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ORIGINAL ARTICLE

Relationship between self-efficacy and sexual function after open heart surgery

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Aims The high level of self-efficacy that facilitates the adaptation of patients to their new lives and accelerates the healing process after open heart surgery has a positive effect on sexual function. The aims of the study are to examine the self-efficacy and sexual function of patients undergoing open heart surgery and factors affecting it.

Methods and results This descriptive cross-sectional study was conducted with 76 patients (44 females, 32 males). The data were collected with an information form, Barnason Efficacy Expectation Scales (BEES): Cardiac Surgical Version, Beck Depression Inventory (BDI), International Index of Erectile Dysfunction (IIEF), and Female Sexual Function Index (FSFI). The mean age of the patients was 63.12 ± 7.91. It was found that 30.3% of the patients (73.9% female and 26.1% male) were sexually inactive, and they did not receive information about sexual function. The mean BEES: Cardiac Surgical Version score was 43.96 ± 6.07. The mean IIEF score was 19.07 ± 26.0, and the mean FSFI score was 15.67 ± 9.12. There was a positive correlation between BEES: Cardiac Surgical Version and IIEF ($r = 0.34$; $P = 0.00$), and there was a negative correlation between BEES: Cardiac Surgical Version and FSFI ($r = -0.27$; $P = 0.01$).

Conclusion It was determined that patients did not have sufficient information about sexual life after open heart surgery. The patients had sexual problems after surgery. It was found that sexual function increased with increasing self-efficacy in men, while sexual function decreased with increasing self-efficacy in women.

Keywords Open heart surgery • Self-efficacy • Sexual dysfunction • Sexual function

Implications for practice

- In this study, self-efficacy, sexual function, and affecting factors after open heart surgery were investigated, a weak significant correlation was found between self-efficacy and sexual function. It was determined that the patients who had open heart surgery did not have any information about sexual function after surgery, they had sexual problems, they thought that sexual function affects heart disease and they did not receive sexual counselling.
- The results of this study are important for nurses. Nurses can increase the self-efficacy levels of patients after open heart surgery and provide sexual counselling after surgery to accelerate the recovery process and improve quality of life. Nevertheless, further studies are needed to test the effect of self-efficacy on sexual function after open heart surgery.

Introduction

Surgical treatment is an important option in cases where cardiovascular diseases such as coronary artery diseases and valve regurgitation or stenosis are less likely cured with medical treatment. Surgery is frequently preferred because it shortens recovery time, increasing quality of life and lifespan.[1,2] A high level of self-efficacy in patients after open heart surgery facilitates their adaptation to post-surgery

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life.[3] It is important to develop self-efficacy of patients by providing them with necessary knowledge and skills to adopt changes in physical appearance and maintain an independent life. The recovery process after open heart surgery requires not only physical changes but also psychosocial adjustment.[3] One of the major components of psychosocial adjustment is a healthy sexual life.[3]

A variety of sexual problems such as decreased frequency of sexual activity and lack of sexual satisfaction may appear after open heart surgery.[4] The most important cause of sexual dysfunction in patients undergone open heart surgery is the fear that having sex may trigger cardiac symptoms such as angina pain and myocardial infarction or damage the surgical site.[5] Yıldız and Pınar[6] reported that 80% of women and 37% of men with myocardial infarction had sexual problems. After coronary artery bypass grafting (CABG) surgery, 36% of individuals experienced a decrease in frequency of sexual activity, and 8% had sexual abstinence.[7] However, contrary to what patients think, studies report that sexual life is safe after cardiac surgery.[8–10] Sexual activity increases cardiac symptoms by 0.01% in individuals with cardiovascular disease. Only 0.6% of sudden cardiac deaths occur due to sexual activity.[7,9] Therefore, individuals with cardiac disease and patients undergone cardiac surgery can have a satisfactory and healthy sexual life through sexual counselling and drug adjustment. In addition, patients with high levels of self-efficacy after surgery were found to have higher coping skills for handling the disease, recover faster and have better sexual functions.[10–14]

Self-efficacy of patients should also be evaluated in the recovery process after cardiac surgery, which also affects their sexual life. There are few studies on this subject. This study aimed to examine the relationship between self-efficacy and sexual function in patients undergone open heart surgery and the factors affecting this relationship.

