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The effect of preadmission education given to bariatric surgery patients on postoperative recovery: A randomized controlled study

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Abstract

Aim: To investigate the effect of preadmission education given to laparoscopic sleeve gastrectomy patients on preoperative and postoperative anxiety, postoperative pain, and patient vital signs.

Methods: The study was designed as randomized, controlled, experimental, and single-blind. This study was conducted with 68 patients who met the inclusion criteria and underwent laparoscopic sleeve gastrectomy in the general surgery clinic of a university hospital between December 2022 and October 2023. Data were collected using the 'Perioperative Form,' 'Visual Analog Scale,' and 'State Anxiety Scale I-II.' Intervention group patients were informed and educated about the surgical process in the outpatient clinic. The anxiety levels of all patients were determined with the State Anxiety Scale the day before surgery. In the postoperative period, vital signs (once), anxiety (on the first day after surgery), and pain levels (eight times during 48 h) were measured.

Results: In the analysis between the groups, the difference between the duration of postoperative hospital stay ($p = 0.007$), pain ($p = 0.000$ for all measured), and anxiety levels ($p = 0.000$) was statistically significant. There were also significant differences in the diastolic blood pressure ($p = 0.007$), body temperature ($p = 0.000$), and saturation values ($p = 0.000$). Patients' readiness level for surgery was the most influential factor in postoperative pain levels ($p = 0.000$).

Conclusion: The education given to the patients before hospitalization decreased preoperative and postoperative anxiety levels, postoperative hospital stay and pain levels, and positively affected diastolic blood pressure, body temperature and saturation levels. One-to-one education given to patients in the outpatient clinic also contributes positively to their readiness for surgery. This study provides valuable evidence to the wider global clinical community by demonstrating the important benefits of preadmission education for patients undergoing bariatric surgery. Implementation of similar educational interventions in diverse healthcare settings

worldwide may lead to increased postoperative recovery and improved overall patient well-being after bariatric surgery.

KEYWORDS
bariatric surgeries, education of patients, laparoscopic sleeve gastrectomy, postoperative care, preoperative period

1 | INTRODUCTION

According to World Health Organization data, the prevalence of obesity in individuals over 18 has been gradually increasing for the last 20 years.[1] In the report published by the Centers for Disease Control and Prevention in 2020, the prevalence of obesity in the USA for those aged 20 years and older was 42.4%.[2] Currently, bariatric surgery is the most effective long-term treatment method for weight loss and for controlling or treating obesity-related diseases.[3] According to data from the American Society for Metabolic and Bariatric Surgery, almost 280 thousand patients underwent bariatric surgery in 2022. Nearly 161 thousand of these patients were reported to have undergone sleeve gastrectomy surgery.[4] Bariatric Surgery is recommended for patients with BMI ≥ 40 kg/m2 and BMI ≥ 35 kg/m2 regardless of the presence, absence or severity of comorbidities. It is also recommended for patients with type 2 diabetes and BMI > 30 kg/m^2.[5–7]

Enhanced recovery protocols are perioperative interventions to shorten patients' hospital stays, improve patients' postoperative outcomes, and reduce the stress response to surgery.[8–10] When we look at the recommendations included in the enhanced recovery protocol in bariatric surgery, one of the elements of the preoperative period is to inform, educate, and counsel patients before surgery.[6]

Preoperative patient education has positive effects on reducing anxiety about anesthesia and surgery and postoperative pain, patient satisfaction, positive outcomes of the surgical experience, shortening the duration of hospital stay, and patient recovery after surgery.[11–14] Psychological and physiological preparation of the patient is essential in the preoperative period. Preoperative preparation significantly affects physical functionality during and after surgery.[15–17] Patient education, included in preoperative patient preparation, enables patients to improve their coping skills, provide the psychological support needed before surgery, and increase their participation in self-care activities.[18]

