Psychol Stud
https://doi.org/10.1007/s12646-023-00761-3

RESEARCH IN PROGRESS

Developing a Structural Model for Sexual Pain Disorder Based on Social Exchange Theory

Majid Saffarinia[1] · Mahnaz Sharifian[2,3] · Susan Alizadeh Fard[1] · Tayebeh Mohtashami[4] · Zahra Karimi[5]

Received: 14 July 2020 / Accepted: 30 August 2023
© The Author(s) under exclusive licence to National Academy of Psychology (NAOP) India 2023

Abstract This study was conducted to develop a structural model for the relationship between sexual schemas, marital adjustment, sexual self-disclosure, and sexual anxiety in female sexual pain disorder by mediating social exchange styles. The statistical population included all women referred to sexual health clinics in Tehran. Using cluster sampling 220 eligible women were selected. The results of structural equation modeling showed a relatively good fit of the model. The results also showed that marital adjustment and sexual anxiety have a positive relationship and passionate-romantic gender schema and self-disclosure have a negative relationship with sexual pain disorder. The results indicate that the passionate-romantic and the embarrassed-conservation gender schema with the mediation of fairness style has an indirect effect on sexual pain disorder, while marital adjustment and sexual anxiety are directly involved in sexual pain disorder without the mediation of social exchange styles. The findings of the present study provide a useful framework for identifying the major components of sexual pain disorder which should be considered in prevention and treatment programs. Training and intervention based on the theory of social exchange, especially the fairness style, is proposed to sexual health practitioners for reducing the sexual problems of women with sexual pain disorder.

Keywords Sexual schemas · Marital adjustment · Sexual self-disclosure · Sexual anxiety · Social exchange styles · Sexual pain disorder

Abbreviations

DSM-V	Diagnostic and Statistical Manual of Mental Disorders
GPPPD	Genito-Pelvic Pain/Penetration Disorder
IEMSS	Exchange model of sexual satisfaction
HRQoL	Health-related quality of life

Introduction

Healthy sexual relations act as a precondition for heightening the emotions and feelings between couples and can also strengthen the family ties and prevent the emergence and exacerbation of mental disorders and the breakdown of the family (Slater & Robinson, 2014). Sexual health requires a positive and respectful approach to the sexual relationship so that couples can increase safe and enjoyable sexual experiences and escape from any violence in a sexual relationship (Higgins et al., 2011). Therefore, any sexual dysfunction and difficulty affect sexual health. One of these disorders in women is sexual pain disorder.

✉ Mahnaz Sharifian
sharifian58@yahoo.com

Majid Saffarinia
m.saffarinia@pnu.ac.ir

Susan Alizadeh Fard
salizadehfard@yahoo.com

Tayebeh Mohtashami
t.mohtasham@gmail.com

Zahra Karimi
Kaimi_z1391@yahoo.com

[1] Department of Psychology, Payame Noor University, Tehran, Iran

[2] Department of Psychology, Azad University, Saveh, Iran

[3] Department of Psychology, Payame Noor University, Tehran, Iran

[4] Shahrood University of Medical Sciences, Shahrood, Iran

[5] Faculty of Applied Health Sciences, Brock University, St. Catharines, Canada

Published online: 17 November 2023

Diagnostic and Statistical Manual of Mental Disorders (DSM-V) has put vaginismus disorder in the category of sex pain disorders. According to these criteria, one of the following symptoms was considered enough for the diagnosis of Genito-Pelvic Pain/Penetration Disorder (GPPPD): difficulties in vaginal penetration, marked pain during intercourse, fear or anxiety of pelvic pain as a result of penetration and tensing/ tightening or contractions of pelvic muscles. The mentioned criteria need to last for more than 6 months. (Eserdağ & Anğın, 2021). The prevalence of this disorder among newly married couples is not exactly clear, but in societies in which talking about sexual issues for girls is considered a taboo and being a virgin is a high social value, it is very common (Merghati & Merghati, 2010). In Iran, there have been cases of couples who have not succeeded in having a single sexual intercourse even after 15–18 years of married life (Bahrami et al., 2013). In various studies, the prevalence of this disorder has been reported to be between 2 and 20% (Gindin & Resnicoff, 2002).

Epstein and Baucom (2002) consider sexual schema as the cause of sexual dissatisfaction and dysfunction and define it as a type of cognition that couples have about their marital relationships. Beck (2009) also believes that many of the interpersonal problems of individuals are influenced by their type of schemas. Reviews of previous literature suggest that women with positive sexual schemas have better feelings about their own sexual experience than those with negative schemas, and these positive schemas help them have satisfactory sex (Radlove, 2009). Lindgren et al. (2011) stated in their study that women who have experienced their first sexual intercourse, have passionate- romantic, and open-direct sexual schema, and women who have never had sexual intercourse, have embarrassed-conservation schemas. Reissing et al. (2005) stated that women with vaginismus have less positive schemas, and this negative view is consistent with their sexual behavior. In general, studies have shown that there is a significant relationship between sexual schemas and sexual satisfaction (Radlove, 2003), marital adjustment (Chatay & Wishman, 2009), desirable sexual performance (Villanueva, 2012), marital intimacy (Stiles, 2004) and incompetence (Harris & Curtin, 2002).

Among other psychological factors that appear to be important in healthy sexual relations are sexual self-disclosure and couple's conversation about sexual issues, sexual preferences and the discovery of the partner's preferences (Whestheimer & Loparter, 2005). Sprecher and Hendrick (2004) argued that self-disclosure involves sharing personal sexual information with another person. This concept also refers to the interaction of the couples through which their sexual relations can be improved by talking about likes and dislikes of their sexual relationship. Wen-bin and Chin-Sheng (2006) concluded in their study that talking about sexual feelings and desires is the best way to understand the sexual desire of the partner and can help them have an enjoyable sexual relationship. Andersen and Cyranowski (2009) concluded that lack of emotional self-disclosure makes a sexual problem persist for a long time because these problems would not be resolved without talking which may result in sexual dissatisfaction and sexual pain disorder.

Also, previous studies have shown that desirable sexual performance is correlated with marital adjustment (Beutel et al., 2002; Nicolosi et al., 2004; Sprecher, 2002; Vento & Cobb, 2011). Considering the importance of marital adjustment in health, many experts consider this construct as an important variable in their studies and evaluations. Aliakbari Dehkordi et al. (2017) showed that compatible women have higher mental health and better sexual performance than incompatible women. Marital satisfaction is also dependent on the degree to which couples have an agreement on different issues of sexual intercourse. Brezsnyak & Whisman (2004) also showed that with a lack of marital adjustment, dissatisfaction with life increases and the individual's self-esteem decreases.

On the other hand, the literature review indicates the relationship between sexual anxiety and sexual dysfunction, and the effects of factors such as anxiety on sexual desire, especially in women have been confirmed. Therefore, anxiety plays an important role in almost all sexual disorders of women. Ward and Ogden (2010) argued that the most common cause of vaginismus is anxiety and fear of pain. In a study by Payne, it was found that women with vaginismus had significant anxiety and reported symptoms such as excessive vigilance with fear of pain (Payne et al., 2005). ter Kuile et al. (2007) also stated that vaginal responses, which are conditioned responses to sexual stimulation, lead to avoidance behaviors and, consequently, decreased sexual function. Elke et al. (2003) stated that fear and anxiety during intercourse involuntarily tighten the vaginal muscles and contract them, which in most cases makes sex either impossible or marked by severe pain.

