

Health Literacy and Patient Learning Needs Among Otolaryngology Patients: A Cross-Sectional Study

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Abstract

Aim: The aim of this study was to determine the levels of health literacy and patient learning needs among patients who had undergone otolaryngological or head and neck surgery and to examine the relationship between these variables. **Method:** This descriptive and correlational study was conducted between December 15, 2025, and April 24, 2026, at the otolaryngology clinic of a state university's Faculty of Medicine Hospital and included 109 patients who had undergone otolaryngological or head and neck surgery. Data were collected via face-to-face interviews 24–48 hours prior to discharge using the "Patient Information Form," the "Health Literacy Scale," and the "Patient Learning Needs Scale." Data were analyzed using descriptive statistics, independent samples t-tests, one-way ANOVA, and Pearson's correlation analysis ($p < 0.05$). **Results:** The mean total score on the Health Literacy Scale was 34.56 ± 8.91 , while the mean total score on the Patient Learning Needs Scale was 206.96 ± 32.71 . A weak positive and statistically significant correlation was found between the total score of the Health Literacy Scale and the total score of the Patient Learning Needs Scale ($r = 0.258$; $p < 0.01$). **Conclusions:** A weak positive relationship was found between health literacy and learning needs among patients who had undergone otolaryngological or head and neck surgery. While age and education level were associated with both variables, health literacy also varied according to income status, presence of chronic disease, and admission type. Assessing health literacy together with patient learning needs may help healthcare professionals plan individualized discharge education.

Keywords: Health literacy, discharge planning, inpatients, nursing, patient education, learning needs.

1. Introduction

In recent years, efforts to reduce healthcare costs have resulted in shorter hospital stays. Consequently, many patients are discharged before completing their recovery, particularly those with more complex care needs¹. Health education for hospitalized patients is limited by time, the level of information available, and the patients' ability to learn, and

it is impossible to provide comprehensive education within a limited timeframe. At this point, we must consider which needs are most urgent and most beneficial for the prevention and treatment of their illnesses. Current health education primarily begins with nursing education and requires an understanding of patients' learning needs². To this end, it is important to identify patients' learning needs and priorities using appropriate assessment tools and to evaluate their readiness to learn³. Examining patients' learning needs is essential for developing effective discharge planning and preventing complications⁴.

Nurses should help patients and their families achieve a higher quality of life by identifying patients' educational needs, providing education and counseling, enhancing their ability to participate in physical and social activities, and encouraging them to play an active role in adapting to lifestyle changes and their condition⁵. The educational sessions provided to the patient should vary depending on the type of surgery performed and the patient's individual characteristics⁶. While providing discharge education, the nurse should also assess the patient's readiness for discharge. This allows for an evaluation of the extent to which the patient's learning needs are met and their readiness for discharge⁷.

There are various factors that influence readiness for discharge. Patients' pain, lack of understanding of the recovery plan, and insufficient ability to perform activities of daily living and financial constraints have a significant impact on readiness for discharge. Furthermore cognitive impairment, depression, low educational level, history of previous hospitalizations and satisfaction with care, as well as persistent symptoms of illness or disability, also influence readiness for discharge¹.

In this context, nurses should develop patient-specific health education based on the patients' characteristics and educational backgrounds. Through education, nurses can create a significant and positive impact on patients' lives and potentially lead to long-term changes⁴. However, when patients are preparing for discharge, it is not sufficient for the healthcare team to simply provide education. It is also critically important to assess how well the patient understands the information provided. Therefore, health literacy is one of the factors that can influence health outcomes in patient discharge education⁸. Health literacy is a crucial concept in ensuring that information and practices are understandable for those utilizing healthcare services and enabling them to participate in decisions regarding their own health⁹. Nurses must understand, assess, and determine the needs of health literacy—which contributes to individuals' health attitudes and behaviors—in order to reduce patients' health information gaps¹⁰.

Although studies have examined patients' learning needs in various clinical settings^{2,3,6,7,11}, no studies have been found that examine both learning needs and health literacy among patients who have undergone otolaryngological or head and neck surgery. The aim of this study was to determine the levels of health literacy and patient learning needs among patients who had undergone otolaryngological or head and neck surgery and to examine the relationship between health literacy and patient learning needs.