In a study, an informational video about the patient's surgical journey was displayed to bariatric surgery patients before the operation, and it was found that patients' preoperative anxiety levels decreased.[19] A study by Sheaffer et al. in 2018 found that the education given to patients before surgery shortened the length of hospital stay.[20] Cardiovascular patients were trained by the operating room nurse 1 day before surgery, and a decrease in postoperative pain and anxiety levels was found.[21] A study conducted on post-bariatric surgery patients observed that the use of training guidelines positively affected post-operative health outcomes. It was recommended to provide awareness to bariatric surgery patients with well-structured preoperative written training material.[22] The guide published in 2022 for bariatric surgery patients recommends researching and providing preoperative information, education, and counseling.[6] An educational process involving patient participation in the preoperative period is necessary to achieve successful outcomes after bariatric surgery. For bariatric surgery patients, education provided individually or in groups in the preoperative period reduces stress caused by surgical appointments, preparation for surgery, activity levels, wound care, pain management, and lack of information. Education by presenting materials that patients can understand and use multimedia tools when necessary contributes to forming realistic expectations.[5]

When the studies in the literature were examined, no randomized controlled study was found, so the study aimed to determine the impact of the information and education provided to patients undergoing laparoscopic sleeve gastrectomy (LSG) surgery before hospitalization on postoperative patient recovery.

2 | METHODS

2.1 | Design

It was conducted as a randomized, controlled, single-blind experimental study. The study was conducted at the general surgery clinic of a university hospital between 01 December 2022 and 01 November 2023.

The hypotheses of the study;

$H1_1$ There is a difference between the duration of postoperative hospital stay of patients with and without information and education

$H1_2$ There is a difference between the postoperative pain levels of patients with and without information and education.

$H1_3$ There is a difference between preoperative anxiety levels of patients with and without information and education

$H1_4$ There is a difference between postoperative anxiety levels of patients with and without information and education.

$H1_5$ There is a difference between postoperative vital signs of patients with and without information and education.

2.2 | Study setting and sampling

Patients who apply to the general surgery outpatient clinic and decide to undergo LSG surgery are included in the surgery list. The study population consisted of patients who were included in the

operation list for LSG surgery in a university hospital. The sample consisted of volunteers waiting for sleeve gastrectomy surgery between December 2022 and November 2023. After being informed about its purpose, they met the inclusion criteria and agreed to participate in the study. During the power analysis calculation, a power ratio of 80%, 95% confidence interval, and an effect size of 0.5 were used.[23] The sample size for each group was determined to be 34, resulting in a total of 68 participants. The results of this post-hoc analysis indicated that with an effect size (d) of 1.83 and an alpha error probability of 0.05, the power of the study was 1.00. The mean scores of the 1st pain measurement level on day 1 were used for post-hoc analysis.

Patients were randomly assigned to the groups to prevent selection bias and control for variables that could affect differences in outcome parameters. The individuals included in the study were allocated to the groups based on the randomization table. The order of the patients was determined according to their outpatient clinic registration numbers. The randomized distribution of the study was calculated using the random numbers formula in the Microsoft Office Excel program. A study flow chart was prepared according to CONSORT (Figure 1). The researcher (YY) provided education in the outpatient clinic. The nurses and surgical team members working in the surgical ward were blinded (FC, PO, and SKS in the research group were blinded).

2.3 | Inclusion and/or exclusion criteria

The inclusion criteria were being conscious, not having a diagnosis of major psychiatric disease, being 18 years of age or older, undergoing

