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Does SMS Message Sent by Nurse After Radical Prostatectomy Affect Quality of Life?

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ABSTRACT

Is there any effect of discharge education content delivered via SMS by nurses on the quality-of-life scores of patients who have undergone radical prostatectomy (RP)? Although RP offers the greatest potential for a definitive cure in localised prostate cancer and improves overall survival, it is associated with various psychosocial and psychological challenges after the discharge period. These issues can lead to decreased patients' quality of life. Surgical treatment-specific side effects can lead to some problems. So, patients are often unprepared for posttreatment self-management at home. A structured follow-up programme following surgery is necessary to increase quality of life and decrease some undesirable complications. Discharge training via SMS messages sent by clinical nurses may increase quality of life in patients after RP. This study was conducted with the aim of evaluating the effect of SMS messages containing discharge information sent by nurses on the quality of life of patients who underwent RP. This quasi-experimental study was conducted from May to December 2022, with 57 patients (29 in the intervention and 28 in the control group) who underwent RP in Istanbul, Turkiye. The intervention group received routine follow-up and discharge information via SMS message twice a week between 09:00 and 17:00 on Mondays and Thursdays for four weeks. The control group received routine information. A 'Descriptive Characteristics Form' and the 'SF-36 Quality of Life Scale' were used as data collection tools. The data was evaluated by descriptive statistics and paired-sample t-tests. The study findings indicated that the average scores across all SF-36 Quality of Life Scale subdimensions (physical functioning, physical role functioning, emotional role functioning, vitality, mental health, social role functioning and general health perceptions) were significantly higher in the intervention group after one month ($p < 0.01$). Postoperative SMS messages sent by clinical nurses increased patients' quality of life. These findings underscore the importance of discharge information reminders via SMS text messages by clinical nurses following RP for enhancing patients' quality of life.

1 | Introduction

Prostate cancer (PCa) is the second most common type of cancer among men worldwide and is the second leading cause of cancer-related deaths, following lung cancer. The lifetime risk of developing prostate cancer is reported to be 1 in 8, while the risk of dying from PCa is 1 in 37 [1, 2]. In Western countries, the incidence of PCa is between 70 and 100 cases per 100 000 men, whereas in Turkey, the incidence is 35 per 100 000, making it the second most common cancer among men with a prevalence rate of 13% [3, 4]. Risk factors for PCa include age, ethnicity, genetic factors, chemical exposure, certain medications, early onset of sexual activity, infections and dietary factors, with incidence increasing with age [5–9]. Today, treatment options vary based on cancer prognosis and patient preference and include focal ablation, radiotherapy,

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Summary

- What is known about the topic
  - Prostate cancer (PCa) is the second most common type of cancer among men. Although treatment options vary based on cancer type, radical prostatectomy (RP) is a common surgical approach.
  - RP is associated with various psycho and psychological issues after the discharge period.
  - Informative SMS messages could be beneficial for patients who have undergone RP to enhance their quality of life postdischarge.
- What this paper adds
  - SMS messages containing discharge information sent by clinical nurses improve the quality of life in patients who underwent radical prostatectomy
  - Study findings may help clinical nurses better comprehend the importance of reminders of discharge information via SMS messages following RP.

hormone therapy, cryotherapy, brachytherapy, chemotherapy and surgery [10].

Surgical treatment of PCa primarily involves radical prostatectomy (RP), which offers the greatest potential for a definitive cure in localised PCa and significantly improves overall survival and cancer-specific survival [11]. However, RP is associated with various psychosocial issues such as erectile dysfunction, urinary incontinence, urethral strictures, pain, affected bowel function, fatigue, insomnia, deep vein thrombosis due to a sedentary lifestyle, malnutrition, sleep and nutritional problems, and increased risk of inguinal hernias. Moreover, psychological challenges include stress, anxiety, depression, social isolation, loss of energy and motivation due to functional impairments, loss of sexual life, fear of cancer recurrence, and fear of death, all of which significantly compromise patients' quality of life and restrict daily activities. Common surgical treatment-specific side effects can lead to shame and embarrassment, further decreasing the quality of life. However, patients are often unprepared for posttreatment self-management at home [12–15].

