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RESEARCH ARTICLE

Vaginismus: Cross – sectional study in population of Karachi, Pakistan.

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Abstract:
Vaginismus is an involuntary and persistent contraction or tightening of the pelvic floor muscles that completely prevent sexual intercourse. To determine presence of vaginismus in Pakistan with its presenting complaints and whether or not Pakistani population seeks medical advice for this problem present study was conducted. We conducted a cross-sectional (Observational) study at different public and private sector hospitals and rehabilitation center OPDs and consultant clinics during January 2013 – April 2013. The study was conducted in married female population of different areas of Karachi. Questionnaire was distributed to married females who confirmed that they have severe unbearable pain at the time of intercourse. After completion of the forms filling, data was analyzed by SPSS-19. Chi square test, Chronbach's alpha reliability test, Wilcoxon signed rank test and ANOVA with Friedman's Chi square tests were performed. Highly significant reliability of items in the questionnaire was found along with inter item correlation ($p<0.05$). Out of 80 patients of vaginismus 71% females were suffering from primary vaginismus. There was no sign of inexperience. 49% females consulted medical personal for their problem, 39% took treatment and found highly significant relief in pain ($z = -4.281$; $p = 0.000$) and ease in sexual activities. Awareness of sexual problems and rehabilitation centers should be increased. Problem solving should be taught to both partners so that they could lad very productive and prosperous life.

Keywords: Vaginismus, Genito-pelvic pain, penetration disorder.

Introduction

Vaginismus basically is involuntary and persistent contraction or tightening of the pelvic floor muscles (circum-vaginal and peri-vaginal muscles or bulbo-cavernosus, the levator ani and pubo-ccoccygeus) surrounding the outer 1/3rd of the vagina when any kind of vaginal penetration is attempted (Kabakçi & Batur, 2003) which may have a huge negative impact on intimate relations and intercourse. It is a poorly understood condition affecting 1 – 7% females worldwide, which may rise to 5 – 17% in clinical settings (Pacik, 2011). Exact patho-physiology of vaginismus is not known, but still it is one of the major sexual dysfunction for which couple seek sex therapy in Turkey (Yasan, Essizoglu, & Yildirim, 2009).

Various clinical and research reports suggests women with vaginismus hold negative views about sexuality. They show fear from pain, injury, bleeding, smaller size of vagina, pregnancy and/or AIDS. This fear as some psychologists suggests is due to strict religious and sexual upbringing especially with the thought that sex is bad, especially sex before marriage is bad (Pacik, 2011).

Classic vaginismus in its severe form makes penetration completely impossible along with severe burning pain but in less severe cases stiffening of the vaginal musculature is seen which may allow slight penetration which results in severe burning sensation after wards (Jeng, Wang, Chou, Shen, & Tzeng, 2006). Vaginismus, hence, is questioned as "is the pain sexual, or is the sex painful?"

The diagnostic and statistical manual of mental disorders (DSM-III) in 1980 introduced the term "sexual pain disorders" for the first time in which dyspareunia and vaginismus were classified as sexual dysfunctions. In DSM-IV-TR classification (2000) dyspareunia was defined as painful coitus experienced either by male or female whereas vaginismus was defined as recurrent or persistent involuntary spasm of outer third of vagina not allowing intercourse with or without pain (Payne et al., 2006). In DSM-V (2013) classification vaginismus is classified as Genito-pelvic pain or Penetration disorder (Reissing, Armstrong, & Allen, 2013).

Many studies show that sexual and physical abuse, negative attitude towards sexuality, lack of sexual knowledge and relationship difficulties are among the major etiological factors of vaginismus (Reissing, Binik, KHALIF, Cohen, & Amsel, 2003).

Vaginismus is a worldwide problem (Valins, 1992). Roughly it is said that every 2 out of 1000 women suffer from vaginismus. Gathering statistics from private clinics in USA showed that 47% dating and 53% married females suffered from vaginismus (Katz, 2002). Same is the case in other parts of the world.

This study was conducted to see the condition existing in Pakistan. We also wanted to find out that do women seek help for this problem or not. Our main aims was focused on the patients, their behavior with us and their hesitancy in talking about their complaint.

Materials and Methods:
In this study we documented and studied the prevalence of and treatment seeking behavior of females who are suffering from vaginismus in Karachi, Pakistan. Whether they are wholly suffering from vaginismus or they have any co-morbid state as well.

