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Comprehension of dyspareunia and related anxiety among northern upper Egyptian women: impact of nursing consultation context using PLISSIT model

Abstract

Background: Although dyspareunia is one of the common health issues, up-till-now it remains neglected in Eastern communities such as in Egypt, especially in Upper Egypt, where investigation or even taking of such problems is considered a taboo. The couples deny it on the grounds of shame; regardless of whether they feel a need for further consultation about it.

Aim: Exploration prevalence of dyspareunia, its related factors, and its associated anxiety among Upper Egyptian women in Beni-Suef city, Egypt, Study the effect of counseling using PLISSIT on dyspareunia and related anxiety.

Subjects and methods: A cross-sectional study using Counseling sheet following PLISSIT model, Numerical Rating Scale, Calibrated scale and Beck Anxiety Inventory.

Results: Of all the participants, 25.0% exposed to reproductive tract infection (RTI), 23.5% had a history of gynecologic/pelvic surgery, 11.0% were menopauses, 86.5% were multipara. Of the 173 women, 52 % normal vaginal birth with episiotomy, 10.1% gave birth assisted by ventouse. Of 160 (76.9%) who were delivered vaginally, 65.3% had perineal tears. Person correlation coefficient test (r) illustrated, the greater the pain, the greater the anxiety, however, no statistically significant difference was found. Between the 2 mentioned variables. Progressive declining in dyspareunia, after counseling using PLISSIT model, throughout 3-months follow up regardless sociodemographic characteristics, obstetrical, gynecological health and sexual behavior characteristics. Statistically significant difference between dyspareunia in pre/post counseling of at p-values <0.05.

Conclusion: Our results confirm the strong link between dyspareunia and anxiety as well as the effectiveness of counseling using PLISSIT model in the alleviation of women's dyspareunic pain and its associated anxiety.

Recommendations: Active approaches are needed to overcome shame and embarrassment, and the stigma that may be associated with asking about common sexual health issues by activating the role of maternity health nurses in gynecologic clinics to enhance women's knowledge regarding sexual health issues.

Keywords: dyspareunia, PLISSIT model, counseling

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Introduction

Sex is an instinctive part of human's life, and sexual function is a major determinant of overall health and general well-being.[1] Sex has its human and personal dimensions that are beyond the mere ability of a person to respond or to have an exciting effect. Our knowledge goes beyond 1000 BC when the taboos became clear, and the value of women in sex, and reproduction became clear, and men were allowed to marry any number of women. In Arab societies, as Egypt, talking about sex and its related problems is very sensitive which may prevent sexual disorders from being assessed.[2] Sexual problems can be associated with painful intercourse, vaginal dryness, low libido.[3] Disruption of women's sexual functions may affect them psychologically & physically, resulting in anxiety & distress, and may lead to incompetent relationships.[2]

Dyspareunia is a local genital pain before, during, or after intercourse with highly prevalent with vaginal penetration of the penis during or immediately after sexual intercourse.[4–6] Although dyspareunia is present in both sexes, it is far more prevalent in women than men, with the pain initiating in several areas, from vulvar surfaces (clitoris or labia) to vagina and deep pelvic structures.[6,7] Thus, it is considered an important public health issue,[1] and may disrupt sexual function.[5] Its frequency was found to be between twenty to fifty percent of all women. Mathias et al.[8] as cited by Fisher, reported that 88% of sexually-active women with pelvic pain were had dyspareunia. A systematic review of studies of dyspareunic pain, done by the WHO, documented an incidence of pain during intercourse ranging from 8% to 22%.[8] It occurs most frequently in those who are sexually inexperienced (particularly if their partners are also inexperienced), those who are peri/post-menopausal.[7]

There are 4 categories of dyspareunia (a) Anatomic: These can be either congenital or developmental, affecting primarily the introitus or vagina; (b) Pathologic: These can involve all parts of the reproductive system or come from adjacent organs such as bladder, urethra, sigmoid, anus or anal canal, and orthopedic problems; (c) Psychosomatic: These may be related to several different causes. Previous rough gynecological examinations or previous painful intercourse due to pathology can leave a patient conditioned to expect

pain, even when the original cause no longer exists. Libido and vaginal lubrication may be decreased by anxiety, in turn, cause pain. There can be fear of discovery, for example, children coming into the bedroom unexpectedly, or fear of unwanted pregnancy; (d) Iatrogenic: These can follow surgery for benign or malignant disease, episiotomy, or vaginal stenosis and atrophy following pelvic irradiation.[9]

Painful coitus is multi-factorial and may be complicated by several comorbidities. The close relationship of pelvic organs (bowel, uterus, bladder), muscle-skeletal pelvis, hips, and abdomen direct the clinician's attention towards these organs being presented with current clinical symptoms: (1) chronic pelvic pain is primary diagnosis contributing to sexual pain such as pelvic inflammatory disease, uterine fibroids, vulvovaginal & urinary tract infections, endometriosis, adhesions, vestibulitis, pudendal neuralagia, sexually transmitted infections (STIs), interstitial cystitis, vulvodynia and injury to the pelvic area during childbirth;[5,10] (2) Hormonal disturbance, decline estrogen and/or testosterone will lead to impairment and lack of sexual desire and may compromise tissue health; (3) Perineal & pelvic surgery as fascial or perineal muscles tear, episiotomy, cesarean section, hysterectomy, clitorectomy, and hemorroidectomy; (4) Pelvic floor weakness leading to lack of sexual feelings and/or prolapsed contributing to discomfort during intercourse; (5) Rhodes, as cited by Frank et al.[7] implicates postural lumbar backache as a cause of dyspareunia.[7] Musculoskeletal dysfunction is a known cause of dyspareunia, specifically muscle pain and over-activity of the levator-ani muscles. Overactive, non-relaxing muscles (vaginismus) are painful to touch.[4] Moreover, (6) Understanding of the organic etiology must be incorporated with appreciation of underlying psychological factors as anxiety, postpartum depression, and negative expectations that may perpetuate the pain cycle.[11] Psycho-social issues as a primary or secondary contributor as sexual or physical abuse, prior adverse sexual experience, fear of intercourse, social & cultural taboos and practices.[4] Psychological dyspareunia may occur secondary to a traumatic birth experience and may be associated with depression or anxiety.[11]

Abarbanel gives comprehensive tables listing origin/type of dyspareunia in the female. Superficial dyspareunia is the pain at the introitus.[9] Superficial provoked pain (SPP) on contact, especially in the vulva, considers the most common form of premenopausal dyspareunia and affecting 12% of women.[12] Characteristically, the discomfort or pain associated with superficial dyspareunia is located around the introitus and may involve the urethral or vulvar areas.[11] The conditions associated with superficial dyspareunia are vulvar vestibulitis, vulvodynia, vaginitis, vaginismus, urethritis.[6] Deep dyspareunia is the pain resulting from deep penetration and accompanied with pelvic pain which may continue after sexual intercourse. Deep dyspareunia tends to occur secondary to gynecological and/or urological disorders. pelvic inflammatory diseases (PIDs), infections, Pelvic adhesions, cystitis, and cervicitis are examples of such conditions that can happen secondary to childbirth.[9] The estimated rate of deep dyspareunia ranges from 8% to 16% in outpatient samples.[12] Common conditions associated with deep painful intercourse are endometriosis, pelvic congestion, pelvic adhesions & PIDs, retroverted uterus, adnexal pathology, chronic cervicitis, endometritis, and urethral disorders.[6] The feature of the pain experienced may help with the diagnosis of the problem; pain associated with superficial dyspareunia may be described as a sore, splitting, burning or tearing on entry, whereas the pain associated with deep dyspareunia is often described as "something being bumped into".[6] Deep thrusting may be presented as a shooting pain on deep penetration or as a dull ache following intercourse.[11]

Painful sex is a heterogeneous disorder requiring comprehensive psychosocial & gynecologic assessment to determine differentiated treatment strategies. A woman who experienced painful coitus has more physical pathology on examination. She will report more negative attitude toward sex, more psychological symptomatology, a higher level of disruption in sexual function, and lower level of marital satisfaction and adjustment.[13] appropriate intervention of painful sex should be focused on the treating of the underlying cause. Indeed, it may, sometimes, take a considerable amount of time to work out the true causes to provide appropriate treatment.[8,11] The problem should be approached by the couple rather than just the individual. Treatment can be medical (general measures), surgical, pharmacological, psychological or a combination, depending on the cause. Many lesions can be treated locally.[7]

Firstly, General measures included (a) Treatment should be directed at the underlying cause, where appropriate; (b) Psychological treatment is as effective as medical intervention, independent of the causes of the pain; (c) A multidisciplinary approach includes clinical psychology and psychosexual medicine. Pain management team may be required ; (d) Modification of sexual techniques & altering sexual position will be helpful in reduction pain related intercourse; (e) Increasing the amount & time of foreplay and delaying penetration until maximal arousal may be helpful in increasing vaginal lubrication and will lead to decrease pain associated with insertion; (f) A woman may be concerned that their vagina is too small to allow entry of a penis; (g) In response to sexual arousal, the vagina increases in length by about 35% - 40% and expands in width at its upper end by about 6cm.[7]

Secondly, Pharmacological measures as (1) Vaginal infection may need treatment; (2) Hormonal manipulation may benefit endometriosis; (3) improvements in sexual function and pain scores, for localized and chronic pain which follow childbirth and/or vaginal surgery, will be achieved by local hyaluronidase and anesthetic as well as local injections of corticosteroids; (4) administration of vaginal estrogen is an effective and safe treatment for genitourinary syndrome of menopause; in women with an arousal problem, Sildenafil may be helpful.[7]

Thirdly, Surgical measures; (1) Surgery is required for pelvic masses and sometimes to remove chronically infected tubes or to clear endometriosis or adhesions; (2) enlarge the tight introitus by Fenton's operation may be helpful; (3) pain following episiotomy can be managed effectively by removal of the sensitive scar tissues; (4) retroverted uterus can be corrected to an anteverted position by Ventrosuspension.[7]

Fourthly, psychological or locally measures: Vaginal self-dilation is a technique that uses vaginal dilators to desensitize the vaginal tissue, promote muscle relaxation, and relieve symptoms associated with dyspareunia. Successful use of these techniques in a combination with psychotherapy intervention has been described in the related literature.[4]

Significant of the Study

Painful coitus may be caused by a variety of conditions, mainly related to the reproductive system. However, even where surgical and/or medical interventions are contemplated, therapy will usually require some form of sex counseling. A sex-oriented history & usual medical format will be used in the assessment. The PLISSIT model of therapy will allow the practitioner to begin proper management, and to make a referral when his/her "comfort index" may be exceeded.[9] A Scandinavian study reported, of the women who had ever had severe & prolonged painful coitus, 31% recovered spontaneously, 20% recovered after medical/surgical treatment, while 28% had consulted for their symptoms.[7]

Many studies have reported that women would like more support and information from health professionals about sexuality.[14,15]

However, studies asking women about seeking advice about sexual health issues show that many women are reluctant to raise the topic of sex with health professionals.[15] In Egypt, unfortunately, there is limited knowledge of specific sexual functioning problems of upper Egyptian women because they are usually considering this topic as stigma and shameful topic. So, they can't be talking about it. Besides, the religious and cultural background of the women are thought to play a pivotal role in determining women's sexual functioning, which makes some risk factors for developing female sexual dysfunction (FSD) in a certain population different from those in another population. In conservative communities, such as that of Beni-Suef, speaking out about sexual problems is considered a taboo and people may get stigmatized for their sexual problems, which may hinder forming an overwhelming view over sexual issues, especially in females.[16] This could explain the scarcity of the available data over the state of dyspareunia and its determinants amongst women residing Upper Egypt.