Like all cancer survivors, patients who undergo RP are enrolled in a structured follow-up program following their primary treatment. This programme typically includes regular face-to-face consultations with specialist oncologists; however, the frequency and specifics of these follow-up visits may vary based on the type of cancer and national healthcare guidelines [16]. Follow-up care primarily aims to monitor disease progression, evaluate treatment effects and provide continuous support to patients and their families, a critical factor in enhancing patient satisfaction [17]. Despite comprehensive patient education before discharge, many patients still express concerns about routine postoperative care once they return home [18]. Insufficient postoperative information can lead to suboptimal health outcomes, highlighting the importance of effective discharge training. Such training should include detailed instructions for both patients and their families to help manage potential complications [19]. During this crucial phase, clinical nurses with expertise in the physical, psychological and social ramifications of PCa play a pivotal role in patient education. It is essential to provide personalised discharge training to address these challenges and ensure patients receive adequate follow-up care. In Turkey, the interaction between patients and urological specialists is frequent. Additionally, the role of clinical nurses in managing patients with RP care and discharge training is vital. Nevertheless, due to nursing shortages and patient overcrowding, nurses usually focus on patients' discharge documents during the discharge process. Therefore, predischarge nursing education may not consistently be available in Turkey. Therefore, patients and their families often leave the hospital without sufficient knowledge about managing complications and home care. Yet, the effectiveness of these interventions and new care strategies requires validation through rigorously designed clinical studies [19].

Exploring alternative methods for postsurgical patient follow-up is inevitable. An alternative is to exploit the current easily accessible technological environment [17]. SMS messaging is the most frequently used method for health education. Previous studies have demonstrated the feasibility and acceptability of SMS message delivery in patients with prostate cancer and gynaecologic cancer for educational intervention [20, 21]. SMS messages have also been indicated to be popular with patients and more cost-effective than paper or telephone-based reminder strategies [22]. To the best of our knowledge, there are currently no studies that have evaluated the effectiveness of sending SMS message content with discharge information on patients' health quality who underwent radical prostatectomy. This study investigated the effect of SMS message content with discharge information sent by nurses on the quality of life in patients who underwent RP. In line with this aim, the research hypotheses are stated below:

H0. *There is no effect of discharge education delivered via SMS by nurses on the quality of life scores of patients.*

H1. *The quality-of-life scores are higher in patients who received discharge education via SMS by nurse.*

2 | Methods

2.1 | Study Design

A quasi-experimental study utilising a two-group pretest–posttest design was conducted to evaluate the effect of SMS text messages containing discharge training content sent by nurses on patients' quality of life who had undergone RP.

2.2 | Setting and Sample

The research population consisted of patients who had a RP at Koc University Hospital in Istanbul between May and December 2022. The urology clinic of the University Hospital has 16 beds, 6 physicians and 13 nurses. Radical prostatectomy operations are frequently performed. Patients undergoing RP are discharged after two days on average if no complications occur. Discharge training is given to the patients in

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cooperation with the assistant physician and clinic nurses. Traditional discharge training includes information on Kegel exercises, medications to be used, antiembolic stockings and care of urinary catheters.

Patients who verbally and in writing agreed to take part in the study, who had no complaints of incontinence before surgery, who underwent radical prostatectomy in the urology clinic of the selected hospital, who were literate, who had no psychiatric problems, who had no communication and visual problems, and who had a smartphone with internet access were included in the study.

2.3 | Sample Size and Sampling Technique

The sample size for this study was determined using the single population proportion formula. Within one year, approximately 100 RP surgeries were performed at the urology clinic of the hospital where this study was conducted. Taking into account the study by Simsir and Temeltas on solutions for urinary incontinence following radical retropubic prostatectomy, the smallest sample size required for 99% power and an alpha level of 0.01 was determined to be 57 using the PASS software [23]. The study included 57 patients (29 in the intervention group and 28 in the control group). The chosen hospital is the workplace of the first researcher, and the focus on urology patients is due to the researcher being a clinical nurse in urologic surgery, with the surgical team supporting the study.

2.4 | Measuring Instruments

Within the scope of the research, a 'Descriptive Characteristics Form', the 'SF-36 Quality of Life Scale' and 'SMS text message' were used.