Methods

Research design and sample

The study was conducted as descriptive cross-sectional. With considering the degree of confidence (95%), margin of error (5%), effect size (0.5), and ability test (80%), sample size was determined as 76 patients undergoing open heart surgery between March 2019 and July 2019 in a cardiovascular surgery outpatient clinic of a training and research hospital in Istanbul, Turkey.

The inclusion criteria were as follows: willingness to participate, being sexually active at least 1 year before surgery, underwent open heart surgery at least 8 weeks ago and did not have neurological problems. Patients who cannot read or write, who is blind or have language barriers and who did not want to be included in the study for any reason and had neurological problems were excluded from the study.

Data collection tools

The study data was collected with an interview form with 35 questions conducted by the researchers to collect information about participants' demographic and health data (cardiac disease history, the type of surgery, sexual function level, information about sexual life after cardiac surgery). Self-efficacy was assessed by the Barnason Efficacy Expectation Scales (BEES): Cardiac Surgical Version, and depression degree was assessed by the Beck Depression Inventory (BDI). To determine the sexual function, the International Index of Erectile Dysfunction (IIEF) and the Female Sexual Function Index (FSFI) was used. The data were collected with face to face interview tecnic by researchers.

Barnason Efficacy Expectation Scales: Cardiac Surgical Version

BEES Cardiac Surgery Version was developed by Barnason *et al.*[15] in 2002 with the aim of determining self-efficacy of CABG patients in adapting to risk factors and lifestyle (physical function, psychological function, changes in risk factors for coronary artery disease, and self-care management) in regard to post-CABG surgery recovery. The validity and reliability of its Turkish version was made by Avcı and Karahan[1] in 2013; and it consists of 15 items and 5 subscales as Physical Function, Self-care Management, Diet Modification, Psychosocial Function and Exercise-Activity Modification. Each item is given points through 1–4 point on a Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree) which is based on patient's perception of trust on his capability of stated behaviour. The total score for the whole scale varies between 15 and 60 points. High score indicates that efficacy expectation is high for determining post-CABG surgery recovery and rehabilitation behaviours. Cronbach's alpha reliability coefficient of the scale was 0.83.[1] The Cronbach's alpha of the BEES: Cardiac Surgical Version in this study was 0.92.

Beck Depression Inventory

The BDI was developed by Beck *et al.*[16], and the validity and reliability study in Turkish was performed by Hisli in 1989.[17] BDI is composed of 21 items that evaluate the severity of depression. Each question inquires about the respondent's particular symptoms and changes in mood over the past week, with a 4-point scale. The total score for the whole scale varies between 0 and 63 points. The degree of depression is indicated by the total score. According to the score; it is classified as between 0–9 is normal, between 10–16 is mild mood disturbance, 17–29 borderline clinical depression, and 30 or more is severe depression.[16,17] The Cronbach's alpha of the BDI was 0.80 and the cut-off point has been determined as 17 for the Turkish version. The Cronbach's alpha of the BDI in this study was 0.97.

International Index of Erectile Dysfunction

It was designed in 1997 by Rosen *et al.*[18], and Turkish language validation was performed by the Turkish Andrology Society in 2002.[19] The five domains of the IIEF include erectile function (six items), orgasmic function (two items), sexual desire (two items), intercourse satisfaction (three items), and overall satisfaction (two items). The total score for the whole scale varies between 17 to 75 points. According to IIEF score, erectile dysfunction is classified as mild at 22–25, mild to moderate at 17–21, moderate at 11–16, and severe at 6–10.[20] The Cronbach's alpha of the IIEF was 0.90, and in this study, the Cronbach's alpha was 0.99.

