Original Article

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The Effect of Informative Mobile App Use on Anxiety, Distress, and Quality of Life of Women With Breast Cancer

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ABSTRACT

Objective: To evaluate the effect of mobile app-based educational information on anxiety, distress, and quality of life in patients with breast cancer (BC).

Materials and Methods: This mobile app was designed to assist patients before and after BC surgery. This randomized controlled study was conducted between April and August 2021. The intervention group (n = 42) received routine care and access to the mobile app for one month, while the control group (n = 40) received only routine care. Data were collected using questionnaires one week before and three weeks after surgery.

Results: The patients in the intervention group, after using the mobile app, had significantly lower anxiety and distress levels than those in the control group (p<0.05). However, there was no difference between the two groups regarding overall quality of life and subscale mean scores (p>0.05).

Conclusion: These findings suggest that using informative mobile apps starting before surgery can effectively reduce anxiety and distress in the early periods after surgery. Although the impact on overall quality of life was insignificant, such interventions may have long-term positive effects on quality of life.

Keywords: Anxiety; breast cancer; cancer care; mobile health; nursing

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Key Points

- The anxiety and distress scores of women utilizing the informative mobile application were significantly lower in the early period after surgery.
- Although quality of life decreased during the postoperative period, no significant difference was identified between the intervention and control groups.
- Participants who received educational information through the mobile application expressed satisfaction with the provided content.

Introduction

Breast cancer (BC) is one of the most important health problems threatening women globally. According to the Cancer Statistics for 2020, female BC is the most frequently diagnosed cancer, with an estimated 2.3 million new cases (1). In Turkey, BC is also the most common cancer among women, with an incidence of 48.6 per hundred thousand (2). Following a diagnosis of BC, women commence treatments such as chemotherapy, radiotherapy, and surgical procedures.

BC patients require additional information regarding the treatment following their diagnosis (3, 4). Patients seek information on essential aspects, such as the treatment's side effects, long-term outcomes, details about aftercare, and post-treatment care (5). Due to insufficient information on the procedure, rehabilitation, recovery time, and pain management, patients harbor concerns about potential complications associated with surgery (4). Insufficient information contributes to uncertainty, distress, anxiety, and fear among BC patients. (5). In addition, any unmet need for information will increase anxiety and distress and thus decrease the quality of life (6-9). Informative training and counseling are essential in reducing the anxiety and distress experienced by women during BC surgery. Patients also express a desire for written materials, facilitating the recall of information (5).

Using accessible technologies, like mobile applications (apps), will aid in ensuring that women receive adequate information and training throughout their treatment. With their ease of use, mobile apps enable

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access to much information or training via smart devices, regardless of time and place. Supportive care with mobile apps may revolutionize cancer care (10). Numerous mobile apps, whether independently developed or institutionally created, are currently accessible for BC-related purposes (11). Mobile apps continue to be produced to provide information, education, or support to patients at different stages of BC treatment (12-15). While mobile apps are designed to aid in BC care management, further studies are required to establish evidence-based data (16). Moreover, BC patients seek trustworthy mobile health apps to manage their care independently (17, 18). Implementing a mobile application that provides information and support to patients throughout the treatment process can reduce their anxiety and distress and increase their quality of life. The objective of this study was to assess the impact of a mobile app, designed to provide information to BC patients undergoing surgical treatment, on their levels of anxiety, distress, and quality of life.

Materials and Methods

Design

This study was conducted as a two-group randomized controlled trial with BC patients scheduled for elective surgery.

