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Self-esteem, defense mechanisms, sexual satisfaction and stress coping mechanisms in individuals treated for vaginismus: A controlled study

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Abstract

The aim of study was to analyze the extent to which treatment for vaginismus affect self-esteem, defense mechanisms, sexual satisfaction and coping with stress. Was conducted as aquasi-experimental, cross-sectional study. The population of the study consisted of womenwho were followed up with the diagnosis of vaginismus in obstetrics clinic. As data collection tools, "Personal Information Form", "Coopersmith Self-Esteem Inventory", "Sexual Satisfaction Scale", "Coping Response Inventory" and "Defense Style Questionnaire" wereused. When people who were diagnosed with vaginismus and accepted treatment were asked about the reasons for demanding treatment, 11.4% of them responded that they experienced pain during sexual intercourse, 4.7% stated that they wanted to able to continue their marriage, and 2.8% of them stated that they wanted to gain self-confidence. When asked for whom they wanted the treatment of the disease, 61 of the participants responded, and 14 of them answered for "Me and my spouse" while 29 for "My spouse" and 18 for "Myself". It was revealed that self-esteem, defense mechanisms, sexual satisfaction and coping with stress are important factors in initiation, maintenance and completion of treatment in patients and that these factors should be especially emphasized during the treatment process. *(Afr J Reprod Health 2024; 28 [11]:105-114).*

Keywords: Vaginismus, self-esteem, defense mechanisms, sexual satisfaction, coping with stress

Résumé

Le but de l'étude était d'analyser dans quelle mesure le traitement du vaginisme affecte l'estime de soi, les mécanismes de défense, la satisfaction sexuelle et la gestion du stress. A été menée sous forme d'étude transversale aquasi-expérimentale. La population de l'étude était composée de femmes qui ont été suivies avec un diagnostic de vaginisme en clinique d'obstétrique. Comme outils de collecte de données, le « Formulaire de renseignements personnels », le « Inventaire d'estime de soi Coopersmith », l'« Échelle de satisfaction sexuelle », le « Inventaire des réponses d'adaptation » et le « Questionnaire sur le style de défense » ont été utilisés. Lorsque les personnes ayant reçu un diagnostic de vaginisme et ayant accepté un traitement ont été interrogées sur les raisons pour lesquelles elles ont demandé un traitement, 11,4 % d'entre elles ont répondu qu'elles éprouvaient des douleurs lors des rapports sexuels, 4,7 % ont déclaré vouloir pouvoir poursuivre leur mariage et 2,8 % d'entre elles. ont déclaré vouloir prendre confiance en eux. Lorsqu'on leur a demandé pour qui ils souhaitaient le traitement de la maladie, 61 des participants ont répondu, et 14 d'entre eux ont répondu pour « Moi et mon conjoint ». tandis que 29 pour "Mon conjoint" et 18 pour « Moi-même ».It was revealed that self-esteem, defense mechanisms, sexual satisfaction and coping with stress are important factors in initiation, maintenance and completion of treatment in patients and that these factors should be especially emphasized during the treatment process. *(Afr J Reprod Health 2024; 28 [11]: 105-114).*

Mots-clés: Vaginisme, estime de soi, mécanismes de défense, satisfaction sexuelle, gestion du stress

Introduction

Vaginismus is defined as fear/anxiety about experiencing pain in the vulvovagina during sexual intercourse while waiting for the act of penetrating the vagina or during penetration, and repetitive and continuous involuntary contractions in the muscles surrounding the outer third of the vagina during the attempt to enter the vagina, and excessive stretching or tightening of the pelvic floor muscles[1]. In DSM-5, the subtitle of vaginismus has been removed pelvic pain and penetration disorder" has been and the definition of "genito introduced by combining it with the diagnosis of dyspareunia[2].

There are conflicting findings regarding the incidence of vaginismus. It is known to be more common in Türkiye and other traditional cultures than in developed countries[3,4]. The rate of vaginismus diagnosis among women admitted to sexual dysfunction outpatient clinics is 25% in developed countries[5]. In Türkiye, vaginismus is the most common female sexual dysfunction. A high rate of vaginismus was found among those who applied to sexual therapy centers in Türkiye, ranging from 41 to 75.9%[6,7].

