Effect of Cognitive Behavioral Therapy on Women with Dyspareunia : A Nursing Intervention

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Abstract:
Background: *Female dyspareunia is a sexual dysfunction manifested as pain in reproductive organs combined with sexual intercourse. It can alter a woman's sense of sexual competency and identity.*
The aim of the study *was to identify risk factors of dyspareunia and evaluates the effect of cognitive behavioral therapy (CBT) on women with dyspareunia including (sexual pain severity, sexual performance, marital and psychosocial adjustment).*
Subjects and Methods: *A quasi experimental design (A pre-post-test) was used. The study was conducted at two Maternal and Child health centers (MCH) and family planning out-patient clinic (FPOC) at Shebin -El-Kom Teaching Hospital- Egypt. A purposive sample of 200 women (100 women with dyspareunia and 100 free of dyspareunia) were included to detect the risk factors. The 100 women who diagnosed with dyspreunia received CBT intervention. These women were followed up for 12 weeks. Five tools were used to collect pertinent data.*
Results: *the study revealed that, the mean score of maternal age of the women with dyspareunia were 24.74±4.01. Most of them were had intermediate level of education (60%), were lived in rural community (78%) and not had enough income (56%). The common risk factors for dyspareunia were related to demographic data (age, residence, and income), reproductive factors (vaginal dryness, itching, abnormal vaginal discharge and cervical ulcer, erosion) and obstetric factors (episiotomy, laceration during delivery and breast feeding). A significant improvement was found between women before and after receiving CBT intervention regarding severity of sexual pain, sexual performance, marital-relationship, social & psychological status.*
Conclusion: *CBT as an important nursing intervention is an effective therapy in managing dyspareunia for decreasing sexual pain severity, improving sexual performance, marital adjustment, psychosocial state.*
Key words: *CBT, Dyspareunia, Sexual dysfunction, Pain , Risk factors.*

I. Introduction

Sexual dysfunction is highly prevalent disorder among women in today's society. Dyspareunia (painful sexual intercourse) is a recurrent or persistent acute pain associated with attempted or complete vaginal entry and/or penile vaginal intercourse [1]. The clinical importance of pain during intercourse is increasingly recognized, lack of consensus still prevails concerning the etiology of this distressing female sexual health problem [2]. There is almost no controversy today concerning the classification of dyspareunia as a sexual dysfunction. Both the Diagnostic and Statistical Manual of Mental Disorders American Psychiatric Association, (2013) and the International Classification of Disease include dyspareunia in their sections on sexual dysfunction [3]. A worldwide prevalence of chronic pelvic pain in systematic review is reported that, the rate of dyspareunia ranges between 8% and 21.8% [4]. On the other hand, twenty-six percent of female patients at sexology outpatient clinics in the Netherlands received treatment for dyspareunia, which makes it the most prevalent problem at Dutch sexology outpatient clinics [5]. In Egypt 31.5% of women were suffered from dyspareunia [6]. A recent study conducted at Mansoura city that studied the effect of sexual counseling program on pain level and sexual function among women with dyspareunia revealed that 27.3% of the study sample complained with dyspareunia and their age was ranged between 20- 45 years [7].

Two types of dyspareunia are distinguished; pain felt deep inside the pelvis during penile thrusting (deep dyspareunia), and pain experienced at the vaginal introitus (i.e superficial dyspareunia). The vast majority of symptomatic women reports superficial dyspareunia [8]. The causes of dyspareunia may be mixed between physiological and psychological, interpersonal and socio-cultural causes: The common physical causes of dyspareunia include interstitial cystitis, irritable bowel syndrome, pelvic inflammatory disease, chronic pelvic pain, and endometriosis. Also, diseases as diabetes, thyroid disease, diseases of heart, liver, and /or kidney disease, pelvic surgery, pelvic injury or trauma, neurological disorders, medication side effects, alcohol or drug abuse and fatigue [9] . Psychological causes could result from fear of pain, interpersonal disturbance, sexual abuse, stress or anxiety from work or family responsibilities, concern about sexual performance, conflicts in the relationship with partner, depression/anxiety, unresolved sexual orientation issues, previous traumatic sexual or physical experience, body image and self-esteem problems [10].

Interpersonal relationship causes may include partner performance and technique, lack of a partner's relationship quality and conflict and/ or lack of privacy. Socio-cultural influence causes may include: inadequate education, conflict with religious, personal, or family values and societal taboos [10]. CBT was used in previous studies for pain and sexual dysfunction to enable patients to reconceptualize genital pain as a multidimensional pain problem influenced by a variety of factors including thoughts, emotions, behaviors and couple interactions; modify those factors associated with pain during intercourse with a view to increasing adaptive coping and decreasing pain intensity; improve the quality of their sexual functioning and consolidate skills [11]. Preliminary evidence about sexual communication suggests that it may be poorer. Thus, there is a need for controlled studies of women with dyspareunia and their partners, examining their relationship and psychological and sexual well-being using validated measures [12]. The nurse is an ideal member of the health team to counsel, consult, and manage patients in the sensitive and highly charged area of human sexuality. The management of dyspareunia should include a comprehensive, systemic and multidisciplinary approach. The research is being undertaken internationally to develop evidence based methods for management [13].