2.4.1 | Descriptive Characteristic Form

This form was prepared by the researchers based on the literature [3–11]. It consists of eight items inquiring about age, gender, education, employment status, marital status, presence of chronic diseases, previous surgery experience and preoperative need for home care.

2.4.2 | SF-36 Quality of Life Scale

Originally developed in 1988 as the Medical Outcomes Study-20 Question Short Form Survey, it was expanded by Ware and Sherbourne in 1989 for clinical and research applications [24]. Its validity was established for the Turkish population by Koçyiğit et al. in 1999 [25]. In 2002, Dündar et al. demonstrated its high validity and reliability with Cronbach's alpha coefficients ranging from 0.74 to 0.92 in chronic diseases [26]. The scale includes items assessing health changes perceived over the last four weeks and the past week. It is a short yet comprehensive survey suitable for clinical practice and research, consisting of 36 items divided into physical and mental components. It encompasses three main categories (functional status, well-being and general health perceptions). It evaluates eight health concepts (physical functioning, social role functioning, physical role functioning, emotional role functioning, mental health, vitality, bodily pain and general health perceptions). As scores increase, patients' quality of life improves [24]. In our study, the Cronbach's alpha values for the scale ranged between 0.72 and 0.98.

2.4.3 | SMS Text Message

The SMS text message containing discharge education was prepared by the researchers based on the literature [1–3, 6–9]. The SMS content was reviewed and refined by three expert urologists, three urology nurses and one faculty member in surgical nursing at the clinic where the study was conducted. The content sent to the intervention group is shown in Table 1.

2.5 | Implementation of Study

Patients were assigned to either the intervention or control group based on the average scores of the SF-36 Quality of Life Scale. Randomisation was facilitated using a program available at https://www.randomizer.org. Patients were selected for each group according to their admission date to the clinic. Those meeting the inclusion criteria for the study were introduced to the researcher following an assessment by an anesthesiologist in the preoperative period. After the patients had been informed about the study, written informed consent was obtained from them.

Patients in the intervention group received routine follow-up and discharge training from the clinic. In Turkey, discharge education of patients who underwent RP is given by the surgeon verbally with face-to-face communication during the patient visit and sometimes by distributing brochures. The first author took part in the discharge training with the surgeon. Patients were informed that they would receive regular SMS messages twice a week for a month after discharge and would need to fill out a survey in the first month after. The SMS text message delivery consisted of five sections. These sections included wound care, emergency situations, foley catheter care and issues to pay attention to. The content of SMS text messages is presented in Table 1. These SMS messages were sent twice-weekly (Monday and Thursday) at two-hour intervals between 09:00 and 17:00. Within this time frame, five different SMS text messages were sent. The SMS Text Delivery Plan is shown in Table 2. This programme lasts for four weeks. The first author contacted the patient on Saturday to ensure that the SMS messages were being received.

In the control group, standard follow-up and discharge training were provided on the day of discharge. These patients were informed that they would need to fill out a survey in the first month post surgery. The SF-36 Quality of Life Scale was administered in the outpatient waiting room after a follow-up visit during the first month post surgery for both the control and intervention groups.

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TABLE 1 | Content of the SMS message.

1. *Section*
(the first 14 days after discharge)
- Do not consume raw vegetables and fruits in excessive amounts
- Do not consume dairy products in excessive amounts
- Drink at least 8 glasses of water daily
- If you plan to travel long distances, please consult your surgeon and follow their recommendations
- As you sad your surgeon, please do not use aspirin, ibuprofen, naproxen or similar drugs during the first 2 weeks after your surgery. They can cause problems related to blood clots
- Do not remove the antiembolic stockings recommended by your surgeon, and adhere to the suggested duration of use
- Apply venous thromboembolism prophylaxis (medication to prevent blood clotting) at the same time each day, as shown in the hospital
- You may have swelling in your scrotum. You may need to wear supportive underwear (like athletic underwear) or briefs until the swelling subsides. You can provide support under your scrotum with a towel when in bed
- Please remember the control date given to you by your surgeon

2. *Section*
(for 3 weeks after your surgery)
- Refrain from sexual activity
- Your erection may not be fully firm. Some men may not be able to achieve an erection. These conditions are expected
- Your orgasm may not be as intense or pleasurable as before
- You may not see any semen when you have an orgasm. These issues may improve or be resolved entirely, but they could take several months or more than a year
- Do not drive
- Although there are no dietary restrictions, be careful not to become constipated. You may use stool softeners to prevent constipation
- Avoid movements that strain your abdominal muscles (such as crunches, running, and straining due to constipation)
- Do not lift heavy loads or items (above 5 kg)

3. *Section*
(If you have a urinary catheter)
- You may feel spasms in your bladder.
- Make sure your permanent catheter is working properly.
- The urine in your drainage bag may be darker red, which is normal.