In exploring factors affecting vaginismus disorder, we should also look at the social aspect of this condition. The existing literature has described sexual pain disorder as a social phenomenon (Khojaste Mehr et al., 2012; Molaei Nezhad et al., 2014; Perry, 2004). With these interpretations, one of the theories that can help us is the Social Exchange Theory. The theory of social exchange is a socio-psychology approach that describes social relations as an exchange process between two partners, based on the concept of benefits, costs, and resources. This theory suggests that human relationships are formed and maintained based on cost–benefit. For example, when a person perceives the costs of a relationship more than its benefits, social exchange theory predicts that this person is likely to decide to end this relationship. This theory is also effective in marital relationships. Perry (2004) argues that

social exchange theory is one of the most important theories in the field of marriage and family, which provides a good explanation for the quality and manner of the marital relationship. As an example, according to this view, early ejaculation of men acts as a cost because women perceive it as an unjust behavior (Rosenbaum, 2009). Kenrick and Butner's (2015) study on the role of social exchanges on sexual performance and gender attitudes of women and men showed that social exchanges between man and wife on marital and sexual issues, form attitudes and views such as "give and take" and "cost and benefit" that essentially affect their sexual performance. Also, these views can have a more powerful effect than other factors affecting sexual function. Cornwall (2002) concluded that social exchange within the framework of money and love among couples is important and can affect romantic relationships, intimacy, motives, sexual feelings, and the level of marital and sexual satisfaction in couples. Hope (2007) showed that when the exchange relationships (give and take) between couples are very intense (such as requesting much money or resources), this can disable women in their sexual activities. On the other hand, when the benefits of marital exchanges are considered fair, the marital relationship is strengthened (Nakonezny & Denton, 2008). Therefore, according to this view, the imbalance between costs and benefits results in marital dissatisfaction that can endanger the family situation (Sprecher, 2001).

New female sexual performance models suggest that women want sexual relationships not because of their sexual satisfaction but because of emotional intimacy (Sánchez-Fuentes & Santos-Iglesias, 2016). Therefore, women's unwillingness for sex should not only be investigated in the biomedical context, but also social communication context (Basson, 2005). Since sexual problems are multifactorial, experts should pay attention to all factors, and explore the role and identity of individuals in their social world. As previous studies have shown, the social exchange between couples is largely influenced by their sexual attitudes (Baumeister & Vohs, 2004). On the other hand, the social exchange theory provides a potentially useful framework for assessing sexual satisfaction, though few researchers have used this variable. Researchers such as Perry (2004) have suggested that social exchange theory is one of the theories that can be used to understand and explain marriage dynamics.

In general, a woman's interaction with her man during emotional and sexual relations greatly affects sexual behavior. Therefore, the present study aims to investigate the relationship between sexual schemas, marital adjustment, sexual anxiety, and sexual self-disclosure by mediating social exchange styles in predicting sexual pain disorder. In other words, this paper attempts to answer this basic question: how do the psychological variables of sexual schema, marital adjustment, sexual anxiety and self-disclosure with mediating social exchange styles affect sexual pain disorder?

Method

Statistical Population, Participants and Sampling Method

The design of this research was descriptive and used correlation and structural equation modelling to analyze the results. The statistical population included all women with sexual pain disorders who were referred to sexual health clinics in Tehran. Using multistage cluster sampling, three clinics (Nik Andishe Pishro, Derakhshesh Taze and the specialized urology and sexual health clinic) were selected among clinics of Tehran by chance. Then two hundred twenty women with sexual pain disorder were randomly selected as the research sample. These diagnoses were made based on DSM-5 diagnostic criteria and diagnosis of a psychiatrist and a clinical psychiatrist. Some other criteria were considered for the sample, which is as follows: age between 28 and 38, having no sexual problems, including lack of arousal, lack of physical and medical problems, not on any medication, no pelvic infection, no previous marriage and no sexual problem in the spouse. The average age of the sample group was 28 years. 53% of the sample had a bachelor's degree. 65% of them were employed and the average duration of marriage was 2 years and 6 months. The informed consent form was first provided to the participants and all the necessary items including research objectives and confidentiality were considered.

Research Instruments

The following questionnaires were used to collect information and data related to the variables of the present study.

Sexual Scheme Questionnaire

Andersen and Cyranowski's Women's Sexual Self-Schema Scale (1994) was used to measure sexual schemas. Participants filled out this questionnaire which had 52 attributes on a 7-point Likert scale (from 0 = at all to 6 = very high). Twenty-four attributes were used as fillers in this test to hide the main nature of the assessment from the subject's point of view. This test has 26 main items and 3 subscales: Passionate—Romantic, Open—Direct and Embarrassed—Conservation. The validity of this scale was calculated by Andersen and Cyranowski (1994). Cronbach's alpha coefficients in the subscales of passionate—romantic, open-direct and embarrassed-conservation were 0.81, 0.77 and 0.66, respectively (total = 0.82) which was satisfactory. The reliability of this

scale was calculated to be 0.815 using Cronbach's alpha coefficient.

Social Exchange Questionnaire

The Social Exchange Questionnaire was developed by Leybman et al. (2011) and consists of 54 items and five subscales of follow-up, fairness, individualism, opportunism, and extreme investment. This questionnaire was normalized in Saffarnia's (2015) study on 470 men and women in Tehran. In this paper-and-pencil self-reported questionnaire, items are graded on a 5-point Likert scale (strongly disagree = 1 to strongly agree = 5). In Saffarinia's study (2015), the reliability of the questionnaire was calculated to be 0.83 using Cronbach's alpha method, which can be considered as satisfactory. Also, the results of the exploratory factor analysis and analysis of the principal components (PCs) through VARIMAX rotation confirmed that five factors with a specific value greater than one and a half exist which are as following: "follow up", "fairness", "individualism", "opportunism" And "extreme investment." This was accompanied by changing some of the main items and deleting items of 5, 6, 11, 12, 26, 27, 30, 32, 36, 40, 44, 51 and 53. Therefore, the original version was reduced to a 41 item version. The results of the confirmatory factor analysis indicated a relatively good fit for the 41-item model.

Marital Adjustment Questionnaire

This scale was developed by Spanier in (1976) to measure the degree of adjustment of the couples and had 32 items. The total score of the scale which is from zero to 150 is obtained through adding scores of all items. The items were presented on a Likert scale. To increase the reliability of the scale, several items were worded positively and some items negatively. According to Spanier (1976), those with a score of 101 or less are considered to be problematic and incompatible, and above this value are compatible. Spanier (1976) has determined the confidence level of the scale for the total scores as 0.96 and the sub-scales for the two-person satisfaction as 0.94 and the two-person agreement as 0.90 and the two-person correlation as 0.86 and the emotional expression in relations as 0.73. The reliability of the scale was calculated to be 0.759 using Cronbach's alpha coefficient.

Sexual Anxiety Scale

To measure sexual anxiety, Davis et al.'s (2006) scale was used which had 18 items. This was presented on a 5-point Likert scale (do not like at all to love it) which were graded from 1 to 5. The internal reliability for this scale was 0.93 using Cronbach's Alpha method and Anders (2006) reported its test–retest reliability as 0.83 and considered its validity as acceptable. Using Cronbach's alpha method, its internal consistency was calculated as 0.75 and its correlation with the Sexual Self-disclosure test was 0.60. Psychology and counseling professors also confirmed its content validity. The reliability of this scale in the present study was calculated to be 0.706 using Cronbach's alpha coefficient.

Spouses Sexual Disclosure Scale (SSDS)

This scale, which was developed by Snell (2002) examined sexual self-disclosure during sex with his/her sexual partner and had 72 items. Cronbach's Alphas of the subscales in the original version for women were from 0.83 to 0.93 with an average of 0.90 and for men ranging from 0.84 to 0.94 with an average of 0.92 The reliability of this scale in this study was calculated to be 0.952 using Cronbach's alpha coefficient. Items number 1 and 2 were removed from the scale due to low reliability.