Although the exact reason is not known, vaginismus is generally considered as a disorder in which social, cultural, psychological and physiological phenomena come together, and in whose formation the environment, childhood sexual traumas and religious conservatism play a role[8]. In psychoanalytic theory, reactions to vaginismus are often associated with a defense mechanism. According to Bayrak, Buytenddijk argued that defensive reflexes develop as a result of experience[9]. These defensive reflexes anticipate an upcoming event and develop an action that is appropriate to the involved situation and acquired as a result of experience. Defensive reflexes are based on the surprise/startle response. This response is a non-specific one, consisting of a muscle cramp with motor dysregulation and followed by a paralysis. Although defense mechanisms are learned responses that develop according to experience, they initially arise automatically[9]. Fear and anxiety about the penetration are psychologically revealed through involuntary vaginal muscle spasm, which is the hallmark of vaginismus[9].

Vaginismus may cause a decrease in self-esteem in women. In a study conducted with women diagnosed with sexual dysfunction, it was found that women with dyspareunia and vaginismus had higher levels of self-humiliation and contempt than individuals with other sexual disorders[10]. Psychological problems experienced by individuals with vaginismus affect their sexual life and sexual satisfaction. In a study comparing the frequency of sexual dysfunctions and psychological symptoms, it was revealed that psychological problems were most frequently observed in women diagnosed with vaginismus among female sexual dysfunctions[11]. In the studies conducted so far, it has been observed that vaginismus patients have higher general anxiety levels and susceptibility to anxiety than individuals without vaginismus, and that these high anxiety levels negatively affect their sexual functions[12,13].

A literature survey indicates that there is a scarcity of studies on the psychological conditions of women with vaginismus. The aim of the present study, therefore, was to investigate the extent to which the self-esteem, defense mechanisms, sexual satisfaction and coping with stress change in women who have vaginismus treatment to fill this gap in the literature.

Research questions

1. Is vaginismus related to self-esteem?
2. Is vaginismus related to defense mechanisms?
3. Does vaginismus affect sexual satisfaction?
4. Is vaginismus related to coping with stress?.

Methods

Type of research

The study was conducted as a quasi-experimental, cross-sectional type.

Research universe-sample

The population of the study consisted of women who were followed up with the diagnosis of vaginismus in a private obstetrics clinic. The study included women who applied to the clinic for vaginismus problem and voluntarily agreed to participate in the study. Women who accepted vaginismus treatment were included in the treatment group while the women who did not accept treatment were included in the control group. The study was conducted during a three-month period between 01/07/2021 and 30/09/2021.

Data collection tools

Personal Information Form: This form was prepared by researchers based on the literature. In the form, 10 questions were asked about the socio-demographic characteristics of the women who applied to the clinic for the problem of vaginismus.
Coopersmith Self-Esteem Inventory: The Coopersmith Self-Esteem Scale is a paper-and-pencil test consisting of 25 items that can be answered on a questionnaire as "Suitable for me" and "Not suitable for me". In these items, there are statements about the individual's perspective on life, family relations, social relations and endurance.

In the Coopersmith self-esteem inventory, each correct answer is scored as "1" and each incorrect answer is scored as "0" points. The maximum score of the inventory is "25" and the minimum score is "0". A score out of 100 could also be calculated by multiplying the total score from the inventory by 4. Higher scores indicate higher self-esteem level. This inventory, which has no sub-scales, measures total (global) self-esteem[14].

Defense Style Questionnaire: This questionnaire was developed by Andrews, Singh and Bond to evaluate the reflections of defense mechanisms used unconsciously at the conscious level[15]. The scoring of the 40-item test, which is grouped under three dimensions: immature, neurotic and mature, and consists of 20 defenses, is graded between 1: not suitable for me at all and 9: very suitable for me. High scores on the test indicate that the use of mature, neurotic and immature defense styles are predominant while a low score indicates that the use of these defense forms is less common. Defense Style Questionnaire was adapted into Turkish by Yılmaz, Gençöz and Ak. In the adaptation study of the test, Cronbach's alpha internal consistency coefficients of the immature, neurotic and mature defense sub-dimensions were found to be 0.83, 0.61 and 0.70, respectively[16].