Undoubtedly, anxiety commonly supervenes in dyspareunia.[17] quite often anxiety may present in the women experienced painful coitus and sometimes it is difficult to unravel the underlying causes. Moreover, there can be dissonance within the partnership.[11] Disruption of sexual function in woman may affect her psychologically, in-turn leads in anxiety, and to results to incompetent relationship.[2] By the time the woman seeks medical help, the problem may have already developed into an anxiety aggravated response to what may have been a minor problem.[9]

As nurses comprise the greatest portion of health care system and they are the ones in charge of the quality of care provided to the women all-over lifespan, they have a very crucial important role in women's counseling.[18] Although dyspareunia is a public health concern with many psychological and physical consequences that do undermine women's quality of life, women frequently avoid mentioning because they are embarrassed at appearing ignorant. The community and maternity nurse in-turn had a crucial role in sexual counseling for the decline of this phenomenon. Evaluation of dyspareunia should be initiated as early as possible. Diagnosis process frequently coincides with the moment when woman and nurse first meet.[19]

The woman and the maternity nurse are better served in an atmosphere of comfort for both. The nurse/patient relationship is the key to achieving this comfort; detailed descriptions of the causes of dyspareunia are published elsewhere.[20] Maternity nurse provide information and assists woman in making and executing a decision; the nurse, additionally, guides the survivor to regain self-confidence and adapt to physical and psychologic changes to optimize survivor woman's autonomy. Maternity nurse-led psychosexual counseling may improve sexual functions in a woman with painful intercourse. Moreover, education and counseling by the community nurse for women after medical intervention of dyspareunia may also release sexual disruption resulting to marital relationship improvement. An important nursing role is to evaluate woman's fears.[21]

Although the consultation was implemented by nursing nurses and teaching nurses, subjectivity and inter-subjectivity, it was present by the contextualization of the "why-why" about the lack of compression of the meaning between sexuality and sex, relevant to establish health actions. Therefore, the intentionality about the educational action sexuality of the women, in the context of the nursing consultation, is typical for those people who understand and share looking for the coherent interpretation of the nurses on sexuality. Evaluation of sexual functions has to be initiated as early as possible. Diagnosis and assessment process frequently coincides in the first meet of nurse and woman.[19]

Nurse as a counselor should provide counseling, guidance, and have the responsibilities to teach such techniques among women with dyspareunia as it offers a great challenge in today's world. Maternity and gynecologic, and community health nurses should be fitted with the appropriate sciences, knowledge, and skills that were necessary to help people adjust to the daily problems & related difficulties.[22]

Aim of the study

However, little is known about dyspareunia in women in Northern Upper Egypt, in this regards the overall aims of the maternal health researcher in this study are: (1) to detect the prevalence, patterns and associated factors of dyspareunia among married women who were sexually-active; (2) to investigate the socio-demographic**,** obstetrical, gynecological and health factors associated with reporting painful sex lasting 6 months or more in the last year, among sexually active women; (3) to assess sexual behavior, sexual relationship and attitudinal factors associated with reporting painful sex lasting 6 months or more in the last year, among sexually active women; (4) to compare relation between exposure to dyspareunia & socio-demographic characteristics, obstetrical, and gynecological characteristics, and sexual behavior characteristics of the studied among sexually active women before and after counseling using PLISSIT on the management of women with painful coitus. Additionally, the aim of the current study was to assess anxiety level associated with dyspareunia among sexually active women before and after counseling using PLISSIT model.

Research hypothesis

The hypotheses formulated by the researchers for the current study were:

i. After implementing the counseling process, using PLISSIT model, women's dyspareunia will be alleviated.
ii. Anxiety level will be alleviated after implementing the counseling using PLISSIT model. The post-counseling anxiety scores will be significantly lesser, day by day than pre-counseling anxiety scores at a significant level 0.05.
iii. There will be a statistically significant association between painful sex and anxiety level at 0.05 level of significance.

Subjects and methods

Research design

A quasi experimental study.

Setting

Recruitment occurred at three public hospitals in Beni-Suef, Egypt. Namely, Beni-Suef University Hospital, Health insurance Hospital and General Hospital, which affiliates to Ministry of Health (MOH), where women attending to gynecologic outpatient clinics.

Participants

All women visiting gynecologic clinics in the period between April 15, 2017, and December 14, 2017, in Beni-Suef city, Upper Egypt, were surveyed. Total suffering from dyspareunia was 540 while 219 accepted to participate. The study was conducted in the period between April 2017 and March 2018. Throughout the study, 19 were excluded: 9 women withdrawn during the program, 4 didn't attain post-counseling evaluation, and 6 women had missing data in their questionnaire. So, the final study sample was enrolled 200 women with painful sex. Women were eligible for recruitment to the study if they were: married, sexually active, aged 15 years or older, women with provoked vestibulodynia (PVD) or superficial painful sex was included. Women with any previous psychiatric/psychological disorders or treatment were excluded.

Tools of data collection

Data of the current study were collected by using the following tools

Tool I: Sexual function according to Marinoff scale

All women visiting gynecologic clinics throughout study period, in Beni-Suef city, were surveyed and evaluated for painful sex by Marinoff scale (adapted and translated into Arabic language). It scored as the following:

0 = no pain with intercourse
1 = pain with intercourse that doesn't prevent the completion
2 = pain with intercourse requiring interruption or discontinuance
3 = pain with intercourse preventing any intercourse

Tool II: A structured interviewing questionnaire (Counseling sheet following PLISSIT model) designed by the researchers and based on reviewing the relevant literature which contained the following items:

i. Basic data of the studied women including demographic information as age at marriage, duration of marriage, employment status, residence, educational level, and monthly income.

ii. Obstetrical, gynecological and health factors data of the studied women with dyspareunia. The questionnaire contained items on parity, mode of last delivery, exposure to any reproductive tract infection or surgery, menopausal status, self-reported health status.

iii. Sexual behavior, sexual relationship and attitudinal factors of studied women. The questionnaire contained items on sex acts in last 4 weeks, frequency of coitus (per week), experienced non-volitional sex, patterns (denominators) of dyspareunia.

Tool III: Numerical rating scale (NRS)[23]

Numerical Rating Scale (NRS) consists of a straight horizontal bar or line with 2 endpoints (the 11-point numeric scale ranges from 0 to 10). Zero usually represents one pain extreme 'no pain at all' whereas the upper limit '10' represents the other pain extreme 'the worst pain, imaginable, ever possible'. Every woman is asked to circle her pain level on the line between the two endpoints. The distance between 'no pain at all' and the mark then defines the subject's pain Figure 1.

Figure 1 0-1 numeric pain rating scale.

Tool (IV): Calibrated scale

The calibrated scale used for measurement of women's weight and height and Body Mass Index (BMI) was calculated

BMI = weight (kg) ÷ height² (m²)[24,25]

i. Normal weight (BMI 18.5 - 25.9 kg/m²).
ii. Overweight (BMI 25 – 29.9 kg/m²).
iii. Obese (BMI ≥ 30 kg/m²).

Tool (V): Beck anxiety inventory (BAI)[26]

Standardized Beck Anxiety Inventory (BAI) is a well-accepted self-report measure level of anxiety in adolescent & adult for use in both research & clinical settings. The BAI is created by Aaron T. Beck, 1988. This scale includes a 21-item multiple-choice self-report inventory that measures the severity of an anxiety. Each of the items on the BAI is a simple description of a symptom of anxiety in one of its 4 expressed aspects:

1.	Subjective	e.g.	Unable to relax
2.	Neurophysiologic	e.g.	Tingling or numbness
3.	Autonomic	e.g.	Feeling hot
4.	Panic-related	e.g.	Fear of losing control

Scoring keys

Participants asked to report the extent to which they have been bothered by each of the 21 questions in the week preceding their completion of the BAI. Each question has 4 possible answer choices:

i. Not at All = 0
ii. Mildly (It did not bother me much = 1
iii. Moderately (It was very unpleasant, but I could stand it) = 2
iv. Severely (I could barely stand it) = 3

The total score will be calculated by finding the sum of the 21 items that ranged between 0 - 63 points.

a The score of 0 – 21 = low anxiety
b The score of 22 – 35 = moderate anxiety
c The score of ≥ 36 = potentially concerning levels of anxiety

Methods of data collection

This study was covered in the following phases

Validity and reliability of tool

The questionnaire was developed in consultation with two gynecologists, one health educators, two maternity & gynecological nursing professors, one psychiatric nursing professor, one community health nursing professor, and an expert in questionnaire validation. The validity of the used tool was evaluated by a health-care specialists, while its reliability assessed by piloting & measuring the related Cronbach Alpha value (Alpha = 0.860).

Administrative considerations

Necessary approval from previous mentioned hospitals' directors at Beni-Suef city was taken after issuing an official letter from the dean of the Faculty of Nursing, Beni-Suef University.

Ethical considerations

Data were collected after explaining the purpose of the study to all women who took part in the study. Confidentiality was mentioned during all stages of the study, as well as obtained personal data and respects for participants' privacy were totally ensured.