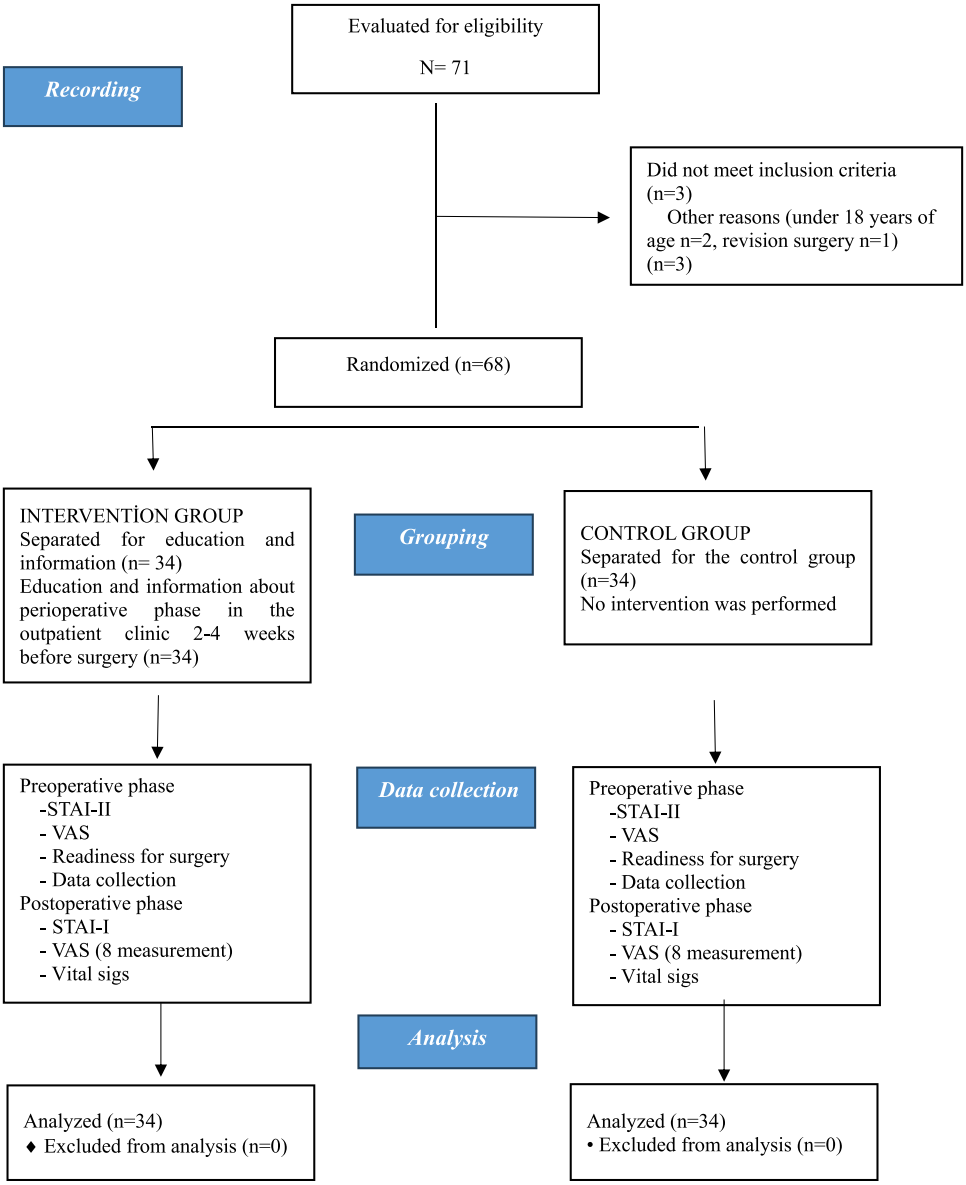

FIGURE 1 CONSORT 2010 flowchart.

their first bariatric surgery, and undergoing sleeve gastrectomy surgery.

Patients who did not agree to participate in the study, had undergone revision surgery, had undergone surgery under emergency conditions, were under the age of 18, had been diagnosed with a psychiatric disease and could not understand verbal warnings were not included in the study.

2.4 | Data collection tools

Data collection form (preoperative, postoperative period), visual pain scale, and state and trait anxiety scale were used to obtain the data.

Data collection form: It consists of a total of 25 questions, including questions such as age, gender, previous surgery, counseling and training status, duration of surgery, educational status, the patient's readiness for surgery, and postoperative complications.[24–27] Patients indicated their readiness for surgery by selecting one of the following options: 'I am extremely ready,' 'I am quite ready,' 'I am a little ready.'