Sexual Satisfaction Scale(SSS): This is a scale whose validity and reliability were studied by Stulhofer *et al*. The scale, which was developed to measure sexual satisfaction in clinical and field research, is a 5-point Likert type (1-5) tool[17]. The lowest score that can be obtained from the scale is 20, and the highest score is 100. The scale consists of a self-centered sub-dimension and a partner/sexual activity-centered sub-dimension. The self-centered sub-dimension determines sexual satisfaction resulting from personal experiences and emotions. The spouse-partner/sexual activity-centered subscale measures the sexual satisfaction a person receives from the sexual behavior and reactions of his/her spouse/partner, as well as the variety and/or frequency of sexual activities. These two subscales represent the New Sexual Satisfaction Scale (NSSS). Self-centered subscale is measured by the items 1-10 while spouse-partner/sexual activity-centered subscale is measured by items 11-20. The validity and reliability study of the Turkish version of the New Sexual Satisfaction Scale was conducted by Tuğut. The scoring of the scale is calculated by adding the points for each item. A high score on the scale indicates that sexual satisfaction is good[18].

Coping Responses Inventory(CRI): In order to measure the methods of coping with stress, Coping Responses Inventory developed by Moos and specially prepared for adults was used. The original scale consists of two parts, avoidance and approach responses, and a total of eight dimensions[19]. Within the scope of the present study, only one part of the scale (approach responses) and four dimensions (logical analysis, positive reappraisal, seeking professional support and problem solving) were used. The scale, which consists of 24 statements, is graded as a 5-point Likert type and the answer options are; 1-Never, 2-Rarely, 3-Sometimes, 4-Mostly, 5-Always[20].

Vaginismus Treatment Application; Women who accepted vaginismus treatment were given cognitive and behavioral treatment by a Gynecologist and a sexual therapist.

Initially, accurate information about the hymen, sexuality, the first night and anatomy was given, then training including cognitive treatment was provided to eliminate unrealistic and exaggerated information. Behavioral methods that include a number of exercises to teach the correct information have also been added to cognitive techniques. Behavioral methods; Kegel exercises called “Pelvic exercises” or “Vaginismus exercises” that aim to manage the pelvic floor muscles correctly have been taught and made to do regularly. Mirror, breathing exercises, massage, touching, finger exercises and dilator studies have also been used in the treatment.

Evaluation of data

Categorical data were evaluated using Chi-square and Mann-Whitney U tests. Independent group t-test was used for numerical data with normal distribution. In addition, regression analysis was performed to calculate the effect size. In all analysis, p values less than 0.05 were considered statistically significant

Results

The sociodemographic characteristics of the participants are shown in Table 1. While the average age of the subjects in the group that did not receive vaginismus treatment was 32.85±7.53 years, the

Table 1: Socio-demographic characteristics of the participants

Variables	Not receiving treatment for vaginismus (n=103)		Receiving treatment for vaginismus (n=105)	
	Mean	SD	Mean	SD
Age	32.85	7.53	31.65	6.05
	n	%	n	%
Education status				
Primary school	8	7.8	3	2.9
Secondary school	1	1.0	1	1.0
High school	25	24.3	25	23.8
Vocational college	7	6.8	3	2.9
University	62	60.2	73	69.5
Employment				
Unemployed	14	13.6	27	25.7
Health worker	21	20.4	24	22.9
Public sector	21	20.4	14	13.3
Private sector	44	42.7	40	38.1
Student	3	2.9	0	0.0

Table 2: Comparison of self-esteem, coping response and sexual satisfaction scores of the study groups

Scales	Not receiving treatment for vaginismus (n=103)		Receiving treatment for vaginismus (n=105)		Statistical analysis		
	Mean	SD	Mean	SD	t(206)	p	Cohen's d
Coopersmith Self-Esteem Inventory	14.96	2.87	12.56	4.17	4.818	<0.001	0.67
Sexual Satisfaction Scale							
Self-centered sexual activity	32.95	7.68	22.85	10.65	7.823	<0.001	1.08
Spouse/partner-centered sexual activity	33.92	7.34	27.83	11.16	4.634	<0.001	0.64
CopingResponseInventory							
Positive reappraisal	22.10	3.36	21.90	5.10	0.336	0.737	0.04
Problem solving	22.60	2.79	22.95	3.98	-0.733	0.464	-0.10
Logical analysis	25.89	3.71	26.63	4.58	-1.286	0.200	-0.17
Environment support	7.48	1.52	6.20	2.05	5.122	<0.001	0.70
Seekingprofessional support	7.15	1.69	5.29	2.09	7.032	<0.001	0.97

SD: Standard deviation

average age was 31.65±6.05 years in the group that received vaginismus treatment.