Pilot study

The pilot study included about 10% (20 women) of the study sample. The pilot study assessed the clarity of language, the applicability of items, and time consumed for filling in the tools' items.

Field work

All women visiting gynecologic clinics, regardless of their cause of attendance and throughout a period of the study, were surveyed and evaluated for painful sex by Marinoff scale to detect and select ones with dyspareunia, each woman took, 5-10 minutes. Total suffering

from dyspareunia was 540 while 219 accepted to participate. Women enrolled in the study were asked to fill in a questionnaire including questions about their socio-demographic characteristics, obstetrical, gynecological and health-related factors & sexual relationship, sexual behaviors, & attitudinal factors correlated with reporting dyspareunia. Each woman took, approximately, 10-20 minutes to complete the questionnaire, and 30-45 minutes for counseling. The researcher helped illiterate ones to complete the questionnaire.

Phases of field work

Three phases were adopted to fulfill the purpose of the study as following mentioned; (1): assessment phase, (2): implementing phase, (3): evaluation phase. All phases took 12 months. The actual field study started between April 2017 and March 2018 for data collected from above mentioned-settings. The invitation was followed up by a reminder telephone, previous appointment by the researcher 1-3 months after the initial invitation. Follow-up questionnaires were completed at 3 months post-counseling program.

Assessment phase

All questionnaires included a series of questions on common sexual issues, based on the questionnaire developed by Barrett and colleagues.[2] In each questionnaire (pre-counseling), women who were sexually active in their last year, were asked if they had experienced any of the following list with their sex life: pain with arousal, sensitive external genitalia, pain at introitus with entry of penis, mid-vaginal pain, pain with deep penetration, pain with orgasm, pain after intercourse. The response options were "yes" or "no". All questionnaires also included detailed questions about pattern of pain during sex: persistent or recurrent difficulties in vaginal penetration; pelvic pain during penetration attempts or intercourse; marked vulvovaginal, marked fear or anxiety of pelvic or vulvovaginal pain in anticipation of or during or as a result of penetration; marked tensing or tightening of the pelvic floor muscles during attempted penetration. The intensity of dyspareunia's pain was also described as moderate-to-severe shooting, stabbing, and sharp pain. Women with dyspareunia were asked for; how long they experienced pain, the frequency of symptoms, and their felt about it. If symptoms are experienced for ≥ 6 months, it will be described as 'Morbid dyspareunia. Among sexually-active women, data on mode of birth and perineal trauma were collected in the questionnaire. The associations between reporting painful sex and socio-demographic characteristics, obstetrical, and gynecological, and sexual behavior characteristics of the studied women were tested. The questions in our questionnaire were specifically designed for the Upper Egyptian setting and were pre-tested with participants in a pilot study.

Implementation phase

Women were counseled using PLISSIT model of therapy which devised in 1976 by Jack S Annon [27] an American psychologist (1929-2005), which has been widely used over the past 40 years by health-care practitioners working to address the sexual wellbeing.

The PLISSIT model portrays as an inverted pyramid and sets out 4 steps of involvement that can help the health-care practitioner in assessment & evaluation of a person's sexual wellbeing needs. The PLISSIT Model is based on the concept that the majority of individuals will be able to resolve their sexual-based problems & concerns by implementing the 1st three categories of the four-category PLISSIT model. PLISSIT is an acronym for levels of intervention which include that health-care practitioners can apply: permission (P), limited information (LI), specific suggestions (SS), and intensive therapy (IT).[9] A visual hierarchy of the various levels of the PLISSIT Model, showing the separation between brief and intensive therapy. Figure 2

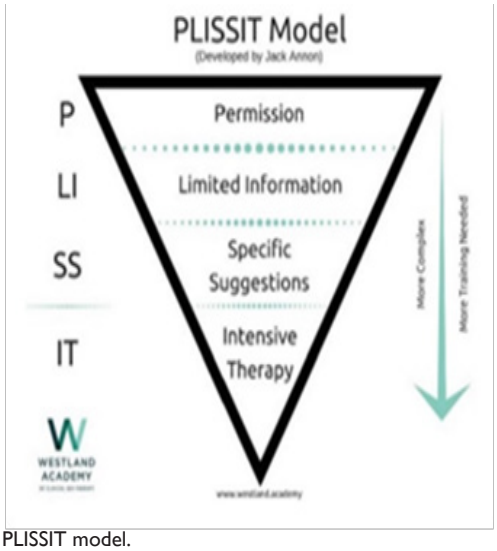

Figure 2 PLISSIT model.

The implementation of the counseling sessions started. The researchers conducted individualized counseling sessions. Each session duration lasted 30-45 minutes. The counseling methods of in the session supported by discussion. The counseling material included, brochures, pictures, questions, and answers for women. The sessions were provided individually in Arabic language according to the 4 levels of PLISSIT model of counseling.

The 1st level is "P" which stands for Permission since many sexual problems are caused by anxiety, guilt feelings, or inhibitions. It follows that a health-care practitioner, who, using his professional authority; simply "gives permission" to do what the client is already doing, can alleviate much unnecessary suffering. (Example: Guilt feelings & anxiety because of masturbation). Additionally, permission involves that, the health-care practitioner giving the client permission to feel free and comfortable about a topic; permission to modify/change their lifestyle; to get medical support and intervention. This step was created as many clients only need the permission to speak & ventilate their concerns about sex-issues in order to understand and move past them, often without needing the other levels of the model.[9,28] The health-care practitioners, in acting as a receptive, nonjudgmental listening partner and allow the client to discuss matters that would otherwise be too embarrassing for the individual to discuss.[29]

The 2nd level is "LI" which stands for limited information, wherein women are supplied with limited & specific information on the topics of discussion. As there is a significant available amount of information, the health-care practitioners should know and learn what sex-issues the client wish to discuss, so that information, organizations, and support groups for those specific subjects can be provided.[29] Limited information could be a discussion of human sexual response, specific anatomical information, or an explanation of sexual arousal cycle, sexual positions, and relationship issues. This step is, often, enough to give client the correct anatomical & physiological information to alleviate dyspareunic pain and restore her sexual functioning. It isn't at all uncommon that women have an erroneous impression about her own body function and thus fall victim to unrealistic expectations. In this case, little more than factual information and education is necessary.[9,28]

The 3rd level is "SS" which stands for specific suggestions, where the health-care practitioner gives the client suggestions related to the specific situations and assignments to do in order to help the client fix the mental or health problem. This requires practical hints or exercises tailored to the individual case and can include suggestions

on how to deal with sex-related diseases or information on how to better achieve sexual satisfaction by the client changing their sexual behavior, also address sleep, hygiene, nutrition, & wellness ideas. The suggestions should be as simple as an involvement in a specific regimen of activity or recommending exercise or medications.[28,30]

Specific suggestions include non-goal oriented sex exercises: Pleasuring is the first exercise. The couple is advised to caress and massage each other over their entire bodies. They avoid the genitals and must not have intercourse. This allows a return of physical contact, without pain and discomfort. Progress is at their own pace, and performance is not measured. Once pleasuring is comfortable, genital stimulation can be added. To retain control, the woman dilates her vagina with her fingers until this is comfortable. Her partner can participate only when she feels she is ready. If lubrication is desired, medical gels or vegetable oils are used; Vaseline can dry and form a painful crust. As confidence develops, the use of fingers can be integrated into the genital exercise, for pleasure as well as for therapy. When intercourse is permitted, the female superior position is used, for female control and confidence. The partner helps by initially lying as still as possible and allowing her to control movements. With further progress, they are given permission to increase and vary their activity. By now they have learned to communicate at a much higher level; this negotiation is both pleasant and productive. Dating is encouraged in an attempt to bring some excitement back into the relationship. Couples in this situation have often become bored and discouraged; they are advised to start courting again. If all of these are of no avail, intensive therapy may be indicated.[9]

The 4th and the final level is "IT" which stands for intensive therapy, requires a long-term intervention addressing complex underlying causes. Intensive therapy might include marital counseling or various types of psychotherapy. In this level, the health-care practitioner refers the woman to other psychologists, mental, psychiatric and medical, surgical health professionals that can help her to deal with the deeper, underlying issues and concerns being expressed. This level, with the onset of the internet age, may also refer to a sexologist suggesting professional online resources for the woman to browse about their specific issue in a more private setting.[9, 31]

Evaluation phase

During this phase, dyspareunia and associated anxiety were assessed again, post-counseling, by using the same tools to assess the effect of the counseling process. Every woman was interviewed 1-month post-intervention. Another evaluation subsequent follow up phases were scheduled; 2 months and 3 months later.

Statistical design

All registered data were collected, organized, and entered into SPSS-16 software and analyzed through: (1) count, percentage, arithmetic mean, standard deviation (Mean ± SD); (2) Chi-square (χ^2) test; (3) Pearson correlation coefficient (r); (4) paired t-test (τ); (5) Marginal Homogeneity test. Graphical presentation presented by column and Bar chart diagram. The level of significance was considered at $p \leq 0.05$; it was considered as: insignificant if $p > 0.05$and significant if $p \leq 0.05$; mild significance (*), if $p \leq 0.05$, moderate significance (**), if $p \leq 0.01$; highly significance (***), if $p \leq 0.001$.

Results

In all, 200 women complaining of painful intercourse included in the study. Participants ranged between 15 and 50 years with a mean age of 29.0 ± 7.5 years. Their age at marriage was ranged between 14 and 34 years with a mean age of 20.7 ± 4.6 with mean duration 8.3 ± 5.9. Most women (59.0%) were employed and had a secondary or technical education (35.5%). Almost two-thirds of our subjects were living in rural areas, 54.0% were overweight and 19.5% were obese, 49.5% were had inadequate family income. The Sociodemographic characteristics of the studied participants are illustrated in Table 1.