Visual Analog Scale (VAS): VAS was used to assess patients' pain. '0' indicates no pain, and '10' indicates the most unbearable pain.

State-Trait Anxiety Inventory (STAI): Developed by Speilberger and Gorsuch in 1964, the inventory measures state and trait anxiety levels in normal and abnormal individuals. Öner and Le Compte (1983) conducted a Turkish validity-reliability study. The STAI consists of two scales of twenty items, measuring state and trait anxiety levels. The State Anxiety Scale determines how an individual feels at a given moment and under certain conditions. In answering the State and Trait Anxiety Scale, one is asked to select and mark one of the options 'not at all, a little, a lot, completely' according to the severity of the feelings, thoughts, or behaviors expressed by the items. The total score obtained from the scale is between 20 and 80. The internal consistency and reliability of the Turkish version were between 0.94 and 0.96. A high score indicates a high level of anxiety.

2.5 | Data collection method

Stage 1: Patients who were planned to undergo LSG were informed about the perioperative period in an appropriate room when they came to the outpatient clinic 2-4 weeks before surgery and were educated about the exercises to be performed before and after surgery.[6,27,28]

Content of the training material

As a result of the literature review, a training booklet was created.[6,16,17] After creating the booklet, opinions were obtained from five experts in the field. The study was carried out as a pilot application in the first stage. Information and training lasted between 45 and 60 min in total. During the training, which the researcher and the patient attended, all exercises were demonstrated to the patient one-on-one. The training was terminated after making sure that the patients performed the exercises correctly. In addition, the researchers gave the patients an education book to make the education and information permanent until the day of surgery.

Within the scope of education to the patient;

*The importance of exercise and nutrition in the period before hospitalization

*Quitting smoking and alcohol use

*Preoperative oral intake,

*Skin preparation before surgery,

*Transfer process to the operating room,

*Perioperative process,

*Operating room environment,

*Family waiting room and family information process when patient is in operating room,

*Unit where postoperative admission will take place

*Perioperative pain management (cognitive-behavioral methods)

*Foot rotation, and leg exercises

*Breathing exercises (use of trifle, deep breathing, coughing).

Stage 2: When the patient was hospitalized, anxiety level with the STAI scale and pain level with the VAS were determined 1 day before surgery.

Stage 3: All patients included in the study were operated on by the same physician (XX) under general anesthesia. LSG surgery was performed on the patients using the four-port technique. The patient's intra-abdominal pressure was adjusted to 14 mm/Hg. After the trocars were placed, the patient was placed in the reverse Trendelenburg position. After the procedure was completed in all patients, trocars were removed from the abdomen and the trocar sites were closed with skin sutures.

Anesthetic induction was performed with standard 5–7 mg/kg thiopental sodium in all patients. Analgesia was achieved with 1 mcg/kg fentanyl and muscle relaxation with 0.6 mg/kg rocuronium. Sevoflurane at a concentration of 1%–1.5% was used to maintain anesthesia. For postoperative analgesia, patients received standard 1 g paracetamol and 50 mg dexketoprofen trometamol. An additional dose of rescue analgesic 50 mg dexketoprofen trometamol was added to the patient whose pain persisted in the postoperative care unit

Postoperatively, the patient's pain level before analgesics every 4–6 h for 2 days, the patient's anxiety level with the STAI scale 1 day after surgery, the development of postoperative complications, vital signs, and duration of hospitalization were recorded. The patient's vital signs were measured just before transfer from the postoperative care unit to the surgical ward.[29,30]

2.6 | Data analysis

The SPSS 25 program was used to analyze quantitative data. In addition to descriptive statistical methods, Mann–Whitney U, and Kruskal Wallis tests were used to determine the difference

between independent groups; the Wilcoxon test was used to determine the change before and after treatment within the same group, and Pearson or Spearman's correlation analysis was used to evaluate the relationships between variables according to the distribution. The results were evaluated at a 95% confidence interval ($p < 0.05$).