Sexual Pain Disorder

To measure sexual pain disorder, the multidimensional vaginal penetration disorder questionnaire (MVPDQ) which was developed by Molaeinejad et al. (2014) was used. This questionnaire has 72 items and questions are scored from 1 to 5. Molaeinejad et al. (2014) conducted a quantitative exploratory study to design a tool for evaluating vaginismus disorder. In the first part of this study, single and paired interviews were conducted with twenty couples, which had some marital dysfunction (the participants were selected from the psychiatric infertility clinic of Isfahan). In the second part of the study, by using the codes, concepts, and themes obtained at the qualitative stage, the items for male and female questionnaires (with 76 items and 45 items, respectively) were designed. After determining the face and content validity, 214 couples from three sexual health clinics filled them out. The cause of the marital dysfunction of these couples was vaginismus, according to the DSM-IV criteria. Then, through exploratory and confirmatory factor analyses, the constructs of both questionnaires were examined. The reliability of the questionnaire was calculated through internal consistency as 0.70 and Cronbach's alpha coefficient as 0.77. Items number 1, 2 and 4 were removed due to low reliability.

Data Analysis

The collected data were analyzed in two levels: descriptive and inferential statistics. For descriptive statistics, mean and standard deviation were used. In the inferential statistics, considering the nature of the hypotheses and research objectives, the data were analyzed using the Pearson correlation coefficient and structural equation modeling. It should be

Table 1 Descriptive findings of research variables

Variable	Mean	Deviation standard
Passionate-romantic gender schema	39.82	6.52
Embarrassed-conservative gender schema	26.29	3.35
Open—direct gender schema	32.62	5.04
Tracking	21.38	4.4
Fairness	25.07	5.45
Individualism	22.58	4.57
Benefit-seeking	30	5.51
Overinvestment	14.09	3.1
Marital adjustment	76.66	12.19
Sexual self-disclosure	10.74	2.2
Sexual anxiety	63.07	8.06
Sexual pain disorder	349.12	24.47

$p<0.05$

noted that for statistical analysis, statistical software SPSS-22 and Lisrel 8.5 were used.

Results

Descriptive data (means and standard deviation) of research variables are presented in Table 1.

The Pearson Correlation Coefficient was used to study the relationship between the variables. The results are presented in Table 2.

As shown in Table 2, the passionate-romantic schema has a significant negative correlation with sexual pain disorder ($p=0.0001$ and $r=-0.256$). Also, there is no significant relationship between the open-direct ($p=0.335$ and $r=-0.065$) and embarrassed—conservation ($p=0.707$, $r=-0.026$). Table 2 also shows that all social exchange styles include follow-up components ($r=0.244$, $p=0.001$), extreme investment ($r=0.277$, $p=0.0001$), fairness ($r=0.379$, $p=0.0001$), opportunism ($r=-0.283$, $p=0.0001$), and individualism ($r=-0.289$, $p=0.7$) have significant relationships with sexual pain disorder ($p<0.05$). Also, Table 2 shows that sexual anxiety ($r=-0.265$, 0.0001) and marital adjustment ($p=0.0001$ and $r=-0.394$) have significant positive relationships with sexual pain disorder, and sexual self-disclosure ($p=0/001$ $r=-0.219$) has a significant negative relationship with sexual pain disorder ($p<0.05$).

Normal distribution was measured by the Kolmogorov–Smirnov test, which indicated that the variables were normally distributed. Therefore, the regression assumptions were examined and confirmed in this study.

It should be noted that the assumptions of the modeling of structural equations, such as single-variable normalization,

Table 2 Correlation matrix of research variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	
1	Passionate-romantic gender schema	1											
2	Embarrassed-conservative gender schema	0/392**	1										
3	Open—direct gender schema	0/366**	0/133*	1									
4	Tracking	−0/283**	-0/084	0/001	1								
5	Fairness	−0/344**	0/002	−0/017	0/705**	1							
6	Individualism	0/349**	0/014	−0/13	−0/39**	0/617**	1						
7	Benefit-seeking	0/283**	0/104	0/04	−0/126	−0/418**	0/758**	1					
8	Overinvestment	−0/287**	−0/022	0/016	0/641**	0/748**	−0/691**	0/522**	1				
9	Marital adjustment	−0/459**	−0/071	−0/025	0/351**	0/566**	−0/576**	−0/527**	0/565**	1			
10	Sexual self-disclosure	0/384**	0/179**	0/166**	−0/321**	−0/309**	0/108	0/056	−0/22**	−0/324**	1		
11	Sexual anxiety	−0/003	0/049	0/098	0/323**	0/136*	0/081	0/21**	0/188**	−0/073	−0/113	1	
12	Sexual pain disorder	−0/265**	−0/065	−0/026	0/244**	0/289**	−0/379**	−0/283**	0/277**	0/394**	−0/219**	0/265**	1

$p<0.05$

multivariate normalization, multiple linearity, and outliers, were also considered in this study.

The fitting indices of the measurement model which is presented in Table 3 show the fitness of this structural model.

Except for the Goodness of Fit Index that is not within the scope of acceptance, the rest of the indices are within the scope of acceptance. It should be noted, however, that the Goodness of Fit Index is strongly influenced by the size of the sample, so the other structural indicators are also used to examine the fitting of the structural model. Figures 1 and 2 show a modified structural pattern that lacks non-meaningful paths.

Table 3 Structural model fitment index

Fit index	Cut-off for good fit	Values
χ^2	–	174.33
χ^2/df	<5	2.58
TLI	TLI $\geq$ 0.90	0.92
CFI	CFI $\geq$ 0.90	0.93
IFI	IFI $\geq$ 0.90	0.93
NFI	NFI $\geq$ 0.95 NNFI $\geq$ 0.95	0.90
GFI	GFI $\geq$ 0.95 AGFI $\geq$ 0.90	0.72
RMSEA	SRMR <0.08	0.08

$p<0.05$

In this study, the Bootstrap test was used to evaluate the mediating relationships. Bootstrap provides the most powerful and logical way to evaluate indirect effects. Meaningful evaluation of these relationships can be examined in two ways. The first method is by referring to significance levels and the second method is by checking the confidence intervals. If the upper and lower limits with 95% confidence interval for the mediating path are both positive and both negative, that path is meaningful at ($p<0.05$).

As Table 4 indicates, the passionate-romantic pathway to sexual pain disorder mediated by a social exchange style of "fairness" with a standard coefficient of -0.254 at a level of $p<0.01$ is meaningful. Moreover, the pathway of embarrassed-conservation to sexual pain disorder mediated by a social exchange style of "fairness" with a standard coefficient of 0/381 at the level of $p<0.01$ is meaningful.