Female Sexual Function Index

The FSFI was designed by Rosen *et al.*, and it was tested for validity and reliability in the Turkish language by Aygin and Eti Aslan.[21] The scale is used for defining the sexual dysfunction in women. It is a multidimensional 9-item self-report measure of sexual functioning of women in the last one month. Its subscales assess desire, arousal, lubrication, orgasm, satisfaction and pain. Range of scores for each item is from 0 to 5. To determine the total score of the FSFI, factor loadings were identified for all subscales. Factor loadings were determined as 0.6 for desire subscale, 0.3 for arousal and lubrication, and 0.4 for orgasm, satisfaction, and pain. The subscales of the FSFI is multiplied by the factor loadings, the highest score to be obtained from the scale is 36, while the minimum score is 2. The

cut-off score of the scale is 26.55. A cut-off total score of ≤26.55 has been proposed for diagnosis of female sexual dysfunction.[22] The Cronbach's alpha for FSFI was 0.82,[22] and in this study the Cronbach's alpha was 0.95.

Data analysis

SPSS (Windows 15.0) software was used for data analysis. Descriptive statistical methods (mean, standard deviation, frequency, minimum and maximum) were used for statistical analysis of data and Mann–Whitney *U* and Spearman's correlation tests were calculated for determining the relationship between the descriptive tests and scales. The power of the correlation coefficient is indicated by *r*. The correlation values were evaluated as 0–0.2 = very weak, 0.2–0.4 = weak, 0.4–0.6 = moderate, and 0.6–0.8 = strong.[23] All tests were conducted with alpha = 0.05.

Ethical approval

Ethics committee approval was obtained from the Noninvasive Clinic Ethical Committee of Bilecik Şeyh Edebali University (protocol no: 54674167-050.03.04/8). We obtain institution permit from the hospital before study. Verbal and written consent was obtained before the questionnaire from the participants who met the criteria for being included in the research sample and agreed to participate in the research. The study was conducted in accordance with the Declaration of Helsinki.

Results

The mean age of the patients was 63.12 ± 7.91, 44.7% were between 41–62 years and 55.3% were 63 years and over. The percentage of female patients were 57.9% and 42.1% of them were male. The 70.0% of patients were primary school graduates, 59.2% of the patients were employed, and 78.9% of the patients were equal to income and expense levels. The 6.6% of patients were normal weight (18–24.9 kg/m^2), 57.9% were overweight (25–30 kg/m^2), and 35.5% were obese (>30 kg/m^2). The 51.5% of patients had chronic disease, and the most common chronic disease was hypertension with 34.2%. The most frequent open heart surgery was CABG (*Table 1*).

When the data on sexual function of both women and men patients were examined in the preoperative period, it was found that 86.4% had sexual intercourse once a week. The 20.5% of women had sexual desire disorder and 15.9% had vaginal dryness. In the preoperative period, it was determined that 9.4% of the men experienced fatigue and 6.3% experienced erectile dysfunction during sexual intercourse. In the postoperative period, 30.3% of the patients had no sexual activity. The reasons for not having sexual activity in women were: sexual desire disorder (11.4%), vaginal dryness (11.4%), and thought of negative impact on postoperative recovery (11.4%). The reason for not having sexual activity in male patients were: erectile dysfunction (12.5%) and thought of negative effects on heart disease (6.3%). It was found that 86.8% of the patients did not receive sexual counselling from health professions (*Table 1*).

It was found that 42.1% of the patients did not know the time to start sexual intercourse after surgery. It was determined that 88.2% of the patients thought that sexual intercourse was an exhausting activity for the heart and 78.9% thought that sexual intercourse could trigger a heart attack. It was found that 92.1% of the patients thought that resting well before sexual intercourse would lead to a comfortable sexual activity. It was determined that 89.5% of the patients thought that excessive physical activity and eating more than 1–3 h before sexual intercourse should be avoided.