Study design:
Cross-sectional study was conducted in the month of January 2013 to April 2013. Due to social constraints it was difficult to distribute Performa so we sought residential hospitals, both government and private, rehabilitation centers where we carried out this study. Here we got to know that patients of vaginismus were not admitted to the hospital, rather they took appointments and very few got themselves indulged in physiotherapy or rehabilitation centers. Our sample size could become 80 respondents.

Tool development:
Tool was the questionnaire which was developed by the help of existing literature and discussion. It contained two portions. One portion included demographic knowledge about age, sex, number of children etc. (9 questions). The second portion had 26 questions which were further subdivided into four portions. There were 10 questions regarding perception and feeling regarding vaginismus and related sexual avoidance, 10 questions about past medical and obstetric history, 4 questions about treatment options and 2 questions regarding response to treatment. After development of questionnaire it was checked and gone through by doctors for content validity after which field visits were done and field workers collected the data.

Data collection:
Data collection was done from different hospitals and rehabilitation centers of different areas of Karachi, Pakistan. Subjects were randomly chosen from Lyari, North Nazimabad, Gulistan-e-Johar, Gulshan-e-Iqbal, Federal B. area etc. Frequent visits to residential hospitals, both government and private, rehabilitation centers were carried out. Immense amount of hardships were faced while distributing out questionnaires, i.e. finding the rare- diseased patient, elaborating or translating each question in lay-man language, consulting trusted medical practitioners. Therefore psychiatrists, doctors in both private and government clinics, maternity homes located at different area of Karachi were consulted.

Limitations:
This study would have proved extremely reliable if it had been done with couples with more proper interviews. Social and religious constraints and natural shyness to talk about sexuality was the major limitation of this study. Additionally people still do not consider this issue very seriously in this part of the world, so we had to ask relatively simple and general questions.

The questionnaire filled by respondents who did not inscribe either age, profession, marital status were not taken into consideration, because these were important criteria's for our research. This was another limitation of the study cutting short our sample size.

Statistical analysis:
Statistical analysis was done on SPSS-19. Single question chi square test was done. Reliability of the test questions was tested by Cronbach's alpha values. Additionally ANOVA with Friedman's chi square test was also conducted. Inter-item correlation and covariance with interclass correlation was done. Rank of pain before and after treatment was tested by Wilcoxon Singed rank test. P values less than 0.05 were considered significant. Incomplete forms were not included in the study.

RESULTS:
All the respondents were married females (80; 100%). 43 females (53.7%) were between ages of 20 –

30 years. Majority of women (46.25%) were married for 12 years, 7 women (8.75%) were married for 12 years and same number of women were married for 1 year.

49 women (61.25%) had 1 – 3 children whereas 18 (22.5%) did not had any children. 44 females (53.7%) had their children by normal delivery whereas 23 (28%) had their child births by caesarian section. When asked about occupation, 51 (62.2%) were housewives, 17 (20.7%) belonged to teaching profession, remaining females belonged to different professions.

48 females (60%) wear hijab (χ^2 value = 3.2; p = 0.074, NS). Out of 80 females 68 (85%) females were in their reproductive phase (χ^2 value = 39.2; p = 0.000; highly significant).

Reliability of the questionnaire was tested by Chronbach's – α (0.772, p<0.05). ANOVA with Friedman's Chi square test was found to be highly significant (f = 18.710; p = 0.000) and single measure inter- class correlation was again found to be highly significant (f = 0.119, C.I = 95%; p = 0.000). This proves that all the variable targeted in the instrument were highly inter-related and reliable.

Perception of vaginismus and Sexual activity:
65% of the respondents (χ^2 = 7.2; p = 0.007) underwent pelvic examination for their problem but 67.5% females (χ^2 = 9.8; p = 0.002) did not had small vaginal opening (Table 1). 50% of the respondents (χ^2 = 16.075; p = 0.000) did not know that whether they had low levels of estrogen or not. Majority of them 15 (18.7%) thought that they had vaginismus because they were suffering from urinary tract infections whereas 12 (15%) thought that they had vaginismus because they had fear of pain on penetration (Table 2). There was non-significant response to whether partner was affected by vaginismus or not (χ^2 = 0.800; p = 0.371; N.S).