Research Questions

- 1) What is the level of health literacy among patients who have undergone otolaryngological or head and neck surgery?
- 2) What is the level of patient learning needs among patients who have undergone otolaryngological or head and neck surgery?
- 3) Do health literacy and patient learning needs differ according to the sociodemographic characteristics of patients who have undergone otolaryngological or head and neck surgery?
- 4) Is there a significant relationship between health literacy and patient learning needs among patients who have undergone otolaryngological or head and neck surgery?

2. Materials and Methods

2.1. Type of Study

This study is a cross-sectional descriptive and exploratory study.

2.2. Population, Sample, and Sampling Method

This study was conducted between December 15, 2025, and April 24, 2026, at the Otolaryngology Clinic of the Faculty of Medicine Hospital affiliated with a state university. The study population consisted of patients who had undergone otolaryngological or head and neck surgery and were receiving treatment and care at the otolaryngology clinic. Convenience sampling was used to recruit participants. The G*Power 3.1.9.4 program was used to determine the required sample size, based on the study by Yurtseven and Deniz Doğan (2025)¹¹. The sample size was calculated assuming that patients' learning needs would be compared using a two-tailed independent-samples t-test according to their demographic characteristics, with a moderate effect size (Cohen's $d = 0.58$), 80% statistical power, and a significance level of $\alpha = 0.05$. Accordingly, the minimum required sample size was calculated as 96 patients. A total of 109 patients were included in the study. The inclusion criteria were receiving treatment and care at the otolaryngology clinic of this hospital, having undergone otolaryngological or head and neck surgery, being 18 years of age or older, being scheduled for discharge within 24–48 hours, having no conditions preventing communication, and voluntarily agreeing to participate in the study. The study was reported following the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist.

2.3. Data Collection

The data collection process was conducted by providing patients with detailed information about the study's purpose prior to its commencement and obtaining their written informed consent. Data were collected by the research nurse using a data collection form from patients scheduled for discharge, 24–48 hours prior to discharge, in a manner that did not interfere with their treatment and care. The data collection process took an average of 10–15 minutes per patient.

2.4. Data Collection Tool

In the study, data were collected using the "Patient Information Form," the "Health Literacy Scale," and the "Patient Learning Needs Scale".

2.4.1. Patient Information Form

The Patient Information Form was developed by the researchers in accordance with the literature. The form includes the patient's age, gender, education level, marital status, employment status, and income level, presence of chronic diseases, medication use, medical diagnosis, admission type, previous hospital admission experience, and whether they had previously received discharge education^{3,6,7,11}.

2.4.2. Health Literacy Scale-Short Form (HLS)

The scale developed by Duong et al. (2019) was adapted into Turkish by Karahan Yılmaz and Eskici (2021). The instrument is a unidimensional, 12-item scale that uses a 4-point Likert-type response format ranging from 1 (very difficult) to 4 (very easy). The scale score is calculated using the formula $(\text{Mean} - 1) \times 50/3$, yielding an index ranging from 0 to 50, with lower scores indicating lower levels of health literacy. The Turkish version of the scale demonstrated internal consistency, with a Cronbach's alpha of 0.85¹². In this study, the Cronbach's alpha was 0.88.

2.4.3. Patient Learning Needs Scale (PLNS)

It was developed by Bubela et al. (1990) to identify the information needs and priorities of surgical patients at discharge¹³. The validity and reliability of the Turkish version

were established by Çatal and Dicle (2008)¹⁴. The scale consists of a total of 50 items and 7 subscales ("Medications", "Daily Activities", "Community and Monitoring", "Emotions Related to the Condition", "Treatment and Complications", "Quality of Life", "Skin Care"). The scale items are rated on a five-point Likert-type scale: "1= not important," "2= somewhat important," "3= neither important nor unimportant," "4= very important," "5= extremely important". The scale has no cutoff point; as the score increases, the need increases. Medications are scored on a scale of "8–40," daily activities on "9–45," social life and follow-up on "6–30," emotions related to the condition on "5–25," treatment and complications on "9–45," quality of life on "8–40," and skin care on "5–25." The scores obtained from the scale range from 50 to 250. The importance level was calculated by dividing the total score of the scale or subscale by the number of items in the respective scale or subscale. The resulting mean scores ranged from 1 to 5 and were interpreted according to the level of importance as follows: 1 = 'not important', 2 = 'slightly important', 3 = 'moderately important', 4 = 'very important', and 5 = 'extremely important'. The Turkish version of the scale had a Cronbach's alpha of 0.95¹⁴. In this study, the Cronbach's alpha was 0.97.