After your catheter is removed:
- You may experience burning during urination, blood in the urine, frequent urination and an urgent need to urinate
- You might experience some urinary leakage, which will improve over time. You will nearly regain normal bladder control within 3 to 6 months
- You can perform the shown Kegel exercises (tightening and relaxing the hip and perineal muscles) while sitting or lying down (at least 3–4 times a day, 10 times each)

4. *Section*
(for Wound Care)
- Change the dressing over your surgical wound once a day or more often if it gets dirty. Keep the wound area clean by washing with mild soap and water
- If your skin is closed with stitches or staples, you may remove the wound dressings and shower. If you have a bandage (Steri-Strips), wrap the surgical area with plastic wrap before showering during the first week
- Do not soak in a bathtub or hot tub or go swimming while you have the catheter. After removing the catheter, you can do these activities and consult with your doctor

5. *Section*
(Please contact your surgeon)
- If your temperature reaches 38°C or higher
- If your urine is bloody or red
- If there is redness, sensitivity, warmth, or bruising in the surgery area and scrotum
- If you experience shivering, nausea, vomiting or any unexpected complaints
- If you notice a blockage or any changes in the urine flow from your urinary catheter, contact your surgeon

2.5.1 | Ethics

Ethics approval for this study was granted by the Ethics Review Committee of Koc University (2022.218.IRB3.101). Institutional permission was also obtained from the hospital administration (16.08.2022/1157). Participants were guaranteed anonymity and confidentiality. They were informed that they could complete the questionnaire privately and

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TABLE 2 | SMS message delivery plan.

Day	Time	Text message
Monday–Thursday	09:00 AM	*Section* 1: SMS messages were sent that include information about what patients should pay attention to in the first 2 weeks after discharge
	11:00 AM	*Section* 2: SMS messages were sent that include information that patients should pay attention to in the first 3 weeks after discharge
	1:00 PM	*Section* 3: SMS messages were sent that include information about foley catheter care and follow-up
	3:00 PM	*Section* 4: SMS messages were sent that include information about wound care and follow-up
	5:00 PM	*Section* 5: SMS messages were sent that include information about emergency situations that require contacting the surgeon
Saturday	Noon	First author contacted the patients by phone to confirm if the SMS text messages were received

conveniently. All data were securely stored in a locked safe. Participants were also informed that they were not obligated to participate in the study and could withdraw at any time. The study adhered to the principles outlined in the Declaration of Helsinki [27].

2.6 | Statistical Analysis

Data collected in the study were analysed using SPSS for Windows (Version 20.0, Statistical Package for Social Sciences). The data distribution was examined based on Skewness/Kurtosis values, and a normal distribution was found [28]. Descriptive statistics for continuous variables were presented as means and standard deviations, while categorical variables were summarised using frequencies and percentages. Differences in measurements over time between the dependent groups were examined using paired-samples *t*-tests. A significance level was set at a *p* value of less than 0.05.

3 | Results

3.1 | Descriptive Characteristics of Patients

Findings related to the patients' descriptive characteristics are shown in Table 2. No statistically significant difference was determined according to the variables of average age and education, marital status, employment status, presence of chronic diseases, previous surgery experience and preoperative need for home care ($p < 0.05$) (Table 3).

3.2 | Quality of Life in the Intervention and Control Groups

The average scores of the SF-36 subdimensions for the patients before and after surgery are presented in Table 4. At the pretest, no significant difference was observed between the mean scores of the SF-36 physical functioning subdimension ($t = -0.11$; $p = 0.99$), whereas a significant difference was found at the posttest between the groups ($t = 3.89$; $p < 0.01$). The effect size of the SMS message delivery on the SF-36 physical function subdimension score in the intervention group was strong ($d = 1.04$), indicating a clinically significant difference between the two groups.