The participants' mean BEES: Cardiac Surgical Version and BDI scores were found as 43.96 ± 6.07 and 9.11 ± 11.66, respectively. Male patients had mild to moderate sexual dysfunction according to the mean IIEF scale score (19.07 ± 26.0), and the erectile function subscale score was quite low (7.55 ± 10.40). The mean FSFI score in female patients was quite low according to the cut-off score (26.55), (*Table 2*).

Table 3 shows the correlations among the scales. There was a statistically significant negative correlation between BEES: Cardiac Surgery Version and BDI scores (r = -0.40; $P < 0.05$). A significant positive correlation between BEES: Cardiac Surgery Version and IIEF was found. ($r = 0.34$; $P < 0.05$). There was a significant negative correlation between BEES: Cardiac Surgery Version and FSFI (r = -0.27; $P <$ 0.05), but there was no significant relationship between lubrication subscale of FSFI (r = -0.21; $P > 0.05$). A significant negative correlation between BDI and IIEF was found (r = -0.35; $P < 0.05$). There was no significant relationship between BDI and FSFI score ($P > 0.05$) except for the pain subscale ($r = 0.29$; $P < 0.05$).

Relationship of scale scores and characteristics of patients is shown in *Table 4*. There was a significant relationship between BDI and age (Z_{MWU} = -2.702; $P < 0.05$) and gender (Z_{MWU} = -2.399; $P < 0.05$). There was no significant relationship between BDI and myocardial infarction history and postoperative time ($P > 0.05$). It was found that there was a significant relationship between BEES: Cardiac Surgical Version and age (Z_{MWU} = -3.441; $P < 0.05$) and gender (Z_{MWU} = -2.291; $P < 0.05$); however, there was no significant relationship between BEES: Cardiac Surgical Version and having myocardial infarction and postoperative time ($P > 0.05$). A significant relationship was found between IIEF and age, and sexual function was worse in the 63 and older group than the 41–62 age group (Z_{MWU} = -3.074; $P < 0.05$). It was found that erectile function subscale of IIEF scale was lower in the age of 63 years and older. IIEF score was significantly higher in patients who received sexual counselling (Z_{MWU} = -3.290; $P < 0.05$). There was no significant relationship between FSFI and age and sexual counselling ($P > 0.05$). Only a significant relationship was found between the pain subscale of the FSFI and age (Z_{MWU} = -2.200; $P < 0.05$), and women with 63 years of age and older had more dyspareunia.

Discussion

Sexual dysfunction is common in both men and women after open heart surgery.[3,24] Patients experience sexual problems since they do not have sufficient knowledge about the time of resumption of sexual function after surgery, the effects of cardiovascular diseases on sexual function, and the changes that may occur in postoperative sexual life.[25] The European Society of Cardiology,[24] the American Society of Cardiology, and the American Heart Association[24] recommend that patients should be counselled about sexual function after cardiac diseases. In this study, it was found that males who received sexual counselling had higher sexual function scores, indicating the importance and necessity of sexual counselling. However, it was found that only 13.2% of the patients received sexual counselling from health personnel (*Table 1*). Djurovic *et al.*[26] determined that health professionals did not inform patients about the return to sexual life after