Table 1 Socio-demographic characteristics of the sexually active women reporting painful sex

Socio-demographic characteristics	Studied women (n = 200)	
	No.	%
Age (years)		
Less than 20	13	6.5
20 -	111	55.5
30 -	14	7.0
40 -	62	31.0
Min – Max	15.0 - 50.0	
Mean ± SD	29.0 ± 7.5	
Educational level		
Illiterate	62	31.0
Read and write/basic education	31	15.5
Secondary/technical education	71	35.5
University education	36	18.0
Occupation		
House wife	82	41.0
Work	118	59.0
Age at marriage (years)		
Less than 20	79	39.5
20 -	89	44.5
25 -	22	11.0
30 -	10	5.0
Min – Max	14.0 - 34.0	
Mean ± SD	20.7 ± 4.6	
Duration of marriage (years)		
Less than 5	71	35.5
5 -	48	24.0
10 -	52	26.0
15 -	29	14.5
Min – Max	1.0 - 32.0	
Mean ± SD	8.3 ± 5.9	
Residence		
Urban	70	35.0
Rural	130	65.0
Crowding index (person/room)		
Less than 1	30	15.0
1 -	115	57.5
2 -	55	27.5
Min – Max	0.5 - 4.0	
Mean ± SD	1.5 ± 0.7	
Body mass index(BMI)		
Normal weight	53	26.5
Overweight	108	54.0
Obese	39	19.5
Family income		
Not enough	99	49.5
Enough	64	32.0
More than enough and can save	37	18.5

Table 2 shows obstetrical, gynecological and health factors associated with reporting painful sex among sexually active women. Of all the participants, 173 (86.5%) were multipara, 14.5% had previous marriage. Of the 173 women, 5.8 percent (10/173) had a spontaneous vaginal delivery, 52 percent (90/173) normal vaginal birth with episiotomy, 19.1 percent (33/173) gave birth assisted by ventouse, 23.1 percent (40/173) gave birth by cesarean section, and

27.7 percent (48/173) were breastfed their babies six months or more. Of 160 (76.9%) who were delivered vaginally, 65.3% (113/160) had perineal lacerations. Moreover, of all the participants, 127 (63.5%) were circumcised, 50 (25.0%) exposed to reproductive tract infection in their past year, 47 (23.5%) had a history gynecologic or pelvic surgery. A few participants 22 (11.0%) were menopauses. However, 46 (23.0%) had chronic diseases as hypertension, diabetes mellitus, vascular or others.

Table 2 Obstetrical, Gynecological and Health factors associated with reporting dyspareunia among sexually-active married women

Obstetrical, Gynecological and health factors associated with reporting painful sex	Studied women (n = 200)	
	No.	%
A- Obstetrical & Gynecological Factors		
Previous marriages		
No	171	85.5
Yes	29	14.5
Number of previous marriages [n = 29]		
One	28	96.6
Two or more	1	3.4
Parity		
Nulliparous	27	13.5
Multiparous	173	86.5
Mode of last delivery [173]		
Spontaneous vaginal delivery	10	5.8
Normal vaginal delivery (with episiotomy)	90	52
Caesarian Section	40	23.1
Instrumental delivery (vacuum extraction)	33	19.1
State of perineum [173]		
Perineal lacerations	113	65.3
Intact perineum	60	34.7
Breastfeeding ≥ 6 months [173]		
Yes	48	27.7
No	125	72.3
B- Gynecological Factors		
Circumcision		
No	73	36.5
Yes	127	63.5
Exposure to reproductive tract infection in the past year		
Yes	50	25.0
No	150	75.0
Number of genital infection [n = 50]		
Once	25	50.0
Twice	10	20.0
Three times or more	15	30.0
Types of reproductive tract infection[n = 50]		
Bacterial vaginosis, Trichomonas vaginalis, and Candida albicans	30	60.0
Chlamydia infections	13	26.0
Nonspecific infection	7	14.0
Exposure to gynecological operations (pelvic surgeries)		
Yes	47	23.5
No	153	76.5
Type of gynecological operations [n = 47]		
D & C	20	42.6
Resection of cervical or uterine fibroid (abdominal surgery)	10	21.3
pelvic prolapse (pelvic surgery)	8	17.0
Other operation	9	19.1
Menopausal status		
Post-menopausal	22	11.0
Pre-menopausal	178	89.0
C- Health Factors		
Self-reported health status		
Good	169	84.5
Fair	4	2.0
Bad / Very bad	27	13.5
Chronic conditions		
Yes	46	23.0
No	154	77.0
Type of chronic disease [n = 46]		
Hypertension	18	39.1
Diabetes Mellitus	20	43.5
Vascular or Others	8	17.4

As presented in Table 3, the majority women (79.5%) in the study subject were had < 4 intercourse per week, 78.5% would like to have known more at sex, 62.0% of women's husband had a naturally higher sex drive than them, 51.0% of participants' partner didn't share the same level of interest, 66.5% of the participants reported that they didn't feel emotionally close to partner during sex. Additionally, 39 (19.5%) experienced non-volitional sex; 33.4 percent (13/39) exposed to non-volitional sex more than 10 times along their sexual life.

Table 3 Sexual behavior, relationship and attitudinal factors associated with reporting dyspareunia among sexually active women

Sexual behavior, sexual relationship and attitudinal factors associated	Studied women (n=200)	
	No.	%
Frequency of coitus (per week)		
≥ 4	41	20.5
< 4	159	79.5
Would like to have known more at sex		
No	43	21.5
Yes	157	78.5
Ever experienced non-volitional sex		
Yes	39	19.5
No	161	80.5
How many times [n = 39]		
1- 3 times	11	28.2
4 - 6 times	5	12.8
6 -10 times	10	25.6
More than 10 times	13	33.4
Husband has a naturally higher sex drive than the wife		
No	76	38.0
Yes	124	62.0
Partner does not share the same level of interest		
Yes	102	51.0
No	98	49.0
Does not feel emotionally close to partner during sex		
Yes	133	66.5
No	67	33.5

Figure 3 presents the patterns (denominators) of dyspareunia among sexually active women. It appears that the most common denominator is persistent or recurrent difficulties in vaginal penetration during intercourse (77.0%). Detailed denominators generally produce estimates of around 11.0% for marked vulvovaginal or pelvic pain during intercourse or penetration attempts and 6.5%, 5.5%, 4.5% for marked anxiety or fear about vulvovaginal or pelvic pain in anticipation of or during or as a result of penetration, musculoskeletal pain, low back pain (LBP), sacroiliac joint (SIJ) & pubis dysfunctions and marked tensing/tightening of the pelvic floor muscles during attempted penetration, respectively.

Figure 4 portrays the detailed symptomatology of dyspareunia among sexually active women. The most common symptom (23.5%) was pain at introitus with an entry of penis followed by mid-vaginal pain (17.5%), sensitive external genitalia (16.0%), pain with arousal (15.0%), pain with deep penetration & pain with orgasm presented 11.0% and pain after intercourse was 6.0%.

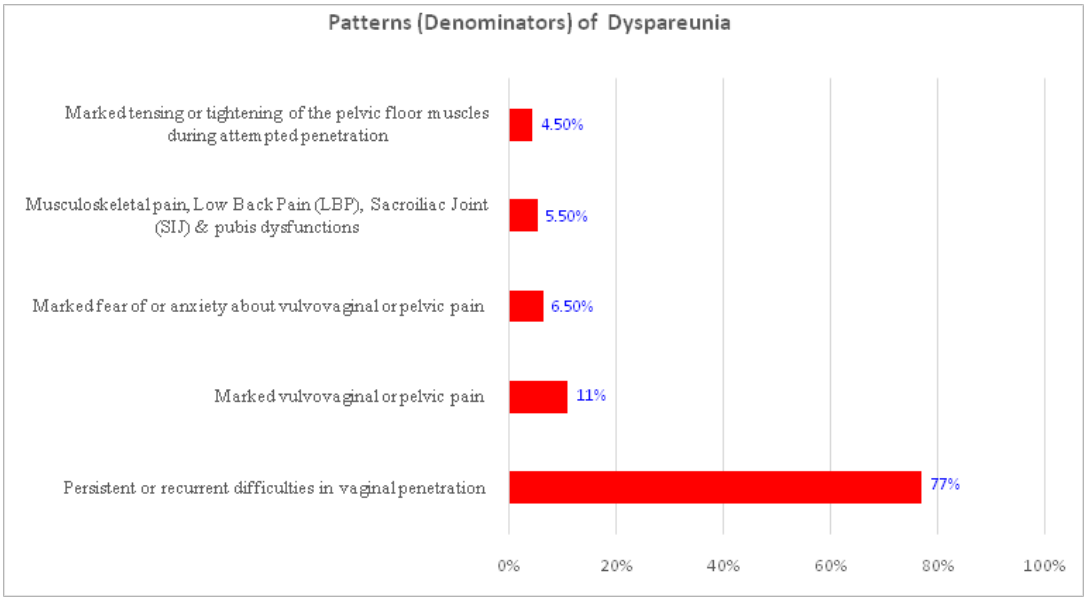

Figure 3 Patterns of dyspareunia among sexually active women. # more than one answer.

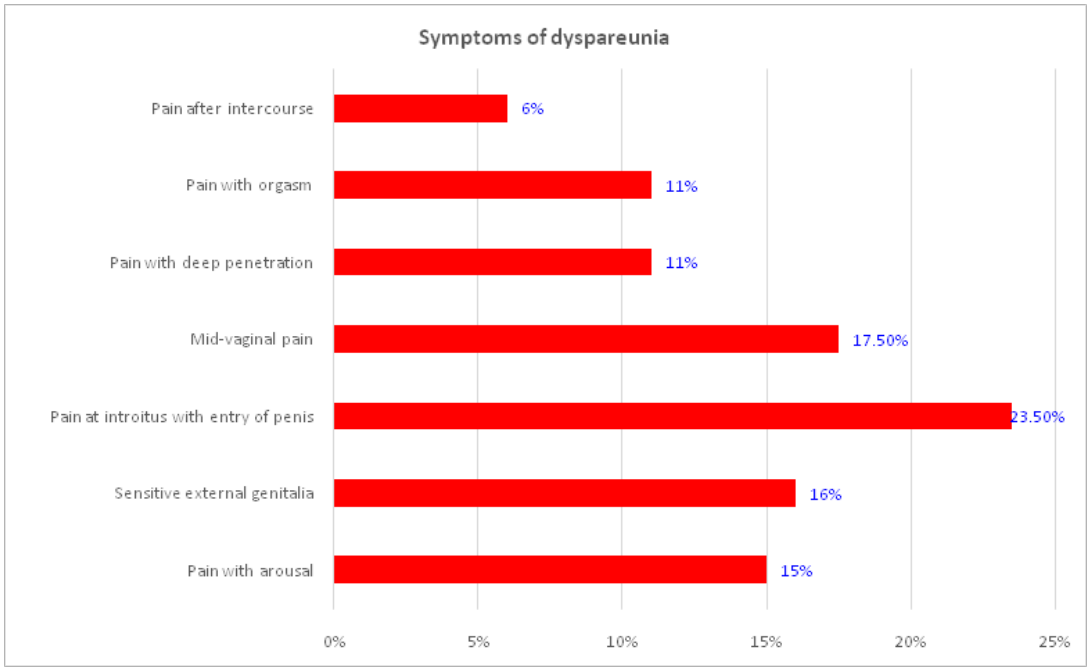

Figure 4 Symptoms of dyspareunia among sexually active women.