Significant of the study

Despite growing public and medical awareness concerning the importance of healthy female sexuality, women with dyspareunia are often still caught in an insidious biopsycho-social pain cycle that is not adequately addressed by health professionals [14]. Studies showed that dyspareunia not only disrupts each phase of the female sexual response cycle, but also many important aspects of daily functioning, such as dyadic adjustment, psychological wellbeing, and quality of life [15] .

Aim of the Study

The current study aimed at identifying risk factors of dyspareunia and evaluating the effect of cognitive behavioral intervention (CBT) on women with dyspareunia including pain severity, sexual performance, marital relationship and psycho-social adjustment.

Research hypothesis

Women exposed to CBT exhibit mild degree or complete relief of sexual dysfunction including pain-related dyspareunia. Women exposed to CBT exhibit mild or complete improvement in marital- relationship /psycho-social adjustment.

II. Subjects And Methods

Study design: A quasi-experimental design was used.

Study Setting: The study was conducted at two Maternal and Child health centers (MCH) at Shebin Elkom city and Family Planning Out-patient Clinics (FPOC) at Shebin-El-Kom teaching hospital- Egypt.

Subjects: a purposive non- probability sample composed of 200 women as the researcher had the conscious selection of the subjects (pick up a target population) was used.

The Sample was divided into two groups

Group 1: Hundred women suffered from dyspareunia and received CBT therapy.

Group 2: Hundred women did not suffer from dyspareunia and attended MCH centers for receiving routine family planning and gynecological care only.

Inclusion Criteria: All recruited women were at reproductive age (15-45) yrs, diagnosed with dyspareunia (superficial & deep), and were sexually active.

Exclusion Criteria: Pregnancy, vaginismus, gynecological tumor (vaginal, cervical and uterine). Also, presence of major medical and/or psychiatric illness. Antidepressants, high blood pressure, medications including sedatives and anti-histamines.

Study Measures

Tool I: A Structured interviewing questionnaire which included the following parts:

A- Basic data of studied women including age, duration of marriage, education, occupation and residence, income, characteristics of current dyspareunia ……

B- Menstrual / obstetric / and contraceptive history

C- Present & past history about reproductive tract infection and abuse history

D- Data about social and psychological effects of dyspareunia.

Tool II: Numeric Pain Intensity Scale [16]: This 0 to 10 pain scale is commonly and successfully used to assess the degree and severity of pain. The values on the pain scale correspond to pain levels as follows: $1 - 3$ = mild pain, $4 - 6$ = moderate pain, $7 - 10$ = severe pain.

Tool III: Female Sexual dysfunction index (FSDI) [17].
It is a brief, multidimensional self-report instrument for assessing the key dimensions of sexual function in women. Total score of the scale ranged from 0-94. It was classified into three levels as the following: Bad level scored (0-31) Moderate level scored (32-63) Good level scored (64-94).

Tool IV: Marital adjustment scale [18]: the total score of marital adjustment scale ranged from 1-32. It was classified into three levels as the following: Bad level of adjustment scored (1-10) .Moderate level of adjustment scored (11-21). Good level of adjustment scored (22-32).

Tool V: Self-esteem scale [19]: The Rosenberg Self-Esteem Scale is a widely used self-report instrument for evaluating individual self-esteem. Self-esteem levels were classified into three levels as the following: Low (10-19), Moderate (20-29), and High (30-40).

Tool VI: Anxiety scale [20]: it used to assess the severity of symptoms of anxiety. The researchers chose 2 questions only. Each item was scored on a scale of 0 (not present) to 4(severe), higher scores indicate higher anxiety level. The severity of anxiety was classified into three levels as the following: Mild (<17)), Mild to Moderate level (18-24), Moderate to Severe (25-30).

Validity: The validity of the tools was ascertained by a group of subject area experts, medical and nursing staff who reviewed the instruments for content accuracy. Also, they were asked to judge the items for completeness and clarity. Suggestions were considered and modifications were made.

Reliability: Test – retest reliability was applied by the researcher for testing the internal consistency of the tools. It refers to the administration of the same tool to the same subjects under similar conditions on two or more occasions. Scores from repeated testing were compared.

Pilot Study: Pilot study was carried out before starting data collection; this was done to estimate the time required for filling out the sheets and also to check the clarity, applicability, relevance of the questions. The pilot study was conducted on 20 subjects and then they were excluded from the total sample. Based on the results of the pilot study, the necessary modifications were carried out.

Ethical considerations: necessary approval from MCH authority was taken after issuing an official letter from the dean of Faculty of Nursing , Menofia University. An informed consent to participate in the current study was taken after the purpose of the study was clearly explained to each woman. Confidentiality of obtained personal data, as well as respect of participants' privacy was totally ensured. A summary of the intervention was explained to each woman before volunteering to participate in the study and women were informed that they can withdraw from the study at any time. No invasive procedure was required.

The procedures and filed work:
Step 1: Interview and data collection: Women that were came to MCH centers to receive the needed and family planning care whom fulfilled inclusion criteria are recruited by researchers to collect data after informed consent were obtained, according to data collected and diagnosis of obstetric physician, those women were classified into 2 groups, group 1: women suffered from dyspareunia, Group 2: women did not suffer from dyspareunia.

Step 2: Framework schedule: the researchers explained to women whom diagnosed of having dyspareunia and willing to be volunteer in the study the aim of the study , scheduled the times and frequency for visits at her home to assure adherence to the CBT therapy.