Table I Characteristics and sexual function attributes of patients

Characteristics		*n*	%
Age			
41–62		34	44.7
63 and over		42	55.3
Gender			
Female		44	57.9
Male		32	42.1
Education level			
Primary		54	71.0
High school		16	21.1
Graduate and master		6	7.9
Employment status			
Employed		45	59.2
Unemployed or retired		31	40.8
Income status			
Lower than expenditure		13	17.1
Equal to expenditure		60	78.9
Higher than expenditure		3	3.9
Chronical diseases			
Hypertension		26	34.2
Diabetes		13	17.1
COPD		5	6.6
Type of surgery			
CABG		54	71.1
Heart valve surgery		22	28.9
Postoperative time (months)			
2–5		12	15.8
6 and over		64	84.2
Menopausal status of female patients			
Yes		41	93.2
No		3	6.8
Preoperative sexual function problems			
Female patients	Sexual desire disorder	9	20.5
	Vaginal dryness	7	15.9
Male patients	Quick fatigue	3	9.4
	Erectile dysfunction	2	6.3
Sexually active after surgery	Yes	53	69.7
	No	23	30.3
Reasons of sexually inactive after surgery			
Female patients	Sexual desire disorder	5	11.4
	Thought of negative impact on post-operative recovery	5	11.4
	Vaginal dryness	5	11.4
Male patients	Thought of negative effects on heart disease	2	6.3
	Erectile dysfunction	4	12.5
Sexual counselling from health profession	Yes	10	13.2
	No	66	86.8

myocardial infarction and CABG due to negligence and lack of knowledge. Lunelli *et al.*[11] found that only 4% of patients with myocardial infarction received sexual counselling from healthcare professionals. Rahim *et al.*[12] determined that a small number of nurses working in cardiac units had sufficient knowledge to provide patients with sexual counselling after cardiac diseases.

Table 2 The results of scales

Scales	$\overline{X}$ ±(SD)	Min–max
BDI	9.11 ± 11.66	0–63
BEES: Cardiac Surgery Version	43.96 ± 6.07	15–60
Physical function	9.22 ± 1.86	3–12
Self-care management	11.96 ± 1.71	6–16
Diet modification	5.25 ± 1.13	2–8
Psychosocial function	8.89 ± 1.53	4–12
Exercise-activity modification	8.63 ± 1.09	5–12
IIEF	19.07 ± 26.0	5–75
Erectile function	7.55 ± 10.40	1–30
Orgasmic function	2.72 ± 3.78	0–10
Sexual desire	2.56 ± 3.42	2–10
Intercourse satisfaction	3.59 ± 4.96	0–15
Overall satisfaction	2.64 ± 3.53	2–10
FSFI	15.67 ± 9.12	2–36
Sexual desire	3.81 ± 1.87	2–10
Sexual arousal	7.20 ± 5.64	0–20
Lubrication	8.84 ± 5.54	0–20
Orgasm	6.18 ± 4.70	0–15
Satisfaction	5.88 ± 3.69	0–15
Pain	9.36 ± 8.70	0–15

BDI, Beck Depression Inventory; BEES, Cardiac Surgery Version: Barnason Efficacy Expectation Scales: Cardiac Surgical Version; FSFI, Female Sexual Function Index; IIEF, International Index of Erectile Dysfunction.

Table 3 Correlations among scales

Scales	BDI		BEES: Cardiac Surgical Version	
	*r	**P	r	P
IIEF	-0.35	**0.00**	0.34	**0.00**
Erectile function	-0.34	**0.00**	0.31	**0.00**
Orgasmic function	-0.39	**0.00**	0.37	**0.00**
Sexual desire	-0.36	**0.00**	0.36	**0.00**
Intercourse satisfaction	-0.39	**0.00**	0.37	**0.00**
Overall satisfaction	-0.35	**0.00**	0.33	**0.00**
FSFI	0.10	0.38	-0.27	**0.01**
Sexual desire	0.07	0.52	-0.25	**0.02**
Sexual arousal	0.05	0.66	-0.25	**0.02**
Lubrication	-0.01	0.92	-0.21	0.06
Orgasm	0.00	0.80	-0.24	**0.03**
Satisfaction	0.05	0.66	-0.31	**0.00**
Pain	0.29	**0.01**	-0.28	**0.01**
BDI	—	—	-0.40	**0.00**

Bold values signifies that the P value is lower than 0.05.
*r, Spearman's correlation; **P < 0.05.
BDI, Beck Depression Inventory; BEES, Cardiac Surgery Version: Barnason Efficacy Expectation Scales: Cardiac Surgical Version; FSFI, Female Sexual Function Index; IIEF, International Index of Erectile Dysfunction.