All participants in both groups were married. Participants in the group receiving vaginismus treatment were asked about their reasons for seeking treatment, and 20% (n=21) responded to this question. Twelve of these participants who received vaginismus treatment (11.4%) reported that they accepted the treatment because they experienced pain during sexual intercourse while 4.7% (n=5) mentioned that they accepted the treatment because they wanted to be able to continue their marriage, and 2.8% (n=3) reported that they wanted to gain self-confidence. When asked for whom they wanted the treatment of the disease, 58% (n=61) of the participants who received vaginismus treatment responded to this question, and 14 (13.3%) answered for "Me and my spouse" whereas 29 (27.6%) for "My spouse" and 18 (17.1%) for "Myself".

Comparison of the two study groups for self-esteem, sexual satisfaction, and stress coping strategies is shown in Table 2. Coopersmith Self-Esteem Inventory scores (t (206) = 4.818, p<0.001), self-centered sexual activity (t(206)=7.823,

Table 3: Comparison of the study groups for the Defense Style Questionnaire subscales

	Not receiving treatment for vaginismus (n=103)		**Receiving treatment for vaginismus (n=105)**		**Statistical analysis**		
	Mean	SD	Mean	SD	t(206)	P	Cohen's d
Mature defense style							
Sublimation	11.36	2.81	11.21	4.22	.300	.764	0.04
Humor	11.64	2.98	11.35	4.26	.564	.573	0.07
Anticipation	12.65	2.42	11.69	4.20	2.002	.047	0.28
Suppression	11.42	2.42	10.32	3.89	2.445	.015	0.33
Total	47.08	7.59	44.59	13.28	1.660	.098	0.23
Neurotic defense style							
Undoing	11.38	2.75	10.65	4.23	1.473	.142	0.20
Pseudo-altruism	11.67	2.40	12.46	3.56	-1.865	.064	-0.26
Idealization	11.23	2.80	10.64	4.19	1.180	.239	0.16
Reaction formation	10.20	2.81	11.53	3.76	-2.880	.004	-0.40
Total	44.50	7.44	45.30	11.27	-.603	.547	-0.08
Immature defense style							
Projection	9.88	3.26	11.49	3.96	-3.196	.002	-0.44
Passive aggression	10.72	3.54	11.90	3.19	-2.517	.013	-0.35
Acting out	9.84	3.58	10.78	3.90	-1.801	.073	-0.25
Isolation	11.61	2.47	12.52	2.98	-2.397	.017	-0.33
Devaluation	9.19	3.67	10.61	3.35	-2.923	.004	-0.40
Autistic fantasy	8.34	3.95	9.02	3.50	-1.310	.192	-0.18
Denial	9.48	3.76	10.24	3.08	-1.598	.112	-0.22
Displacement	11.20	3.56	12.45	3.67	-2.494	.013	-0.34
Dissociation	9.73	3.90	9.16	4.11	1.034	.302	0.14
Splitting	11.08	2.60	10.37	4.43	1.417	.158	0.19
Rationalization	9.00	4.36	9.87	2.70	-1.724	.086	-0.23
Somatization	11.51	2.87	12.07	3.76	-1.208	.228	-0.16
Total	121.65	28.47	130.54	23.66	-2.451	.015	-0.33

Table 4: Multiple linear regression analysis of variables predicting the total score of the Coopersmith Self-Esteem Inventory according to groups

	B	LL	UL	Beta (β)	t	p
Not receiving treatment for vaginismus [a]						
DSQ- Immature defense styles	-0.024	-0.045	-0.003	-0.237	-2.241	0.027
DSQ- Neurotic defense styles	-0.091	-0.172	-0.010	-0.235	-2.216	0.029
Receiving treatment for vaginismus [b]						
CRI- Positive appraisal	0.350	0.212	0.489	0.429	5.014	<0.001
SSS- Self-centered sexual activity	0.074	0.008	0.140	0.189	2.218	0.029
Number of children	-1.227	-2.403	-0.052	-0.173	-2.071	0.041