2.5. Ethical Considerations

Prior to data collection, institutional approval was obtained (Meeting Date: 10.11.2025, Meeting Number: 20, Decision Number: 01), and ethical approval was granted by the Clinical Research Ethics Committee of Çukurova University (Meeting Date: 05.12.2025, Meeting Number: 161, Decision Number: 25). Permission was obtained via email from the researchers who conducted the Turkish validity and reliability studies of the scales used in the research to ensure the scales could be administered. Before the data collection process began, patients were informed about the purpose of the research, and written informed consent was obtained from patients who voluntarily agreed to participate in the study. The principles of the Helsinki Declaration were adhered to throughout the research.

2.6. Statistical Analysis

The SPSS 27.0 software package was used to analyze the research data. Prior to the statistical analyses, the dataset was screened for missing values. No missing data were identified; therefore, no missing data handling or imputation procedures were required. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to evaluate the data.

The suitability of the data for a normal distribution was assessed using skewness and kurtosis values. Based on the ± 1.5 thresholds recommended in the literature¹⁵, the skewness and kurtosis values for the PLNS and HLS were found to be within the acceptable range (PLNS: skewness = -0.655, kurtosis = -0.008; HLS: skewness = -0.527, kurtosis = 1.062). Therefore, the data were considered to be approximately normally distributed.

In the analysis of normally distributed data, the independent samples t-test was used for comparisons between two independent groups, while one-way ANOVA was used for comparisons involving more than two independent groups. If a significant difference was found between groups in the ANOVA results, post hoc Tukey tests were applied to determine which groups the difference originated from. Pearson's correlation analysis was performed to examine the relationships between the study variables. All statistical analyses were performed using a 95% confidence level, and statistical significance was set at $p < 0.05$.

3. Results

The study was completed with 109 patients. The mean age of the patients participating in the study was determined to be 45.85 years. 60.6% of the participants were male, 62.4% were married, and 32.1% had completed elementary, undergraduate, or graduate

education. It was found that 54.1% of the patients were unemployed and 76.1% assessed their income level as moderate (Table 1).

45.9% of the patients were hospitalized in the otolaryngology department due to head and neck surgery. 88.1% of the participants were admitted to the hospital for a planned admission. It was determined that 30.3% of the patients had chronic illnesses and 68.8% had previous hospital experience. Additionally, it was found that 38.5% were taking medication regularly (Table 1).

Only 13.8% of patients reported having received discharge education previously. Among those who received education, 2.8% stated they received it solely from a nurse, while 11% reported receiving it jointly from both a nurse and a physician (Table 1).

Table 1: Comparison of patients' demographic characteristics and mean scores on the HLS and PLNS

Variables		HLS	PLNS
	Mean±SD (min-max)	r,p	r,p
Age	45.85±17.43(18-79)	-.224* .020	-.222* .020
	n(%)	Mean±SD	Mean±SD
Gender			
Female	43(39.4)	36.17±8.43	213.79±33.16
Male	66(60.6)	33.50±9.11	202.51±31.88
Test (t)		1.535	1.776
p		.128	.079
Marital Status			
Married	68(62.4)	33.49±9.60	205.76±33.17
Single	41(37.6)	36.38±7.34	208.95±32.24
Test (t)		-1.642	-.491
p		.104	.625
Educational Status			
Illiterate ^a	7(6.4)	28.57±10.45	203.00±44.57
Elementary School ^b	35(32.1)	31.46±8.90	193.54±35.58
High School ^c	32(29.4)	36.67±8.22	209.59±28.49
Bachelor's and Above ^d	35(32.1)	37.00±8.00	218.77±26.53
Test (F)		4.275	3.873
p		.007 (b-d)	.011 (b-d)
Employment Status			
Employed	50(45.9)	34.49±9.36	205.98±30.06
Not working	59(54.1)	34.62±8.59	207.79±35.04
Test (t)		-.077	-.288
p		.939	.774
Income Status			
Good ^a	11(10.1)	41.91±7.23	223.27±28.16
Moderate ^b	83(76.1)	34.16±8.15	206.18±32.38
Poor ^c	15(13.8)	31.38±11.40	199.33±35.68
Test (F)		5.153	1.826
p		.007 (a-b,c)	.166