Participants

Patients were included if they were scheduled for elective surgery due to BC, were over 18 years old, could read and understand Turkish, were at least a primary school graduate, had internet access, and had a smartphone with an Android operating system suitable to download the mobile app. Patients who were diagnosed with active psychiatric disease, were using antidepressant medication, had vision problems that prevented them from using a mobile app, and were scheduled for reconstructive surgery using their tissue were excluded from the study. In this study, out of 162 recruited patients, 74 were excluded due to the following reasons: non-Turkish speakers (n = 5), illiteracy (n = 5), non-phone users (n = 10), lack of a phone compatible with the e-mobile application (n = 23), use of antidepressant medication (n = 12), planned additional surgeries alongside breast surgery (n = 7), and unwillingness to participate (n = 12). The participants were randomized into either the intervention group or the control group. The required sample size was determined previously using the "G. Power-3.1.7" software package after reaching ten individuals in each group. Accordingly, at least 42 individuals were identified in each group at 80% power, 0.54 effect size, and 0.05 significance level. Considering there may be drop-out during the study, 88 patients were included in the sample (Figure 1).

Randomization

Types of surgery for women who will have breast surgery for BC for the first time were breast-conserving surgery, mastectomy, and modified radical mastectomy. Intervention and control groups were determined using the bloc randomization method, stratified according to the types of surgery. The random.org (https://www.random.org/) website was used for randomization. The random assignments were conducted under the clinic nurse's supervision.

Preliminary Study

The preliminary preparation for this study was carried out in three stages, including the creation of scientific content, mobile app design, and pilot study.

The Creation of Scientific Content: Scientific content for the needs of patients was gathered under three main headings, and some content was structured with video support (Table 1). The scientific content included information and education about BC, preparations, and training before the operation, as well as post-operative care management and discharge training. The videos included training, such as breathing exercises, arm and shoulder exercises, and wound and drain care. The content validity index (CVI) of Davis (19) was used to determine the content validity of scientific content. Values with a CVI of 0.80 or above are considered valid. The overall content validity of the guide, for which ten experts were consulted, was 0.98

Mobile app Design: The mobile app had three sections: Information Forum (I), Personal Forum (notebook and reminder) (II), and Ask the Researcher (messaging) (III). The information forum is a section that enables patients to access related texts, pictures, and videos. This section, presented under three main headings, general information about BC, pre-operative information, and post-operative information, offers a comprehensive educational package to the patients (Table 1). The prepared pictures and videos were placed on the relevant subject. The personal forum is a section that allows patients to create their notes and use the necessary reminders. The Ask the Researcher section will enable patients to communicate with the researcher via messages. The participants could download the "Breast Cancer Surgery Information Guide" mobile app from the Google Play Store and install it on their phones. Users whom the researcher authenticated could access the content with an email and password.

Pilot Study: The mobile app's functionality was evaluated with three patients during the surgical treatment process, but they were omitted from the final analysis. The mobile app was finalized based on stylistic and improvement suggestions from the patients.

Data Collection

Preoperative interviews were conducted face-to-face, on average, 3–7 days before admission to the hospital. In the first interview with the patients, data were collected using the Patient Information Form and Anxiety, Distress, and Quality of Life measurement tools (see below)