CRI: Coping Response Inventory, DSQ: Defense Style Questionnaire, SSS: Sexual Satisfaction Scale, SE: Standard Error
[a] Durbin-Watson=1.826, Condition Index=10,510, Tolerance=0.742, VIF=1,348
[b] Durbin-Watson=1.776, Condition Index=11,084, Tolerance=0.941-0.989, VIF=1.011-1,063

p<0.001) and spouse/partner sexual activity-centered sexual satisfaction (t(206)=4.634, p<0.001) sub-dimension scores, environment support (t(206)=5.122, p<0.001) and Seeking professional support (t(206)=7.032, p<0.001) sub-dimension scores of the Coping Response Inventory of the group that did not receive vaginismus treatment were significantly higher than those of the group that received vaginismus treatment.Comparison of the sub-dimensions of Defense Style Questionnaire of the study groups is shown in Table 3. There was no significant difference between the two groups in terms of the total scores of mature and neurotic defense styles (p=0.098 and p=0.547, respectively). The total scores of immature defense styles were significantly higher in the group receiving vaginismus treatment (t(260)=-2.451, p=0.015). In the group receiving vaginismus treatment, the scores of a neurotic defense style of developing Reaction formation (t(260)=-2.880, p=0.004) and the scores of the immature defense styles of defense methods of Projection (t(260)=-3.196, p=0.002), Passive aggression (t(260)=-2.517, p=0.013), Isolation (t(260)=-2.397, p=0.017), Devaluation (t(260)=-2.923, p=0.004) and Displacement (t(260)=-2.494, p=0.013) were higher than the control group. In the group that did not receive vaginismus treatment, on the other hand, the mean scores of the mature defense mechanisms of Anticipation (t(260)=2.002, p=0.047) and Suppression (t(260)=2.445, p=0.015) sub-dimensions were significantly higher than the group receiving vaginismus treatment.

Multiple linear regression analysis of the variables predicting the total score of the Coopersmith Self-Esteem Inventory according to the study groups is shown in Table 4. In both models, age, educational status, number of children, number of births, sub-dimensions of CSEI (immature, neurotic and mature defense styles), sub-dimensions of DSQ (Logical analysis, Positive reappraisal, Seeking professional support, Environment support and Problem solving) and sub-dimensions of the Sexual Satisfaction Scale (Self-centered sexual satisfaction, Spouse/partner-centered sexual satisfaction) were included as independent variables. It was found that the model created in the group that did not receive vaginismus treatment was significant (F=10.094, p<0.001) and the variables explained 16% of the variance. It was observed that the parameters predicting the CSEI total score were immature (t=-2.241, β=-0.237, p=0.027) and neurotic defense style total scores of SBT (t=-2.216, β=-0.235, p=0.029). The model was significant for the group receiving vaginismus treatment (F=14.797, p<0.001), and the predictors explained 30% of the variance. In this group, the predictors of CSEI total score were the Positive reappraisal sub-dimension of the CRI (t=5.014, β=0.429, p<0.001), the self-centered sexual satisfaction sub-dimensionof the SSS (t=2.218, β=0.189, p=0.029) and the number of children (t=-2.071, β=-0.173, p=0.041)

Discussion

Women who received vaginismus treatment and participated in the present study stated that the reason for desiring the treatment was to experience pain during sexual intercourse, to continue their marriages and to gain self-confidence. It was observed that a large part of the participants wanted the treatment for their spouses. It was observed that the Coopersmith Self-Esteem Inventory score of the group that did not receive vaginismus treatment was significantly higher than the group that received the treatment.

Although a cause-effect relationship could not be established regarding the association, the results of the correlation analysis revealed that the relationship was bidirectional and significant. Again, there are studies in the literature that support these results. In a recent study, it was found that the self-esteem of women diagnosed with vaginismus was at a moderate level, while the self-esteem of women in the control group was at a high level[21]. Diker reported that individuals with sexual dysfunction did not like their own bodies and had low self-confidence[22]. It was reported that individuals with sexual dysfunction had less self-confidence and did not see themselves as attractive compared to individuals without sexual dysfunction[23]. For this reason, self-esteem is seen as an important factor in sexual dysfunction. The gender has a huge impact on vaginismus and body/self-perception. Individuals who have sexual dysfunctions experience problems such as fears of vaginismus, first intercourse and painful intercourse due to sexual taboos[24]. In addition to the lack of sexual education in our country, the meaning attributed to sexuality, the inappropriateness and prohibition of premarital sexuality, the importance given to the sanctity and protection of the hymen membrane, the beliefs that prevent masturbation and