71% females (χ^2 = 14.450; p = 0.000) experienced pain in the 1st intercourse but there was non-significant avoidance to sex (χ^2 = 0.050; p = 0.823) for weeks or months however 69% females (χ^2 = 11.250; p = 0.001) do put stiffness to run away from severe pain sensation. 74% females (χ^2 = 18.050; p = 0.000) were taught about sex before marriage. This shows that vaginismus is not because of mere inexperience or lack of knowledge.

Major physical symptoms documented were fear of having sex, spasm in whole body, halting of breath during penetration and severe pain whereas psychological symptoms included embarrassment, depression, low self-esteem hesitation and negative symptoms.

Past medical and obstetric history
Past medical history revealed that majority of women did not suffer from any medical problem (84%, χ^2 = 36.45; p = 0.000), yeast infections of vagina (65%; χ^2 = 7.2; p = 0.007), physical trauma (60%, χ^2 = 3.2; p = 0.074, NS), postpartum surgery (74%; χ^2 = 18.050; p = 0.000) or premature births (78%; χ^2 = 24.2; p = 0.000). There was non-significant fear from day to day physical activity or pain (59%; χ^2 = 2.45; p = 0.118), complications (59%; χ^2 = 2.45; p = 0.118) or feeling of inadequacy (55%; χ^2 = 0.800; p = 0.371) (Table 1).

Treatment options for vaginismus:
When the respondents were asked whether they consulted any medical professional for their problem, 49% females (χ^2 = 0.050; p = 0.82, N.S) were found to consult physicians and 39% females (χ^2 = 4.05; p = 0.044) out of them took any medication or treatment for their problem. 16% of whom underwent kegal exercise and vaginal dilatations (χ^2 = 36.45; p = 0.000) (Table 1).

Response to treatment:
Out of 31 females who underwent treatment ranked their pain before (χ^2 = 1.467, p = 0.690; N.S) and after (χ^2 = 15.379; p = 0.000) treatment, Wilcoxon Signed Rank test (z = - 4.281; p = 0.000) showed highly significant relief in pain (Table 1).

DISCUSSION:
Vaginismus is a psychosexual problem in which woman unconsciously add up spasm in her body in response to pain associated with vaginal penetration (Tulla, Dunn, Antilus, & Muneyyirci-Delale, 2006) resulting in partial or complete impossibility of penetration. On extensive surveys and studies it is said that women with vaginismus show significantly higher pelvic muscle tone accompanied by lower muscular strength. These women show defensive and avoidance behavior during pelvic examination (Reissing, Binik, Khalifé, Cohen, & Amsel, 2004). However exact patho-physiology of the condition is not known but it is usually associated with misinformation about sexual activity. It is the most common sexual dysfunction among couples seeking sex therapy in Turkey (Yasan, et al., 2009) whereas in Portuguese population vaginismus showed 25.5% incidence rate (Nobre, Pinto-Gouveia, & Gomes, 2006).

Body responds involuntarily and uncontrollably to vaginismus same as it responds to avoid injury. Here body respond to fear from vaginal penetration (Yasan, et al., 2009). Fear of pain is the most commonly held belief in vaginismus sufferers which is the major cause of anxiety as well as depression (Hiller, 2000). Our study revealed that 12 females (15%) thinks that fear of penetration is the sole reason of their vaginismus whereas 29 (36%) of them thinks that their fear of pain or harm avoidance behavior is one of the many reasons

of their vaginismus which is positively associated with depression, anxiety and feeling of embarrassment in all the participants.

According to Escrdag et al (Eserdag, 2012) vaginismus can be of two types. Primary presents from first attempt of penetration whereas secondary or acquired vaginismus presents in later life following any physical / psychological trauma, menopausal changes or pelvic pathology. In our study 71% (χ^2 = 14.450; p = 0.000) were found to be cases of primary vaginismus.

Unconsummated marriages cannot be just because woman is suffering from vaginismus, there can be difficulties with the partner as well. Escrdag et al (Eserdag, 2012) in a study at "Vaginismus Therapy clinic (HERA)" conducted between January '2006 to October '2009 found that out of 580 males of registered couples only 226 (38.9%) were completely normal without any sexual dysfunction, remaining all of them had one or more sexual dysfunctions. In Pakistan this may be a cause that vaginismus may be a reaction to male sexual dysfunction but in our study this was the major limitation that we could not work with couples. This perspective is still to be addressed.

