Mediators of Sexual Distress in Women with Dyspareunia: A Population-based Cross-sectional Study

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Research

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Abstract

Background: Dyspareunia (recently been named as GPPPD), is considered as one of the negative factors affecting couple's sexual health. The present paper explores the characteristics of pain in dyspareunia cases and also determine protective factors cause fewer sexual distress among sufferers.

Methods: A population-based cross-sectional study conducted in 2017, on 590 married women aging 18 -70 years, in 30 health center via cluster-quota sampling method. Demographic data, sexual distress and Binik's GPPPD Questionnaire were utilized as study tools.

Results: Although 33% of the women report dyspareunia, based on standard criteria the prevalence of severe and moderate dyspareunia were dropped to 10.5% and 25.8%, respectively that among them the most common location, time and type of pain were in vaginal entrance, at the beginning of intercourse and with burning nature, respectively. Dyspareunia had a significant negative impact not only on women's ability to have intercourse (P=.004) but also on their sexual desire (P=.038).

Interestingly, 5.4% of the women did not report any distress despite having severe dyspareunia. In comparison with those patients with distress, the latter group had higher sexual satisfaction, more positive body image and self-confidence, as well as more intimacy in relationship (P=.000). Notably, 19% of the participants experienced significant sexual distress, although in 8.5% of them dyspareunia was not confirmed.

Conclusion: Promote personal characteristics such as positive self-confidence and body image and interpersonal factors like sexual satisfaction and intimacy, can be effective in the management of dyspareunia via decrease sexual distress.

Plain English Summary

Dyspareunia is considered as one of the negative factors affecting individual and couple's sexual health. In the present paper, we explained about the characteristics of sexual pain such as the pain location, time and nature of pain. In addition, we tried to determine the factors that may effects on sexual distress of women with dyspareunia. In other word, we want to understand which contextual factors mediate between sexual distress and dyspareunia. A population-based cross-sectional study on 590 married women aging 18–70 years, showed that although 33% of the women reported sexual pain in the self-report single question, considering Binik's criteria dyspareunia were confirmed only in 10.5% of women. The most common location, time and type of pain were in vaginal entrance, at the beginning of intercourse and with burning nature. Dyspareunia had a significant negative impact on women sexual desire (P = .038). Interestingly, 5.4% of the women did not report any sexual distress despite having severe dyspareunia. In comparison with those patients with distress, the latter group had higher sexual satisfaction, more positive body image and self-confidence, as well as more intimacy in relationship (P = .000). Our results showed that in addition to routine managements for sexual pain or fear of intercourse, considering these protective factors can assist the therapists to make more effective

interventions and cause better toleration of pain and fewer sexual distress among sufferer. Notably, 19% of the participants experienced significant sexual distress, although in 8.5% of them dyspareunia was not confirmed.

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Introduction

In DSM-5, the formerly separate dyspareunia and vaginismus merged and called genito-pelvic pain/penetration disorder (GPPPD) (1). Because the majority of the existing studies have used the term “sexual pain” or “dyspareunia” instead of GPPPD, in the present study also, these terms has been used interchangeably.

Sexual pain is a common problem that has significant effects on the couple relationships. According to a study conducted on women of 40 to 80 years of age from 29 countries, the distribution of sexual pain in middle-eastern women was reported as 21% (2). Other studies report that 12% of premenopausal women suffer from sexual pain (3). Although cultural and religious factors can effect on dyspareunia experience and also sexual distress, few standard studies conducted in the sexual pain prevalence and associated factors in the Middle east and Muslim Countries (4). In the systematic review carried out in Iran in 2017, due to many methodological problems in existing studies such as lack of standard questionnaires, inappropriate sample size, and lack of population-based survey; a wide range of dyspareunia (between 9% and 95.9%) has been reported. The authors stated that more precise surveys are needed to estimating of dyspareunia prevalence and its characteristics (5).

In addition to diagnostic criteria and a minimum duration of 6 months, the presence of marked sexual distress are crucial for diagnosis GPPPD (1). Sexual distress means all negative emotions, such as worry, frustration, or feelings of inadequacy, that people experience in their sexual relationship that effect negatively on overall well-being and quality of life (6). It should be mentioned that some sexual dysfunctions are not distressing for women and it is crucial to understand why and when sexual problems are distressing. In other words, is there any factors that moderate the relationship between sexual functioning and sexual distress? (7).