The social exchange approach to marital relationships considers the occurrence of interpersonal behaviors not only as a reward-cost system, but also in terms of reciprocity, different degrees of dependence, commitment formation, cohesion and solidarity, trust, power inequality, values,

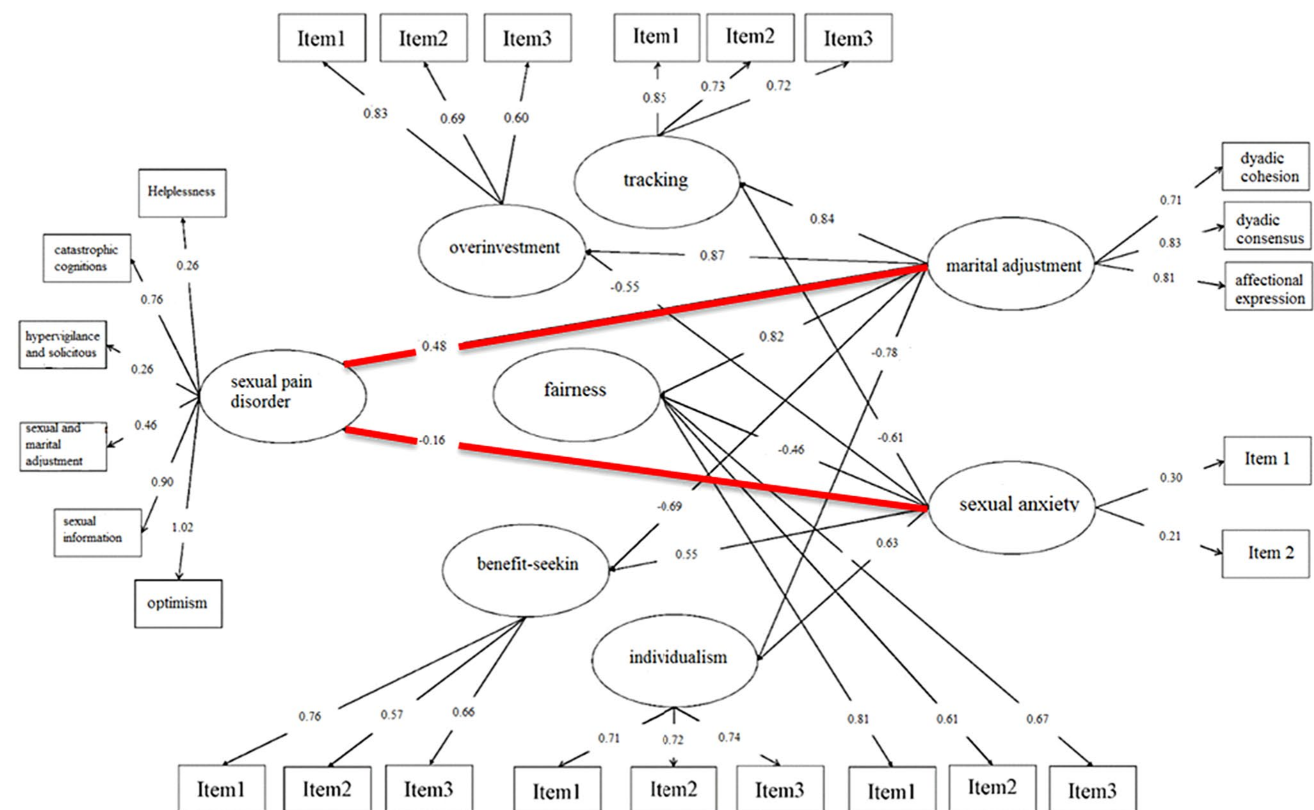

Fig. 1 Model with standard coefficients

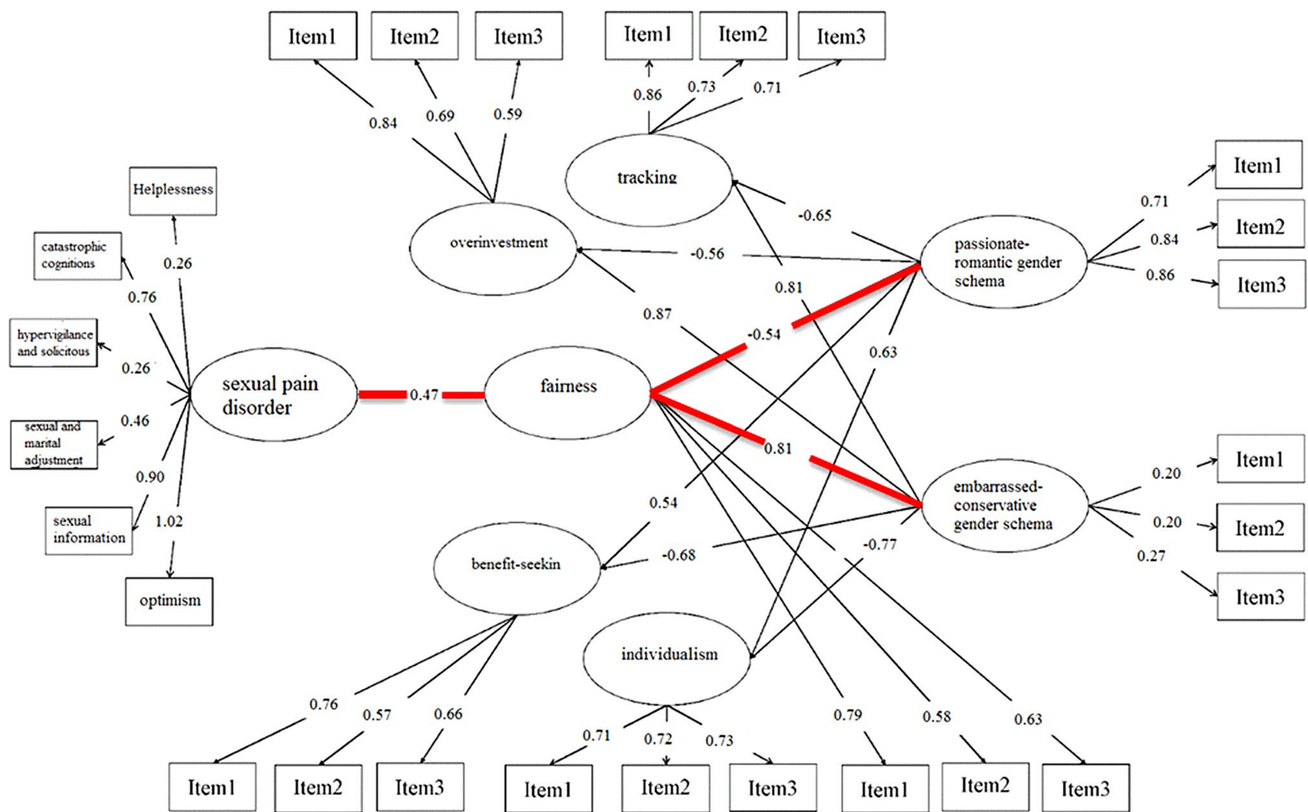

Fig. 2 Model with standard coefficients

Table 4 Bootstrap test results for mediator effects

Mediator paths	passionate-romantic gender schema fairness sexual pain disorder	embarrassed-conservative gender schema fairness sexual pain disorder
Non-standard coefficient	−0/566	2/419
Standard coefficient	−0/254	0/381
Upper bootstrap	−0/131	0/467
Bottom bootstrap	−0/391	0/273
Standard error	0/065	0/05
Sig	0/003	0/002

$p < 0.01$

usefulness, results, reciprocity norms, and different social situations (Sabey et al., 2018). Thus, social exchange styles as a personality trait can be related to and affect many variables. On the other hand, according to the Gender Equality Index (GEI), sexual activity in women has changed (Kontula & Miettinen, 2016). Supporting sexual autonomy, social and academic achievement has created positive conditions for sexual activity in women (Kołtuniuk et al., 2020).

Thus, in recent decades, major changes have taken place in women's sexual orientation. Evidence shows that women's attitudes have become freer; sexual behavior has become more equal; women have become more sexually active, and overall female sexual satisfaction has increased. But some studies have shown that egalitarian women are less satisfied with their traditional married life than women (Taniguchi & Kaufman, 2013). These developments in women's gender roles in recent decades have led to changes in women's attitudes toward sexuality and the pursuit of more orgasm and sexual satisfaction, which can be accompanied by a style of social exchange, especially the style of fairness. In other words, women today are more in favor of cost–benefit equality.