Step 3: Implementation of CBT: The intervention including CBT components related- dyspareunia was performed after filling of questionnaire at the interview settings.

CBT Components
A: The Correction of Misconceptions [21].
B: Graded Sexual Assignments [22]
C: Psychosexual behavioral–related dyspareunia [23]

These components were implemented through:

Encourage self-contact, self-awareness**:** encourage active for play, to maintain and/or increase libido, arousal and possibly clitoral orgasm, by delaying penetration until the woman feel fully aroused with specific prohibition of coital attempts until the pelvic floor is adequately relaxed and the women is willing and able to accept intercourse

Switch positions**:** the sharp pain during thrusting, the penis may be striking the women's cervix or stressing the pelvic floor muscles, causing aching or cramping pain. Changing positions may help. The woman try being on top of her husband during sex. Women usually have more control in this position, so she may be able to regulate penetration to a depth that feels good.

Use lubricants: A personal lubricant can make sex more comfortable.
Distraction techniques focusing on sexual imagery**.**
Encourage communication with husbands.
Pelvic floor exercise (Kegel's exercise): the woman learned a periodic vaginal relaxation exercises followed by contraction that can decrease pain.

Step 4: Follow up: women with dyspareunia were followed up (4 times over 12 weeks) throughout home visits at the subject's homes if they were located at the same sector around the MCH centers area. If they located away in villages follow Shebin Elkom, they were followed up by telephone to assure the adherence of the CBT therapy.

Step 5: Evaluation phase**:** post intervention data were collected at the end of follow up period .

Statistical analysis: the collected data were organized, tabulated and statistically analyzed using SPSS software version 13. For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, comparison between two groups and more was done using Chi-square test (χ^2). For comparison between means of two groups of parametric data of independent samples, student t-test was used. For comparison between means of two related groups (before & after intervention) of non-parametric data, Z value of Wilcoxon Signed Ranks Test was used. Significance was adopted at $p<0.05$ for interpretation of results of tests of significance .To predict the presence or absence of dyspareunia among women based on a set of predictor variables logistic Regression was done. Binary logistic regression coefficients (B) are calculated and used to estimate Odds ratios (EXP (B) for each of the independent variables as risk factors for dyspareunia [24].

III. Results

Table 1 represented a comparison between women with dyspareunia and women without dyspareunia regarding their socioeconomic characteristics. As inferred from the table, the mean maternal age of the women with dyspareunia was 24.74±4.01compared to 25.77±4.68 of women without dyspareunia. There were statistically significant difference between the two groups regarding level of education, residence and income. Most of women with dyspareunia were had intermediate level of education (60%), were lived in rural community (78%) and not had enough income (56%).

No statistically significant difference was revealed between the two groups regarding job and duration of current marriage. Most of women with dyspareunia were house wives (64%).

Table 2 represented a statistically significant differences between two groups regarding method of delivery, occurrence of episiotomy, occurrence of laceration, history of breast feeding and type of family planning method used (P<0.05). Meanwhile there was no significant differences between two groups regarding pain, regulation of menstruation, current usage of family planning methods.

Table 3 revealed a comparison between two groups regarding occurrence of reproductive tract infections (UTI), it showed statistically significant difference between groups regarding occurrence of vaginitis, abnormal vaginal discharge, vaginal dryness, vaginal itching, cervical erosion (P<0.0001).Meanwhile, there was non statistically significant difference regarding occurrence of cervicitis, UTI. The same table also shows statistically significant difference between dyspareunia and dyspareunia free women regarding abuse exposure (P<0001). 58 % of women with dyspareunia exposed to abuse during childhood and 61% of them exposed to abuse during marriage.

Table 4 the analysis by using a Binary logistic regression of demographic data, obstetric, reproductive history as predictive factors for dyspareunia among studied women. This table revealed that age, residence, income, episiotomy, laceration during delivery, breast feeding, vaginal dryness, vaginal itching, abnormal vaginal discharge and cervical ulcer were common predictors/risk factors for occurrence of dyspareunia in the current study.

Table 5 represented the characteristics of dyspareunia among studied group, it showed that 44% of women had dyspareunia at beginning of vaginal introitus , 24% of women had dyspareunia every time of sexual

intercourse, 32% of women complained of dyspareunia were used man on the top position. 33% of women complained of dyspareunia at postpartum period. The most reported causes of dyspareunia (51%) was lack of foreplay prior intercourse from their husbands, while 34% was reported cause related to infection of reproductive tract .

Table 6   showed the social effects of dyspareunia among studied women before and after intervention. There was statistically significant difference of women and their relation with their husbands before and after interventions.

Table 7 showed a significant improvement in sexual performance, marital adjustment and pain severity the higher mean score (56.82±15.93) of women with dyspareunia were had a good level of sexual performance post intervention compared to 47.60±14.99 of women pre intervention. Likewise, the higher mean score (25.87±5.28) of women with dyspareunia were had a good level of marital adjustment post intervention compared to 22.55±6.05 of women   pre intervention . Regarding pain severity, the higher mean score of studied women was 1.53±0.93 after intervention compared to 1.98±0.74 before intervention. It means, there was an eliminating in pain related dyspareunia post intervention, the difference was significant.