There is one hypothesis that vaginismus is followed by vulvar vestibulitis which is severe pain on any attempt to touch vestibule or vaginal entry (Bergeron et al., 1997). Our study however showed that 12 (15%) females thought that their vaginismus was due to either vulvar vestibulitis alone or associated with other psychological symptoms.

Review of the literature shows that treatment of vaginismus includes couple sex therapy, vaginal dilatation exercises, kegal exercises, sex education (Reissing, et al., 2013), that is treatment is directed towards gradually eliminating the spasmodic reflex contraction of muscles controlling vaginal entrance (Leiblum, 2000). Rosenbaum (Rosenbaum, 2005) suggests that physiotherapy should also be added with other treatment options. Leiblum (Leiblum, 2000) suggests that along with treatment, effective psychological investigation of relationship of women with their partners is also crucial for the treatment as 100 % success rate in treatment of sex therapy is achieved when therapy is provided to couples (Hawton & Catalan, 1990) because relationship becomes powerful with strong motivation.

Vaginismus is often associated with infertility. Tulla et al (Tulla, et al., 2006) have reported a case of eleven years' vaginismus and un-consummated marriage. Sex therapy enabled the couple to treat vaginismus and proved fruitful with pregnancy. Sex therapy is usually accomplished with referral to sex therapist, sex counselors, psychologists and physical therapist (Pacik, 2011). Tulla et al (Tulla, et al., 2006) suggest to avoid any invasive infertility treatment for vaginismus. Luckily in our study, infertility was not the significant issue as 62 (77.5%) females were fertile just 18 (22.5) females did not had children (χ^2 = 25.175; p = 0.000).

Another treatment option for vaginismus is Botox injection, which was suggested by Brin & Vapnek in 1997 (Brin & Vapnek, 1997). It was given 10 units followed by 40 units injected in the pelvic floor muscles. 1st patient who received this treatment was able to intercourse after 8 years. The treatment remains effective for 24 months. A number of studies conducted by other researchers also show the effectiveness of the treatment like Shafik & Al-Sibai (El-Sibai, 2000), Ghazizadeh & Nikzad (Ghazizadeh & Nikzad, 2004) and Abbott et al (Abbott, Jarvis, Lyons, Thomson, & Vancaille, 2006).

Our study shows that females in our country although educated do not like to discuss this matter easily therefore could not get any counseling this was the prime reason for small sample size in our study. Majority of the women did not consult the physician. Those who consult do not get the treatment may be because the situation is not so critical as far as pain is concerned and they could bear the pain or in the family setup they feel shy to talk about their problem and seek help. Because those who get the treatment show very positive and promising results as the Wilcoxon signed rank test showed (z = -4.281; p = 0.000). This matter should not be taken easily and proper sex education and counseling is needed because according to Leiblum (Leiblum, 2000) treatment is not always successive despite the belief in the society that vaginismus is easily diagnosed and readily treated.

CONCLUSION:

In the conclusion it can be said that vaginismus should not be taken simple. Proper sex education before marriage, safe sexual practices should be taught so that fear of sex or any psychological problem does not develop. Once developed proper consultation with doctors should be taken by the couples. Proper love and respectful relationship should be generated between couples which enables the women to cope up with this situation easily.

SUGGESTIONS:

1. Proper, reliable ethnic and religion oriented sex education should be provided to adolescents by family.
2. Epidemiological data collection should be ensured for study and control of diseases of all nature
   A coordinated team should be built up with a network including gynecologist, psychiatrist and primary health care professional who could address these problems and effective sex therapy could be provided to the community.

Table No.1 Chi square test performed on different questions of the research tool.