On the other hand, according to the Interpersonal Sexual Satisfaction Exchange Model (IEMSS), which is derived from the theory of social exchange, there are four components in sexual satisfaction: (a) The balance between rewards and costs in a sexual relationship, (b) Comparison of rewards and costs With expected levels of rewards and costs, (c) equal perception of rewards and sexual costs between partners, and (d) quality of aspects of asexual relationships (Stephenson & Meston, 2011a, b; Sánchez-Fuentes and Santos-Iglesias, 2016); these dimensions are different between men and women.

In this view, studies have shown that men view orgasm as a sexual reward, which means that men value the physical

aspects of their sexuality. While women positively value the emotional aspects of their sexual partner, physical aspects such as undressing in front of their sexual partner and reaching orgasm are lost to them as sexual expenses (McClelland, 2011; Sánchez-Fuentes & Santos-Iglesias, 2016; Stephenson & Meston, 2011a, b). As a result, in women's sexual attitudes, paying attention to asexual interactions is so effective that these examples can be used to explain the lack of a meaningful association between other styles.

And these cases have made this style in the present study, both in terms of cultural change and statistically a stronger factor and has affected the role of other exchange styles, on the other hand, considering that this study for the first time, the role of social exchange styles with sexual pain disorder has been studied as a mediating variable, so prospective studies are needed to explain stronger results.

Discussion

As stated, this research was conducted to develop a structural model for the relationship between sexual schemas, marital adjustment, sexual self-disclosure, and sexual anxiety in vaginismus disorder by mediating social exchange styles. The results of this study showed that sexual anxiety and marital adjustment have a direct effect on sexual pain disorder without the mediation of social exchange styles. Moreover, passionate romantic schema and the embarrassed-conservation schema have an indirect effect on sexual pain disorder, mediated by social exchange styles of "fairness." These findings are in line with the results of previous studies and indirectly confirm the results of previous studies (Azizpour and Safarzadeh, 2016; Ismaeilzadeh et al., 2020; Khojasteh Mehr et al., 2012; Rosenbaum, 2009; Sánchez-Fuentes and Santos-Iglesias, 2016; Stephenson & Meston, 2011a, b).

As the literature review and the results of this study, showed social exchange styles are associated with sexual pain disorder. According to Clark et al. (2015), the social exchange between couples, which usually happens in the form of giving money and gifts to a woman by a man in pre-marital relationships, consider as a part of a romantic relationship and in most cases leads to permanent marriage and stability. On the other hand, Hope (2007) in his study showed that when the exchange relationships (give and take) between couples are very intense (such as requesting much money or resources), this can disable women in their sexual activities and hence they try to avoid talking about sexual issues. But in explaining the role of the mediator of social exchange styles, which is one of the main findings of the research, we can mention the following: According to the theory of social exchange, the key concepts in this theory are trust and commitment (Blau, 1964; Cook & Emerson, 1978; quoted by Rosenbaum, 2009). Trust is an essential element that allows people to be just and others expect long-term justice from them. Commitment involves establishing stable relationships through high reciprocal levels of benefits (Rosenbaum, 2009). Therefore, having low commitment and trust are important factors in explaining sexual pain disorder both according to sexual schema perspective and social exchange. In this regard, according to the results of the present study, the fact that only the fairness style has a significant relationship with sexual pain disorder can also be explained.

Nowadays, rapid social, economic and cultural developments can change the structure of the family and relationships of family members with each other, which results in more women's tendency to fairness and justice in marital relations. Studies show that perception of fairness as a strong predictor of marital satisfaction occurs in the early stages of the couples' relationship (Khojaste Mehr et al., 2012; Sharifian et al., 2020; Traupmann et al., 1981). Lioyd et al. (1982) also stated that fairness is a strong predictor of satisfaction with the relationship. Spercher (2001) argues that the perception of fairness depends on the balance between the consequences (benefits and costs) and the investment of partners (couples) in the relationship. Today, the perception of fairness is a very important and decisive factor in marital relations. In traditional marriage, the status and role of the people was limited and distinct, but this has changed with highlighting the role of women in society. Women's employment led them to share their income in the family, which increased their authority and their role in the family (Khojaste Mehr et al., 2012). So the women's society in the community was accompanied by demanding equality of rights between men and women and the issue of justice. Demanding equality is so important that it has had an impact on less important issues such as the division of housework. According to Claffey and Mickelson (2009), fairness in the division of housework affects the marital disparity of individuals. Therefore, according to the theory of social exchange, humans are—consciously or unknowingly—constantly taking into account the benefits of participating in a relationship. They are seeking justice and a balance between input and output. According to this view, marital relationships are an example of cooperative relationships, so, like all interactive relationships, in couples' lives, there must be justice and healthy interpersonal relationships (Kogan et al., 2010). Therefore, if couples feel inequality, they will certainly have some problems in marital functions, including sexual relationships.

On the other hand, some of the interesting findings of the present study are as follows: According to the literature review, there is a relationship between sexual disorders and low marital adjustment (Beutel et al., 2002; Nicolosi et al, 2004; Sprecher, 2002; Vento & Cobb, 2011). Surprisingly, the present study has shown that the participants may have

marital adjustment despite the woman's sexual pain disorder. In this regard, the results of previous studies are contradictory. For instance, Ferenidou et al. (2008) found that %72/5 of women who scored low in the sexual performance index reported a high level of sexual satisfaction. Several items can be considered in explaining the result. The level of love for a spouse, the type of relationship and the level of intimacy between couples and doing foreplays (kissing, caressing, hugging,…) or in other words, the establishment of an emotional relationship before sex are important factors in the adjustment of women. These behaviors have a strong relationship with both female and male sexual satisfaction (Ashdown et al., 2011). According to Interpersonal Exchange Model of Sexual Satisfaction (IEMSS) which is derived from social exchange theory, sexual satisfaction has four components:

(A) The balance between benefits and costs in a sexual relationship.
(B) Comparison of benefits and costs with expected levels of benefits and costs.
(C) The perceived equality between sexual benefits and the costs of between partners.
(D) Quality of aspects of non-sexual relationships (Stephenson, 2011; Sanchez-Fentz and Iglas, 2016) which appears to be more important for women with vaginismus. Therefore, in these couples, though there is no deep sexual relationship, the quality of non-sexual relationships and superficial sexual relationships make life stable. In some cases, the couples live for many years without any deep sexual intercourse. For instance, Masters (1966) reported a 17-year-old marriage without even one single full sex. In Iran, there are some cases that couples have not yet succeeded in sexual intercourse even after 15–18 years of living together. Therefore, new female sexual performance models suggest women want sexual relationships not because of their sexual satisfaction but because of emotional intimacy (Barrientos & Paez, 2006). Also, according to Stephenson (2011), women with anxious-attachment may consider sexual performance problems as an important sexual cost for themselves. Therefore, according to this view, women who have embarrassed-conservation schema may have anxious-attachment and hence, they may seek a superficial sexual activity and non-sexual activity (such as kissing, caressing, and hugging) for fear of loss. Barrientos and Paez (2006) stated that for women, factors such as high level of education and the social and economic status of men are predictors of sexual satisfaction, which can also be informative in explaining the result of our study. It is worthwhile to be noted that a review of qualitative studies indicates that sexual satisfaction has a different meaning for Iranian women; for instance, sexual satisfaction is related to "values." These "values" comprise the sexual or emotional feelings of affection in a married couple. It is also important to investigate the effect of variables on women's sexual satisfaction, including cultural and religious factors, the increase in divorce, the change in people's perspectives due to an increase in women's level of education, the employment and financial independence of women, the gap between sexual puberty and marriage, and women's empowerment and change in their attitudes toward sexual life (Afzali et al., 2020).