Variables		HLS	PLNS
Type of Surgical Procedure			
Ear Surgery	23(21.1)	36.59±7.03	197.69±33.18
Nose Surgery	36(33.0)	34.87±8.31	215.52±30.52
Head and Neck Surgery	50(45.9)	33.39±10.02	205.06±33.18
Test (F)		1.045	2.295
P		.355	.106
Chronic Disease Status			
Yes	33(30.3)	30.51±10.10	204.57±29.54
No	76(69.7)	36.35±7.75	208.00±34.13
Test (t)		-3.279	-.500
P		.001	.618
Previous Hospitalization Status			
Yes	75(68.8)	33.07±8.90	204.02±32.53
No	34(31.2)	37.82±8.12	213.44±32.65
Test (t)		-2.648	-1.398
P		.009	.165
Regular Medication Use Status			
Yes	42(38.5)	32.47±10.23	201.09±33.94
No	67(61.5)	35.90±7.74	210.64±31.61
Test (t)		-1.975	-1.491
P		.051	.139
Previous Discharge Training Status			
Yes	15(13.8)	33.98±10.88	206.73±30.08
No	94(86.2)	34.66±8.61	207.00±33.26
Test (t)		-.273	-.029
P		.785	.977
Type of Hospital Admission			
Emergency	13(11.9)	27.99±6.80	185.61±41.22
Elective	96(88.1)	35.46±8.81	209.85±30.51
Test (t)		-2.936	-2.571
P		.004	.012

The letters a, b, c, and d indicate statistically significant differences between groups. Post hoc comparisons were performed using Tukey's HSD test to identify the source of group differences. In parentheses, (a–b) denotes a significant difference between category a and category b. F indicates one-way analysis of variance (one-way ANOVA F test), and t indicates independent samples t-test. HLS: Health Literacy Scale, PLNS: Patient Learning Needs Scale, SD: Standard Deviation; r: Pearson correlation, *p < 0.05.

The mean total score on the PLNS for the patients participating in the study was found to be 206.96 ± 32.71. When examining the mean scores of the subscales: the medications subscale was 34.21 ± 5.24, the daily living activities subscale was 36.70 ± 6.57, the “Community and Monitoring” subscale at 23.95 ± 4.38, the “Emotions Related to the Condition” subscale at 19.54 ± 4.48, the “Treatment and Complications” subscale at 38.27 ± 5.64, and the “Quality of Life” subscale at 33.87 ± 5.54. The mean total health literacy score for patients was determined to be 34.56 ± 8.91 (Table 2).

Table 2. Distribution of patients' scores on the HLS and PLNS scales and their subscales

Scales and Subscales	Mean±SD	Min-max	Level of Importance
Medications Subscale	34.21±5.24	17-40	4.27
Daily Activities Subscale	36.70±6.57	17-45	4.07
Community and Monitoring Subscale	23.95±4.38	15-30	3.99
Emotions Related to the Condition Subscale	19.54±4.48	5-25	3.90
Treatment and Complications Subscale	38.27±5.64	22-45	4.25
Quality of Life Subscale	33.87±5.54	14-40	4.23
Skin Care Subscale	20.40±3.87	10-25	4.08
PLNS Total score	206.96±32.71	102-250	4.13
HLS Total score	34.56±8.91	0-50	-

A negative and statistically significant relationship was found between HLS scores and age ($r = -0.224$; $p = 0.020$). It was determined that HLS scores showed significant differences based on educational level ($F = 4.275$; $p = 0.007$), and that this difference existed between groups with primary education and those with a bachelor's degree or higher. Significant differences in HLS scores were also found in terms of income status ($F = 5.153$; $p = 0.007$), with individuals in the higher income bracket having higher scores. Furthermore, it was determined that HLS scores differed significantly based on the presence of chronic disease ($t = -3.279$; $p = 0.001$), prior hospitalization ($t = -2.648$; $p = 0.009$), and type of admission ($t = -2.936$; $p = 0.004$). In contrast, no significant differences in HLS scores were found based on gender, marital status, employment status, medical diagnosis, regular medication use, or receipt of discharge education ($p > 0.05$) (Table 1).