the recognition of the woman's body can cause fear of the first night in couples and especially female individuals and fear of vaginismus in chronic cases[25]. On the other hand, unlike women, being a virgin when they marry is a source of shame for men in Türkiye. It was stated in the literature that the main problem in vaginismus cases is contractility due to inflammation of the vaginal mucosa caused by forced coitus trials of inexperienced men[26]. Accordingly, the inexperience of men seems to be a risk factor for vaginismus in our country. In a study conducted by Güz on infertile women, one of the other sexual dysfunctions, low self-esteem was common among the infertile women who faced negative reactions from their spouses and families[27]. It was stated that infertile women experienced more intense feeling of isolation from their spouses and other people[28]. Another dimension of gender in the society emerges in this way. In our country, the roles of women today (as in the past) are linked to their fertility[29]. Individuals are faced with the pressure that women should give birth and men should be able to cause women to give birth. For this reason, it is possible to encounter low self-perception and worthlessness in men and women. As observed in this study, it was reported that sexual dysfunctions create a sense of isolation in women and thence negatively affects their self-esteem[28].

It was observed that the self-centered and spouse/partner sexual activity-centered sexual satisfaction sub-dimension scores of the Sexual Satisfaction Scale of the group that did not receive vaginismus treatment were significantly higher than the group that received the treatment. Some previous studies indicated that sexual satisfaction was high among women with vaginismus when there was no penetration attempt, and that there was no significant difference between them and the women without vaginismus[30]. On the other hand, Reissing concluded that the desire and pleasure rates of women with vaginismus were low, and accordingly, the rate of sexual satisfaction was low[31]. In the present study, on the other hand, sexual satisfaction rates were low in both the vaginismus treatment and control groups. In a study, the relationship between pain and sexual satisfaction in vaginismus was examined, and it was observed that patients whose pain threshold increased after the MBRS therapy program improved in some areas of sexual satisfaction[32]. Self-centered sub-dimension and spouse/partner centered sub-dimension scores, which are the sexual satisfaction sub-dimensions, of the control group who did not accept the treatment were significantly higher than the group receiving vaginismus treatment. This shows that the high level of sexual satisfaction had an effect on the willingness to receive treatment.

It was observed that the group that did not receive vaginismus treatment had significantly higher Environment support and Seeking professional support sub-dimension scores, sub-dimensions of the Coping Stress Inventory, compared to the group receiving vaginismus treatment. Regardless of what the person decided about the treatment of vaginismus, social support seeking seemed to be important in terms of helping women in the process[33]. Indeed, it was stated in this study that women needed social support during the vaginismus process. Women's social support and treatment for vaginismus were found to allow them to develop a positive attitude towards the future, and reinforced their belief that this situation is not unsolvable[34]. As can be understood from this, the potential to cope with stress was positive in the treated group. On the other hand, in our study, the social support-seeking behavior was higher in the group that did not receive treatment than in the group that accepted vaginismus treatment, indicating that this group turned to close environment and social support to cope with stress.

It was observed that mature defenses were used at a higher rate in the group that did not receive vaginismus treatment in the present study, while neurotic and immature defense mechanisms were used at a higher rate in the group that received vaginismus treatment. Of the mature defenses, the Anticipation and Suppression defense mechanisms were found to be higher in the group that did not receive vaginismus treatment compared to the group that received treatment. It seemed logical that the Anticipation and Suppression defense mechanisms were high in this group. It can be speculated that the reason why the control group did not accept the treatment could be the belief that vaginismus would go away itself. According to Cervone and Pervin, the suppression defense mechanism refers to pushing a piece of information out of consciousness and not being aware of its existence[35]. As can be understood from this definition, the person suppresses his/her problem by pushing out of consciousness and does not feel the need to be treated for it. According to Arntz and Jacob, individuals who try to portray