On the other hand, talking about sexual issues in many societies is a taboo, and this is very dependent on culture and ethnicity. For instance, Iranian women think that they should talk less about their sexual desires in marriage and less express their dissatisfaction. They face the stereotype that "A good woman never talks about her sexual behavior." On the other hand, the emphasis on "no sex before marriage" as a social value and nakedness on the first night of the wedding and entering the forbidden zone, which society values the girl's life largely for it, makes her face a duality between what should not be in the past and now should be (Rosenbaum, 2009). Therefore, socio-cultural factors play an important role in this context. Hence, the lack of a significant effect of sexual self-disclosure in the causal model of sexual pain disorder can be explained. Masters (1966) also showed that couples who cannot talk about their sexual desires are more likely to experience sexual abnormalities than other couples who talk about these issues. Moreover, Velayati confirmed that women with sexual dysfunction develop symptoms of mood instability, low self-esteem, anxiety, selfishness, guilt and consequently they do not express their feelings and desires (Velayati et al., 2021). One of the important problems of couples, especially young couples, is not having enough confidence to deal with their sexual desires with their spouse. In half of the studies, it has been shown that men have less difficulty in this area, while more than 60% of women cannot easily disclose their inclination (Richards, 2021; Snell, 2002). Therefore, when couples do not trust each other, they do not share their thoughts and feelings and their sexual intercourse is disturbed. Normal couples usually trust each other within 6 weeks, expressing their feelings to the other (Wen-bin & Chin-Sheng, 2006). When couples do not express their sexual desires, they will have less pleasure in sexual intercourse, and this will play an important role in causing sexual pain disorder. Andersen and Cyranowski (2009) concluded in his study that lack of emotional sexual self-disclosure makes a sexual problem persist for a long time because these problems would not be resolved without talking which may result in sexual dissatisfaction and sexual pain disorder. On the other hand,

as women see their husbands' needs as priority try to not express their sexual desires (Hope, 2007).

Therefore, through examining the theoretical background and related studies, sexual schemas cannot, by themselves, lead to sexual pain disorder, but in the context of social exchange styles, especially the fairness style, contribute to a sexual pain disorder. In other words, having negative sexual schemas affects the attitudes of women with vaginismus concerning the level of trust and commitment in understanding the equality of costs and benefits and the imbalance between benefits and costs contributes to a sexual pain disorder. Huberman's recent research in line with previous research confirms that greater density of Passionate–Romantic sexual self-schemas was associated with more past pleasurable sexual experiences and better sexual function. Greater density of Open-Direct sexual self-schemas was associated with more positive sexual attitudes and better sexual function. For the negative schema domain, greater density of Embarrassed–Conservative sexual self-schemas was associated with fewer past sexual partners, less past sexual experiences, and less tendency for sexual excitation (Huberman et al., 2021). In terms of sexual anxiety and marital adjustment that directly affects the sexual pain disorder, Bradbury and Finage (1988, quoted in White, 2003) suggest that dynamic factors (such as anxiety and Marital adjustment) mediates the impact of static and stable factors (social exchange styles) on dependent variables (sexual pain disorder). Therefore, stable variables such as sexual schemas can be effective on social exchange styles, which are also part of stable variables, but dynamic variables such as sexual anxiety and marital adjustment cannot be effective on social exchange styles. In this case, social exchange styles do not play a role in mediating because these variables directly affect sexual pain disorder, given their dynamic nature (Fig. 3) and this findings are in line with Velayati's study which showed that a high level of anxiety is an important factor to predict poor health-related quality of life (HRQoL) in women with vaginismus directly and it also mediated the relationship between marital satisfaction as well as depression with HRQoL (Velayati et al, 2021).

Strengths and Limitations

Our study is the first research that has developed a structural model for sexual pain disorder in the context of social exchange theory and also it is the first study that examines the psychological variables of sexual schema, marital adjustment, sexual anxiety and sexual self-disclosure simultaneously. Undoubtedly, such studies allow readers and researchers to better compare and analyze in the shortest possible time. However, this study has been conducted on women with sexual pain disorder in Tehran, Iran, and so making generalizations to other social groups in other cities and countries with different cultural and ethnic consideration should be done cautiously. Also, the lack of control of demographic variables and personality variables in the sample group is another limitation of this research. Moreover, although the data of this research are consistent with the tested structural model, its use in cause and effect relationships should be done cautiously. Therefore, it is suggested that future studies consider other possible

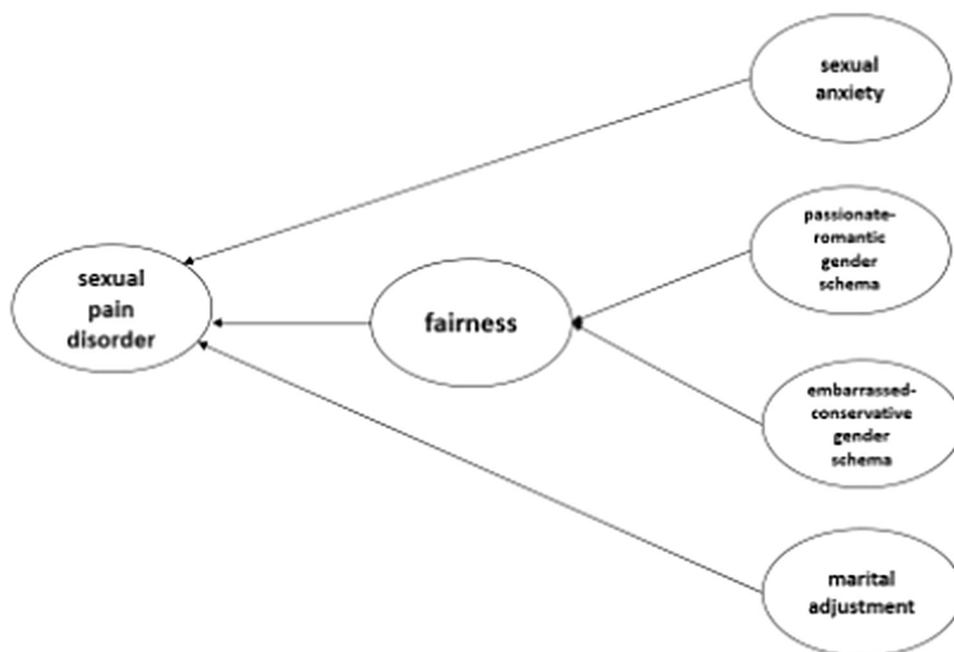

Fig. 3 Final model

variables (e.g., socio-economic class, privacy and availability of designated space exclusively for the partners) and explore the role of sexual anxiety and marital adjustment in an attempt to reduce the sexual problems of women with sexual pain disorder.

Conclusion

The present study investigated the mediating social exchange styles' role in the relationship between sexual schemas, marital adjustment, sexual anxiety, and sexual self-disclosure and predicting sexual pain disorder. The findings of this study provide a useful framework for identifying the major components of sexual pain disorder, which should be considered in prevention and treatment programs. Training and intervention based on the theory of social exchange, especially the fairness style, is proposed to sexual health practitioners for reducing the sexual problems of women with sexual pain disorder.

Acknowledgements We thank all women's specialists and managers of sexual health clinics of Nik Andishe Pishro, Derakhshesh Taze and the specialized urology and sexual health clinic, as well as women with sexual pain disorder who participated in the present study, and all people who helped us in this study.

Author contributions All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by all authors. The first draft of the manuscript was written by MS, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Funding This study was not funded by anywhere.

Data availability All data used are available.

Code availability No applicable.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethics approval Approval was obtained from the ethics committee of Payame Noor University. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Consent to participate All participants were aware about study conditions, and they were able to give up their collaboration in any step of study.