In this study, 30.3% of the patients reported to have no sexual activity after open heart surgery. Regarding the reasons for not having sexual activity, the female patients emphasized on possible negative effects of sexual activity on postoperative recovery (11.4%), lack of sexual drive (11.4%), and vaginal dryness (11.4%), whereas the male patients emphasized on possible negative effects of sexual activity on heart disease (6.3%) and erectile dysfunction (12.5%). Assari[13] found that female patients avoided coitus because of the fear that it might affect the recovery after coronary disease. Lindau *et al.*[27] reported that most of the patients with myocardial infarction experienced sexual dysfunction due to fear of reinfarction. Mourad *et al.*[28] determined that male patients had more erectile dysfunction and ejaculation problems in post-CABG period than in pre-CABG period. Studies report changes in luteinizing hormone, dehydroepinandrostenedione, progesterone, and testosterone levels after coronary bypass surgery, leading to premature ejaculation and erectile dysfunction.[24]

Cardiac surgery is one of the most difficult procedure requiring adapting to physical, emotional, and social changes in patients. Self-efficacy level is an important indicator of the capacity of patients to adapt to changes in their lives during the rehabilitation process after cardiac surgery.[29] Self-efficacy reveals an individual's perception of his/her capacity to adapt to necessary changes in health behaviours including physical activity during cardiac rehabilitation process.[2,29,30] In this study, it was found that the patients had quite high levels of self-efficacy. Similarly, Avcı and Karahan[1] found the patients' mean BEES: Cardiac Surgical Version score as 47.26 ± 7.58. In this study because of not collecting the data about sexual function before surgery, we could not compare the patients sexual function before and after open heart surgery; but regarding the patients' IIEF and FSFI scores, both male and female patients experienced sexual dysfunction after open heart surgery. Some individuals with cardiovascular disease experience loss of libido due to mental effects of heart disease, erectile dysfunction due to drugs (beta blockers and diuretics) and age-related changes (menopause, prolongation of refractory period, etc.), increasing the incidence of sexual dysfunction such as decreased sexual appetite and arousal, reduced frequency of sexual intercourse, vaginal dryness, and dyspareunia. In addition, impaired body image (due to sternotomy) and other risk factors (diabetes, hyperlipidaemia, smoking, etc.) may cause sexual dysfunction in cardiac patients.[4,9] Justo *et al.*[31] reported that 31.3% of males with coronary disease had erectile dysfunction. Nascimento *et al.*[32] observed decreased sexual desire, reduced frequency of sexual intercourse, and anorgasmia in individuals with cardiovascular disease. In this study erectile function subscale score of the IIEF was significantly lower (7.55 ± 10.40), but only 12.5% of the male patients had erectile dysfunction after surgery.

In this study, it was found a significant relationship between self-efficacy and sexual function in both men and women. The study reported that as self-efficacy increased, sexual function increased in males, but decreased in females. A healthy cardiac function is necessary for a healthy sexual function.[9] A high level of self-efficacy has a positive effect on cardiac rehabilitation process.[8] An improvement in cardiac function positively affects erectile function, increasing sexual function.[33,34] Alimohammadi *et al.*[35] found that as self-efficacy of women increased, their sexual functions increased. Unlike those in the literature, this present study found that as the level of self-efficacy