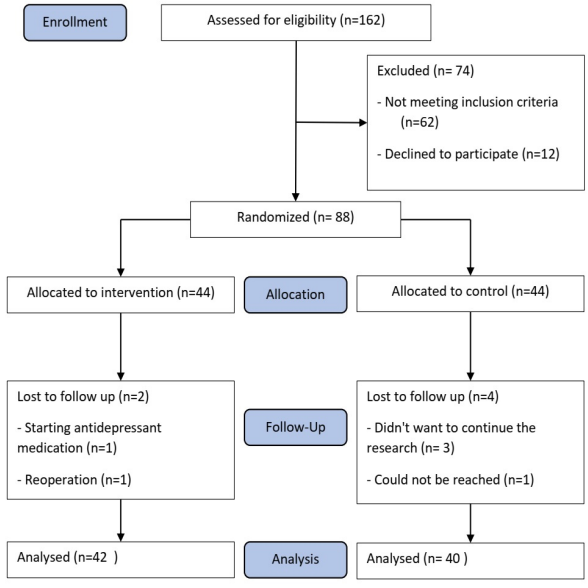

Figure 1. The CONSORT flow diagram

Table 1. Information headings and subheadings in the mobile application

General information	Preoperative information	Postoperative information
- What is Cancer? - What is Breast Cancer? - Breast Cancer Risk and Prevention - Breast Cancer Detection and Diagnosis [BSE-Video] - Types of Breast Cancer - Breast Cancer Surgery and Breast Reconstruction - Other Treatment Methods of Breast Cancer	- General information before hospitalization (information about the surgery and consent, situations that should be reported to the doctor, blood supply, pre-operative tests, private room situation, companion situation, meal and visiting hours, coping with pre-operative stress) [Video] - Preparation from the day before the surgery until the night (shower/bath, hair removal, fasting period, items to be brought to the hospital, exercises to be learned before the surgery) [Video] - Surgery Day Preparation [Video]	- Conditions to be considered in the first 24 hours after the surgery - Post-operative complications (respiratory complications, hematoma, seroma, wound complications, lymphedema) - Pain and its management - Time to discharge and recheck - Post-operative bath time - Wound care - Stitches care and removal - Surgical Drain Care [Video] - Life After Discharge (skin care, use of deodorant-perfume, avoidance of heat, nutrition, work life, home life, doing sports, traveling, sexual life, choice of clothing, breast prosthesis and pocketed bra use, psychological health after surgery) [Video] - Lymphedema and its management [Video] - Arm Shoulder Strengthening Exercises [Video]

Intervention Group: The researcher uploaded the mobile app to the Android market and downloaded it to the patients' phones. Patients were taught how to use this app and given an instruction manual. One week after the surgery, the patients were called and reminded about using the app. Data were collected three weeks after the surgery through telephone interviews with the Patient Follow-up Form, Anxiety, Distress, and Quality of Life measurement tools, the Patient Information Satisfaction Questionnaire, and the Mobile App Evaluation Form.

Control Group: The patients received routine care and training in the clinic, and no additional intervention was applied. Data were collected three weeks after the surgery through telephone interviews with the Patient Follow-up Form, Anxiety, Distress, and Quality of Life measurement tools, and the Patient Information Satisfaction Questionnaire.

After the data collection process for the mobile app was completed, the patients in the control group were informed about it. The mobile app was downloaded for the patients (n = 15) who wanted it, and the information was sent to the others (n = 25) as a PDF document. Patients in the intervention group could continue to access the mobile app.

Data Collection

Data were collected using data collection forms from patients who attended the surgical oncology clinics and outpatient clinics of a university hospital between April and August 2021.

Patient Information and Follow-Up Form: This form consists of two sections. The first section consists of questions about patients, such as age, marital status, education status, occupation, employment status, income status, smoking status, presence of chronic disease, planned hospitalization, date of surgery and discharge, the type of treatment, the performed type of the surgery, sentinel lymph node dissection, and axillary lymph node dissection status. The second section, the "Follow-up form", includes questions about the type of surgery performed and the date of hospitalization, surgery, and discharge.

Hospital Anxiety and Depression Scale: The hospital anxiety and depression scale (HAD) is a self-report scale used to diagnose anxiety and depression in a short time and to determine the risk group in patients with physical illness and applied to primary healthcare services. Only the Anxiety subscale (HAD-A) was used in this study. The anxiety subscale consists of seven items (1st, 3rd, 5th, 7th, 9th, 11th, and 13th questions). Items 1, 3, 5, 11, and 13 gradually decrease severity. The score that is obtained from the HAD-A ranges between 0 to 21 (min.-max.). The Turkish validity and reliability study of the scale was conducted by Aydemir et al. (20). In the reliability study of the scale, Cronbach's alpha value for the anxiety subscale was found to be 0.85. In this study, Cronbach's alpha value of the scale was calculated as 0.83.