As notified from Table 8, there was statistically significant difference between studied women pre and post intervention   regarding scores of anxiety   level, and self–esteem scale. The mean   score of anxiety level was decreased after intervention; it was 5.66±7.70 compared to 10.69±11.26 before intervention i.e. the anxiety level was decreased. Regarding self – esteem level, the mean score was increased (24.94±3.02) after intervention   while it was 21.33±1.86 before intervention. The self-esteem of studied subjects was improved.

Table 1. Demographic data of studied women with and without dyspareunia (N=200)

Demographic data	Women with dyspreunia (n=100) %	Women without dyspreunia (n=100) %	χ^2	P
▪Age (years):				
Range	18-37	19-42		
Mean±SD	24.74±4.01	25.77±4.68		
t-test		1.672		
P		0.096		
▪Residence:				
Rural	78	62	6.095	0.014*
Urban	22	38		
▪Job:				
Working	36	44	1.333	0.248
House wife	64	56		
▪Duration of current marriage (years):				
Range	1-15	1-20		
Mean±SD	4.76±3.65	5.22±4.14		
t-test		0.833		
P		0.406		
▪Educational level:				
Illiterate	4	8	9.905	0.019*
Read & write	16	8		
Intermediate education	60	48		
High education	20	36		
▪Monthly income:				
Not enough	56	40	4.510	0.034*
Enough	44	60		

*Significant (P<0.05)

Table 2. Menstrual , obstetric and contraceptive history of studied women with and without dyspareunia (N=200)

Variables of reproductive history	Women with dyspreunia (n=100) %	Women without dyspreunia (n=100) %	χ^2	P
▪Pain during menstruation:				
Yes	58	52	0.727	0.394
No	42	48		
▪Regulatory of menstruation:				
Regular	46	40	0.734	0.39
Irregular	54	60		
▪Current usage of family planning				
Yes	72	68	0.211	0.463
No	28	32		
-If yes, type of FP methods				
IUD	46	32	11.480	0.022*
Combined pills	8	22		
Progestin only pills	13	10		
Norplant	2	0		
Injectable contraceptive.	3	4		
▪Method of delivery:				

No	10	8	12.022	0.002*
Normal	60	38		
CS	30	54		
▪Occurrence of episiotomy:				
No	65	84	8.530	0.003*
Yes	35	16		
▪Occurrence of laceration:				
No	64	86	11.762	0.0006*
Yes	36	14		
▪History of breast feeding:				
No	28	48	7.662	0.006*
Yes	72	52		

*Significant (P<0.05)

Table 3. History of reproductive tract infection (RTI) and abuse of the studied women (with and without dyspareunia) (N=200)

Variables	Women with dyspreunia (n=100) %	Women without dyspreunia (n=100) %	χ^2	P
I: Reproductive Tract Infection (RTI):				
▪Vaginitis:				
Yes	74	52	9.464	0.002*
No	26	48		
▪Cervicitis:				
Yes	20	12	2.381	0.123
No	80	88		
▪Urinary tract infection (UTI):				
Yes	30	38	1.426	0.232
No	70	62		
▪Abnormal vaginal discharge:				
Yes	66	42	0.092	0.013*
No	44	58		
▪Vaginal dryness:				
Yes	48	30	6.810	0.009*
No	52	70		
▪Vaginal itching:				
Yes	54	3	5.153	0.023*
No	46	62		
▪ Cervical Ulcer or erosion:				
Yes	17	2	13.085	0.0001*
No	83	98		
▪ History of cautery treatment:				
Yes	16	2	11.966	0.001*
No	84	98		
II: Abuse exposure:				
▪Childhood abuse:				
Yes	58	25	21.092	0.0001*
No	42	75		
▪After marriage abuse:				
Yes	61	21	31.443	0.0001*
No	39	79		

*Significant (P<0.05)

Table 4. Binary logistic regression analysis of demographic data, obstetric, reproductive history as predictive factors for dyspareunia among studied women (N=200)

Items	B	SE	P	Exp (B)	95% confidence interval (CI) for Exp (B)	
					Lower limit	Upper limit
I: Demographic data						
▪Age	0.214	0.105	0.042*	1.23	1.008	1.521
▪Residence	1.204	0.432	0.005*	0.300	0.129	0.700
▪Work	0.310	0.407	0.445	0.733	0.330	1.627
▪Duration of marriage	0.172	0.119	0.149	0.842	0.667	1.064
▪Education level	0.400	0.254	0.115	0.670	0.408	1.102
▪Income	1.021	0.466	0.028*	2.775	1.113	6.916
II: Obstetric history						
▪Age of menarche	0.234	0.172	0.173	0.791	0.565	1.108
▪Pain of menstruation	0.251	0.536	0.639	1.286	0.450	3.673
▪Regulatory of menses	0.319	0.511	0.533	0.727	0.267	1.980
▪No. of abortion	0.676	1.102	0.540	0.509	0.059	4.413
▪Method of delivery	0.965	0.414	0.020	2.624	1.166	5.908
▪Episiotomy	1.390	0.622	0.025*	4.016	1.186	13.601
▪Laceration during delivery.	3.412	0.951	0.0001*	30.334	4.708	195.457