With regard to need of survey based on the new concept of GPPPD and importance of standard study in society with different culture from western countries, our research team designed a population-based study in 2017–2018. The results related to the prevalence of GPPPD, risk factors and protective factors of GPPPD explicitly discussed in other article (8). In the present paper, we explained about the characteristics of sexual pain such as the pain location, time and nature of pain. In addition, we tried to determine the factors that may effects on sexual distress of women with dyspareunia. In other word, we want to understand which contextual factors mediate between sexual distress and dyspareunia. These characteristics assist the therapists to make more effective interventions for controlling patients’ pain.

Methods

The present research was a population-based, cross-sectional study which conducted after obtaining the necessary scientific and Ethic permissions from Tehran University of Medical Sciences; IR.TUMS.FNM.REC.1396.2087. dated: 2017.04.17.

Sampling

A two-stage cluster sampling was conducted. To achievement maximum heterogeneity, 30 main health centers were included in the study. Then married women were randomly selected from the existence list in each center. The sample in each center was determined with consideration of the probability of selection in proportion to population size (or estimated population size). As a complete listing of all inhabitant women was available, a systematic sampling was employed. For random selecting of participants, random starting point and fixed sampling interval (by dividing the population size by the desired sample size) was used. Then the individuals were contacted and invited to the study. The sampling process conducted on the study area of 65 $km^{2,}$ by 4 trained midwives and during 20 weeks

Participants

615 women randomly selected from a list of 344,243 families who lived in 2017 in these region. 590 person completed our questionnaire and entered in the analysis. The study population was apprised of the nature of the survey and their verbal and written informed was obtained. The participants completed the questionnaires at the health centers, and each participant was attended by a trained researcher. The inclusion criteria were: married, aged 18–70 years, cohabiting with spouse for at least one year and the exclusion criterion was a report of drug abuse on the demographic questionnaire

Research tools

One demographic checklist (11 self-reported questions); self-reporting of pain or fear during intercourse (one question); presence of sexual distress by 2 questions of Female Sexual Distress Scale-Revised (FSDS-R) (9) and Binik questionnaire (10) for assessment of GPPPD (19 questions include 8 diagnostics and 11 complementary questions) served as the research tools. The final diagnosis of GPPPD confirmed only when 8 diagnostic questions in Binik scale and 2 questions of sexual distress showed significant pain and distress. In addition, those who reported pain or fear in single self-report question were asked to answer the 11 complementary questions to assess the characteristics of pain.

The Binik's Guideline (2010) used for the assessment of GPPPD and was comprised of 19 questions in 5 dimensions: A) Percentage of success of vaginal penetration; B) Pain with vaginal penetration; C) Fear of vaginal penetration; D) Pelvic muscle dysfunction during vaginal penetration; and E) Medical co-morbidity. Eight questions are diagnostic of the GPPPD and other 11 questions are about the characteristics of pain in sufferers (in this paper we reported these later part). Due to first usage of this questionnaire in Iran, face and content validity has been done. The face validity checked by 10 participants and with more than 80% agreement between participants, all questions remained without

changes. It was the same for the content validity of GPPPD that was confirmed by eight faculty members of Tehran University of Medical scineces. To confirm the reliability of the questionnaire, the questionnaire was administered in two iterations with an interval of 2 weeks to 35 women qualified for participation in the study, which yielded a Cronbach's alpha of 0.90 and an internal consistency of 80%.

Statistical methods

A review of the previous studies on dyspareunia indicated that considering a 26% prevalence (11) could lead to an appropriate estimation of the sample size. Considering a two-sided 95% confidence interval with a width equal to 0.08 (margin of error = .04), design effect of 1.2, and a non-responding rate of 10%, a sample size of 615 women was obtained. For the purpose of data analysis, distribution, mean, and standard deviation values were initially obtained using description statistics. Chi-square and independent t-test were used for homogeneity of the two groups. The linear logistic regression analysis was conducted to estimate the strength of associations between sexual distress and associated factors. The collected data was then captured in a Statistical Package for Social Sciences-22 software (SPSS Inc., Chicago, IL, USA) for further analysis.