The NCCN Distress Thermometer and Problem List: This scale measures psycho-social distress in cancer patients. It consists of a visual analog scale that individuals can apply independently, consisting of only one question. It is used to evaluate the stress situation patients have experienced in the last week and a list of problems. The validity and reliability study of the NCCN Distress thermometer was conducted by Özalp et al. (21) in 2006. The scale's sensitivity in the study was 0.73, and the specificity was 0.49. A list of problems was added to the distress thermometer in 2003. The problem list consists of the issues collected in five different groups (daily life, family, emotional, physical, and body problems) that cancer patients frequently experience. Patients mark the difficulties they have encountered in the last week in the list (21).

FACT-G Quality of Life Scale: Functional Assessment of Cancer Therapy-General (version 4) Quality of Life Scale consists of four dimensions: physical well-being (seven items), social/family well-being (seven items), emotional well-being (six items), and functional well-being (seven items). There were 27 questions on the scale. The scale has a 5-point Likert-type structure and is scored between 0 and 4. All questions assess the patient's quality of life in the last seven days. The scale's total score equals the sum of the sub-dimensions, and a high score indicates a high quality of life. Cronbach's alpha value calculated because of the cross-cultural use of the scale was found to be 0.88 (22). In our study, Cronbach's alpha value of the scale was determined to be 0.92.

Patient Information Satisfaction Questionnaire: This questionnaire consists of three questions about patients' satisfaction with the information they receive and the information/training they receive from doctors and nurses.

Mobile App Evaluation Form: This form consists of seven closed questions that are answered "yes, no, or partially" to evaluate the mobile information app used by the patients in the intervention group in terms of form, layout, readability, information quality, and ease of use, and two open-ended questions about the most used section on the app and suggestions for improvement (23, 24).

Ethical Considerations

Institutional permission and the University Ethics Committee approval were obtained for the study (approval number: 83264, date: 23.10.2019 - Ankara University Ethics Committee). This study was performed in compliance with the Declaration of Helsinki (as revised in Brazil 2013). Written informed consent was obtained from the patients. The permission of the authors was obtained to use the measurement tools. To protect personal data, the information used to access the mobile app was closed to third parties.

Statistical Analysis

Data were analyzed using SPSS, version 21 (IBM Inc., Armonk, NY USA). Descriptive statistics of the variables were presented with numbers (n), percentages (%), mean scores ($\bar{x}$), standard deviation (ss), median, interquartile range, and minimum-maximum values. The Shapiro-Wilk test was used to confirm the data conform to the normal distribution, the paired samples t-test was used to evaluate the repeated measurements, and the independent samples t-test was employed to compare the groups. The data obtained were evaluated at a confidence interval of 95% and a significance level of $p<0.05$. An intention to treat (ITT) analysis was performed based on the groups to which the women were initially assigned. A per-protocol analysis was used for reporting because similar main results were obtained in the ITT analysis.

Results

Demographic and Disease-Treatment Characteristics: The mean age of the patients in the intervention group was 48.8±9.0 years, and the mean age in the control group was 49.3±9.4 years. There was no statistically significant difference between the groups according to the descriptive and disease-treatment characteristics of the patients ($p>0.05$; Table 2).

The Effect of Mobile Apps on Anxiety: The mean post-test anxiety scores of the patients in the intervention and control groups were significantly lower than their pre-test scores ($p<0.05$). The mean anxiety scale scores of the patients in the intervention group after access to mobile information were significantly lower than those of the control group ($t = -2.031$, $p<0.05$; Table 3).

The Effect of Mobile App on Distress: The mean distress score of the patients in the intervention group (IG) after mobile information was significantly lower than in the pre-test score ($t = 6.50$, $p<0.01$) and control group (CG; $t = 3.642$, $p<0.01$; Table 3). The causes of patients' distress were primarily emotional problems (IG = 78.8%, CG 71.4%) in the pre-test, whereas emotional (IG = 44.5%, CG = 49.4%) and physical (IG = 38.8%, CG = 34.6%) problems were found in the post-test.