The study revealed that in Tables 4, there is a statistically significant correlation was found between dyspareunia and sociodemographic characteristics as occupation/educational level/dwelling/crowding index (persons/room), and body mass index (BMI).

Table 5 reveals mild statistically significant correlation between dyspareunia and women's previous marriages, circumcision, exposure to reproductive tract infection, self-reported health/menopausal status & previous gynecological surgery. Moderate statistically significant correlation between dyspareunia and women's state of the perineum was found. Moreover, a highly statistically significant correlation was found between dyspareunia and women's mode of last delivery, breastfeeding, and chronic conditions (hypertension, D.M., vascular, others).

Table 4 The correlation between exposure to dyspareunia and socio-demographic characteristics of the studied among sexually-active married women

Study variables	r	p
Age (years)	0.113	0.060
Educational level	- 0.121	0.023*
Occupation	- 0.214	0.001***
Residence	0.267	0.001***
Crowding index (person/room)	0.135	0.032*
Body mass index (BMI)	- 0.268	0.001***
Family income	0.101	0.070

Table 5 The correlation between exposure to dyspareunia and obstetrical, gynecological and health factors associated among sexually active women

Study variables	r	p
Previous marriages	0.126	0.017*
Circumcision	0.187	0.020*
Parity	0.217	0.073
Mode of last delivery	0.273	0.001***
State of perineum	- 0.125	0.01**
Breastfeeding ≥ 6 months	- 0.229	0.001***
Exposure to any reproductive tract infection (RTI) in the past year	0.131	0.019*
Menopausal status	0.125	0.024*
Self-reported health status	0.168	0.050*
Chronic conditions (hypertension, D.M., vascular, others)	0.236	0.001***
Previous gynecological surgery	0.113	0.011*

r: Pearson correlation coefficient, (*) mild significance, p ≤ 0.5; (**) moderate significance, p ≤ 0.01; (***) highly significance, p ≤ 0.001

Table 6 reveals a statistically significant correlation between dyspareunia and women's Sexual behavior characteristics among sexually active women.

Table 6 The correlation between exposure to dyspareunia and Sexual behavior characteristics among sexually active women

Study variables	R	p
Frequency of coitus (per week)	0.188	0.065
Husband has a naturally higher sex drive than the wife	0.121	0.023*
Partner does not share the same level of interest	- 0.179	0.042*
Does not feel emotionally close to partner during sex	0.256	0.001***
Exposure to non-volitional sex	0.136	0.032*

r: Pearson correlation coefficient, (*) mild significance, p ≤ 0.5; (***) highly significance, p ≤ 0.001.

Figure 5 presents the prevalence of exposure to dyspareunia pre, and post counseling among sexually-active women. It revealed that, before counseling, all women in the study sufferers from dyspareunia; more than two thirds (69.0%) of studied sample suffered from morbid dyspareunia (painful sex lasting 6 months or more) compared to 31.0% of them suffered from non-morbid dyspareunia (painful sex lasting less than 6 months). While after implementation of counseling process, it was observed that, the prevalence of dyspareunia decreased as 34.5% of studied women reported free-pain intercourse within one month, the progression reach to 53.0% after 2 months. Moreover, 63.5% of studied women reported free-pain intercourse 3 months after implementation of counseling.

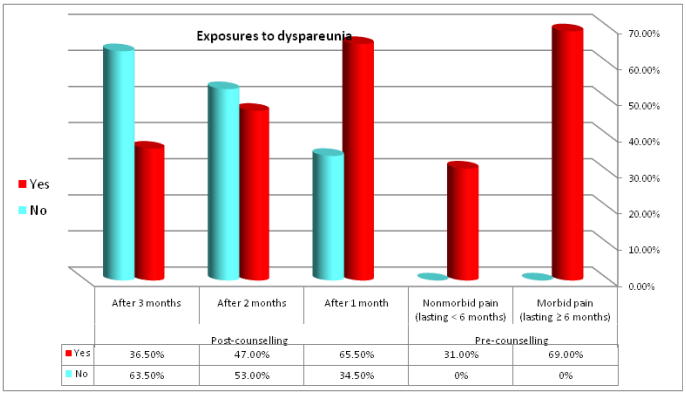

Figure 5 Prevalence of exposure to dyspareunia pre/post counseling among sexually-active married women.

Table 7 illustrated that in pre-counseling the majority of studied women (79.0%) had marked to severe anxiety, 16.0% had a moderate anxiety whilst only 5.0% had a low level of anxiety. On the contrary, after counseling in the 2nd follow-up visit (2 months after counseling), around half of them (49.0%) had a low level of anxiety while no one (0.0%) had marked to severe anxiety scores; whereas in the 3rd follow-up visit (3 months after counseling), the majority (75.0%) had a low level of anxiety, 25.0% of them had moderate level of anxiety while no one (0.0%) had marked to severe anxiety scores. Marginal Homogeneity test revealed highly statistically significant difference between pre/post counseling of assessments at p-values < 0.0001.

Table 7 Distribution self-report anxiety level among sexually active women exposure to dyspareunia

Beck anxiety inventory (BAI) self-report scale	Pre-counseling at starting of study		Post-counseling after 1 month		After 2 months		After 3 months		Significance
	No.	%	No.	%	No.	%	No.	%	
low anxiety	10	5.0	52	26.0	98	49.0	150	75.0	
Moderate anxiety	32	16.0	50	25.0	102	51.0	50	25.0	< 0.0001***
Marked to severe anxiety	158	79.0	98	49.0	0	0.0	0	0.0	

Marginal Homogeneity test, (***) highly significance, p ≤ 0.001.

Table 8 portrays the correlation between dyspareunia using Numerical Rating Scale (NRS) and anxiety level using self-retailing anxiety scores among sexually active women. Pearson correlation coefficient test (r) revealed that, the greater the pain, the greater the anxiety and the less the pain, the less anxiety, despite, no statistically significant difference was found between the 2 mentioned variables. In pre-counseling r = 0.285. On the contrary, after counseling in the 1st follow-up visit (1 months after counseling) r = 0.258, in the 2nd follow-up visit (2 months after counseling) r = -0.171, whereas in the 3rd follow-up visit (3 months after counseling) r = -0.103.

Table 8 Correlation between dyspareunia (Numerical Rating Scale) and self-report anxiety scores among sexually active women

Numerical Rating Scale	Pre-counseling at starting of study		Post-counseling after 1 month		After 2 months		After 3 months	
	r	P	r	P	r	P	r	P
Beck Anxiety Inventory (BAI) self-report scale	0.285	0.053	0.258	0.081	- 0.171	0.238	- 0.103	0.118

r: Person correlation coefficient, *significant at p ≤ 0.05

In consideration to the relation between exposure to dyspareunia and socio-demographic characteristics of the studied among sexually active women Pre/post implementation counseling using PLISSIT model. Table 9 shows declining in pain intensity with all mentioned item of women's Sociodemographic characteristics after implementation the counseling process using PLISSIT model. Statically analysis revealed highly statistically significant difference between pre/post counseling of assessments at p-values < 0.0001 regarding age (P = 0.013), educational level (P < 0.0001), occupational status (P <0.001), coldness index (P = 0.042) and BMI (P = 0.019).

Table 9 Relation between exposure to dyspareunia and socio-demographic characteristics of the studied among sexually active women Pre/post implementation counseling using PLISSIT model

Socio-demographic characteristics	Pre-counseling at starting of study				Post-counseling after 1 month				After 2 months				After 3 months				Significance
	morbid pain (n = 138)		Non-morbid pain (n = 62)		Yes (n = 131)		No (n = 69)		Yes (n = 94)		No (n = 106)		Yes (n = 73)		No (n = 127)		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Age (years)																	
Min – Max	15.0 - 49.0		15.0 - 50.0		15.0 - 50.0		15.0 - 49.0		15.0 - 50.0		15.0 - 49.0		15.0 - 49.0		15.0 - 50.0		**t = 2.520 P = 0.013***
Mean ± SD	28.1 ± 6.8		31.2 ± 8.5		28.8 ± 7.2		29.5 ± 8.2		29.3 ± 8.0		28.8 ± 7.1		29.5 ± 7.2		28.7 ± 7.7		
Educational level																	
Illiterate (62)	42	67.7	20	32.3	44	71.0	18	29.0	48	77.4	14	22.6	28	45.2	34	54.8	
Read and write/ basic education (31)	26	83.9	5	16.1	18	58.1	13	41.9	10	32.3	21	67.7	9	29.0	22	71.0	
Secondary/ technical education (71)	48	67.6	23	32.4	42	59.2	29	40.8	28	39.4	43	60.6	28	39.4	43	60.6	**X^2 = 36.239 P <0.0001*** **
University education (36)	22	61.1	14	38.9	27	75.0	9	25.0	8	22.2	28	77.8	8	22.2	28	77.8	
Occupation																	
Work (118)	77	65.3	41	34.7	82	69.5	36	30.5	56	47.5	62	52.5	43	36.4	75	63.6	**X^2 = 0.983 P = 0.001*** **
House wife (82)	61	74.4	21	25.6	49	59.8	33	40.2	38	46.3	44	53.7	30	36.6	52	63.4	
Residence																	
Urban (70)	49	70.0	21	30.0	50	71.4	20	28.6	35	50.0	35	50.0	30	42.9	40	57.1	X^2 = 1.048 P = 0.306
Rural (130)	89	68.5	41	31.5	81	62.3	49	37.7	59	45.4	71	54.6	43	33.1	87	66.9	
Crowding index (person/ room)																	
Min – Max	0.5 - 4.0		0.5 - 3.0		0.5 - 4.0		0.5 - 3.0		0.5 - 4.0		0.5 - 4.0		0.5 - 4.0		0.5 - 4.0		**t = 2.051 P = 0.042***
Mean ± SD	1.5 ± 0.8		1.3 ± 0.5		1.5 ± 0.8		1.4 ± 0.6		1.5 ± 0.7		1.4 ± 0.7		1.4 ± 0.7		1.5 ± 0.7		
Body mass index (BMI)																	
Normal weight (53)	36	67.9	17	32.1	26	49.1	27	50.9	22	41.5	31	58.5	17	32.1	36	67.9	
Overweight (108)	70	64.8	38	35.2	76	70.4	32	29.6	52	48.1	56	51.9	37	34.3	71	65.7	**X^2 = 7.890 P = 0.019***
Obese (39)	32	82.1	7	17.9	29	74.4	10	25.6	20	51.3	19	48.7	19	48.7	20	51.3	
Family income																	
Not enough (99)	68	68.7	31	31.3	67	67.7	32	32.3	53	53.5	46	46.5	38	38.4	61	61.6	
Enough (64)	45	70.3	19	29.7	43	67.2	21	32.8	26	40.6	38	59.4	18	28.1	46	71.9	
More than enough/can save (37)	25	67.6	12	32.4	21	56.8	16	43.2	15	40.5	22	59.5	17	45.9	20	54.1	X^2 = 3.510 P = 0.173