Results

The analysis of demographic characteristics of 590 individual showed that the mean of women's age and duration of marriage were 35.5 and 13.8 year, respectively. The majority of women had, two children (43.5%), proper financial status (66.8%), high school diploma level education (75%). Approximately 90% of women were housewife and 32% reported that they were nervous during sexual activities due to lack of privacy. Only 4.2% had vulvar pain during vestibular touch. About 70% had sufficient intimacy with their husband and mostly (86%) reported moderately to high sexual satisfaction. Moderate and high Marital satisfaction reported in 27% and 61% of participant, respectively.

As it has mentioned in our previous paper, based on the Binik criteria final prevalence of severe and moderate dyspareunia was 10.5% and 25.8%, respectively. However, 33% of participants reported experience of sexual pain in the single self-report question.

Table 1 explains the sexual distress among participants. It was worth to note among 84% of participants who were either healthy or those with self- reported dyspareunia (the pain did not confirm based on Binik criteria), 8.5% reported considerable level of sexual distress. In contrast, between 16% of women that their dyspareunia confirmed based on the strict Binik criteria, 5.4% did not report any sexual distress despite severe pain (Table 1)

Table 1
Sexual distress among participants

	Without sexual distress N (%)	With sexual distress N (%)	Total N (%)
Without pain or those with self- reported dyspareunia (not confirmed)	446 (75.5%)	50 (8.5%)	496 (84%)
Dyspareunia confirmed only based on Binik criteria	32 (5.4%)	62 (10.6%)	94 (16%)
Dyspareunia confirmed based on both Binik criteria and sexual distress		62 (10.6%)*	
Total	478 (80.9%)	112 (19.1%)	590 (100%)
* Confirmed sever case of GPPPD: 10.6%			

Table 2 shows the status of eight diagnostic questions for all participants. Even though the level of pain was severe in all 62 participants suffering from GPPPD, 100% of them stated that they had experienced more than 10 intercourses within the past six months (versus 82% in healthy women). Severe, or considerable levels of, pain and fear of pain during intercourse was reported in 3.6% and 1.3% of healthy women, and in 53.2% and 37.1% of the women suffering from the GPPPD disorder, respectively. Severe, or considerable levels of, distress during intercourse and stiffness of vagina muscles was observed in 2.8% and 3.8% of healthy women, and in 25.8% and 33.9% of the women suffering from the GPPPD disorder, respectively (Table 2).

Table 2
Diagnostic questions in all participants (8 question of BINIK scale for diagnosis of GPPPD)

	Dyspareunia Confirmed (N = 62) NO (%)	Healthy women* (N = 528) NO (%)	Total sample (N = 590) NO (%)
Number of intercourse in the last 6 months			
Less than 10 times	0(0.0)	95 (18)	95 (16.1)
More than 10 times	62 (100)	433 (82)	495 (83.9)
Number of full penetration in the last 6 months			
Less than 50% of attempt	2 (3.2)	25 (4.7)	27 (4.6)
More than 50% of attempt	60(96.8)	503 (95.3)	563 (95.4)
Feel of pain during intercourse			
No Pain	2 (3.2)	207 (39.2)	209 (35.4)
A little pain	13 (21.0)	173 (32.8)	186 (31.5)
Some pain	14 (22.6)	129(24.4)	143 (24.2)
Moderate pain	22 (35.5)	17 (3.2)	39 (6.6)
Quite a bit of pain	11 (17.7)	2 (0.4)	13 (2.2)
Anxious about or fear of pain during intercourse			
Not at all	6 (9.7)	329 (63.3)	335 (56.8)
A little	11 (17.7)	135(25.6)	146 (24.7)
Somewhat	22 (35.5)	57 (10.8)	79 (13.4)
Moderately	16 (25.8)	5 (0.9)	21 (3.6)
Quite a bit or always	7 (11.3)	2 (0.4)	9 (1.5)
Anxious about other things during intercourse			
Not at all	10 (16.1)	331 (62.7)	341 (57.8)
A little	18 (29)	123 (23.3)	141 (23.9)
Somewhat	13 (21)	64 (12.1)	77 (13.1)
Moderately	15 (24.2)	6 (1.1)	21 (3.6)

