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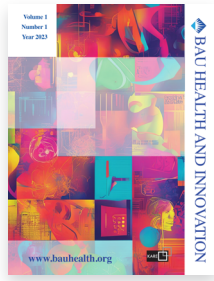

Original Article

Investigation of the Level of Healing After Discharge in Patients with Surgery

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Abstract

Objectives: This study was designed to assess the recovery levels of patients who have undergone surgical interventions and are scheduled for discharge. It was conducted as a descriptive quantitative study in the general surgery ward of a state hospital between April and May 2023. The study sample consisted of 333 patients.

Methods: Data were collected using a patient ıdentification form and the Post-Discharge Recovery Scale and were analyzed with the Statistical Packages for the Social Sciences 25.0. Descriptive statistics were used, and the distribution of the data was evaluated with the Kolmogorov–Smirnov test, Q-Q plots, and histograms. Analysis of variance was applied for comparisons between more than two groups.

Results: The results showed that 73% of the patients were between 18 and 65 years old, 54.1% were male, and 50.2% had a primary school education. In addition, 56.5% of the patients did not have any chronic diseases, 43.8% underwent general surgery, and 94.3% received discharge education.

Conclusion: This study highlights that the recovery levels of patients undergoing surgical interventions can be influenced by various factors.

Keywords: Discharge, early post-operative recovery, kleinbeck recovery scale, post-discharge recovery, recovery scale.

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With the advancement of technology, minimally invasive surgical techniques are increasingly preferred over open surgery.[1] One of the outcomes of minimally invasive surgical methods is a significant reduction in hospital stay.[2] In a study comparing hospital stay durations between patients undergoing laparoscopic surgery and those undergoing open surgery, it was found that the hospital stay was significantly shorter in the laparoscopic group (average 3.1 days) compared to the open group (average 5.8 days).[3] A shorter hospital stay has brought about an expectation that the recovery process of surgical patients will continue in the home environment and that patients will be discharged.[4] A successful surgical process should result in patients being discharged appropriately and in a timely manner. However, discharging patients earlier than necessary can lead to complications at home and an increase in readmissions.[5] Comprehensive discharge preparation provided to the patient has been associated with lower readmission rates in many studies.[6] In this context, it is considered necessary to concretely demonstrate the relationship between recovery levels and discharge planning in patients following surgical intervention. Based on this, the present study aimed to evaluate the recovery levels of patients who have undergone surgical interventions and are scheduled for discharge.

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Materials and Methods

Research Design

This study was conducted as a descriptive and cross-sectional quantitative study aimed at determining the recovery status of patients who were scheduled for discharge after undergoing a surgical procedure, using the Post-Discharge Recovery (PSR) Scale.[7]

Ethical Aspects of the Research

The study received ethical approval from a university on March 06, 2023, with the reference number E-20021704-604.02.02-53556. In addition, research approval was obtained from the hospital management where the study was conducted and from the provincial health directorate on April 04, 2023, with the reference number E-55607146-604.01.01-211044088.

Population and Sample of the Study

The population of the study consisted of patients who underwent surgical interventions over the course of a year in the surgical wards of a state hospital in Istanbul. The sample consisted of patients who met the sample criteria, were over 18 years of age, voluntarily agreed to participate in the study, and who were scheduled for discharge.

Data Collection Tools

Data for the study were collected using a patient ıdentification form created by the researchers and the PSR Scale, which was developed by Kleinbeck[8] and whose Turkish validity and reliability were tested by Eti Aslan et al. in 2021.[7] This scale, consisting of 15 questions, is designed to assess the recovery levels of patients following surgical procedures.

Data Analysis

Statistical analysis of the data

The statistical analysis of the findings obtained in the study was performed using IBM Statistical Packages for the Social Sciences (SPSS) Statistics 25 (IBM SPSS, Türkiye). The normality of the distribution of variables was assessed using the Kolmogorov–Smirnov test, Q-Q plots, and histograms. Descriptive statistical methods (mean, standard deviation, frequency, and percentage) were used to evaluate the study data. The student's t-test was employed to compare quantitative data between two groups. For comparisons involving more than two groups, analysis of variance (ANOVA) (one-way ANOVA) was utilized. Post hoc tests were conducted to identify the specific groups causing differences identified by the ANOVA; Tukey's honestly significant difference test was used for homogenous variances, whereas Tamhane's T2 test was applied for non-homogenous variances. Statistical significance was set at $p<0.05$.

Normality Examination of the Study

The skewness and kurtosis values of the scales and sub-dimensions used in the hypothesis tests of the study were examined. Skewness and kurtosis values within the range of -2–+2 indicate that the data are normally distributed (Hair, Black, Babin, Anderson, and Tatham, 2005), which suggests the appropriateness of using parametric tests for hypothesis testing. Values outside this range suggest that the data are not normally distributed and that non-parametric tests should be used for hypothesis testing. On reviewing the Cronbach's Alpha scores, both scales demonstrated sufficient reliability with scores above 0.70, indicating no statistical obstacles to their use in the tests.

Results

It was found that 43.8% (n=146) of the participants included in the study had undergone general surgery, 98.8% (n=329) had undergone elective surgery, 91% (n=303) did not require post-operative intensive care, 50.2% (n=167) had no prior surgical history, 86.2% (n=287) had a hospital stay of 0–4 days, 88% (n=293) had a caregiver at home, and 94.3% (n=314) received discharge education. The mean recovery percentage score of the sample was reported. On examination of the findings, the average recovery percentage of the sample was found to be 69%. Table 1 below shows the relationship between the participants' demographic variables and their recovery percentages; significant relationships were found with age, education level, employment status, presence of chronic disease, type of surgery, and length of hospital stay ($p<0.05$). In Table 2, variables such as gender, type of surgery, intensive care unit (ICU) requirement, surgical history, presence of a home caregiver, and discharge education were examined, and no significant differences were found ($p>0.05$).