In the pretest, no significant difference was observed in the SF-36 physical role functioning subdimension scores ($t = 1.06$; $p = 0.29$) between the two groups, but a significant difference was found in the posttest ($t = 2.34$; $p = 0.02$). The effect size of the SMS message delivery on the SF-36 Physical Role Functioning subdimension scores for intervention patients was moderate ($d = 0.52$).

A significant difference was found in the SF-36 emotional role functioning subdimension scores within both groups, pre- nd postsurgery. According to the results of the repeated measures analysis of variance within groups, an increase over time in the SF-36 Emotional Role Functioning subdimension scores was observed (respectively, $p < 0.01$; $p = 0.03$).

For the intervention group, repeated measures analysis of variance indicated a progressive increase over time in the SF-36 vitality subdimension mean scores ($t = 4.06$; $p < 0.01$). The effect size for the SF-36 Vitality subdimension scores at the final test for intervention patients was strong ($d = 1.07$).

A significant relationship was observed in the presurgery SF-36 mental health subdimension mean scores ($t = -2.76$; $p = 0.01$). A significant increase was detected in the SF-36 mental health subdimension scores from pre- to post-surgery in intervention patients ($t = 3.65$; $p < 0.01$). The effect size of SMS message delivery on the SF-36 mental health subdimension scores for intervention patients was moderate ($d = 0.96$).

A significant relationship was observed between the presurgery SF-36 social role functioning subdimension scores ($t = -2.73$; $p = 0.01$). The SF-36 social role functioning subdimension scores before and after surgery showed a significant change in the intervention group ($t = 3.72$; $p < 0.01$). The effect size of the

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TABLE 3 | Comparison of the patients' descriptive characteristics.

	Intervention group		Control group		Total		Test statistics	
	$X \pm SD$		$X \pm SD$		$X \pm SD$		t^a	p
Age	67.52 ± 6.27		68.93 ± 5.45		67.88 ± 6.68		3.61	0.09
	n	%	*n*	%	*N*	%	x^{2b}	*p*
Education level								
Primary school	10	62.5	6	37.5	16	100.00	4.22	0.37
Middle school	1	25.00	3	75.00	4	100.00		
High school	8	38.10	13	61.90	21	100.00		
University and above	10	62.50	6	37.50	16	100.00		
Marital status								
Single	7	58.33	5	41.67	12	100.00	0.34	0.40
Married	22	48.89	23	51.11	45	100.00		
Employment status								
Employed	23	69.70	10	30.30	33	100.00	5.23	0.16
Not employed	6	25.00	18	75.00	24	100.00		
Presence of chronic diseases								
Yes	19	46.34	22	53.66	41	100.00	1.22	0.27
No	10	62.50	6	37.50	16	100.00		
Previous surgery experience								
Yes	21	45.65	25	54.35	46	100.00	2.60	0.10
No	8	72.73	3	27.27	11	100.00		
Preoperative need for home care								
Yes	3	60.00	2	40.00	5	100.00		
No	26	50.00	26	50.00	52	100.00		

[a]Independent-sample *t*-test.
[b]Chi-square test and row percentages have been taken.

education on postdischarge SF-36 social role functioning subdimension mean scores was moderate ($d = 0.99$).

At the pretest, no significant difference was observed in the bodily pain subdimension scores between the two groups ($t = 1.70$; $p = 0.09$), but a significant difference was found at the posttest in the SF-36 Bodily Pain subdimension mean scores ($t = 2.87$; $p < 0.01$). However, the effect size of SMS messaging on the SF-36 bodily pain subdimension mean scores was weak ($d = 0.35$).

A significant difference was observed in the postsurgery SF-36 general health perceptions subdimension mean scores ($t = 4.67$; $p < 0.01$). The effect size of SMS-based information on the SF-36 general health perceptions subdimension scores at the posttest was strong ($d = 1.23$) (Table 4).