2.7 | Ethical considerations

University clinical research ethics committee permission (date: 12 October 2022, number: 2022/116) and institutional permission from the institution where the research was conducted were obtained. The study was approved and registered at www.ClinicalTrials.gov (NCT06281990). Participants were contacted in the hospital environment and informed about the purpose and method of the study. Written or verbal permission was obtained from the participants who wanted to participate in the study.

3 | RESULTS

The demographics of the 68 patients who participated in the study are shown in Table 1. The mean age of the patients was 39.21 ± 12.45 in the control group and 33.09 ± 10.28 in the intervention group. The mean BMI was 46.84 ± 8.68 in the control group and 45.69 ± 5.61 in the intervention group. When the patient's readiness for surgery and length of hospital stay were compared between the groups, the difference was statistically significant ($p = 0.000$, $p = 0.007$).

The comparison of vital signs, anxiety, and pain level measurements between the groups is shown in Table 2. When the mean pain level measurements of the intervention and control groups were compared, the statistical difference was significant in all eight measurements ($p = 0.000$) (Table 2). When the mean scores of preoperative and postoperative anxiety levels were analyzed, there was a statistically significant difference between the groups ($p = 0.000$, $p = 0.007$) (Table 2). When the postoperative vital signs of the intervention and control group patients were analyzed, there was a statistically significant difference between the mean diastolic blood pressure scores, saturation values, and body temperature ($p = 0.007$, $p = 0.000$, $p = 0.000$) (Table 2).

The relationship between the pain and anxiety of the patients is given in Table 3. When the data are analyzed, it is seen that there is a significant relationship in all preoperative and postoperative pain level measurements (Table 3). There was a moderate positive correlation between postoperative anxiety and pain level in the 1st, 2nd, and 4th measurements on Day 1, 1st, and 2nd on measurements Day 2. There was a weak positive correlation between postoperative anxiety and pain level in the 3rd measurement on Day 1, the 3rd, 4th measurements on Day 2 (Table 3). There is a moderate negative correlation between postoperative anxiety and saturation values and a weak positive correlation between body temperature values. There is a moderate negative correlation between preoperative anxiety and saturation values and a weak positive correlation between body temperature values (Table 4). The relationship between pain and vital signs of the patients is given in Table 5. There was a moderate negative correlation between pain level and saturation in the 1st, 2nd, 3rd, 4th measurements on Day 1, 1st, 3rd on measurements Day 2.

When the most important factor affecting the patient's pain was examined, it was found to be the state of readiness for surgery (Table 1).

TABLE 1 The comparison of the demographics, of the study groups.

		Groups				
		Intervention		Control		
Variables		n	%	n	%	p
Gender	Female	23	67.6	25	73.5	0.601
	Male	11	32.4	9	26.5	
Marital status	Married	21	61.8	28	82.4	0.060
	Single	13	38.2	6	17.6	
Educational status	Primary school	10	29.4	8	23.5	0.287
	Middle school	4	11.8	3	8.8	
	High school	15	44.1	11	32.4	
	University	5	14.7	12	35.3	
Presence of chronic disease	Yes	9	26.5	11	32.4	0.601
	No	25	73.5	23	67.6	
Readiness for surgery	I am extremely ready	28	82.4	12	35.3	**0.000***
	I'm quite ready	6	17.6	14	41.2	
	I'm a little ready	0	0	8	23.5	
BMI	Grade 1	0	0	1	2.9	0.561
	Grade 2	3	8.8	2	5.9	
	Grade 3	31	91.2	31	91.2	
		Mean	SD	Mean	SD	
Average number of days in hospital		2.09	0.379	2.41	0.557	**0.007***

Abbreviations: BMI, Body Mass Index; n, number; SD, Standart Deviation.
*$p < 0.05$.

TABLE 2 Comparison of vital signs, anxiety and pain level measurements between groups.