	B	SE	P	Exp (B)		
▪Breast feeding	0.953	0.403	0.018*	2.594	1.178	5.71
		III: Reproductive health				
▪Vaginitis	0.898	0.485	0.064	2.456	0.9508	6.350
▪Cervicitis	0.206	0.516	0.689	1.229	0.447	3.375
▪Urinary tract infection	0.630	0.454	0.165	0.533	0.219	1.296
▪Vaginal dryness	0.965	0.357	0.007*	2.625	1.305	5.280
▪Vaginal itching	1.204	0.605	0.047*	3.332	1.019	10.900
▪Abnormal vaginal discharge.	1.593	0.563	0.005*	0.203	0.067	0.613
▪ Cervical ulcer	1.762	0.849	0.038*	5.826	1.102	30.793
▪ History of cautery	1.128	0.864	0.191	3.091	0.569	16.798

B=Logistic Regression Coefficient; SE=Standard Error of B; P=Significance; Exp (B)=Estimated Odds Ratio; *Significant (P<0.05)

Table 5 . Characteristics of dyspareunia among studied women (N=100)

Variables	The studied women with dyspreunia (n=100) %
▪ When dyspareunia occur:	
At the onset of vaginal introitus	44
At the middle of vagina	38
At the end of vaginal introitus	10
All the above	8
▪Frequency of dyspareunia:	
Every time	24
Sometimes	76
▪Position of intercourse which pain occurs:	
Man-on-top	32
Woman-on-top	20
Side-lying	28
Cross –wise	20
▪ How long the women complain dyspareunia:	
From beginning of marriage	58
Postpartum	33
After menstruation	9
▪ Causes of dyspareunia (self reported)	
No Foreplay prior intercourse	51
Psychological factors	15
Infection of reproductive tract	34

*Significant (P<0.05)

Table 6 . Social effects of dyspareunia among studied women before and after intervention with CBT therapy (N=100)

Social effects of dyspareunia	The studied women with dyspreunia before and after intervention with CBT therapy (n=100)		χ^2	P
	Before (n=100) %	After (n=100) %		
▪Effects on family and work:				
Bad	52	49	0.180	0.671
Good	48	51		
▪ Effects on house work:				
None	65	64	0.21	0.810
Mild bad	26	29		
Moderate bad	9	7		
▪Effects on relation with others(relatives):				
None	40	47	2.008	0.571
Mild bad	42	39		
Moderate bad	10	10		
Worst	8	4		
▪ Effects on relation with children:				
None	41	52	3.262	0.353
Mild bad	49	41		
Moderate bad	9	7		
Worst	1	0		
▪ Effects on relation with husband:				
None	24	50	24.411	0.0001*
Mild bad	27	32		
Moderate bad	14	7		
Worst	35	11		

*Significant (P<0.05)

Table 7. Sexual performance, marital adjustment and sexual pain severity of studied women with dyspareunia before and after intervention with CBT (N=100)

Variables	The studied women with dyspreunia before and after intervention with CBT therapy (N=100)			
	Before (n=100) %	After (n=100) %	χ^2	P
▪Level of sexual performance (0-94)				
Bad (0-31)	14	7	13.20	0.001*
Moderate (32-63)	73	59		
Good (64-94)	13	34		
Range	17-79	22-91		
Mean±SD	47.60±14.99	56.82±15.93		
Paired t-test	18.198			
P	0.0001*			
▪ Pain severity of dyspareunia (0-94)				
Mild	28	14	10.232	0.006*
Moderate	46	35		
Severe	26	16		
Range	1-3	0-3		
Mean±SD	1.98±0.74	1.53±0.93		
Paired t-test	6.413			
P	0.0001*			
▪Marital adjustment scale (1-32)				
Bad (1-10)	5	0	13.464	0.001*
Moderate (11-21)	38	21		
Good (22-32)	57	79		
Range	10-31	14-32		
Mean±SD	22.55±6.05	25.87±5.28		
Paired t-test	15.861			
P	0.0001*			

*Significant (P<0.05)

Table 8. Anxiety and self esteem scales of studied women with dyspareunia before and after intervention with cognitive-behavioral therapy (N=100)

Variables	The studied women with dyspreunia before and after intervention with CBT therapy (n=100)			
	Before (n=100)	After (n=100)	χ^2	P
▪Level of anxiety (0-30) :				
None anxiety (0)	50	65	8.791	0.032*
Mild (≤ 17)	10	14		
Mild to moderate (18-24)	30	17		
Moderate to severe (25-30)	10	4		
Range	0-28	0-24		
Mean±SD	10.69±11.26	5.66±7.70		
#Z value	3.229			
P	0.001*			
▪Self-esteem scale levels(10-40) :				
Low (10-19)	14	7	8.232	0.015*
Moderate (20-29)	86	87		
High (30-40)	0	6		
Range	18-27	18-35		
Mean±SD	21.33±1.86	24.94±3.02		
Paired t-test	11.895			
P	0.0001*			

*Significant (P<0.05)   #Z value of Wilcoxon Signed Ranks Test

IV. Discussion
Basic data and risk factors of dyspareunia
The sexual pain disorders including dyspareunia are highly prevalent yet misunderstood women's sexual health problems [25]. To determine the associated factors related to dyspareunia, a comparison between women with dyspareunia and women without dyspareunia was done. As inferred from table 1, that the mean maternal age of the women with dyspareunia were 24.74±4.01. Also, the present study, revealed a statistically significant differences between two groups regarding age Table 4. This was congruent with, [26] who studied dyspareunia in Puerto Rican middle-aged women found that dyspareunia was lower among women aged 40–49 years. Also, [27] studied sexual dysfunction in the US: They reported; age as an important factor for sexual dysfunction. They mentioned that with increasing age, the prevalence of dyspareunia decreased. But, [1] didn't find any relation between age and dyspareunia and ascertain that, data on age and its relation to dyspareunia are rare and different.