Consent for publication The current manuscript has never published in elsewhere and all authors are satisfied with publish their manuscript in the journal of Psychological Studies.

References

Afzali, M., Khani, S., Hamzehgardeshi, Z., Mohammadpour, R. A., & Elyasi, F. (2020). Investigation of the social determinants of sexual satisfaction in Iranian women. *Sexual Medicine, 8*(2), 290–296.

Aliakbari Dehkordi, M., Mohammadi, A., Alipour, A., & Mohtashami, T. (2017). The impact of cognitive behavioral sex therapy on decreasing anxiety and increasing sexual function in people with vaginismus. *IJHS, 3*(2), 15–20.

Andersen, B. L., & Cyranowski, J. M. (1994). Women's sexual self-schema. *Journal of Personality and Social Psychology, 67*(6), 1079–1100.

Andersen, B., & Cyranowski, J. M. (2009). Women sexuality: Behaviors, responses and individual difference. *NIH Public Access, 63*(6), 891–906.

Ashdown, B. K., Hackathorn, J., & Clark, E. M. (2011). In and out of the bedroom: Sexual satisfaction in the marital relationship. *JISS, 2*(1), 40–57.

Azizpoor, P., & Safarzadeh, S. (2016). Moderating role of perception of equity and sacrificial behavior on relationship of spouse intimacy with marital quality. *Journal of Family Research, 12*(3), 391–411.

Bahrami, H., Eftekhar, M., Kiamanesh, A., & Sokhandani, F. (2013). Sexual function and self-disclosure in unconsummated marriages. *Iranian Journal of Psychiatryand Clinical Psychology., 19*(2), 149–155.

Barrientos, J. E., & Paez, D. (2006). Psychosexual variables of sexual satisfaction in Chile. *Journal of Sex & Marital Therapy, 32*, 351–368.

Basson, R. (2005). Women sexual dysfunction: Revised and expanded definitions. *Synthesis, 172*(10), 1327–1333.

Baumeister, R. F., & Vohs, K. D. (2004). Sexual economics: Sex as female resource for social exchange in heterosexual interactions. *Personality and Social Psychology Review, 8*(4), 339–363.

Beck, A. T. (2009). *Depression: Causes and treatment* (p. 225). University of Pennsylvania Press.

Beutel, M. E., Schumacher, J., Weidner, W., & Brähler, E. (2002). Sexual activity, sexual and partnership satisfaction in ageing men-results from a German representative community study. *Andrologia, 34*(1), 22–28.

Blau, P. (1964). *Exchange and Power in Social Life*. New York, NY, USA: Wiley.

Bradbury, T. N., & Fincham, F. D. (1988). Individual difference variables in close relationships: a contextual model of marriage as an integrative framework. *Journal of personality and social psychology, 54*(4), 713–721. https://doi.org/10.1037//0022-3514.54.4.713

Brezsnyak, M., & Whisman, M. (2004). Sexual desire and relationship functioning it's effect of marital satisfaction and power. *Journal of Sex & Marital Therapy, 30*(3), 199–217.

Chatay, Y., & Wishman, M. A. (2009). Partner schemas and relationship functioning: A states of mind Analysis. *Behavior Therapy, 40*(1), 50–56.

Claffey, S. T., & Mickelson, K. (2009). Division of household labor and distress: The role of perceived fairness for employed mothers. *Sex Roles, 60*(1), 819–831.

Clark, S., Kabiru, C., & Mathur, R. (2015). Relationship transitions among youth in urban Kenya. *Journal of Marriage and Family, 72*, 73–88.

Cook, K. S., & Emerson, R. M. (1978). Power, equity and commitment in exchange networks. *American Sociological Review*, 721–739.

Cornwall, A. (2002). Spending power: Love, money, and the reconfiguration of gender relations in Ado-Odo, southwestern Nigeria. *American Ethnologist, 29*(4), 963–980.

Davis, D., Shaver, P. R., Widaman, K. F., Vernon, K. L., Folette, W. C., & Beitz, K. (2006). I can't get no satisfaction: Insecure

attachment, inhibited sexual communication and sexual dissatisfaction. *Personal Relationships, 13*(4), 465–483.

Elke, D. R., Yitzchak, M. B., & Samir, J. (2003). Does vaginismus exist? A critical review of the literature. *The Journal of Nervous and Mental Disease, 203*(5), 111–122.

Epstein, N. B., & Baucom, D. H. (2002). *Enhancedcognitive behavioral therapy for couples: A contextual approach* (p. 284). American Psychological Association.

Eserdağ, S., & Anğın, A. D. (2021). Importance of gynecological assessment for the treatment of vaginismus as a predictive value. *Journal of Obstetrics and Gynaecology Research, 47*(7), 2537–2543.

Ferenidou, F., Kapoteli, V., Moisidis, K., Koutsogiannis, L., Giakoumelous, A., & Hatzichristou, D. (2008). Presence of a sexual problem may not affect women's satisfaction from their sexual function. *The Journal of Sexual Medicine, 5*(3), 631–639.

Gindin, L. R., & Resnicoff, D. (2002). unconsummated marriages: A separate and different clinical entity. *Journal of Sex and Marital Therapy, 28*, 85–99.

Harris, A., & Curtin, L. (2002). Parental perceptions, early maladaptive schemas, and depressive symptoms in young adults. *Cognitive Therapy and Research, 26*(3), 405–416.

Higgins, J. M., Mullinax, M., Trussell, J., Davidson, J. K., & Moore, N. B. (2011). Sexual satisfaction and sexual health among university students in the United States. *American Journal of Public Health, 101*(9), 1643–1654.

Hope, R. (2007). *Addressing cross-generational sex: A desk review of research and programs*. Population Reference Bureau.

Huberman, J. S., Bouchard, K. N., Wang, G. A., & Rosen, N. O. (2021). Conceptualizing sexual self-schemas: A review of different approaches and their implications for understanding women's sexual function. Current Sexual Health Reports (pp. 1–8).

Ismaeilzadeh, N., & Akbari, B. (2020). Effectiveness of mindfulness-based cognitive therapy in sexual self-efficacy and marital satisfaction among couples with marital conflicts. *Avicenna Journal of Neuro Psycho Physiology, 7*(1), 29–36.

Kenrick, D. T., & Butner, J. (2015). Dynamical evolutionary psychology: Individual decision rules and emergent social norms. *Psychological Review, 110*(1), 3–28.

Khojasteh Mehr, R., Faramarzi, S., & Rajabi, Gh. (2012). The role of equity perception in marital quality in married employees in Ahvaz organizations. *Journal of Psychological Studies, 8*(1), 31–50.

Kogan, A., Impett, E. A., Oveis, C. H., Hui, B., Gordon, A. M., & Keltner, D. (2010). When giving feels good: The intrinsic benefits of sacrifice in romantic relationships for the communally motivated. *Psychological Science, 21*(12), 1918–1924.

Kołtuniuk, A., Przestrzelska, M., Karnas, A., et al. (2020a). The association between sexual disorders and the quality of life of woman patients with multiple sclerosis: Findings of a prospective, observational, and cross-sectional survey. *Sexual Medicine, 8*, 297–306. https://doi.org/10.1016/j.esxm.2020.02.009

Kontula, O., & Miettinen, A. (2016a). Determinants of female sexual orgasms. *Socioaffective Neuroscience & Psychology, 6*, 31624. https://doi.org/10.3402/snp.v6.31624

Leybman, M., Zuroff, D. C., Fournier, M. A., Kelly, A. C., & Martin, A. (2011). Social exchange styles: Measurement, validation, and application. *Personality, 25*(3), 198–210.