* without pain or self-report pain that did not confirm based on both Binik criteria and sexual distress

	Dyspareunia Confirmed (N = 62) NO (%)	Healthy women* (N = 528) NO (%)	Total sample (N = 590) NO (%)
Quite a bit or always	6 (9.7)	4 (0.8)	10 (1.7)
General tense during intercourse			
Not at all	10 (16.1)	303 (57.4)	313 (53.1)
A little	16 (25.8)	141 (26.7)	157 (26.6)
Somewhat	20(32.3)	69 (13.1)	89 (15.1)
Moderately	11 (17.7)	8 (1.5)	19 (3.2)
Quite a bit or always	5 (8.1)	7 (1.3)	12 (2.0)
Vaginal muscles tighten up during intercourse			
Not at all	8 (12.9)	259 (49.1)	267 (45.3)
A little	13 (21.0)	171 (32.4)	184 (31.2)
Somewhat	20 (32.3)	78 (14.8)	98 (16.6)
Moderately	15 (24.2)	16 (3.0)	31 (5.3)
Quite a bit or always	6 (9.7)	4 (0.8)	10 (1.7)
Interfere muscle tension with ability to intercourse			
Not at all	9 (14.5)	291 (55.1)	300 (50.8)
A little	15 (24.2)	148 (28.0)	163 (27.6)
Somewhat	16 (25.8)	76 (14.4)	92 (15.6)
Moderately	17 (27.4)	10 (1.9)	27 (4.6)
Quite a bit or always	5 (8.1)	3 (0.6)	8 (1.4)
* without pain or self-report pain that did not confirm based on both Binik criteria and sexual distress			

Table 3 shows sexual pain characteristics in response to 11 complementary questions of GPPPD questionnaire which was answered by only 196 participants (33% of the sample) with self-report of dyspareunia. It is worth to note that these questions were quite personal and not of any diagnostic nature, thus there was not any insistence on answering the questions and therefore the number of the individuals who had answered this question was not equal for each question in Table 3.

Table 3
Complementary questions in women with self- report pain (11 question for Sexual pain description)

Sexual pain characteristics	self-report of dyspareunia (N = 196) NO (%)	Dyspareunia Confirmed (N = 53) NO (%)	Dyspareunia not Confirmed (N = 143) NO (%)	p-value¥
The most important reason for intercourse				.430
To get pregnant	5 (2.6)	1 (1.9)	4 (2.8)	
To please partner	52 (26.5)	14 (26.4)	38 (26.6)	
To have pleasure	25 (12.8)	6 (11.3)	19 (13.3)	
To improve couple relationship	104 (53.1)	29 (54.7)	75 (52.4)	
To improve sexual self-esteem	5 (2.6)	0 (0.0)	5 (3.5)	
Other	5 (2.6)	3(5.7)	2 (1.4)	
Time of pain				.243
Before intercourse	7 (3.6)	4 (7.5)	3 (2.1)	
At the beginning of intercourse	71 (36.2)	21 (39.6)	50 (35.0)	
During thrusting	68 (34.7)	21 (39.6)	47 (32.9)	
During orgasm	3 (1.5)	1 (1.9)	2(1.4)	
After intercourse	14 (7.1)	3 (5.7)	11 (7.7)	
During gynecological examinations	13 (6.6)	2 (3.8)	11 (7.7)	
While wearing tight pants	3 (1.5)	1 (1.9)	2 (1.4)	
While exercising	0 (0.0)	0 (0.0)	0 (0.0)	
Not related to intercourse	11 (5.6)	0 (0.0)	11 (5.6)	
Other	5 (2.6)	0 (0.0)	5 (3.5)	
I don’t know	1 (0.5)	0 (0.0)	1 (0.7)	
location of pain	193 (100.0)	27 (100.0)	166 (100.0)	.058
I don’t know	9 (4.7)	2 (3.8)	8 (5.7)	

¥ tested between the last two columns (confirmed and not confirmed dyspareunia) *P < .05, **P < .01, ***P < .001