X^2: Chi-Square test t: paired t-test, (*) mild significance, p ≤ 0.5; (***) highly significance, p ≤ 0.001

Citation: Hassan HE, Saber NM, Sheha EAAEM. Comprehension of dyspareunia and related anxiety among northern upper Egyptian women: impact of nursing consultation context using PLISSIT model. *Nurse Care Open Acces J.* 2019;6(1):1-19. DOI: 10.15406/ncoaj.2019.06.00177

Association of pre/post implementation counseling using PLISSIT model with painful sex with regard obstetrical, and gynecological characteristics among sexually active women declares in Table 10**.** Dyspareunic pain declined in all participant throughout 3-months follow up regardless they were circumcised or not, menopausal status, their exposure to any reproductive tract infection in the past year. A statistically significant difference between before/after counseling of assessments at p-values < 0.05 was found.

Finally, the relationship between pre/post implementation counseling using PLISSIT model and exposure to dyspareunia, with regard sexual behavior characteristics among sexually-active married women, shows in Table 11. Progressive declining in dyspareunia throughout 3-months follow up regardless frequency of coitus per week, husband's sex drive, feels emotionally close to partner during sex and denominators of dyspareunia. A statistically significant difference between pre/post counseling of assessments at p-values < 0.05 was found.

Table 10 Relation between exposure to dyspareunia and Obstetrical, and Gynecological characteristics among sexually active women Pre/post implementation counseling using PLISSIT model

Obstetrical & Gynecological Factors	Pre-counseling at starting of study				Post-counseling after 1 month				After 2 months				After 3 months				Significance
	morbid pain (n = 138)		Non-morbid pain (n = 62)		Yes (n = 131)		No (n = 69)		Yes (n = 94)		No (n = 106)		Yes (n = 73)		No (n = 127)		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Circumcision																	
No (73)	49	67.1	24	32.9	50	68.5	23	31.5	35	47.9	38	52.1	30	41.1	43	58.9	X^2 = 1.048 P = 0.306
Yes (127)	89	70.1	38	29.9	81	63.8	46	36.2	59	46.5	68	53.5	43	33.9	84	66.1	
Previous marriages																	
No (171)	120	70.2	51	29.8	108	63.2	63	36.8	79	46.2	92	53.8	70	40.9	101	59.1	**X^2 = 10.011 P = 0.002*** **
Yes (29)	18	62.1	11	37.9	23	79.3	6	20.7	15	51.7	14	48.3	3	10.3	26	89.7	
Exposure to any reproductive tract infection in the past year																	
Yes (50)	27	54.0	23	46.0	31	62.0	19	38.0	18	36.0	32	64.0	11	22.0	39	78.0	**X^2 = 6.048 P = 0.014***
No (150)	111	74.0	39	26.0	100	66.7	50	33.3	76	50.7	74	49.3	62	41.3	88	58.7	
Menopausal status																	
Post-menopausal (22)	17	77.3	5	22.7	13	59.1	9	40.9	8	36.4	14	63.6	8	36.4	14	63.6	**X^2 = 7.013 P = 0.008*** **
Pre-menopausal (178)	121	68.0	57	32.0	118	66.3	60	33.7	86	48.3	92	51.7	65	36.5	113	63.5	

X^2: Chi-Square test, t: paired t-test, (*) mild significance, p ≤ 0.5; (***) highly significance, p ≤ 0.001.

Table 11 Relation between exposure to dyspareunia and Sexual behavior characteristics among sexually active women Pre/post implementation counseling using PLISSIT model

Sexual behavior	pre-counseling at starting of study				Post-counseling after 1 month				After 2 months				After 3 months				Significance
	morbid pain (n = 138)		Non-morbid pain (n = 62)		Yes (n = 131)		No (n = 69)		Yes (n = 94)		No (n = 106)		Yes (n = 73)		No (n = 127)		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Frequency of coitus (per week)																	
≥ 4 (41)	27	65.9	14	34.1	20	48.8	21	51.2	17	41.5	24	58.5	11	26.8	30	73.2	**X^2 = 6.380 P = 0.012***
< 4 (159)	111	69.8	48	30.2	111	69.8	48	30.2	77	48.4	82	51.6	62	39.0	97	61.0	
Husband has a naturally higher sex drive than the wife																	
No (76)	54	71.1	22	28.9	53	69.7	23	30.3	24	31.6	52	68.4	21	27.6	55	72.4	**X^2 = 4.160 P = 0.041***
Yes (124)	84	67.7	40	32.3	78	62.9	46	37.1	70	56.5	54	43.5	52	41.9	72	58.1	
Partner does not share the same level of interest																	
Yes (102)	64	62.7	38	37.3	67	65.7	35	34.3	48	47.1	54	52.9	38	37.3	64	62.7	**X^2 = 8.115 P=0.004*** **
No (98)	74	75.5	24	24.5	64	65.3	34	34.7	46	46.9	52	53.1	35	35.7	63	64.3	
Does not feel emotionally close to partner during sex																	
Yes (133)	102	76.7	31	23.3	92	69.2	41	30.8	72	54.1	61	45.9	58	43.6	75	56.4	**X^2 = 8.657 P = 0.003*** **
No (67)	36	53.7	31	46.3	39	58.2	28	41.8	22	32.8	45	67.2	15	22.4	52	77.6	
Patterns (Denominators) of Dyspareunia #																	
Persistent or recurrent difficulties in vaginal penetration during intercourse (154)	105	68.2	49	31.8	101	65.6	53	34.4	69	44.8	85	55.2	59	38.3	95	61.7	**X^2 = 11.702 P = 0.001*** **
Marked vulvovaginal or pelvic pain during intercourse or penetration attempts (22)	19	68.4	3	31.6	18	81.8	4	18.2	8	36.4	14	63.6	6	27.3	16	72.7	X^2 = 0.990 P = 0.542
Marked anxiety about vulvovaginal or pelvic pain in anticipation of or during or as a result of penetration (13)	9	69.2	4	30.8	11	84.6	2	15.4	5	38.5	8	61.5	3	23.1	10	76.9	**X^2 = 8.830 P = 0.012***
Musculoskeletal pain, Low Back Pain (LBP), Sacroiliac Joint (SIJ) & pubis dysfunctions (11)	9	81.8	2	18.2	8	72.7	3	27.3	3	27.3	8	72.7	2	18.2	9	81.8	**X^2 = 8.115 P=0.004** **
Marked tensing or tightening of the pelvic floor muscles during attempted penetration (9)	6	66.7	3	33.3	6	66.7	3	33.3	4	44.4	5	55.6	4	44.4	5	55.6	**X^2 = 10.981 P = 0.001*** **

X^2: Chi-Square test, t: paired t-test, (*) mild significance, p ≤ 0.5; (***) highly significance, p ≤ 0.001. # more than one answer

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Discussion

Although dyspareunia is one of the common health issues, up-till-now it remains neglected in Eastern communities such as in Egypt, especially in Upper Egypt, where investigation or even taking of such problems is considered a taboo. The couples deny it on the grounds of shame; regardless of whether they feel a need for further consultation about it. Considering the effect of painful sex on the interpersonal relationship of couples & the duty of health-care systems to defend the psychologic health of the community, detecting factors that have an influence on painful sex is necessary for designing an effective and functional counseling.[32] Our study is relevant and current due to the absence of studies in the area of the subject of the dyspareunia in the Nursing Courses and can be evidenced through a state of the art. In this regards, this research is one of the first studies carried out to detect the prevalence of dyspareunia, its related & risk factors and its associated anxiety among the Upper Egyptian women in Beni-Suef city, Egypt. For these reasons, the study gave voice to the women, to understand the meaning of their sexuality, in the context of the nursing consultation, in their moment of life. The objectives were to describe, understand and discuss subjectivity and inter-subjectivity between nurses and clients in the educational action sexuality of women in the context of nursing consultation among married women in Beni-Suef, Egypt.[33]

It is difficult to accurately estimate the incidence of painful sex, as the majority of cases are unreported. In our current study, when the intensity of dyspareunia was assessed in a sole study examining a volunteers group, aged 15-50 years, of gynecologic outpatients; it was found that although 540 women were suffering from dyspareunia throughout a period of 9 months, 219 of them accepted to participate in the study and then 19 were dropped out later. This may be attributed to, in conservative communities, such as that of Upper Egypt, speaking out about sexual problems is shameful and considered a taboo and people may get stigmatized for their sexual problems, which may hinder forming an overwhelming view over sexual issues, especially in females.[34] This is supported by the findings of the Scandinavian study. It reported that out of 3017 women aged 20 to 60 years attending a cervical screening program, only 9.3% reported dyspareunia: 13.0% of women aged 20-29 years; 6.5% aged 50-60 years. [35]

The population prevalence of dyspareunic pain is estimated to vary from 3% : 18% globally,[10] and lifetime estimates range from 10% : 28%.[36] Wide range reflects a significant heterogeneity in methodologies of prevalence studies.[10] While assessing the outcome of the counseling process on participants' intensity of dyspareunic pain throughout the period of study data analysis revealed that, before counseling, more than two thirds (69.0%) of studied sample suffered from morbid dyspareunia (painful sex lasting 6 months or more) compared to 31.0% of them suffered from non-morbid dyspareunia (painful sex lasting less than 6 months). The higher incidence reported in our study compared to other studies shows the sharp difference in cultural ideologies between studied subjects, coupled with rampant illiteracy and poverty and early marriage which is commonplace in our setting. This result supported by those researchers, who reported that the majority of Egyptian women had dyspareunia during intercourse.[37] However, these results are contradicted Mitchell's results who mentioned that, painful coitus lasting three months or more in the last year is not uncommon; it is reported by 7.5% of the studied women, of whom one-quarter (i.e. 1.9% of all sexually active women) report morbid painful sex (symptoms occurring very often or always, symptoms experienced for more than six months and fairly or very distressed about the difficulty).[10] While after implementation of the counseling process, using validated measurements, progressive improvements in dyspareunic pain was observed and the gains were maintained at the one to three months' follow-up. Overall, 34.5% of women indicated that their pain had alleviated within one month, 53.0% within 2 months and 63.5% within 3 months after implementation of the PLISSIT counseling model.