Variable	yes	no	Do not know	χ^2 value	P- value
Demographic data					
1. age of patient	19.14 ± 1.24 (Mean ± SEM)			68.8	**0.000****
2. Profession of patient	House wives – 51 (63.75%); Teacher – 17 (21.3%); Receptionist – 3 (3.75%); Banker – 3 (3.75%); Dentist, Doctor, student, Pharmacist, Manager – 1 (1.25%0 each			284.25	**0.000****
3. married years	6.19 ± 0.53 (Mean ± SEM)			43.675	**0.000****
4. number of children	2.06 ± 0.18 (Mean ± SEM)			25.175	**0.000*****
	62(77.5%)	18(22.5%)			
5. Do you wear hijab?	48 (60%)	32 (40%)		3.2	0.074
6. Has your delivery been normal, caesarian or abortion occurred?	44 (55%) – Normal delivery 23 (29%) – Cesarean section 3 (4%) – Abortion 10 (12.5%) - None			40.7	**0.000*****
7. Are you menopausal?	12 (15%)	68 (85%)		39.2	**0.000****
Perception regarding vaginismus and sexual activity					
8. Do you become anxious about sexual intercourse	36 (45%)	44 (55%)		0.800	0.371
9. did you pass through pelvic exam	52(65%)	28 (35%)		7.2	**0.007****
10. Is your vaginal opening too small?	26(32.5%)	54 (67.5%)		9.8	**0.002****
11. Does vaginismus effect your husband?	36 (45%)	44 (55%)		0.800	0.371
12. Did you have difficulty in sex for the first time or experienced vaginismus a little later in life?	57 (71%) 1ST time	23 (29%) Later		14.450	**0.000****
13. Do you put stiffness in your body to run away from pain	55 (69%)	25(31%)		11.250	**0.007****
14. Did you avoid intercourse for weeks or months to avoid pain or due to fear?	39 (49%)	41 (51%)		0.050	0.823
15. Were teachings given to you before marriage about sexual intercourse?	59 (74%)	21 (26%)		18.050	**0.000****

Medical & Psychological History					
16. Have you been diagnosed for low levels of estrogen?	11 (14%)	29 (36%)	40 (50%)	16.075	**0.000****
17. Are you suffering from other medical problems referring to vaginismus?	13 (16%)	67 (84%)		36.45	**0.000****
18. Have you ever been through the yeast infection?	28 (35%)	52 (65%)		7.2	**0.007****
19. Have you ever faced the condition of physical trauma?	32 (40%)	48 (60%)		3.2	0.074
20. Have you experienced any post-partum surgery?	21 (26%)	59 (74%)		18.050	**0.000****
21. Has any member of your family experienced similar symptoms?	22 (29%)	57 (71%)		60.025	**0.000****
22. Did you have any premature births?	18 (22%)	62 (78%)		24.2	**0.000****
23. Did you suffer from any complications?	33 (41%)	47 (59%)		2.45	0.118
24. Do you fear pain associated with any kind of physical or day to day activity such as cuts or bruises?	33 (41%)	47 (59%)		2.45	0.118
25. Do you have feelings of inadequacy when facing situations or new experiences?	36 (45%)	44 (55%)		0.800	0.371
Treatment					
26. Did you have your partner during kegal exercise and vaginal dilation exercise?	13 (16%)	67 (84%)		36.45	**0.000****
27. Have you taken any measures to reduce pain?	46(58%)	34 (42%)		1.8	0.180
28. Have you consulted a doctor for your condition?	39 (49%)	41 (51%)		0.050	0.82
29. Have you taken any medication or treatment or any other therapy? (botulinum toxin injection)	31 (39%)	49 (61%)		4.05	**0.044***
Response to treatment					
30. ‡ Rank the pain you experienced before any type of treatment	None – 5; Mild – 7; Moderate – 9, Severe – 10			1.467	0.690
31. ‡ After proper treatment, rank the pain you experienced	None – 20; Mild – 8; Moderate – 3; Severe - 0			15.379	0.000**

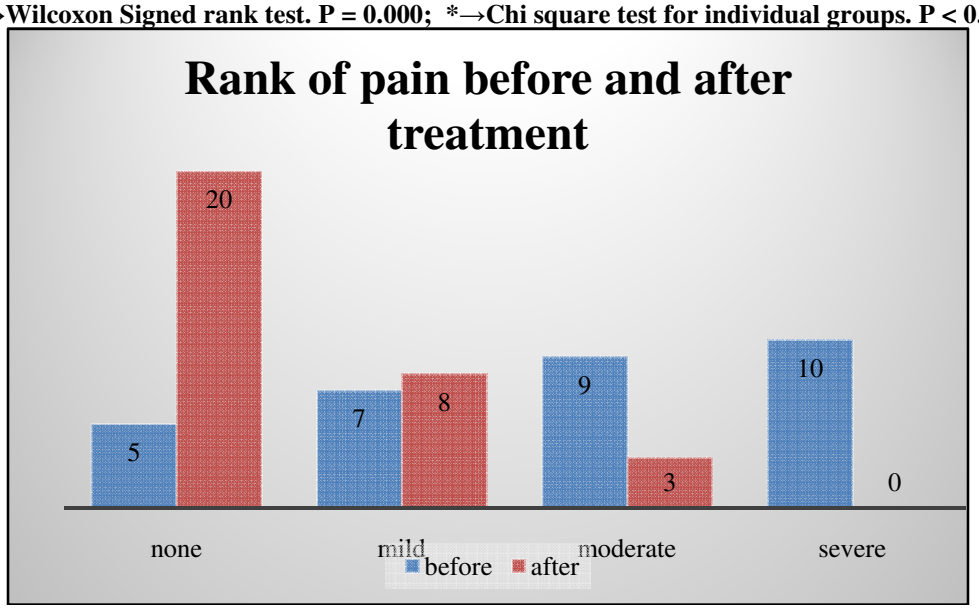
‡ N=31; those who sought the medical treatment for their problem
** $P < 0.05$