	Groups				
	Intervention		Control		
Pain measurements	Mean	SD	Mean	SD	p*
1st measurement on Day 1	6.74	1.62	9.59	1.48	**0.000***
2nd measurement on Day 1	4.53	1.46	6.85	1.15	**0.000***
3rd measurement on Day 1	3.29	1.38	5.12	0.97	**0.000***
4th measurement on Day 1	2.62	1.30	4.59	1.04	**0.000***
1st measurement on Day 2	2.47	1.05	4.29	1.14	**0.000***
2nd measurement on Day 2	1.71	0.90	3.44	1.02	**0.000**
3rd measurement on Day 2	1.29	0.62	2.65	1.12	**0.000**
4th measurement on Day 2	1.21	0.47	2.24	1.15	**0.000**
Preoperative STAI	24.35	2.49	40.55	10.16	**0.000***
Postoperative STAI	24.61	4.47	40.20	9.60	**0.000**
Diastole	71.18	6.56	75.88	7.28	**0.007***
Systole	116.18	10.15	120.59	9.19	0.065
Body temperature	36.32	0.14	36.47	0.16	**0.000***
Pulse	74.65	4.80	76.94	5.73	0.78
Saturation	97.85	1.01	95.91	0.79	**0.000***

Abbreviations: SD, Standard Deviation; STAI, State-Trait Anxiety Inventory.

*$p < 0.05$.

TABLE 3 Correlation between pain intensity and anxiety.

Pearson correlation		1st. Measurement on Day 1	2nd. Measurement on Day 1	3rd. Measurement on Day 1	4th. Measurement on Day 1	1st. Measurement on Day 2	2nd. Measurement on Day 2	3rd. Measurement on Day 2	4th. Measurement on Day 2
Postoperative anxiety	r	0.651	0.631	0.492	0.596	0.566	0.558	0.452	0.376
	p*	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.002**
Preoperative anxiety	r	0.674	0.688	0.586	0.560	0.583	0.577	0.474	0.431
	p*	**0.000***	**0.000***	**0.000***	**0.000**	**0.000**	**0.000**	**0.000***	**0.000**

Abbreviation: r, Pearson correlation.

*$p < 0.05$.

4 | DISCUSSION

4.1 | Discussion of survey data

According to the American Society for Metabolic and Bariatric Surgery, the number of patients undergoing sleeve gastrectomy surgery has increased by 50% from 2015 to 2021. Within the scope of Enhanced Recovery After Surgery (ERAS) protocols developed to accelerate patient recovery in surgery, preoperative information and education are recommended to ensure that bariatric surgery patients make well-informed choices and actively participate in their care.[6] This study showed that perioperative information and education provided to patients in the outpatient clinic before laparoscopic sleeve gastrectomy surgery significantly decreased postoperative pain and anxiety levels and brought body temperature, diastolic blood pressure, and saturation values to the desired level in patient recovery.

TABLE 4 Correlation between anxiety and vital signs.

Pearson correlation		Diastole	Systole	Body temperature	Pulse	Saturation
Postoperative anxiety	r	0.169	0.177	0.293	0.085	−0.598
	p*	0.169	0.149	**0.015***	0.491	**0.000***
Preoperative anxiety	r	0.164	0.157	0.427	0.160	−0.613
	p*	0.180	0.201	**0.000***	0.193	**0.000***

Abbreviation: r, Pearson correlation.
*$p < 0.05$.