Sexual pain characteristics	self-report of dyspareunia (N = 196) NO (%)	Dyspareunia Confirmed (N = 53) NO (%)	Dyspareunia not Confirmed (N = 143) NO (%)	p-value¥
Clitoris	0 (0.0)	0 (0.0)	0 (0.0)	
Labia minor	0 (0.0)	0 (0.0)	0 (0.0)	
Labia major	5 (2.6)	4 (7.5)	1 (0.7)	
Vaginal opening	96 (49.7)	24 (45.3)	72 (51.1)	
Urethral opening	0 (0.0)	0 (0.0)	0 (0.0)	
Vestibule	2 (1.0)	0 (0.0)	2 (1.4)	
Uterus	35 (18.1)	9 (17.0)	26 (18.4)	
Cervix	25 (13.0)	10 (18.9)	15 (10.6)	
Ovary	15 (7.8)	4 (7.5)	11 (7.8)	
Fallopian tubes	6 (3.1)	0 (0.0)	6 (4.3)	
Description of quality of pain	195 (100.0)	52(100.0)	143 (100.0)	.613
Throbbing,	19 (9.7)	4 (7.7)	15 (10.5)	
Shooting	14 (7.2)	6 (11.5)	8 (5.6)	
Cramping	51 (26.2)	9 (17.3)	42 (29.4)	
Gnawing	2 (1.0)	1 (1.9)	1 (0.7)	
Hot-burning	86 (44.1)	25 (48.1)	61 (42.7)	
Heavy	10 (5.1)	3 (5.8)	7 (4.9)	
tiring-exhausting	9 (4.6)	3 (5.8)	6 (4.2)	
fearful	4 (2.1)	1 (1.9)	3 (2.1)	
Effects of pain on the ability to intercourse				.004**
Not at all	60 (30.6)	10 (18.9)	50 (35.0)	
A little	73 (37.2)	15 (28.3)	58 (40.6)	

¥ tested between the last two columns (confirmed and not confirmed dyspareunia) *P < .05, **P < .01, ***P < .001

Sexual pain characteristics	self-report of dyspareunia (N = 196) NO (%)	Dyspareunia Confirmed (N = 53) NO (%)	Dyspareunia not Confirmed (N = 143) NO (%)	p-value¥
Somewhat	49 (25.0)	23 (43.4)	26 (18.2)	
Moderately	11 (5.6)	4 (7.5)	7 (4.9)	
Quite a bit or always	3 (1.5)	1 (1.9)	2 (1.4)	
Effects of pain on desire				.038*
Not at all	70 (35.7)	14 (26.4)	56 (369.2)	
A little	75 (38.3)	17 (32.1)	58 (40.6)	
Somewhat	39 (19.9)	16 (30.2)	23 (16.1)	
Moderately	9 (4.6)	4 (7.5)	5 (3.5)	
Quite a bit or always	3 (1.5)	2 (3.8)	1(0.7)	
Effects of fear on the ability to intercourse				.036*
Not at all	75 (38.3)	13 (24.5)	62 (43.4)	
A little	64 (32.7)	16 (30.2)	48 (33.6)	
Somewhat	41 (20.9)	17 (32.1)	24 (16.8)	
Moderately	9 (4.6)	4 (7.5)	5 (3.5)	
Quite a bit or always	7 (3.6)	3 (5.7)	4 (2.8)	
Medical/surgery conditions that might have caused difficulties				.769
No	168 (85.7)	47(88.7)	121 (84.6)	
Yes	19 (9.7)	4 (7.5)	15 (10.5)	
I don’t know	9 (4.6)	2 (3.8)	7 (4.9)	
Recent gynecological examination				.451
No	106 (54.1)	31 (58.5)	75 (52.4)	
yes	90 (45.9)	22 (41.5)	68 (47.6)	

¥ tested between the last two columns (confirmed and not confirmed dyspareunia) *P < .05, **P < .01, ***P < .001

Sexual pain characteristics	self-report of dyspareunia (N = 196) NO (%)	Dyspareunia Confirmed (N = 53) NO (%)	Dyspareunia not Confirmed (N = 143) NO (%)	p-value¥
Tell to health provider				.654
No	132 (67.3)	37(69.8)	95 (66.4)	
Yes	64 (32.7)	16 (30.2)	48 (33.6)	
Physical reason for your pain				.226
No	74 (37.8)	18 (34.0)	56 (39.2)	
Yes	33 (16.8)	6 (11.3)	27 (18.9)	
I don't know	89 (45.4)	29 (54.7)	60 (42.0)	
¥ tested between the last two columns (confirmed and not confirmed dyspareunia) *P < .05, **P < .01, ***P < .001				

In the majority of participants' (53.1%), main reason for sexual intercourse was better marital relationship. The time of pain in the majority of women (36.2%) were at the beginning of intercourse and the site of pain in the majority of women (49.7%) were in vagina entrance. Most of the women (44.1%) described the pain as a sense of burning or heat. The negative impact of sexual pain on desire for sexual intercourse, and especially on the ability to have a sexual intercourse, was significantly different in the two groups (P = .038 and P = .004, respectively).