Previous international and national literature has confirmed this negative correlation between age and dyspareunia. The older age, the greater intensity of dyspareunia. Vulvovaginal thinning & dryness, as well as lower estrogen production, may explain the association between old age and dyspareunic pain.[10,34] As with most women's sexual difficulties occurring during midlife & beyond, painful sex is typically considered to be a consequence of declining ovarian hormone level. As a result of aging tissue & decreasing level of endogenously produced estrogen during menopausal phase, in particular, estradiol (E_2), atrophic changes may be observed in the external genital region, introitus, and vagina (i.e. vaginal atrophy). The resulting symptoms will be vaginal dryness, itching, vulvar pruritus, & dyspareunia. The aging process involves both hormonal alteration and physiologic, psychologic and social changes that may compromise woman's sexual activities and functioning. Evidence from the majority of large-scale cross-section investigations suggested that increasing age may be associated with decreased rate of dyspareunia, but this may be ascribed in part to declining sexual activity in older women.[12]

The results of our study illustrated that peak incidence (55.5%) of women's dyspareunic pain were in middle age group (20-30 years) while 31.0% of them were 40-50 years old. This result is in line with Mitchell et al who stated, the proportion reporting painful sex is highest in young women (16-24 years) and those in later mid-life (55-64 years old), however, there was no significant trend with age.[10] However, this result isn't in accordance with Steege & Zolnoun who studied of point prevalence of dyspareunia in Sweden women, involving 3017 participants and reported a peak incidence of 4.3% in the 20 to 29 years old age group, with lower numbers reported for each subsequent decade.[8] Additionally, National Health and Social Life survey in the USA, another study reported a prevalence of painful coitus ranging from 21.0% among women who aged from 18-29 years old to 8% among women who aged from 50-59 years old. In the Australian Longitudinal Study of Health and Relationships, measuring painful sex estimated a prevalence of 10% among women aged 20 to 64 years.[12] Our estimates were higher than this may be a result of heterogeneity of sexual culture and dealing with sexual issues in developed versus developing country especially conservative areas, such as that of the Upper Egypt.

The current review surveys the traditional and widely held conceptualization of postmenopausal painful sex as a relatively direct symptom of hormonal decline. Moreover, the drop in circulating estrogens is thought to be the main cause of vascular changes resulting in diminished physiologic arousal to sexual stimulation and lack of lubrication, which consequentially lead to dyspareunia.[10,12] The results of the current study illustrated that 11.0% of participants were menopause: 77.3% of them suffering from morbid dyspareunia, 22.7% suffering from non-morbid dyspareunia (pre-counseling). As past literature has almost unanimously attributed the postmenopausal painful-sex to declined estrogen level & vaginal atrophy.[12,38] Moreover, dyspareunic pain is, typically, associated with dryness resulting from vaginal atrophy.[10] The current study revealed an association between dyspareunia and menopausal status, although several studies have failed to find such an association.[39,40]

Consequently, hormones replacement therapy (HRT) has long been considered the frontline & the almost exclusive management for postmenopausal dyspareunia. [12] That is explained the improvement in women's condition post counseling as a result of advice and refer menopausal women, using the "IT" the 4th and final level of PLISSIT model of counseling which stands for intensive therapy, to descript appropriate hormone replacement therapy (HRT). One-month after counseling using PLISSIT model, 40.9% of menopausal women alleviated their dyspareunia and 63.6% of them have free painful coitus after two months. Significant correlation was found ($p = 0.008$).

Undoubtedly women's education and occupation not only affect the intensity of dyspareunic pain but also successfulness of counseling

process. Adequate education and proper job encompass several chances and methods as well as open windows for women to see, listen, read topics, namely sexual health, advice concerning vulvar & vaginal hygiene habits, avoidance of irritants, education about sexual-function, behavior modification, stress decreasing techniques, pain Pathophysiology & management.[39] Conversely, uneducated women & housewives may be exposed to non-volitional sex and they have no portal for correct and professional knowledge regarding sexual health. This is supported by Mitchell who stared, reporting painful coitus is strongly associated with experiencing non-volitional sex.[10]

When women with occupation were compared to their counterparts with no occupation, unemployment was a main studied risk factor for dyspareunia. Dyspareunia was significantly associated with unemployment ($p = 0.001$). This finding may be attributed to, housewives and unworked women may have no windows to gain knowledge or experiences exchange with colleges and professional ones. However, this finding contradicts Fauconnier who found that the risk of having dyspareunia was greater for working women.[5] Hamilton denotes that women with stressful jobs such as nursing, teaching, etc. are exposed, most of the time, to stressful situations than housewives. That is why employed women will have a chronic stress which in-turn has a negative effect on their sexual hormones and sexuality.[42] The relationship between occupational status and dyspareunic pain can be explained by the very peculiar social composition of the studied population; much higher incidence was reported from women with qualified job; 95.0% of the working women had a highly qualified job (managerial/professional or intermediate). One may put this into relation to the effect of chronic stress, which is known to provoke superficial dyspareunia.[5] Besides, women with higher educational levels and a highly professional job may have a tendency to destroy the societal taboos and explicit their sexual problems.[2] Acceptable percentage of both working and housewives (63.6% & 63.4%) reported pain free sex 3 months' post counseling implementation. Statically analysis revealed highly statistically significant difference between pre/post counseling of assessments at p-values < 0.001 regarding occupational status. This seems to mirror of the effectiveness of counseling using PLISSIT model.

Moreover, when women with university education were compared to their counterparts with illiterate or whom just read and write, low education was one of the risk factors for painful intercourse. Our results revealed a significant association between dyspareunia and poverty of education. This finding contradicts with Ibrahim et al.[43] but consists of other studies.[44,45] A similar population-based study, of 200 Brazilian-born women with ≥11 years of formal education, found a prevalence of dyspareunia of 39.5%.[46] Although, after implementation of counseling process using PLISSIT model, all women regardless their educational level get better Numerical Rating Scale which denotes less dyspareunia, the best score of pain decline was among highly educated women while the worse one was among illiterate women. More than three-quarters (77.8%) versus only 22.6%, highly educated versus illiterate, of women, expressed pain-free sex 2-months after implementation with high statistically significance.

Out of the 200 dyspareunic women, 108(54.0%) were overweight and 39(19.5%) were obese. Almost two-thirds of our subjects were living in rural areas 130 (65.0%), the mean crowding index (person/room) was 1.5±0.7. Significant correlations have been noticed between dyspareunia and residences & crowding index ($p < 0.05$). It is accepted to find increasing dyspareunic pain by increasing crowding index which leads to that couples cannot feel free while they acting their sexual relation. A negative significant association has also been noticed between dyspareunia and ƁMI ($p<0.05$). This may be attributed to hormonal changes (associated with obesity and overweight) caused by insulin resistance, lack of confidence and low self-steam related to improper and imperfect body image as well as impaired blood flow and atherosclerosis of the vasculature genitalia are the main explanations of painful coitus. Increased ƁMI in our study may be linked to higher probabilities of dyspareunia ($p = 0.001$, $r = - 0.268$). Our results are in agreement with previous studies which showed a recognizable negative correlation between ƁMI and sexuality,[2] while contradicting results that couldn't consolidate an association between ƁMI and sexuality.[2] Although our findings showed declining in pain intensity with regardless women's residency after implementation the counseling process, nonetheless this correlation was statistically insignificant ($p=0.306$). While the improvement has statistically insignificance in relation with crowding index ($p=0.042$) and ƁMI ($P=0.019$)

Our results revealed mild significant association between painful sex and women's self-reported health status ($r=0.168$, $p=0.050$), but strong significant associations with chronic conditions as hypertension, D.M., vascular, others, ($r=0.236$, $p=0.001$). This is in consistent with the conclusion of Mitchell's results who found a clear association between pain and chronic health conditions and self-reported health and reporting. [10] It is, also, agree with the literature linking pain with a range of chronic conditions.[39] Comorbid medical history, particularly diabetes mellitus, bowel or bladder disease, and cardiovascular disorders and medical conditions which can affect vaginal sensation include Sjögren's syndrome (which may cause dryness of vaginal) and diabetes (which may increase he tendency to thrush but which may also be associated with reduced vaginal lubrication).[7] Additionally, our finding of a clear association between sexual pain and previous gynecological surgery ($r=0.113$, $p=0.011$). This is supported by the literature linking pain with a range of comorbid abdominal and pelvic surgery, which may lead to adhesions, and prolapsed surgery which may lead to vaginal scarring.[7]

It was found that a quarter (25.0%) of the participant women had reproductive tract infections (RTIs). This mirror the impact of Upper Egyptian women's culture, particularly among rural dwellers. They often pay little or no attention to these nuisances and shame to take about it, thus refuse any form of gynecologist examination or counseling. Moreover, they had a lack of knowledge regarding proper management & hygienic care of RTIs.[22] Not surprisingly to find a significant correlation between dyspareunic pain and exposure to any reproductive tract infection ($r=0.131$, $p=0.019$). This may attribute to RTIs change vaginal PH and in-turn leads to improper sexual act resulting to dyspareunia. Reproductive tract infection (RTI) is a known direct cause of genital pain and although this may explain the association we found, it is also possible that previous experience of RTIs leads some individuals to engender difficulties with arousal, and in-turn, leading to painful sex.[10] Statically analysis revealed statistically significant difference between pre/post counseling of assessments (p-values$=0.014$) regardless of previous exposure to RTIs. This may mirror effective counseling and treatment of reproductive tract infection. Our results confirm the strong link between counseling using PLISSIT model and dyspareunic pain alleviation.

