elderly patients were found to have higher satisfaction with nursing care. The authors attribute this situation to the increase in the quality of today's healthcare facilities and the increase in the level of satisfaction with nursing care due to older people comparing their negative experiences in lower quality health facilities in the past<sup>21</sup>. Nowadays, with the development of technology, it is easier to access information, enabling elderly people to research their health conditions. Considering that as the level of knowledge increases satisfaction with nursing care increases, there is no significant difference between young and old individuals.

In this research, the lowest HLS score of the patients was 25, and the highest score was 125. The mean HLS score of the patients was found to be  $102.50 \pm 20.44$  (Table 2.). Considering the relatively high score obtained from the Health Literacy Scale, it can be said that the patients' health literacy levels were above the average level<sup>20</sup>.

The research determined that those who used a computer or smartphone, had a social media account, spent 1 hour or more on social media a day, and investigated their illness on the internet had higher mean Health Literacy Scale scores. The factors that lead to these situations can be counted as individuals' curiosity for new information together with the increase in their knowledge level by using technology more. It was found that the mean HLS score of the patients between the ages of 18-45 was higher. In the study of Ergün (2019), no relationship was found between age and health literacy<sup>28</sup>. Özdoğan (2014), Yılmazel and Çetinkaya (2016), Türkoğlu et al. (2018) revealed that as the age increases, the mean HLS scores of the individuals decrease<sup>29-31</sup>. This result is supported by the decrease in cognitive ability in advanced ages, low literacy rate, and low technology use skills<sup>30</sup>.

In the studies of Çimen and Temel (2017), Güven (2016), Ergün (2019), Oscalices et al. (2019), similar to this study, the higher the level of education, the higher was the mean HLS score<sup>20,28,32-35</sup>. As the level of education increases, people's awareness levels and their use of technology increase, so they become more conscious about health literacy. In addition, the increase in the level of education also increases the ability to understand, apply and interpret the information transferred. In this case, it causes an increase in health literacy.

Çimen ve Temel (2017), Ergün (2019), Rakhshkhorshid et al. (2018) reported that employed patients, in parallel with this study, had a higher mean HLS score compared to unemployed individuals. It is considered that health literacy may also be high due to the younger age and more educated employees<sup>20,28,36</sup>.

In our study, the mean HLS score was higher for those whose income was more than their expenses than those

whose income was equivalent to their expenses and whose income was less than their expenses. A similar findings were reported in the studies of Çimen and Temel (2017), Uğurlu (2011), Uğurlu and Akgün (2019)<sup>14,17,20</sup>. It can be suggested that individuals with better finances may be more educated and may promote their health literacy by having the assets to access information more easily.

In this study, the mean HLS scores of patients hospitalized in surgical ward were higher than those hospitalized in internal medicine inpatient services. This may be because surgical patients are more anxious about the surgical operation and need more research about their treatment.

In this study, as the health literacy level of the patients' increases, their satisfaction with nursing care increases. The health literacy concept is about people's health; There is an essential link between health literacy and health care issues when associated with the ability to search for information, interpret information, seek appropriate health care, understand and approve health care, and assess and understand healthcare risks<sup>2</sup>. Considering that nurses are the healthcare staff who communicate with the patient the most and spend the most time in health institutions, it is evident that there is a serious relationship between health literacy and nursing care. Since health literacy will affect the nursing care, perception, understanding, and evaluation of the patients, the high level of health literacy increases their satisfaction with nursing care.

## CONCLUSION

This study found that as the level of health literacy increased, nursing care satisfaction increased, and some descriptive characteristics were effective on health literacy and patient care satisfaction. Increasing care satisfaction in patients is one of the quality indicators in the health system. Based on these results, it can be concluded that improving patients' health literacy level will also increase their satisfaction with care. In addition, nurses' awareness of the modifiable factors affecting care satisfaction and health literacy and the interventions to be made will improve the quality of care. It is recommended that nurses determine patients' health literacy levels and ensure that they benefit from health education and counseling services on necessary issues. It is evaluated that the evaluation of the variables affecting health literacy and nursing care satisfaction with observational or experimental studies can yield results that will increase the quality of nursing care. In this regard, it can be suggested that nurse managers and other health personnel understand the importance of the issue and act as a multidisciplinary.

**Ethics Committee Approval:** The study was started after receiving approval from Non-Interventional Research Ethics Committee, Faculty of Health Sciences, Hasan Kalyoncu University (decision date: 14.06.2019 and numbered: 2019/84).

**Conflict of Interest:** The authors declare that they have no conflict interests.

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**Exhibitor Consent:** We conducted according to the ethics guidelines set out in the Declaration of Helsinki. All the patients participating in the study were informed about the study, their written/verbal consents were taken, and they were also informed that they could leave the study at any time.

**Author contributions:**

Study design: BT, EK

Data collection: EK

Literature search: BT, EK

Drafting manuscript: BT, EK

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**Yazar katkıları:**

Araştırma dizaynı: BT, EK

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