The present study revealed a statistically significant difference between groups regarding educational level and income; more than half of women with dyspareunia have intermediate education and didn't have enough income. The findings of the present study was almost similar to the study done by [28] who studied dyspareunia in women and found that significant risk factors and predictors for dyspareunia include education level below a college degree and a decrease in household income .Mean while, [1] did not find any relation between employment status and dyspareunia. Regarding mode of delivery, the present study findings revealed that, most of women with dyspareunia had vaginal delivery and nearly one third of them had episiotomy.

This result was matching with previous study done by [29] who studied sexual outcomes in primiparous women experiencing vaginal and caesarean births and reported that all of the women who had a vaginal delivery underwent a mediolateral episiotomy and most of them had dyspareunia than others bearing C/S. The women in the C/S group resumed their postpartum sexual activities much sooner than those who had experienced NVD/episiotomy. On the same line [30]; [31] proved the relationship between episiotomies and dyspareunia, Meanwhile [32] reported that despite the very common sexual problems after childbirth, sexuality was not significantly associated with delivery type or episiotomy. Regarding perineal tear, the woman with dyspareunia had perineal tear more than women without dyspareunia, the finding of present study was similar to findings of study that evaluated the prevalence and the causes for postpartum dyspareunia referred primarily to obstetric trauma, such as vaginal tears [33]. But regards breast feeding, the finding was similar to [29] who found that, women who breastfed their infants were less interested in starting intercourse.

Physiologic changes that occur during the postpartum period, such as a decrease in some of the sexual hormones like estrogen and androgens, affect the sexual response cycle. [34] Studied contraception and sexuality and stated that progesterone only method can in small numbers decrease libido and cause vaginal dryness consequently dyspareunia. This result was in line with our finding that the most common methods used by women with dyspareunia were using IUD and progesterone only pills. A significant association between vaginitis and occurrence of dyspareunia was found. In congruence with present study findings, [35] who studied factors predisposing women to chronic pelvic pain, they found that dyspareunia was more common in women who had pelvic inflammatory disease. A significant association was found between abuse either during child hood or marriage and occurrence of dyspareunia. These findings were congruent with findings of study conducted by [36] who studied history of sexual and physical abuse in women with dyspareunia: association with pain, psychosocial adjustment, and sexual functioning and reported that presence of a sexual abuse history in women with dyspareunia is associated with increased psychological distress and sexual impairment. About half of the studied women had dyspareunia during intercourse at beginning of vaginal introitus. These findings were in line with study done by [37], they found that most dyspareunia occurred during intercourse, located at vaginal entrance (55 %). Also, [7] reported that 39.3% of women had pain at introital opening. One third of dyspareunia cases (32%) were used man on top position, while the minority of them (%20) were used cross−wise position. The findings of current study was consistent with [38] who found that the cross-wise position was perhaps the best position for decreasing dyspareunia than other positions as when employed properly, neither partner is supporting their weight, the external genitalia are available for additional stimulation, and both direction and depth of vaginal penetration can be easily adjusted. Regarding social effect of dyspreunia, the present study revealed that dyspareunia had negative effect on relationship with husband and psychological status. In congruence with these findings [28] reported that dyspareunia can have a negative impact on a woman's mental health and relationship with partner, also [35] reported that anxiety, depression were more common in women with dyspareunia.

Effect of CBT on sexual functioning, pain, marital and psychological status
The study findings revealed that dyspareunia had negative effect on sexual function, marital relationship, anxiety and self-esteem. These findings were congruent with findings of Doctorate dissertation conducted by [39] who found that women's experience dyspareunia accumulating negative consequences on well being, sexual function, and relationships and added, the more distressed a woman is about the pain she experiences during sex, the higher level of anxiety. Also, [40] and [41] reported that women with painful genital sexual activity—display significantly higher state and trait anxiety than normal controls. In evaluating the level of sexual performance (functioning), marital adjustment before and after intervention. Several studies were conducted on women with dyspareunia and CBT which included psycho-education, distraction techniques, Kegel exercises, rehearsal of self-coping statements, communication skills training, and cognitive restructuring, sex education [42]. There was a statistically significant difference between pre and after intervention phases regarding scores of sexual performance, marital adjustment scale. The present study findings was congruent with study conducted by [42] who studied female sexual pain disorders and CBT, it found that about three fourths of women had improved in sexual functioning and reduced pain after receiving CBT. M moreover, [43] in comparison of CBT vs. Supportive psychotherapy indicated that CBT was initially effective in treating female sexual pain disorders and improving sexual functioning. Sexual therapy addressing relationship distress, sexual performance

concerns, and dysfunctional communication patterns is likely to enhance sexual functioning [44]. In evaluating psychological factors; level of anxiety, self–esteem scores before and after intervention. There was statistically significant difference between pre and after intervention phases regarding scores of anxiety level, self–esteem scale. These findings was congruent with study conducted by [45] who found a significant improvement on measures of psychological adjustment and sexual function from pretreatment to 6-month follow-up in group with CBT.