Table 4 Relationship between characteristics of patients and scales

Scales	BDI		BEES: Cardiac Surgical Version		IIEF		FSFI	
Characteristics	$\overline{X} \pm SD$	$^{*}Z_{MWU}$ $^{**}P$	$\overline{X} \pm SD$	Z_{MWU} P	$\overline{X} \pm SD$	Z_{MWU} P	$\overline{X} \pm SD$	Z_{MWU} P
Age		**-2.702**		**-3.441**		**-3.074**		-0.271
		0.00		**0.00**		**0.00**		0.78
41–62	**4.88 ± 7.79**		**46 ± 6.71**		**58.50 ± 7.63**		40.04 ± 27.90	
63 and over	**12.54 ± 13.16**		**42.30 ± 4.99**		**37.40 ± 21.38**		42.54 ± 21.44	
Sexual counselling		-0.259		-1.102		**-3.290**		-1.057
		0.79		0.27		**0.00**		0.29
Yes	7.90 ± 8.13		41.30 ± 6.86		**64.80 ± 3.19**		20.20 ± 4.10	
No	9.30 ± 12.13		44.36 ± 5.89		**41.70 ± 19.97**		15.09 ± 9.45	
Myocardial infarction		0.310		-0.381		-0.856		-0.561
		0.75		0.70		0.39		0.57
Yes	7.42 ± 8.55		44.00 ± 5.98		23.15 ± 28.35		7.97 ± 9.53	
No	9.68 ± 15.55		43.94 ± 6.15		17.71 ± 25.28		9.44 ± 10.74	
Postoperative time (months)		-0.353		-0.657		-0.659		-0.200
		0.72		0.51		0.51		0.84
2–5	7.33 ± 6.25		43.33 ± 3.28		25.75 ± 31.93		8.05 ± 9.79	
6 and over	9.45 ± 12.43		44.07 ± 6.47		17.82 ± 24.83		9.26 ± 10.58	
Gender		**-2.399**		**-2.291**				
		0.01		**0.02**				
Woman	**12.13 ± 13.18**		**42.95 ± 7.09**					
Man	**4.96 ± 7.59**		**45.34 ± 4.00**					

Bold values signifies that the P value is lower than 0.05.
$^{*}Z_{MWU}$, Mann–Whitney *U*; $^{**}P < 0.05$.
BDI, Beck Depression Inventory; BEES, Cardiac Surgery Version: Barnason Efficacy Expectation Scales: Cardiac Surgical Version; FSFI, Female Sexual Function Index; IIEF, International Index of Erectile Dysfunction.

in women increased, their sexual functions decreased. This may be because they had low level of self-efficacy and sexual function. This may be also because most of the women (93.2%) had menopause. Women may avoid sexual functions due to menopause-induced vaginal dryness.[36] In this study, 11.4% of the women reported vaginal dryness as the reason for not having postoperative sexual activity.

In this study, it was found that the level of self-efficacy in patients decreased with increasing age. As age increases, one's self-confidence, physical capacity and energy to start and maintain an activity decreases.[29] In addition, attitudes towards elderliness in a society can affect one's self-confidence in performing a work. Therefore, as the age advances, people perceive potential difficulties as obstacles exceeding their capabilities.[29] Similarly, D'Souza *et al.*[37] reported that self-efficacy decreased with increasing age. The present study found a significant relationship between gender and self-efficacy. Accordingly, the level of self-efficacy was lower in women than in men. Cybulski *et al.*[30] also found that women had lower level of self-efficacy. Another study reported that women were more concerned about home care.[38] Women have higher levels of workload. Women take care of both themselves and other family members in recovery process. Therefore, they feel more tired and have lower self-efficacy.[38] This may be the reason for the low self-efficacy levels of women found in this present study. As perceived self-efficacy affects cognition, emotions and behaviours, it is useful in dealing with stressful conditions.[37]

The present study found that depression symptoms were observed to decrease with increasing self-efficacy.

This study has a few limitations that need to be considered. First, it is a cross-sectional study, which means that it is not possible to establish a true cause and effect relationship. Second, as this study was conducted at only one hospital in Turkey, one must be careful about how the result can be generalized. Third, our sample consisted only of volunteer participants, and the data analysis was based on self-reporting data which could have an impact of the outcome of the study.

Data availability

The data that support the findings of this study are available from the corresponding author [M.Ç.], upon reasonable request.

Conflict of interest: none declared.

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