Pain during surgery is one of the main factors affecting patient recovery in the postoperative period. It is essential that the patient and the nurse interact for pain control and that preoperative education is provided for the nurse to better manage the patient's pain process.[17] In addition, the effect of preoperative and postoperative anxiety levels on pain perception has been supported by many studies in the literature.[11,13,14,21] In this study, patients undergoing sleeve gastrectomy surgery were informed about the perioperative period by the nurse in the outpatient clinic, and pain management education was provided. Anxiety levels in the preoperative and postoperative period and postoperative pain were measured a total of 8 times at 4–6 h intervals. The measurements showed that the anxiety and pain levels of the patients in the intervention group were significantly lower than those in the control group. In a study conducted on cardiovascular patients, patients were informed by the operating room nurse with a patient education booklet in the preoperative period, and it was found that the anxiety level of the patients before and after surgery and pain levels in all postoperative measurements decreased.[21] In another study designed in the same way in laparoscopic surgery patients, it was found that only the postoperative anxiety level of the patient decreased. In contrast, pain and preoperative anxiety did not change.[11] In a randomized controlled study conducted in patients undergoing spinal surgery, it was observed that the education given 1 day before surgery reduced pain and anxiety levels in measurements made 1 day after surgery.[13] However, a meta-analysis reported that the information before surgery did not affect the pain level.[18] In a systematic review of randomized controlled trials, it was determined that patients who received direct individual education ($p < 0.05$, $n = 7$) and educational video ($p < 0.01$, $n = 4$) had a significant decrease in postoperative pain levels.[31] In the same study, 4 studies with LSG patients were included and it was found that preoperative training with educational video reduced the level of postoperative pain ($p < 0.01$).

Increased anxiety, worry, and fear during the preoperative period may trigger the release of stress hormones.[17] These hormones may improve the severity of pain in the postoperative period by increasing pain perception. At the same time, the pain experienced in the postoperative period may also increase anxiety, which may cause a vicious cycle.[17,32] In a study evaluating pain, anxiety, and depression levels in bariatric surgery patients in the literature, it was found that preoperative anxiety and depression status affected postoperative first-day pain.[24] In a study conducted in different patient groups, it was observed that patients with low preoperative anxiety had low postoperative pain.[33] In a study in 145 patients, preoperative educational video interventions reduced preoperative anxiety and postoperative pain levels.[34] In the study conducted by Ongun et al., patients were educated and informed in the preoperative period. In the postoperative period, it was observed that the pain of the intervention group patients decreased in all measurements.[29] Pain levels are thought to decrease when the patients learn the pain management strategies included in the content of the education given to them and apply these strategies in the postoperative period. It is seen in the research findings that preoperative and postoperative anxiety levels and pain levels at different periods are positively correlated with each other.

In a study, a video containing information about the perioperative period was shown to the patients in the preoperative period. It was found that the preoperative anxiety levels of the patients decreased.[19] In the study conducted by Koşucu and Şelimen, patients were trained in the preoperative period, and music was played for 30 min. After the intervention, it was observed that preoperative and postoperative anxiety decreased.[14] The results of this study are consistent with the literature. In this study, it is thought that the education and information provided to patients undergoing sleeve gastrectomy within the scope of bariatric surgery is a factor in reducing the anxiety levels of the patients to learn cognitive behavioral methods, to be aware of the surgical procedure, to learn information that will contribute to their recovery, and to feel that they are in the process.

Information and education help patients better prepare for the surgical process.[22,35,36] This may contribute to reducing preoperative stress and thus keeping body temperature and blood pressure under control. Gümüş examined the effect of preoperative and postoperative anxiety levels on the quality of recovery, and it was observed that the quality of recovery decreased with increasing anxiety.[37] In a study conducted on patients undergoing nephrectomy surgery in the literature, it was found that there was a relationship between preoperative anxiety and postoperative respiratory values.[33] In a randomized controlled study, patients received preoperative training, and their postoperative vital signs and cortisol levels were examined. No significant differences were found between the intervention and control groups.[13] In a quasi-experimental study, education and music were played to patients before surgery, and it was observed that there was a significant difference between systolic and diastolic blood pressure and

TABLE 5 Correlation between pain intensity and vital signs.