V. Conclusion

CBT is an effective nursing intervention in managing dyspareunia among women for decreasing sexual pain severity, improving sexual performance, marital relationship, psychological status. The risk factors for occurrence of dyspareunia were related to demographic factors (age, residence, and income), reproductive factors (vaginal dryness and itching, abnormal vaginal discharge and cervical ulcer/erosion) and obstetric history (episiotomy, laceration during delivery and breast feeding).

VI. Recommendation

•Establish a sexual educational unit into Egyptian health care services e.g. . Sexual counseling.
•Appropriate intervention strategies, including a broad-spectrum diagnosis and management approaches to promote and maintain the sexual and reproductive health among female populations.
•Further studies are needed to address dyspareunia- related factors and its management.

Acknowledgement

References

[1].   Sobhgol S.S. and S. Mohammad Alizadeli Charndabee. Rate and related factors of dyspareunia in reproductive age women: a cross-sectional study. International Journal of Impotence Research, 2007; 19: 88–94.
[2].   Desrochers, G., Bergeron, S., Landry, T. and Jodoin, M. Do psychosexual factors play a role in the etiology of provoked vestibulodynia? A critical review. Journal of Sex and Marital Therapy, 2008;34: 198–226.
[3].   Binik, Y. Should dyspareunia be classified as a sexual dysfunction in DSM- V? A painful classification decision. Arch Sex Behav., 2005; 34, 11-21.
[4].   Ferrero, S., Ragni, N. and Remorgida, V. "Deep dyspareunia: causes, treatments, and results", Current Opinion in Obstetrics and Gynecology. 2008;20:394–99.
[5].   Kedde, H., Donker, G., Leusink, P. and Kruijer, H. The incidence of sexual dysfunction in patients attending Dutch general Practitioners. International Journal of Sexual Health, 2011; 23: 269-277.
[6].   Elnashar, A.M., Ibrahim, M., EL-Desoky, M.M., Ali, O.M. and Hassan, B. M. "Female sexual dysfunction in Lower Egypt". BJOG., 2007;114:201–06.
[7].   Mansour, S. E., Shebl, A. M. and Wahe, S. M. The effect of sexual counseling program on pain level and sexual function among women with dyspareunia. Journal of Education and Practice, 2014; 5(3).
[8].   Brauer, M., ter Kuile, M. M. and Laan, E. Effects of appraisal of sexual stimuli on sexual arousal in women with and without superficial dyspareunia. Archives of Sexual Behavior, 2009; 38, 476–485.
[9].   Meana, M. and Lykins, A. Negative affect and somatically focus in young women reporting pain with intercourse. Journal of Sex Research, 2009; 46: 80–88.
[10].   Desrochers, G., Bergeron, S., Khalife, S., Dupuis, M.J. and Jodoin, M. Fear avoidance and self-efficacy in relation to pain and sexual impairment in women with provoked vestibulodynia. Clin. J. Pain., 2009; 25:520 -7.
[11].   Masheb, R. M., Kerns, R. D., Lozano, C., Minkin, M. J. and Richman, S. A randomized clinical trial for women with vulvodynia: Cognitive–behavioral therapy vs. Supportive psychotherapy. Pain, 2009; 141: 31–40.
[12].   Pazmany, E., Bergeron, S., Verhaeghe, J., Oudenhove, L. and Enzlin, P. Sexual Communication, Dyadic Adjustment, and Psychosexual Well-Being in Premenopausal Women with Self-Reported Dyspareunia and Their Partners: A Controlled Study. J sex Med. 2014.
[13].   McCall, J.L. and DeGregorio, M.W. Pharmacologic evaluation of ospemifene, Expert. Opin. Drug Metab. Toxicol., 2010; 6(6):773-9.
[14].   Graziottin, A. and Brotto, L. A. Vulvar vestibulitis syndrome: A clinical approach. Journal of Sex and Marital Therapy, 2004;30: 125–139
[15].   Farmer, M.A. and Meston, C. M. Predictors of genital pain in young women. Archives of Sexual Behavior, 2007;36: 831–843
[16].   National Institutes of Health. Numeric Pain Intensity Scale. 2003.
[17].   Rosen, R. The female sexual function index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. Journal of Sex and Marital Therapy. 2000; 26(2):191-208
[18].   Locke, H. and Wallace, K. Short marital-adjustment and prediction tests: Their reliability and validity. Marriage and Family Living, 1959; 21: 251-255
[19].   Rosenberg, M. Society and the adolescent self-image. Princeton, NJ: Princeton, University Press. 1965.
[20].   Hamilton, M. The assessment of anxiety states by rating. Br. J. Med. Psychol., 1959;32:50–55.
[21].   LoPiccolo, J. Challenges to sex therapy. In C. M. Davis (Ed.), Challenges in sexual science: Current theoretical issues and research advances (pp. 16-22). Lake Mills, IA: The Society for the Scientific Study of Sex. 1983
[22].   Wolpe, J. Psychotherapy by reciprocal inhibition. Stanford, CA: Stanford University Press. 1958.