The Impact of Mobile Apps on Quality of Life: Total and sub-dimension mean quality of life scores after mobile information did not differ between the intervention and control groups ($p<0.05$). The total quality of life score and the functional well-being mean score of the patients in the control group were significantly lower than their pre-test scores (t/p = 2.123/0.04; t/p: 3.426/0.001, respectively). In both groups, the mean physical well-being score decreased ($p<0.05$), and the mean emotional well-being score increased ($p<0.05$) in the post-test, and there was no significant difference between the groups (Table 3).

Satisfaction with Patient Information: There was a significant difference between the intervention and control groups according to their satisfaction with all information/education they received ($p<0.01$). Patients in the intervention group were more satisfied with the information they received than the control group ($x^2 = 13.47$, $p = 0.001$).

Evaluation of the Mobile App: The patients' evaluations were as follows: the adequacy of information provided in the mobile app (90.5%), the quality of information (90.2%), satisfaction with the app's visual aspects (92.9%), the adequacy of the app's readability level (90.5%), and satisfaction with the app's ease of use (92.9%).

Discussion and Conclusion

The findings of this study support the research hypothesis, indicating that the implementation of an informative mobile app effectively reduced anxiety and distress levels among women undergoing surgery for BC. However, unlike our research hypothesis, the results show that this implementation did not positively impact the health-related quality of life in the early postoperative period.

The comparison between the groups demonstrated that the intervention group using the mobile app exhibited a significantly lower anxiety score, supporting the research hypothesis. Various studies with different results have been conducted examining the effect of web and mobile-based information on the anxiety level of BC patients. (25-27). Similar to this study, web-based training, which was given during the period before and after surgery, was effective in reducing the anxiety of women. However, the information that was provided with the mobile app consisted of BC biology, treatment methods, and surgical techniques and did not include the subjects that supported the care of the patient, increasing the anxiety and depression levels of the patients (25). The video-assisted information about the length of hospital stay, surgery, and adjuvant treatment given to the women in the preoperative period did not affect their anxiety levels (28). An information resource created according to women's needs, supported visually and audibly, covering care issues, and a platform where they can obtain advice about

Table 2. Descriptive and clinical characteristics of the patients

Characteristic	IG (n = 42)	CG (n = 40)	Statistical analysis	
	$\bar{x}$ ± SD	$\bar{x}$ ± SD		
Age (years)	(48.81±9.018) Min-Max (33–66)	(49.30±9.379) Min-Max (32–69)	*t* = -0.241	*p* = 0.810
	n (%)	**n (%)**	**χ^2**	***p***
Marital status				
Married	36 (85.7)	37 (92.5)	0.483	0.266
Single	6 (14.3)	3 (7.5)		
Education level				
Primary school	13 (31)	22 (55)	7.33	0.062
Secondary school	4 (9.5)	6 (15)		
High school	16 (38.1)	7 (17.5)		
University	9 (21.4)	5 (12.5)		
Job				
Worker	10 (23.8)	8 (20)	0.174	0.677
Housewife	32 (76.2)	32 (80)		
Income level				
Income less than expenses	4 (9.5)	10 (25)	3.466	0.063
Income equals expense	38 (90.5)	30 (75)		
Living city				
Ankara	31 (73.8)	27 (67.5)	0.394	0.530
Other cities	11 (26.2)	13 (32.5)		
Smoking				
Yes	13 (31)	12 (30)	0.009	0.925
No	29 (69)	28 (70)		
Chronic disease				
Yes	22 (52.4)	21 (52.5)	0.000	0.991
No	20 (47.6)	19 (47.5)		
Family history of breast cancer				
Yes	11 (26.2)	10 (25)	0.015	0.902
No	31 (73.8)	30 (75)		
Type of treatment				
Adjuvant	25 (59.5)	31 (77.5)	3.057	0.080
Neoadjuvant	17 (40.5)	9 (22.5)		
Planned type of surgery				
BCS + SLNB	14 (33.3)	15 (37.5)	0.297	0.862
Mastectomy + SLNB	20 (47.6)	19 (47.5)		
MRM	8 (19)	6 (15)		
Sentinel lymph node dissection				
Yes	34 (81)	34 (85)	0.237	0.626
No	8 (19)	6 (15)		
Axillary lymph node dissection				
Yes	24 (57.1)	18 (45)	1.209	0.272
No	18 (42.9)	22 (55)		