Table no. 2 Frequency distribution chart of responses to question "Condition which you think has cause vaginismus in your case?"

Answers to "Condition which you think has cause vaginismus in your case?"	Frequency	Percentage
1) Urinary tract infection	15	18.7%
2) Fear of pain when penetrated	12	15%
3) Vaginal yeast infection	7	8%
4) Strict moral education	4	5%
5) Vulvular vestibulitis	3	3.75%
6) Excessive knowledge regarding sexual assault	1	1.25%
7) Vaginal Yeast infection, Fear of pain when penetrated	4	5%
8) Vaginal Yeast infection, Fear of pain when penetrated, Excessive knowledge regarding sexual assault	1	1.25%
9) Urinary tract infection, harm avoidance behavior	1	1.25%
10) Vulvular vestibulitis, Urinary tract infection, Vaginal yeast infection, Sexual assault, Excessive knowledge regarding sexual assault, Fear of pain when penetrated	1	1.25%
11) Vulvular vestibulitis, Excessive knowledge regarding sexual assault, Strict moral education, harm avoidance behavior	1	1.25%
12) Urinary tract infection, Fear of pain when penetrated	3	3.75%
13) Urinary tract infection, Fear of pain when penetrated, Vaginal yeast infection	3	3.75%
14) Urinary tract infection, Excessive knowledge regarding sexual assault, harm avoidance behavior	2	2.5%
15) Fear of pain when penetrated, Strict moral education	1	1.25%
16) Fear of pain when penetrated, Vaginal yeast infection, harm avoidance behavior	1	1.25%
17) Vulvular vestibulitis, Fear of pain when penetrated, harm avoidance behavior	1	1.25%
18) Vulvular vestibulitis, Vaginal yeast infection	1	1.25%
19) Vaginal yeast infection, Excessive knowledge regarding sexual assault, Fear of pain when penetrated, harm avoidance behavior	1	1.25%
20) Strict moral education, domestic violence	1	1.25%
21) Vulvular vestibulitis, Fear of pain when penetrated	3	3.75%
22) Urinary tract infection, Strict moral education	2	2.5%
23) Fear of pain when penetrated, domestic violence, Strict moral education, sexual assault	1	1.25%
24) Vaginal yeast infection, Strict moral education	1	1.25%
25) Vaginal yeast infection, Excessive knowledge regarding sexual assault, Strict moral education	1	1.25%

26) Vulvular vestibulitis, harm avoidance behavior	**1**	**1.25%**
27) Vaginal yeast infection, Fear of pain when penetrated, Strict moral education, harm avoidance behavior	**1**	**1.25%**
28) Urinary tract infection, Fear of pain when penetrated, Strict moral education, harm avoidance behavior	**1**	**1.25%**
29) Urinary tract infection, Fear of pain when penetrated, Excessive knowledge regarding sexual assault, harm avoidance behavior	**1**	**1.25%**
30) Vaginal yeast infection, Vulvular vestibulitis, domestic violence	**1**	**1.25%**
31) Urinary tract infection, Fear of pain when penetrated, Vaginal yeast infection, Vulvular vestibulitis	**1**	**1.25%**
32) Fear of pain when penetrated, Excessive knowledge regarding sexual assault, harm avoidance behavior	**1**	**1.25%**
33) Urinary tract infection, Fear of pain when penetrated, sexual assault	**1**	**1.25%**

Figure 1: Rank of pain before and after treatment
‡→Wilcoxon Signed rank test. P = 0.000; *→Chi square test for individual groups. P < 0.05



CONFLICT OF INTERST:
Authors do not have any conflict of interest.

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