Hypotheses established within the scope of the study were evaluated based on the results and tabulated. According to Table 3, variables such as age, educational level, employment status, presence of chronic diseases, type of surgical intervention, and length of hospital stay support the hypothesis "H0: No effect on recovery." On the other hand, gender, type of surgery, need for post-operative ICU, previous surgeries, presence of a home caregiver, and discharge education support the hypothesis "H1: There is an effect on recovery."

Table 1. Significant differences in demographic variables

Variable	Significance	n	Mean	SD	p
Age	Significant	243 (18–65)	70.70	9.71	0.000
		63 (65–74)	64.86	8.74	
		27 (75+)	63.08	7.03	
Education level	Significant	167 (primary)	66.72	9.26	0.000
		21 (middle)	65.30	8.59	
		101 (high)	71.78	9.63	
		44 (college)	72.86	9.63	
Employment status	Significant	142 (working)	71.04	9.84	0.000
		100 (not working)	70.66	9.69	
		91 (retired)	63.90	7.74	
Chronic illness	Significant	188 (none)	71.49	9.43	0.000
		88 (1 chronic illness)	65.77	8.39	
		57 (more than 1 chronic illness)	65.63	10.43	
Type of surgery	Significant	16 (neurosurgery)	71.21	8.25	0.000
		94 (orthopedics)	67.16	10.22	
		146 (general surgery)	66.34	8.42	
		30 (urology)	74.13	10.75	
		47 (ENT)	76.75	6.84	
Length of hospital stay	Significant	30 (0–4 days)	66.69	8.05	0.010
		303 (more than 4 days)	69.20	9.89	

SD: Standard deviation, ENT: Ear nose throat.

Table 2. Demographic variables with no significant differences

Variable	Significance	n	Mean	SD	p
Gender	No significant difference	153 (female)	67.90	9.50	0.064
		180 (male)	69.89	9.90	
Type of surgery	No significant difference	329 (elective)	68.98	9.75	
		4 (emergency)	68.33	11.13	
ICU Requirement	No significant difference	30 (yes)	66.69	8.05	0.178
		303 (no)	69.20	9.89	
Surgical history	No significant difference	167 (yes)	69.89	9.84	0.113
		135 (no)	67.62	9.53	
		31 (yes, same surgery)	69.96	9.87	
Home care provider	No significant difference	293 (yes)	68.67	9.70	0.119
		40 (no)	71.23	9.97	
Discharge education	No significant difference	314 (yes)	69.06	9.86	0.521
		19 (no)	67.58	7.87	

SD: Standard deviation, ICU: Intensive care unit.

Discussion

In this study on the PSR process, patients' recovery levels were examined in relation to various demographic and clinical variables. It was found that the recovery rate decreased with age, with the lowest recovery rate observed in patients aged 75 and older. This has been attributed to physiological changes associated with aging.[9] Regarding the gender variable, male patients were found to have a

Table 3. Hypothesis table

	Accept H_0	Reject H_1
Age	✓	
Gender		✓
Education level	✓	
Employment status	✓	
Existing chronic illness	✓	
Type of surgical procedure	✓	
Type of surgery (elective/emergency)		✓
Need for ICU post-surgery		✓
Previous surgery history		✓
Hospital stay duration	✓	
Home caregiver		✓
Discharge education		✓

ICU: Intensive care unit.

higher recovery rate than females. The lower recovery rate among women is thought to be related to health status, pre-operative condition, and socioeconomic factors.[10] It was observed that as the level of education increased, so did the recovery rate, with the highest recovery rate found among college graduates. It is believed that as the level of education increases, so does health awareness.[11] Patients who were employed had a higher recovery rate compared to retirees, with the latter's lower recovery rate likely due to their generally older age.[12] Patients without chronic diseases were found to have higher recovery rates, as the presence of chronic diseases negatively impacts recovery.[13–15] Patients who underwent ENT surgery had the highest recovery rate, whereas those who underwent general surgery had the lowest. It was concluded that major surgical interventions complicate the recovery process.[16] Elective surgeries were found to have higher recovery rates compared to emergency surgeries[17] with pre-operative education thought to influence this outcome.[18] Patients who did not require ICU care had higher recovery rates, with those needing ICU care generally having more severe and uncontrolled health issues.[19] Patients with previous surgical experience had higher recovery rates, likely due to being more prepared based on past experiences.[19] Patients who stayed longer in the hospital had higher recovery rates, attributed to receiving more comprehensive treatment.[5,20] Patients without a home caregiver had higher recovery rates, possibly because they were generally younger and lived alone, thus requiring less care.[21,22] Patients who received discharge education had higher recovery rates, highlighting the positive impact of educational programs on the recovery process.[23]

Conclusion

The study demonstrates that the post-surgical recovery process is influenced by various demographic and clinical factors, which significantly determine patients' health status after discharge. The findings provide guidance for surgical nurses and health-care professionals to manage discharge processes more effectively and to maximize patients' recovery potential. Future research that examines these factors in more detail and evaluates their effects on different patient groups is expected to contribute to the development of strategies aimed at improving the quality of patient care.

Disclosures

Ethics Committee Approval: The study was approved by the Bahçeşehir University Ethics Committee (no: E-20021704-604.02.02-53556, date: 06/03/2023).

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