Lindgren, K. P., Schact, R. L., Mullins, P. M., & Blayney, J. A. (2011). Cognitive representation of sexual self-differ as a function of gender and sexual debut. *Archives of Sexual Behavior, 40*, 111–120.

Lioyd, S., Cate, R. M., & Henton, J. (1982). Equity and rewards as predictors of satisfaction in casual and intimate relationships. *Journal of Psychology, 110*, 43–48.

Masters, J. (1966). Human sexuality response U.S.A. *American Journal of Family Therapy, 19*, 66–67.

McClelland, S. I. (2011). Who is the "self" in self-reports of sexual satisfaction? Research and policy implications. *Sexuality Research and Social Policy, 8*, 304–320.

Merghati, K. E., & Merghati, K. T. (2010). Effect of vaginismus in demolishing of a marriage contract (Faskh-e –Nekah). *Medical High Quarterly, 2*(2), 23–32.

Molaeinezhad, M., Merghati Khoei, E., Latifnejad Roudsari, R., Salehi, M., & Yousefy, A. (2014). Sexual Scripts theory and the constructs of unconsummated marriage. *J Res Behave Sci, 11*(4), 289–305.

Molaie Nezhad, M., Yousefi, A., Salehi, N., Latifinejad Roudsari, R., & Salehi, P. (2014). Validation of the partner version of the multidimensional vaginal penetration disorder questionnaire: A tool for clinical assessment of lifelong vaginismus in a sample of Iranian population. *Iranian Journal of Reproductive Medicine, 12*, 42.

Nakonezny, P. A., & Denton, W. H. (2008). Marital relationships: A social exchange theory perspective. *The American Journal of Family Therapy, 36*(5), 402–412.

Nicolosi, A., Moreira, E. D., Villa, M., & Glasser, D. B. (2004). A population study of the association between sexual function, sexual satisfaction, and depressive symptoms in men. *Journal of Affective Disorders, 82*(2), 235–243.

Payne, K. A., Binik, Y. M., Amsel, R., & Khalife, S. (2005). When sex hurts, anxiety and fear orient attention toward Pain. *EJP, 9*(4), 427–436.

Perry, B. J. (2004). *The relationship between equity and marital quality among Hispanics, African, Americans and Caucasians*. Doctoral Dissertation. Ohio State University.

Radlove, S. (2003). Sexual response and gender roles. In Allgeier, E. R., & McCormick, N. B. (Eds). *Changing boundaries, Gender roles & sexual behavior* (p. 292).

Radlove, S. (2009). Sexual response and gender roles. In Allgeier, E. R. & McCormick (Eds). *Changing boundaries, gender roles and sexual behavior* (p. 292).

Reissing, E. D., Lalibrete, G. M., & Davis, H. J. (2005). Young women's sexual adjustment: The role of sexual self- schema, sexual self- efficacy, sexual aversion and body attitudes. *The Canadian Journal of Human Sexuality, 14*(3/4), 77–85.

Richards, R. J. (2021). *To disclose or not disclose: The proposition and test of the sexual self-disclosure decision model (SS-DDM)*. Doctoral dissertation, The University of Wisconsin-Milwaukee.

Rosenbaum, T. Y. (2009). Applying theories of social exchange and symbolic interaction in the treatment of unconsummated marriage/relationship'. *Sexual and Relationship Therapy, 24*(1), 38–46.

Sabey, C. V., Charlton, C., & Charlton, S. R. (2018). The magic positive -to -negative interaction ratio: Benefits, applications, cautions, and recommendations. *Journal of Emotional and Behavioral Disorders, 17*(1), 3–11.

Saffarinia, M. (2015). *Social psychology and personality tests*. Arjmand Publication.

Sánchez-Fuentes, M., & Santos-Iglesias, P. (2016). Sexual satisfaction in Spanish heterosexual couples: Testing the interpersonal exchange model of sexual satisfaction. *Journal of Sex & Marital Therapy, 42*(3), 223–242.

Sharifian, M., Saffarinia, M., & Alizadehfard, S. (2020). The role of gender schemas by mediating fairness style in predicting sexual pain disorder: Study of structural equation model. *Journal Archive, 9*.

Slater, C., & Robinson, A. J. (2014). Sexual health in adolescents. *Clinics in Dermatology, 32*(2), 189–195.

Snell, W. E. (2002). The sexual self-disclosure scale. In C. M. Davis, W. L. Yarber, & S. L. Davis (Eds.), *Handbook of sexuality-related measures*. Newbury Park: Sage.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and Family, 38*(1), 15–28.

Sprecher, S. (2001). Equity and social exchange in dating couples: Associations with satisfaction. *Journal of Marriage and Family, 63*, 599–613.

Sprecher, S. (2002). Sexual satisfaction in premarital relationship: Associations with satisfaction, love, commitment, and stability. *Journal of Sex Research, 39*(3), 190–196.

Sprecher, S., & Hendrick, S. (2004). Self-disclosure in intimate relationships: Associations with individual and relationship characteristics over time. *Journal of Social and Clinical Psychology, 23*(6), 857–877.

Stephenson, K. R., & Meston, C. M. (2011a). *The Canadian Journal of Human Sexuality, 20*(1/2), 31–40.

Stephenson, K. R., & Meston, C. M. (2011b). The association between sexual costs and sexual satisfaction in women: An exploration of the interpersonal exchange model of sexual satisfaction. *The Canadian Journal of Human Sexuality, 20*(1/2), 31–40.

Stiles, O. E. (2004). *Early maladaptive schemas and intimacy in young adults' romantic relationships*. San Francisco Bay: Alliant International University.

Taniguchi, H., & Kaufman, G. (2013). Gender role attitudes, troubles talk, and marital satisfaction in Japan. *Journal of Social and Personal Relationships, 31*(7), 128–144.

ter Kuile, M. M., Van Lankveld, J. J. D. M., de Groot, E., Melles, R., Nefs, J., & zand bergen M. (2007). Cognitive-behavioral therapy for women with lifelong vaginismus: Process and prognostic factors. *Behaviour Research and Therapy, 45*(2), 359–373.

Traupmann, J., Peterson, R., & Hatfield, E. (1981). Measuring equity in intimate relations. *Applied Psychological Measurement, 5*, 467–480.

Velayati, A., Jahanian Sadatmahalleh, S., Ziaei, S., & Kazemnejad, A. (2021). The role of personal factors in quality of life among Iranian women with vaginismus: A path analysis. *Health and Quality of Life Outcomes, 19*(1), 1–10.

Vento, P.W.P.-D., & Cobb, R. J. (2011). Chronic stress as a moderator of the association between depressive symptoms and marital satisfaction. *Journal of Social and Clinical Psychology, 30*(9), 905–936.

Villanueva, C. (2012). *How attachment, personality, and sexual self-schema influence sexual behavior*. M.A Thesis, Califotnia State University, Sacramento.

Ward, E., & Ogden, J. (2010). Experiencing vaginismus–sufferers' beliefs about causes and effects. *Sexual and Relationship Therapy, 25*(4), 434–446.

Wen-bin, C., & Chin-Sheng, W. (2006). Sexual self-disclosure in cyberspace among Taiwanese adolescents: Gender differences and the interplay of cyberspace and real life. *Cyberpsychology & Behavior, 9*(1), 46–53.

Westheimer, R. K., & Loparter, S. (2005). *Human sexuality: A psychosocial perspective* (2nd ed.). Philadelphia: Lippincott Williams & Wilkins.

White, K. J. (2003). *The five-factor model personality and relationship variable: A study of association*. Doctoral Dissertation, Graduate Faculty of Texas Tech University.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.