[23]. Graziottin A. Sexual pain disorders: dyspareunia and vaginismus. in: Porst H. Buvat J. (Eds), ISSM (International Society of Sexual Medicine) Standard Committee Book, Standard practice in Sexual Medicine, Blackwell, Oxford, UK, 2006; p. 342-350.

[24]. Dawson, B. D. and Trapp R. G. 2001. Reading the medical literature : Basic & Clinical Biostatistics. Lange Medical Book/ McGraw – Hill. Medical Publication Division, New York. 3rd ed., Ch. 7-9, PP 161- 218.

[25]. Bergeron, S., Morina, M. and Lord, M. Integrating pelvic floor rehabilitation and cognitive- behavioural therapy. Sexual and Relationship Therapy for sexual pain: what have we learned and were do we go from here? 2010; 25(3): 289–298

[26]. Yaniris, R. Avellanet, Ana Patricia Ortiz, José R. Pando and Josefina Romaguera, Dyspareunia in puerto rican middle-aged women: PMC., 2009; 16(4): 742–747.

[27]. Laumann, E.Q., Paik, A. and Rosen R.C. Sexual dysfunction in the United States: prevalence and predictors. JAMA., 1999;281: 537–544.

[28]. Dean, A. Seehusen and Drew C. Baird. Dyspareunia in women. Am. Fam. Physician., 2014; 90(7):465- 470.

[29]. Khajehei, M., S. Ziyadlou, Rad M. Safari, HR. Tabatabaee and F. Kashefi, A. Comparison of sexual outcomes in primiparous women experiencing vaginal and caesarean births. Indian J. Community Med., 2009; 34(2): 126–130

[30]. Solana-Arellano, E., Villegas-Arrizon, A., Legorreta-Soberanis, J., Cɑrdenas-Turanzas, M., Enzaldo de la Cruz J.and Andersson N. Women's dyspareunia after childbirth: A case study in a hospital in Acapulco, Mexico. Rev. Panam. Salud. Publica., 2008; 23:44– 51.

[31]. Williams, A., Herronmarx, S. and Knib, R. The prevalence of enduring postnatal perineal morbidity and its relationship to type of birth and birth risk fators. J. Clin. Nurs. 2007; 16:549–61.

[32]. Conolly, A., Thorp, J. and Pahel, L. Effect of pregnancy and childbirth on postpartum sexual function: A longitudinal prospective study. Int. Urogynecol. J., 2005; 16: 263–7

[33]. Meir Medical Center. Postpartum Dyspareunia Resulting From Vaginal Atrophy. 2012.

[34]. Shah, M.B., Hoffstetter, S. and Minerva Ginecol. Contraception and sexuality. US National Library of Medicine National Institutes of Health. 2010; 62(4):331-47.

[35]. Pallavi Latthe, Luciano Mignini. Factors predisposing women to chronic pelvic pain: systematic review. BMJ., 2006; 332:749.

[36]. Leclerc, B., Bergeron, S., Binik, Y.M. and Khalifé S. History of sexual and physical abuse in women with dyspareunia: association with pain, psychosocial adjustment, and sexual functioning. J Sex Med., 2010; 7:971-80.

[37]. Orawan Chen and Surasak Taneepanichskul . Prevalence of Dyspareunia in Healthy Thai Perimenopausal Women. Thai Journal of Obstetrics and Gynaecology, 2003; 15: 13-121.

[38]. John, F., Steege and Denniz A. Zolnou. Evaluation and treatment of dyspareunia; Obstetrics & Gynecolog, 2009; 113(5).

[39]. Lea Thaler. Pain tolerance and thresholds in women with dyspareunia: Do pain and sex primes have differential effects?, A dissertation submitted in partial fulfillment of the requirements for the Doctorate of Philosophy in Psychology Department of Psychology The Graduate College, University of Nevada, Las Vegas, 2011.

[40]. Granot, M., Friedman, M., Yarnitsky, D. and Zimmer, E.Z. Enhancement of the perception of systemic pain in women with vulvar vestibulitis. British Journal of Obstetrics and Gynecology, 2002; 109:863–866.

[41]. Payne, K.A., binik, Y.M., amsel, R., khalife, S. and lahaie, M.A. An investigation of fear-mediated hypervigilance in women suffering from vulvar vestibulitis syndrome. 2002.

[42]. Barbara, M. and LoFrisco. Female sexual pain disorders and cognitive behavioral therapy. The Journal of Sex Research, 2011;48(6): 573-579.

[43]. Backman, H., Widenbrant, M., Bohm-Starke, N., and Dahlo f, L. Combined physical and psychosexual therapy for provoked vestibulodynia—An evaluation of a multidisciplinary treatment model. Journal of Sex Research, 2008; 45: 378–385.

[44]. Eleonora, B., Pasqualotto, Fabio Firmbach Pasqualotto, Bernardo P. Sobreiro and Antonio Marmo Lucon. Female sexual dysfunction: the important points to remember, 2005.

[45]. Bergeron, S., Binik, YM., Khalifé, S., Pagidas, K., Glazer, HI., Meana, M. and Amsel, R. A randomized comparison of group cognitive--behavioraltherapy, surface electromyographic biofeedback, and vestibulectomy in the treatment of dyspareunia resulting from vulvar vestibulitis 2001; 91(3):297-306.