4 | Discussion

This study has demonstrated that sending SMS text messages containing discharge information improved all SF-36 Quality of Life Scale subdimension scores, including physical functioning, physical role functioning, emotional role functioning, vitality, mental health, social role functioning and general health perceptions, significantly among the intervention group. Although SMS text messaging is feasible and acceptable for delivering prostate cancer education to African American men [20], no previous study has specifically investigated the impact of discharge information via SMS on the postoperative quality of life in patients undergoing RP. However, research in other fields, such as gynaecology, orthopaedics, cardiovascular surgery and among cancer patients, has confirmed that SMS text messages containing discharge instructions enhance home-based care management, promote regular medication adherence, facilitate easier compliance and reduce hospital readmissions [21, 29–31]. Other studies have also demonstrated that sending informational messages postdischarge, in addition to routine hospital protocols, has enhanced patients' knowledge levels, self-care involvement and overall quality of life [30, 32–34]. Moreover, a systematic review by Wijeratne et al. emphasised the effectiveness of SMS messaging in improving adherence to treatment and contributing to the recovery process among cancer patients [35]. The

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TABLE 4 | Comparison of average of the SF-36 subscale.

	Pretest	Retest test		
	$X \pm SD$	$X \pm SD$	t[a]	p_{time}
Physical functioning				
Intervention group	61.38 ± 28.91	80.52 ± 16.11	3.07	**0.00**
Control group	61.43 ± 23.56	58.75 ± 25.04	1.06	0.29
t[b]	−0.01	3.89		
P_{Group}	0.99	**0.00**		
Cohen's d		**1.04**[c]		
Physical role functioning				
Intervention group	12.93 ± 31.78	80.17 ± 37.43	7.11	**0.00**
Control group	22.32 ± 34.92	54.46 ± 45.16	3.37	**0.02**
t[b]	1.06	2.34		
P_{Group}	0.29	**0.02**		
Cohen's d		**0.52**[e]		
Emotional role functioning				
Intervention group	20.69 ± 41.23	78.16 ± 38.08	5.30	**0.00**
Control group	35.71 ± 47.08	59.52 ± 46.58	2.28	**0.03**
t[b]	1.28	1.65		
P_{Group}	0.20	0.10		
Cohen's d		**0.67**[e]		
Vitality				
Intervention group	32.24 ± 20.6	72.41 ± 24.91	6.29	**0.00**
Control group	42.86 ± 14.49	48.75 ± 18.74	1.55	0.13
t[b]	2.24	4.06		
P_{Group}	**0.03**	**0.00**		
Cohen's d	**0.60**[e]	**1.07**[c]		
Mental health				
Intervention group	35.45 ± 19.62	78.48 ± 24.53	6.88	**0.00**
Control group	48.71 ± 16.37	56.86 ± 20.05	1.18	0.08
t[b]	−2.76	3.65		
P_{Group}	**0.01**	**0.00**		
Cohen's d	**0.74**[e]	**0.96**[e]		
Social functioning				
Intervention group	26.29 ± 25.52	80.6 ± 25.79	7.47	**0.00**
Control group	45.54 ± 27.68	55.36 ± 25.33	1.48	0.14
t[b]	−2.73	3.72		
P_{Group}	**0.01**	**0.00**		
Cohen's d	**0.72**[e]	**0.99**[e]		
Bodily pain				
Intervention group	27.41 ± 28.24	77.16 ± 24.25	6.62	**0.00**
Control group	40.27 ± 28.61	58.57 ± 24.58	3.23	**0.00**
t[b]	−1.70	2.87		
P_{Group}	0.09	**0.00**		
Cohen's d	—	**0.35**[d]		
General health perceptions				
Intervention group	41.38 ± 11.79	67.93 ± 10.57	8.48	**0.00**
Control group	49.82 ± 10.67	54.29 ± 11.44	1.67	0.11
t[b]	−2.83	4.67		
P_{Group}	**0.00**	**0.00**		
Cohen's d	**0.75**[e]	**1.23**[c]		

Note: Statistically significant values are marked in bold. A significant relationship has been observed between the total scores within each group across all time points.
[a]Paried-sample t-test.
[b]Independent sample t-test.
[c]Cohen's d strong effect size (≤ 1.01).
[d]Cohen's d small effect size (≤ 0.50).
[e]Cohen's d moderate effect size (≤ 1).

literature emphases that at discharge, healthcare professionals need to explain information while integrating patients' conditions, perceptions and needs at the same time. However, patients may not understand or remember the information provided, resulting in confusion, misinterpretation and mismanagement of treatment and follow-up. A clinically relevant proportion of patients being discharged are not able to recall their diagnoses and discharge instructions, and shortcomings in the education of patients before discharge have been associated with a higher risk for reattendance 30 days after hospital discharge and mortality rate, lower patient satisfaction and health quality [36]. These findings underscore the potential value of SMS message interventions by clinical nurses postdischarge, particularly for the population undergoing RP.