In those individuals whose sexual pain was confirmed by the standard criteria, in comparison with those who had sexual pain but their pain was not confirmed by the standard criteria, sexual pain had a more significant effect on abstinence from sexual intercourse. Also, the negative impact of a fear of sexual intercourse on the ability to have a sexual intercourse was significantly different in the two groups (P = .036). It is worth to note that 67.3% of the population who had a feeling of pain never discussed their problem with the treatment team (Table 3).

Discussion

This paper discussed about the characteristics of sexual pain and also determined the protective factors cause fewer sexual distress among sufferers. In the other word, this study showed why some women with sever dyspareunia did not complain of any sexual distress while some women without even any sexual pain diagnosis experience significant sexual distress.

In this survey 19% of the population reported significant distress during sexual intercourse, although in 8.5% of them sexual pain did not confirm that should be interpreted carefully. This group either were without pain or reported pain that did not confirm based on standard pain criteria. Existence of sexual distress despite meaningful sexual pain can be due to several reasons: firstly, considering various criteria may lead to an underestimation of sexual pain. This research has been conducted in accordance with the new DSM-5 standards and the criteria recommended by BINIK questionnaire and only the presence of considerable and sever pain (options 3 and 4) was deemed as a diagnostic criterion. Therefore, those individuals who experienced medium or mild pain were exclude from dyspareunia diagnosis. It should be considered that pain bears a considerable effect on the quality of life. In addition, people's interpretation of pain is completely different. Even those women who are suffering from slight pain might experience significant distress in their sexual life due to the nature of pain or pain catastrophizing. Various studies have suggested that one of the influential factors on sexual pain, or fear of intercourse, might be pain catastrophizing (4). The second interpretation of sexual distress in healthy individuals in this paper can relate to the presence of other sexual problems in these individuals which is not dealt with in this study. The third, and probably the most important interpretation, is that sexual issues are broadly related with other aspects of life. This finding is applicable to clinician and shows assessment of sexual disorders is not enough for evaluating of sexual health and sexual distress cannot happened merely due to sexual dysfunction. In fact, comprehensive medical history is necessary for appropriate interventions and finding the reason behind sexual concerns and distress. Sexual distress may stem from various reasons including not trusting or not loving one's spouse, concerns about pregnancy, and the presence of children (12).

In this survey 5.4% out of 16% of participants that their dyspareunia confirmed by strict Binik criteria, did not complain of any sexual distress and consequently this participant excludes from final diagnosis of GPPPD. However, this 5.4% (32 women) are very important group because some variables protect them from experience of distress or conflict in their sexual relations. On other word, their coping strategies could be useful solutions for others sufferer. Our analyses showed that self-confidence (P = .000), sexual satisfaction (P = .000), a positive body image (P = .000) and proper intimacy relationship (P = .000) were significantly higher in this subgroup compared to those suffering from distress in addition to pain. The protective effect of sexual satisfaction in this women can be interpreted by replacing and enjoying other sexual activities instead of penetration and consequently less attention and anxious about dyspareunia. More intimacy also can help to better communication and selection of alternative sexual activities. Self-confidence and positive body image direct and indirectly effect on increasing sexual satisfaction and declining distress. Even though the previous studies have shown that sexual pain may influence self-confidence and body image (13), the present study took one step further and showed that these factors might even be of some protective influence against sexual distress. To this end, the studies conducted by Liner et al. and Stephenson et. Al. and show that increased emotional intimacy decreases both sexual pain and anxiety in the afflicted individuals; they also emphasized that it is necessary for the spouses to participate in the sexual pain treatment process (14, 7). Benoit-Piau et al. also reported that partner support has moderating effect on pain catastrophizing in women with vulvodynia (15). In fact, the

present study states strategies for overcoming severe pain, and these strategies can benefit the patients as well as therapists. Still other surveys need to determine the other factors that may cause a better toleration of dyspareunia.