Spearman Korelasyon		1st. Measurement on Day 1	2nd. Measurement on Day 1	3rd. Measurement on Day 1	4th. Measurement on Day 1	1st. Measurement on Day 2	2nd. Measurement on Day 2	3rd. Measurement on Day 2	4th. Measurement on Day 2
Diastole	r	0.139	0.202	0.140	0.187	0.154	0.156	0.210	0.156
	p*	0.258	0.098	0.254	0.126	0.210	0.204	0.086	0.204
Systole	r	0.138	0.160	0.135	0.101	−0.024	−0.010	0.042	−0.010
	p*	0.262	0.192	0.274	0.410	0.844	0.933	0.733	0.933
Body temperature	r	0.375	0.328	0.321	0.235	0.206	0.227	0.188	0.227
	p*	**0.002***	**0.006***	**0.008***	0.054	0.092	0.062	0.125	0.062
Pulse	r	0.080	0.070	0.001	0.082	0.123	0.056	0.016	0.056
	p*	0.518	0.572	0.990	0.507	0.318	0.649	0.894	0.649
Saturation	r	−0.658	−0.640	−0.640	−0.666	−0.664	−0.458	−0.573	−0.458
	p*	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000***	**0.000**

Abbreviation: r, Spearman correlation.

*$p < 0.05$.

respiratory values between the groups.[14] In a study conducted in cardiovascular surgery patients, training patients before surgery was included in the list of evidence-based practices. In the intervention group where the list was applied, it was found that the body temperature of the patients after surgery was at the desired level and the number of complications in the postoperative period decreased.[29] When we look at this study's results, we see a significant difference between the saturation values, diastolic blood pressure, and body temperature of the patients in the intervention and control groups. It can be said that the low preoperative and postoperative anxiety levels and low postoperative pain levels for 2 days positively affected the mentioned values of the patients.

4.2 | Strengths and limitations of the work

The inclusion of sleeve gastrectomy surgery patients in the study constitutes both a limitation and a strength of the research. The patient sample groups are homogeneous (Table 1), but since the sample size and representativeness are in a certain group, it is not possible to generalize the results to all surgical patients. One of the limitations of the study is that the patients were trained and informed about the perioperative period 2–4 weeks before hospitalization. In addition, the observation period determined to evaluate the postoperative recovery process is limited to the time until discharge from the hospital.

Among the strengths of this study is that preadmission education helped participants understand and be prepared for the surgical process. Being a randomized controlled study among participants increases the reliability of the findings. Additionally, the fact that the study was single-blind may help reduce bias in the data collection process. Standardization of measurement tools used in the data collection process also increases the comparability of the results. The results show that preadmission training reduces anxiety levels in both the preoperative and postoperative periods and shortens the length of hospital stay. These findings underscore the significance of preadmission training in the care of bariatric surgery patients, suggesting that it may play a crucial role in enhancing postsurgical recovery.

4.3 | Implications for policy and practice

Health policies must support the care and comprehensive preadmission education of bariatric surgery patients. By providing them with information about the process of health problems, this education can help them cope with pre-and postoperative anxiety and reduce postsurgical complications. The surgical team should consider the patient as a part of the team, and the education and information process should proceed together. In addition, health countries should develop and implement preadmission training programs so that parts can receive appropriate parts before processing and improvement options are more readily available. These conclusions can improve the quality of care for bariatric surgery patients shorten hospital stays and provide health care.

5 | CONCLUSION

The findings of this study emphasize the clinical applicability of outpatient education programs for patients who will undergo sleeve gastrectomy surgery within the scope of bariatric surgery. Patients who received information about the perioperative period in the outpatient clinic increased their readiness for surgery, decreased their preoperative and postoperative anxiety levels, postoperative pain levels, and the number of days of hospitalization, and their saturation levels reached the desired level. The study has important implications for improving and optimizing perioperative education to accelerate the recovery of bariatric surgery patients. Future researchers should conduct studies in large sample groups to compare training strategies, the long-term effects of education programs, and more precise results. Additionally, the benefits of a broader perspective on patient recovery can be expanded, such as readmission after discharge and complication rate, quality of life, etc.

AUTHOR CONTRIBUTIONS

Pınar Ongun: Conceptualization; methodology; formal analysis; investigation; data curation; writing—original draft; writing—review and editing; visualization. **Yaren Yurdakul**: Methodology; data curation; writing—review and editing; funding acquisition. **Sibel Karaca Sivrikaya**: Methodology; writing—review and editing; visualization. **Ferhat Cay**: Methodology; writing—review and editing. Final approval of the version to be published was approved by all authors.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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