Table 3: Relationship Between HLS and PLNS Total and Subscales Scores

Scales and Subscales	1	2	3	4	5	6	7	8	9
Medications Subscale (r,p)	-								
Daily Activities Subscale (r,p)	.769** <.001								
Community and Monitoring Subscale (r,p)	.780** <.001	.809** <.001							
Emotions Related to the Condition Subscale (r,p)	.725** <.001	.763** <.001	.869** <.001						
Treatment and Complications Subscale (r,p)	.863** <.001	.826** <.001	.788** <.001	.726** <.001					
Quality of Life Subscale (r,p)	.848** <.001	.813** <.001	.833** <.001	.832** <.001	.827** <.001				
Skin Care Subscale (r,p)	.807** <.001	.807** <.001	.831** <.001	.871** <.001	.777** <.001	.863** <.001			
PLNS Total Score (r,p)	.907** <.001	.913** <.001	.916** <.001	.892** <.001	.914** <.001	.939** <.001	.921** <.001		
HLC Toplam Total Score(r,p)	.244* .011	.269** .005	.246* .010	.247** .010	.237* .014	.172 .076	.232* .016	.258** .007	

Pearson correlation coefficients are reported. * $p < 0.05$, ** $p < 0.01$.

A weak negative and statistically significant correlation was also found between PLNS scores and age ($r = -0.222$; $p = 0.020$), indicating a small effect size according to

Cohen's guidelines¹⁶. It was determined that PLNS scores showed significant differences in terms of educational level ($F = 3.873$; $p = 0.011$) and that this difference existed between groups with primary education and those with a bachelor's degree or higher. Additionally, PLNS scores were found to differ significantly based on admission type ($t = -2.571$; $p = 0.012$), with patients admitted for planned procedures having higher scores. However, no statistically significant differences were found in PLNS scores based on gender, marital status, employment status, income level, medical diagnosis, presence of chronic disease, previous hospitalization, regular medication use, or receipt of discharge education ($p > 0.05$) (Table 1).

When examining the relationships between the PLNS subscales and the total score, very strong, positive, and statistically significant correlations were found between all subscales and the total score ($r = 0.892$ – 0.939 ; $p < 0.001$). It was also determined that the relationships among the subdimensions were highly positive and significant ($r = 0.725$ – 0.871 ; $p < 0.001$).

Low-level positive and statistically significant relationships were observed between the total score of the HLS and the total score of the PLNS, as well as some of its subscales ($r = 0.232$ – 0.269 ; $p < 0.05$). However, the relationship between the HLS and the quality of life subscale was found to be statistically insignificant ($p > 0.05$) (Table 3).

4. Discussion

Providing effective discharge education is a fundamental component of nursing practice and is essential for promoting safe self-management after discharge. However, the effectiveness of discharge education is influenced by factors related to healthcare professionals, healthcare services, and patients¹⁷. Health literacy is one of the most important patient-related factors, as it affects patients' ability to understand, evaluate, and use the information provided during discharge education⁸.