IG: Intervention group; CG: Control group; BCS: Breast conserving surgery; SLNB: Sentinel lymph node biopsy MRM: Modified radical mastectomy; SD: Standard deviation; Min-Max: Minimum-Maximum

Table 3. Comparison of the anxiety, distress and quality of life total and subscale scores of the patients

Characteristics		Pre-test		Post-test		Test statistics	
	Groups	**Mean ± SD**	**Median (IQR)**	**Mean ± SD**	**Median (IQR)**	**t**	***p***
Anxiety	IG	8.40±4.33	8(5)	4.74±4.037	3(5)	4.423	**0.001***
	CG	8.83±4.47	9(7)	6.55±4.038	6(6)	3.247	**0.002***
	IG *vs.*	t =-0.432		t =-2.031			
	CG	*p* = 0.667		***p* = 0.046***			
Distress	IG	5.95±2.48	6 (4)	3.81±2.25	4(3)	6.500	**0.001***
	CG	5.58±2.18	5.5 (3)	5.35±2.30	5(4)	0.621	0.538
	IG *vs.*	t = 0.783		t = -3.642			
	CG	*p* = 0.436		***p* = 0.001***			
QOL Total	IG	82.71±13.71	85.5 (22)	80.97±13.67	84 (18)	0.735	0.466
	CG	80.53±13.55	81 (17)	76.95±11.19	75 (17)	2.123	**0.04***
	IG *vs.*	t = 0.721		t = 1.45			
	CG	*p* = 0.473		*p* = 0.150			
Physical well being	IG	23.52±3.24	24 (4)	20.12±4.24	20.5 (5)	5.309	**0.001***
	CG	23.50±3.41	24 (4)	19.73±4.21	20 (7)	5.507	**0.001***
	IG *vs.*	t = 0.422		t = 0.422			
	CG	*p* = 0.675		*p* = 0.675			
Social/family well being	IG	24.56±3.25	25 (4)	24.88±2.72	25.33 (4)	-0.528	0.600
	CG	23.28±4.93	25 (6)	24.48±3.69	26 (6)	-1.824	0.076
	IG *vs.*	t = 0.563		t = 0.563			
	CG	*p* = 0.402		*p* = 0.575			
Emotional well being	IG	14.57±4.44	14.5 (5)	16.88±4.28	17.5 (6)	-3.029	**0.004***
	CG	13.9±4.34	14 (7)	15.30±3.48	15 (5)	-2.309	**0.026***
	IG *vs.*	t = 0.691		t = 1.827			
	CG	*p* = 0.491		*p* = 0.071			
Functional well being	IG	20.05±5.37	21 (8)	19.10±4.89	19.5 (7)	1.103	0.276
	CG	19.85±4.49	19 (7)	17.45±4.28	17 (6)	3.426	**0.001***
	IG *vs.*	t = 0.180		t = 1.617			
	CG	*p* = 0.858		*p* = 0.110			