The present research showed some characteristics of sexual pain among Iranian women who suffer from dyspareunia. The findings contained in Table 2 show that all individuals whose final diagnosis had been confirmed had more than 10 sexual intercourses during the past 6 months. A review of Table 3 and the reasons for having sexual intercourse simply shows that 81% of the suffering individuals counted spouse's satisfaction and betterment of marital relations as the main reasons behind having sexual intercourse. Intercourse despite severe pain can be devastating and, in case therapists fail to alleviate patients' pain, they must assist the couples with enjoying sexual activities other than penetration. Painful intercourse disgust people not only of the penetration, but also of any other sexual activity. To this end, spouse's accompaniment during the treatment process is beneficial not only in the resolution of the pain issue but also in easing these types of concerns (16). In response to location and timing of the pain, most participants experienced pain in vaginal opening and at the beginning of intercourse. These findings help the therapists to pay more attention to specific reasons for this type of sexual pain such as infections and decreased lubricity of vagina due to insufficient stimulations.

Three out of eleven items related to Table 3 showed a significant difference between individuals with and without dyspareunia confirmation. The two groups showed a significant difference regarding the effect of pain on intercourse ability, the effect of pain on sexual desire, and the effect of fear on intercourse ability. These findings are in itself a confirmation of diagnostic criteria, and shows that a diagnosis of sexual disorder is valid only when pain and fear bear a significant effect on intercourse ability and sexual desire. Various studies show that pain disorder decreases sexual desire by creating fear and a vicious circle (17), and ultimately leads to abstinence from sexual intercourse (18). It is noteworthy that around 70% of those who were experiencing pain in their own view and those whose GPPPD was confirmed had never shared their problem with the treatment team. Similarly, the previous studies reporting that a considerable percentage of women suffering from various types of sexual disorder had never sought medical examinations and counseling, and as a result inquiry about women's sexual health should form part of each gynecology appointment (19, 20).

It is worth to note that the current research employed a single question and participants' self-reporting for studying factors related to sexual pain. As a limitation of this study, these factors were not assessed by the standard questionnaire. The large population of the study, their randomized selection, the population-based nature of the study, making use of a standard questionnaire for diagnosis, and conduction based upon the new DSM-5 definitions count as the strengths of this research study.

Conclusion

Even though pain concurs with decreased quality of life and various side-effects, sexual pain bears significant negative effects not only on the individual, but also on the couple and their interpersonal

relations through decreasing sexual desire and the number of sexual intercourses and consequently sexual satisfaction. Nevertheless, the majority of the women do not inform health providers of their sexual pain or fear, and continue to have intercourse due to fear of losing their spouse. Our results showed that in addition to routine managements for sexual pain or fear of intercourse, promote positive self-confidence and body image, sexual satisfaction, and intimacy in marriage were protective factors that cause better toleration of pain and fewer sexual distress. These findings can be applicable in the patients and clinicians to cope with the sexual pain problem. In addition, attention to women's concerns about sexuality is crucial. In our sample, 19% of participants reported significant sexual distress, 10.5% of women with confirmed dyspareunia and 8.5% of unconfirmed dyspareunia cases. It shows that the cause of sexual distress can be reasons other than sexual dysfunctions and obtaining comprehensive medical history is necessary for finding the reasons behind sexual concerns and distress.

Abbreviations

Genito-pelvic pain/penetration disorder (GPPPD)

Female Sexual Distress Scale-Revised (FSDS-R)

Declarations

Ethical Approval and consent to participate

Ethic approval obtained from Tehran University of Medical Sciences; IR.TUMS.FNM.REC.1396.2087. dated: 2017.04.17.

Consent for publication

Not applicable

Availability of data and materials

The data are available from the corresponding author on reasonable request.

Conflict of interest

The authors declare no conflict of interest.

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Statement of authorship

Conception and Design, Acquisition of Data, Analysis and Interpretation of Data, Drafting the Article and final approve have beed done by Farnaz Farnam; Ameneh Alizade

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