In this study, the mean health literacy score of the patients was found to be 34.56 ± 8.91 (0–50 points). Since higher scores on the scale indicate better health literacy, the results suggest that patients' health literacy is above the moderate level. No studies evaluating health literacy among patients who had undergone otolaryngological or head and neck surgery were identified in the literature. Therefore, the findings of the present study were compared with those reported in studies conducted in different clinical settings. Therefore, the findings of the present study were compared with those reported in studies conducted in different clinical settings, and these comparisons should be interpreted with caution due to differences in patient populations. Previous studies conducted in surgical settings have reported moderate-to-high health literacy levels among patients undergoing lumbar disc herniation surgery⁸, high health literacy among patients hospitalized in general surgery clinics¹⁸, and problematic or limited health literacy among patients scheduled for surgical procedures¹⁹. In contrast, patients with chronic obstructive pulmonary disease hospitalized in internal medicine clinics were reported to have poor health literacy²⁰. These differences may be explained by variations in the characteristics and scoring systems of the health literacy instruments used, as well as differences in the patient populations studied. Patients who have undergone otolaryngological or head and neck surgery require adequate knowledge and skills regarding preoperative and postoperative medication use, early recognition of potential complications, self-care practices, and adherence to discharge instructions. Therefore, adequate health literacy plays a crucial role in enabling patients to understand the education provided, adhere to treatment and care recommendations, and actively participate in their care. These findings suggest that educational interventions for patients who have undergone otolaryngological or head and neck surgery should be planned with consideration of their health literacy levels. In this study,

health literacy levels varied according to patients' age, educational status, income level, presence of chronic diseases, history of previous hospitalizations, and type of admission. These findings are consistent with previous studies reporting that educational attainment and income are important determinants of health literacy²¹⁻²³. Individuals with higher levels of education and income generally have better access to health information and greater ability to understand and evaluate such information, which may contribute to higher health literacy levels. Similarly, patients with chronic diseases, previous hospitalization experience, or planned hospital admissions may have more frequent interactions with healthcare professionals, providing greater opportunities to acquire health-related knowledge and skills. These findings highlight the importance of considering patients' sociodemographic and health-related characteristics when planning interventions to improve health literacy.

In this study, the mean PLNS total score was 206.96 ± 32.71 (range: 102–250). Since the PLNS does not have an established cutoff value, higher scores indicate greater learning needs. Accordingly, the observed mean score suggests that the participants had relatively greater learning needs. When examining the subscales of the patient education needs scale, the highest level of importance was observed in the subscales of medications, treatment and complications, and quality of life, while the lowest level of learning need was observed in the subscales of emotions related to the condition and community and monitoring. In the literature, it is reported that the importance level is high for general surgery patients²⁴; for patients undergoing same-day hand surgery²⁵, for same-day surgery patients²⁶, and for patients undergoing Percutaneous Coronary Intervention²⁷ were reported to have moderate levels, while patients undergoing lumbar disc herniation surgery^{6,28} and urological surgery¹¹ were found to have high levels of educational needs. When examining the subscales, it was found that the subscales showing the highest and lowest levels of importance were similar among patients who underwent urological surgery, lumbar disc surgery, and general surgery^{11,24,28}. The findings of this study are in line with those of previous research obtained in patients with lumbar disc herniation and urological surgery. The differences observed among studies are thought to stem from variations in the type, scope, and risk level of the surgical procedure, postoperative care requirements, and the self-care responsibilities patients will assume after discharge. In particular, patients' information needs may increase in surgical procedures where the risk of complications is higher or postoperative care is more complex. These findings indicate that patient education should be planned not through a standardized approach, but by taking into account the characteristics of the surgical procedure and individual patient needs. Systematically assessing patients' learning needs and developing individualized education programs can enhance the effectiveness of post-discharge care and contribute to the prevention of potential complications.

In this study, patients' learning needs varied according to age, educational status, and admission status. Similar to our findings, previous studies have reported that patients' learning needs are influenced by sociodemographic and clinical characteristics, including educational level and factors related to hospitalization^{8,11,18}. The associations observed in the present study may be explained by differences in patients' prior health-related knowledge, experience with healthcare services, and access to health information. These findings underscore the importance of assessing patients' learning needs individually and tailoring educational interventions accordingly.

A weak positive correlation was found between HLS and PLNS scores. A similar relationship was also observed in patients undergoing lumbar disc herniation surgery⁸. This finding suggests that as health literacy increases, patients are better able to assess their health status, recognize information gaps, and seek more information on health-related topics. At the same time, the presence of a weak correlation indicates that patients'

learning needs may also be associated with various other factors, such as age, educational level, prior health experiences, characteristics of the surgical procedure, and individual psychosocial factors.