When the subscales are evaluated, in our study, it was stated that the average scores for the SF-36 physical role difficulty subdimension increased among intervention patients who received educational information via SMS after discharge. A study mentioned that text messaging technology via mobile phones can create a Hawthorne effect on patients; receiving messages from healthcare professionals makes patients feel uniquely cared for and appreciated [37]. These feelings could potentially enhance their physical role difficulty scores, suggesting a psychological benefit that complements the physical advice provided.

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In this study, it was observed that there was an increase in the average scores for the SF-36 emotional role difficulty subdimension among patients in the intervention group. In Turkey, a study involving patients who had undergone cataract surgery did not explore quality of life; yet, it was found that postoperative informative messages helped reduce patients' anxiety levels [38].

In our study, it was determined that the average scores for the SF-36 energy/vitality/vigour subdimension of the intervention patients were higher than those of the other group in the postoperative period. Although studies focussing specifically on patients who have undergone RP are scarce, research by Bartholdy et al. [30] on patients with knee osteoarthritis found that sending short text messages reduced inactivity and accelerated the recovery process. The postdischarge informative messages can lead to raising patient awareness about necessary postoperative care activities. Furthermore, adherence to recommendations may make patients feel more energetic and vital due to a faster recovery [30].

In the present study, it was revealed that the mean of average scores of SF-36 mental health and social role functioning increased significantly among the intervention group. A study with cancer patients demonstrated that text messages providing information, monitoring and feedback enabled patients to socialise more comfortably and act more consciously, especially those with medical devices such as catheters, which positively influenced their psychological well-being [39]. The permanence of SMS messages, stored on phones and less likely to be lost or deleted than paper, allows patients to revisit the information whenever necessary. Moreover, the accessibility of messages, regardless of time and place, and the ability to review them in any social setting may have positively impacted the scores in social functioning and mental health subdimensions among patients.

Postdischarge follow-up and monitoring hold a significant place in improving patients' quality of life and easing the adaptation process [18, 19]. The literature suggests leveraging technology in postoperative care and monitoring [40]. In the study, it was found that the average scores of the SF-36 General health perceptions subdimension improved among intervention patients who received discharge information via SMS. Previous studies and our findings indicate that technologies such as web-based training and SMS text messaging, which supplement traditional patient education materials, have positive effects on patient's quality of life, satisfaction, adaptation to treatment and social life, speedy recovery and overall health perception due to better disease management [30, 38, 41].

The current study acknowledges certain limitations. The use of a self-administered survey could introduce bias, as the results depend on the information provided by participants. While the study presents evidence of the effect of SMS messaging with discharge information on the quality of life in patients who underwent RP, the small sample size limits the robustness of the findings. Further high-quality research is necessary to reinforce these initial results. Another limitation is the recruitment of patients from a single centre with one month of evaluation, which restricts the generalisability of the results to other health institutions and patient populations. Additionally, the lack of prior studies both in Turkey and internationally evaluating the effectiveness of discharge education via SMS messages for patients who have undergone RP constrained the development of the discussion section.

5 | Conclusion and Recommendations

The study confirmed the H1 hypothesis, showing that patients receiving detailed discharge information via SMS messages demonstrated statistically significant improvements in all SF-36 Quality of Life Scale subdimensions during the first postoperative month. The literature highlights that maintaining contact with patients postdischarge, especially through various technological methods, fosters a feeling of being cared for and appreciated, thereby improving adherence to treatment and speeding up recovery. Therefore, these findings may help clinical nurses better comprehend the importance of reminders of discharge information via SMS text messages following RP. This approach can extend beyond routine clinical discharge training for patients who have undergone RP. It is recommended that similar studies be conducted with larger sample groups and with more than one month of evaluation.

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Conflicts of Interest

The authors declare no conflicts 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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