themselves as realists may try to suppress their emotions with the thought that they may be ridiculed by other individuals[36]. The reason for the group that did not accept treatment to use this defense mechanism could be the reason for not receiving treatment. It was observed that the defense mechanism of developing a Reaction formation, a neurotic defense sub-dimension, was significantly higher in the group receiving vaginismus treatment. According to Geçtan, the opposite is done in order to avoid the mental tension and guilt caused by impulses and tendencies that are perceived as forbidden and negative[37]. When these impulses are experienced intensely, the person tries to protect himself/herself by acting in the opposite way. Women diagnosed with vaginismus and their life partners may mutually blame each other in their marriages. Despite this, when the group followed up with the diagnosis of vaginismus was asked about the reasons for receiving treatment, the first answer was "for me and my spouse", followed by "for my spouse" and finally "for myself". These answers confirmed the mechanism of creating a Reaction formation. Again, the sub-scores of Projection, Passive aggression, Isolation, Devaluation and Displacement were significantly higher in the vaginismus treatment group compared to the control group (Table 3). The total score of immature defense styles was also higher in the vaginismus treatment group. The use of the Projection mechanism by the group receiving vaginismus treatment aims to remove a situation that causes self-dissatisfaction. In a study conducted in 2009, vaginismus cases were divided into four groups in terms of the relationship between treatment duration and personality pathology. In the first group, there were cases with mild immature personality traits who had treatment for less than three hours while moderate neurotic patients treated for 3-6 hours constituted the second group, the patients with severe neurotic traits treated for more than 6 hours were the third group and the patients with severe personality disorders who could not be treated despite more than 10 hours of treatment or who gave up the treatment were the fourth group[26]. The study, thus, revealed that the defense mechanisms used by individuals diagnosed with vaginismus can change the process and even the outcome of the treatment.

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Informed consent

Informed consent was obtained from all participants participating in the study.

Ethical approval

The study was approval by the University Ethics Committee, as well as of the Ethics Committees from the different assistance resources (dated 20.05.2021, with no 21-KAEK-139), and it was conducted in accordance with the Declaration of Helsinki and with the data protection laws regarding regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016. Informed consent was obtained from the women participating in the study and institutional permission was obtained from Diva Women's Health Center on 25.05.2021.

Conflicts of interest

The authors do not declare any conflict of interest.

Acknowledgment

The authors thank all the participants who participated in the study.

Data availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Conclusion

The present study revealed that the reasons for the women in the vaginismus treatment group to receive vaginismus treatment were that they experienced pain during sexual intercourse, they wanted to maintain their marriages and to gain self-confidence. A great majority of these women wanted the treatment for their spouses to experience sexuality

more comfortably. In our study, the group that did not receive vaginismus treatment had significantly higher scores for self-esteem levels, for self-centered and spouse/partner sexual activity-centered sub-dimensions of the Sexual Satisfaction Scale, and the Environment support and Seeking professional support sub-dimensions of the Coping Response Inventory compared to the group receiving vaginismus treatment.

In our study, it was observed that mature defense styles were used at a higher rate in the group that did not receive vaginismus treatment while neurotic and immature defense styles were used at a higher rate in the group that received vaginismus treatment.

Although vaginismus is regarded as a sexual dysfunction, it is associated with many components of mental health. Patients' self-esteem, defense mechanisms, sexual satisfaction and coping with stress levels are among the factors affecting the initiation, maintenance and completion of vaginismus treatment.

Considering that vaginismus is generally based on psychological factors, women with vaginismus may be recommended to seek help from a sexual health professional, sexual therapist or psychologist and create an appropriate treatment plan with professional help, and obtain more information to better understand and manage vaginismus and accelerate the treatment process. In addition, it may be recommended that they receive communication support in order to establish healthy communication with their partners and express their needs since stress increases vaginismus, apply stress management and relaxation techniques and join support groups and meet people who share similar experiences because it will provide emotional support.

It may be recommended for healthcare personnel working with vaginismus patients to act empathetically, understand the patient's concerns and emotional state, communicate openly and provide an environment of trust, provide information about the treatment process and options to help the patient approach the treatment in a more positive way, and refer them to a sexual therapist. In addition, it may be recommended for them to revise the treatment plan for the patient when necessary by discussing their coping strategies, to respect the patient's privacy, to participate in educational activities for individuals and the society in order to prevent misunderstanding of vaginismus in society and to increase awareness, and conducting more extensive research on the subject.

Contributions of authors

Conceptualization, TYB, NG, BG, GE; methodology, TYB, NG, BG; formal analysis, TYB, NG; research, TYB, NG, BG, GE; writing-original manuscript, TYB, NG; reviewing and editing of the manuscript, TYB, NG, BG; supervision, TYB, NG, BG, GE; project management, TYB, NG. All authors have read and accepted the prepared version of the manuscript.

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