*: p<0.05; IG: Intervention group; CG: Control group; QOL: Quallity of life; SD: Standard deviation; IQR: Interquartile range

their problems may have been effective in reducing women's anxiety. In the present study, an informative mobile app reduced distress levels. Similarly, Çınar et al. (13) reported that the supportive education given via a mobile app to BC patients receiving hormone therapy reduced the distress level of the patients. Studies investigating the effect of knowledge-based interventions on the level of distress are limited (13). In another study, group consultation combined with a tablet-based online app did not affect the distress level of BC patients, which may have been due to the low initial measurement distress levels of the patients (29). The increase in patients' distress levels is associated with the need for unmet information and supportive care (6, 7).Although the postoperative quality of life decreased in both groups, the quality of life score of the intervention group was better than that of the control group. In contrast to the present study's findings, research has indicated that interventions, such as self-management support, supportive education, and awareness training delivered through mobile applications and web-based educational programs positively impact the quality of life among women diagnosed with BC (13-15, 27). However, these developed applications are directed towards stages such as chemotherapy and radiotherapy rather than surgical treatment for BC. The messaging app-based rehabilitation program increased the quality of life of women who underwent breast surgery (30). In the study, interventions related to subjects, such as teaching arm-shoulder exercises, stress management, and nutrition, were applied to the women starting from the preoperative period. In the postoperative period, interventions were conducted to manage complications and life after discharge. The patient's quality of life after the surgery decreased in the first month compared with the preoperative period and increased by the sixth month (30). In this study, which evaluated the short-term quality of life of the patients, considering that other

treatment processes may have adverse effects on the quality of life, the information and support provided by the mobile app did not affect the quality of life. To evaluate the impact of informative mobile apps on the quality of life, long-term follow-ups should be performed starting from the preoperative period and after the surgery.The patients in the intervention group in the present study were satisfied with the mobile app developed and its contents. In a qualitative study evaluating the information needs of patients with BC, it was stated that women wanted the information to be given in a form that could be taken home to ensure that they could remember it easily (4). Mobile apps are technological products patients can download to their phones and quickly access information wherever and whenever they want. The mobile app we used in this study is adequate because it is easy to use and meets its purpose.

Study Limitations

The results of this study only include patients who underwent surgery for BC in the hospital where the study was conducted. Patients were operated on in three different ways based on the findings of preoperative tests, but there could be changes in the type of surgery depending on the patient's condition. Whether or not an axillary dissection would be performed on a patient scheduled for breast-conserving surgery was often clarified during the operation. Therefore, the study was conducted with patients undergoing all types of breast surgery. The mobile app used in the research was developed according to the type of smartphone used by middle-aged and older people in our country. It cannot be generalized to patients using other operating systems. Another limitation of the study is the inability to implement blinding for the researcher during the data collection. Lastly, the research was conducted when the effects of the COVID-19 pandemic had diminished, but the impact of the pandemic on the research was not investigated.

Although the informative mobile support app used in this study decreased the anxiety and distress levels of BC patients in the early postoperative period, its effect on longer term quality of life could not be determined, as there was only a one-month follow-up. This study, conducted during the pandemic, is relevant to the use of technological apps, which have been used increasingly in our daily lives and came to the fore during the pandemic. Interventions via mobile apps developed by health professionals can be used regardless of place/time. Nurses can use this application developed for BC patients in clinics to ensure continuity of patient education. Since this application can provide information to patients from the preoperative period, the unmet need for information and education may also be reduced. Moreover, supporting patient education and information with such mobile applications can enable patients to easily access reliable information or support in the post-discharge period. As a result, nurses' use of the developed mobile application in the care of patients may help reduce the anxiety and distress of BC patients. As a data source for evidence-based studies, this study will contribute to the results of using mobile informative apps in care practices for patients undergoing breast surgery.

Ethics Committee Approval: Institutional permission and the University Ethics Committee approval were obtained for the study (approval number: 83264, date: 23.10.2019 - Ankara University Ethics Committee).

Informed Consent: Written informed consent was obtained from the patients.

Authorship Contributions

Surgical and Medical Practices: S.K.; Concept: F.S.S., S.E.İ.; Design: F.S.S., S.E.İ., S.K.; Data Collection and/or Processing: F.S.S., S.K.; Analysis and/or Interpretation: F.S.S., S.K.; Literature Search: F.S.S.; Writing: F.S.S., S.E.İ., S.K., S.K.

Conflict of Interest: The authors have no conflicts of interest to declare.

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