Limitations

The fact that the study was conducted at a single center and included only patients who had undergone otolaryngological or head and neck surgery limits the generalizability of the results to all otolaryngology patients and patient groups in different healthcare institutions. Additionally, due to the study's cross-sectional design, the relationships between variables cannot be interpreted causally.

5. Conclusions

This study demonstrated a weak positive correlation between health literacy and patient learning needs among patients who had undergone otolaryngological or head and neck surgery. In particular, the highest learning needs were identified in the subscales of medications, treatment and complications, and quality of life. These findings highlight the importance of assessing patients' health literacy levels when planning discharge education. Therefore, it is essential to develop and implement structured, patient-specific education programs that take into account both patients' health literacy levels and their individual characteristics and previous health experiences. Additionally, supporting these education programs with digital technologies, mobile applications, brochures, and written materials prepared at a level that patients can understand may enhance the effectiveness and quality of patient education. It is recommended that future studies be conducted at different centers, with larger sample sizes, and involving different surgical patient groups, as well as research evaluating the outcomes of discharge education provided through various educational methods.

Statement of ethics: Prior to data collection, institutional approval was obtained (Meeting Date: 10.11.2025, Meeting Number: 20, Decision Number: 01), and ethical approval was granted by the Clinical Research Ethics Committee of Çukurova University (Meeting Date: 05.12.2025, Meeting Number: 161, Decision Number: 25).

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References

1. Mehraeen, P., Jafaraghaee, F., Paryad, E. & Kazemnejad Leyli, E. Comparison of Nurses' and Patients' Readiness for Hospital Discharge: A Multicenter Study. *J. Patient Exp.* 9, (2022).
2. Zhang X, Wu M, Chen Y, Su Y, Zeng T. Perceived Learning Needs of Hospitalised Cancer Patients and Nurses. *Nurs Open.* 2025;12. doi:10.1002/nop2.70163.
3. Savcı C, Karaaslan Y, Yüksel S. Learning Needs, Expectations and Views of General Surgery Patients. *J Acad Res Nurs.* 2021;7:76-85. doi:10.55646/jaren.2021.71602.
4. Al-Maskari A, Al-Noumani H, Al-Maskari M. Patients' and Nurses' Demographics and Perceived Learning Needs Post-Coronary Artery Bypass Graft. *Clin Nurs Res.* 2021;30:1263-1270. doi:10.1177/1054773821990266.
5. Üstündag H, Gül A, Özkaya B. The Determination of Patient Learning Needs After Day Surgery: A Cross-Sectional Study. *J PeriAnesthesia Nurs.* 2023;38:258-263. doi:10.1016/j.jopan.2022.06.002.
6. Başgün A, Ceyhan Ö. Determination of the Learning Needs of Patients with Lumbar Disc Herniation Operation. *J Life Long Nurs.* 2023;1:20-37.
7. Burucu R, Yıldız S, Uğur T, Şahin M. Determination of Readiness for Discharge and Educational Requirements of Individuals with Chronic Diseases and Inpatient Treatment in Internal Clinics: A Descriptive Study and Relation Searching Study. *J Heal Sci.* 2023;32:214-223. doi:10.34108/eujhs.1174253.
8. Öztürk K, Durmaz M, Kurşun Ş. The Effect of the Health Literacy Level of the Patients Underwent Lumbar Disc Herniation Surgery on the Readiness for Discharge. *Ordu Univ J Nurs Stud.* 2023;6:35-44. doi:10.38108/ouhcd.1017371.
9. Tuğut N, Yılmaz A, Yeşildağ Çelik B. The Relationship Between Nursing Students' Health Literacy Levels and Healthy Lifestyle Behaviors. *J Cumhur Univ Heal Sci Inst.* 2021;6:120-128. doi:10.51754/cusbed.911936.
10. Wilandika A, Pandin MGR, Yusuf A. The roles of nurses in supporting health literacy: a scoping review. *Front Public Heal.* 2023;11. doi:10.3389/fpubh.2023.1022803.
11. Yurtseven Ş, Deniz Doğan S. Learning Needs of Urological Surgery Patients: A Descriptive and Cross-Sectional Study. *Türkiye Klin J Nurs Sci.* 2025;17:339-346. doi:10.5336/nurses.2024-105411.
12. Karahan Yılmaz S, Eskici G. Validity and Reliability Study of The Turkish Form of The Health Literacy Scale Short Form and Digital Healthy Diet Literacy Scale. *İzmir Katip Çelebi Univ Fac Heal Sci J.* 2021;6:19-25.
13. Bubela N, Galloway S, McCay E, McKibbon A, Nagle L, Pringle D, et al. The patient learning needs scale: reliability and validity. *J Adv Nurs.* 1990;15:1181-1187. doi:10.1111/j.1365-2648.1990.tb01711.x.
14. Çatal E, Dicle A. A validity and reliability study of the patient learning needs scale in Türkiye. *Dokuz Eylül Univ Sch Nurs Electron J.* 2008;1:19-32.
15. Tabachnick BG, Fidell LS. *A Practical Approach to Using Multivariate Analyses.* Boston: Pearson Education; 2013.
16. Cohen J. *Statistical Power Analysis for the Behavioral Sciences.* Lawrence Erlbaum Associates; 1988.
17. Kang E, Tobiano GA, Chaboyer W, Gillespie BM. Nurses' role in delivering discharge education to general surgical patients: A qualitative study. *J Adv Nurs.* 2020;76:1698-1707. doi:10.1111/jan.14379.
18. Çetin F, Yılmaz E. The Effects of Health Literacy Levels of Patients in Surgical Clinic on Health Perception and Surgical Fear. *İzmir Katip Çelebi Univ Fac Heal Sci J.* 2022;7:61-67.
19. Şişman H, Akpolat R, Bildirici Ç. Relationship Between Health Literacy Level and Surgical Anxiety in Patients Planned to Undergo Surgery: A Cross-Sectional Research. *Türkiye Klin J Nurs Sci.* 2025;17:915-924. doi:10.5336/nurses.2024-106514.
20. Ersözlü M, Akıncı Aydın E, Selçuk E, Şen E. Patients with chronic obstructive pulmonary disease and the use of complementary and alternative medicine: The role of health literacy in Türkiye. *Chron Respir Dis.* 2025;22. doi:10.1177/14799731251382230.
21. Bader M, et al. Towards a more patient-centered clinical trial process: A systematic review of interventions incorporating health literacy best practices. *Contemp Clin Trials.* 2022;116:106733. doi:10.1016/j.cct.2022.106733.
22. Erdoğan Yüce G, Muz G. Investigation of the Relationship between Health Literacy Level and Adjustment to Chronic Disease in Individuals with Chronic Disease: A Cross-Sectional Study. *Gümüşhane Univ J Heal Sci.* 2023;12:1115-1123. doi:10.37989/gumussagbil.1271039.
23. Demiroğlu S, Patır S. Examination of Adults' Health Literacy Levels in Relation to Demographic Variables. *Int J Manag Acad.* 2025;8:1025-1035. doi:10.33712/mana.1813893.
24. Gök F, Faydalı S. The Surgical Patients' Learning Needs and Affecting Factors. *J TOGU Heal Sci.* 2023;3:1-14.
25. Karcioğlu UB, Bodur G. Determination of the discharge education needs of patients with day hand surgery operation in Turkey. *Int J Orthop Trauma Nurs.* 2025;58:101208. doi:10.1016/j.ijotn.2025.101208.

26. Çelebi C, Kanan N. Determination of the Information Requirements in the Discharge Stage of Day Surgery Patients. *Black Sea J Heal Sci.* 2023;6:233-239. doi:10.19127/bshealthscience.1220826.
27. Özkara E, Öztekin SD. Determination of the Learning Needs of Patients Undergoing Percutaneous Coronary Intervention in the Discharge Period: Cross-Sectional Analytical Study. *Turkiye Klin J Nurs Sci.* 2025;17:1048-1056. doi:10.5336/nurses.2025-109644.
28. Baran M, Aksu Ç. Educational Needs of Patients Undergoing Lumbar Disc Herniation Surgery. *J Turkish Nurses Assoc.* 2025;6:179-186.