The circumcised women in our study represent 63.5%. Although type I of female genital mutilation (FGM), which includes partial clitoridectomy rather than infibulation or complete removal of clitoris, is the most widely used type of circumcision in Egypt and previous Egyptian studies concluded that scores of dyspareunia were comparable between circumcised women & uncircumcised ones,[2,16,47] nonetheless our results showed significant difference in painful intercourse in circumcised women comparison to the non-circumcised ones ($r = 0.187$, $p = 0.02$). This may attribute to that circumcision may affect and interrupt sexual cycle: desire, arousal, orgasm, satisfaction, and pain.

Additionally, interrupt of woman's sexual cycle, A Lake of desire or arousal as a reported result of circumcision, may expose women to intimate partner violence and also forced sexual activity which in-turn lead to dyspareunia. This is may explain that 19.5% of the studied

sample experienced non-volitional sex. Frank supports our point of view as he noted that almost half of women who have experienced intimate partner violence have also had forced sexual activity.[7] This result is in accordance with many researchers who denote a negative psychological and sexual consequences of female genital mutilation have been heavily reported.[48–51] What is really surprising in our results that although the progressive declining in the intensity of dyspareunic pain in both circumcised and uncircumcised women, which refers positive impact of the counseling process for women, we didn't find any considerable significant differences (P = 0.306) between circumcised women and uncircumcised ones.

We also found that history of previous, duration of marriage and family income correlated with dyspareunia. Morbid painful sex which lasting ≥ 6 months in the last year is reported by 62.1% of women who had a history of previous marriage, of whom 14.5 % of all studied sexually active women. Duration of marriage of 64.5% of women was more than 5 years with mean duration of 8.3 ± 5.9. Our finding agrees with Arafa who mentioned that women who reported more years of marriage had more intensity of dyspareunic pain. This may be due to the fact that women who are married for longer periods are supposed to be older and have more children. In addition, more years of marriage carry extra burdensome tasks that interfere with sexual functioning.[34] Additionally, our results showed that 49.5% of women had inadequate family income, 68.7% of women reported morbid dyspareunia. A longer duration of marriage may carry more stressful duties, more economic challenges, less passion for sex. Such factors do undermine the sexual functions of partners. Although our findings showed declining in dyspareunia after implementation counseling regardless of their economic status, this correlation was statistically insignificant (p = 0.173). Strikingly, long marriage duration was indicated as a determinant of the development of dyspareunic pain in the present study. This could be accounted for by the fact that longer marriage duration is usually associated with more children, and older age which may be resulting in less passion for sex and more stressful duties and economic challenges.[1]

There are vast studies on the effect of mode of delivery in the context of the sexual dysfunctions, but there are clearly few studies on the comparison of nulliparity with multiparity. Hence, our study carried out to find the correlation between mode of delivery and painful intercourse and tried to compare dyspareunia in nulliparous and multiparous women. We found that mode of delivery and state of perineum are correlated with dyspareunia (p = 0.001 & 0.01), respectively. This result was in accordance with multi-factorial data analysis which found that postpartum dyspareunia was significantly associated with the type of delivery.[11]

Dyspareunia is a well-documented sequel of childbirth as it can sometimes be perceived as a psychological traumatic event.[5] Previous literature have indicated that nulliparous women had the higher incidence of dyspareunia than multiparous one, but others did not. A total of 105 primigravid women had dyspareunic pain before pregnancy, while the frequency of this problem decreased to 59 (P = 0.001). In multigravid women, 70 had dyspareunic pain the frequency of which decreased to 44 after the second delivery (P = 0.002).[32] However, the results of our current study didn't support such difference (r = 0.217, p = 0.073). Makkii & Yazdi, in their study, discussed this inconsistency in results and recommended designing valid surveys on large samples to investigate the effect of parity on sexual functions.[50]

Of course, dyspareunia is more prevalent among women with vaginal delivery.[53] Some other studies found that painful sex is more prevalent in women with instrumental delivery (whose delivery was done through helping vacuum extractor or forceps).[32] Dyspareunia is higher in women with vaginal birth. However, after 6 months, the association between mode of delivery and sexual disorders was not significant.[32] These results aren't concomitant with our results.

As 90 of 173 of women delivered normally through the vaginal canal with episiotomy, 33 of them were delivered through assisted delivery (helping vacuum extractor or forceps) and 113 had perineal lacerations. Perineal trauma and episiotomy sustained in relation to painful intercourse. Dyspareunia may attribute to complications of episiotomy and its possible sequelae, as constricted introitus, infection, episiorrhaphy dehiscence. The results of our current study are supported by a study of Solana-Arellano et al in Mexico.[52] Additionally, Sleep & Grant reported that dyspareunia is more frequent in women with grades 3 or 4 vaginal tearing contrasting with those of grade two tearing or with episiotomy.[55]

Additionally, Data from a large longitudinal survey carried out by Glazener, illustrated that postpartum perineal pain was significantly linked with the assisted vaginal delivery when compared with spontaneous one. [11] Other studies showed that factors strongly associated with both the severity & rate of post-partum dyspareunia are the type & degree of perineal trauma sustained, assisted/instrumental delivery and/or perineal tears. However, most of the studies suggested the deleterious role of perineal tears/trauma on dyspareunia.[5] The more recent researches declared that women who delivered without perineal tears/trauma reported a best outcomes in terms of pain.[11]

Moreover, our results showed negative correlation between breastfeeding dyspareunia (r = - 0.229, p = 0.001). This is may be attributed to hormonal changes which associated with breast-feeding. It may lead to decline libido and/or superficial dyspareunia secondary to vaginal dryness. This result is in line with Glazener's results who found that breastfed women were more likely, three-times, to temporarily have uninterested in sexual intercourse.[56] A study carried out by Kettle also showed that the incidence of post-partum dyspareunic pain was increased among breastfeed women (21.2% versus 15.9%).[57] This result was also supported by Barrett et al.[58]

The results of the present study revealed that the majority (79.5%) of the studied sample had less than 4 acts of sexual intercourse per week or even avoid engagement in it to avoid pain. Regarding the relation between exposure to dyspareunia and frequency of intercourse, in contrast to previous research,[57] we didn't find an association of dyspareunia with the frequency of intercourse (r = 0.188, p = 0.065). It has been suggested that some women simply endure their pain in order to not interrupt and continue having sex with their partner.[60]

On the other hand, a positive significant correlation was found between sexual abuse (women's exposure to non-volitional sex) and dyspareunic pain (r = 0.136, p = 0.032). About one-fifth of the studied women were exposed to non-volitional sex. This may attribute to 62.0% of women's husband, in the current study, was naturally higher sex drive than their wives, more than half (51.0%) of partners didn't share the same level of interest, and 66.5% of the studied women didn't feel emotionally close to partner during sex; which may explain prevalence, intensity, and duration of dyspareunia. Although this result is supported by Fauconnier who reported that dyspareunia is a well-documented sequel of sexual abuse regardless of the actual perineal trauma sustained,[5] and Frank who added that, if is there anything to suggest there has been sexual abuse, it should be reported to assess dyspareunia, [7] it contradicted Steege results who revealed weak association between sexual abuse and dyspareunia through a systematic review of 111 articles.[8]

Anyway, dyspareunic pain was decline after implementation of counseling. Significant differences were found between women exposure to dyspareunia and sexual behavior characteristics among sexually active women pre/post implementation counseling using PLISSIT model: Frequency of coitus per week (P = 0.012), husband has a naturally higher sex drive than the wife (p = 0.041), partner does not share the same level of interest (P = 0.004), woman doesn't feel emotionally close to partner during sex (P = 0.003).

Anxiety is a state of mind which develops depending on environmental stimulants that are perceived by the individuals as being dangerous or threatening and have unpleasing effects.[22] It is well-recognized that anxiety may occur at any period of the lifespan. Thither are many aspects of everyday life that provoke anxiety, various conditions may increase the frequency and severity of the anxiety.[61] Anxiety is more common in women during their childbearing age. The gestational periods are considered to be relatively high-risk times for women with pre-existing anxiety.[62] While assessing the outcome of the counseling process on participants' intensity of anxiety throughout the period of study data analysis revealed that, before counseling, the majority (158 of 200; 79.0%), sufferers from marked to severe anxiety, 16.0% (32 of 200) sufferers from moderate anxiety and 5.0% (10 of 200) sufferers from low anxiety. While after implementation of the counseling process, using PLISSIT model and validated measurements, progressive decline anxiety level was observed and the gains were maintained at the one to three months' follow-up. In the 1st follow-up (after one month), the percentage of women who suffered from marked to severe anxiety progressively decreased to 49.0%. None of them (0.0%) indicated marked to severe anxiety after 2 months since starting the program. This might be due to an increased women's level of awareness, and their desire to allay anxiety. Marginal Homogeneity test revealed highly statistically significant difference between pre/post counseling of assessments at p-values < 0.0001. This seems to mirror of the effectiveness of counseling PLISSIT model.

Although dyspareunia is less commonly reported by women, it is the sexual function problem most commonly experienced as distressing.[63] It may lead to feelings of shame, isolation, loss of confidence, sexual inadequacy, and feeling out of control.[59] Moreover, the current study examined correlation between dyspareunia using numerical rating scale and anxiety level using self-retailing anxiety scores among sexually-active women. Parallel declines in dyspareunia and anxiety level was observed. It was observed that, retailing anxiety scores were changed (r = 0.285) before implementation of counseling to (r = - 0.103) after implementation. This is logic and was expected as dyspareunia is the main cause of women's anxiety. This result is in accordance with Heim (2001) who reported that anxiety was noted more often in patients with dyspareunia compared with control subjects.[6]

Limitations of the study

The study had, nonetheless, several limitations. First, it achieved a 37.03% (200 of 540) responded rate among the women who complain from dyspareunic pain throughout the study period. One reason might be the sensitive aspect of the subject of this study; women frequently avoid mentioning sexual complaints because they are embarrassed. It is difficult to say to what extent this low response rate may have weakened our results. The 2nd limitation was that our tool of measurement of dyspareunic pain was based on women's self-report data rather than on clinical diagnosis. The 3rd limitation was that, because of the cross-sectional nature of our data, we aren't able to infer causality. Sexual pain may cause, stem from, or coexist with poor psychosocial, physical and sexual health, and even for in-depth research, the challenge of delineating causal pathways is daunting.

Conclusion

This study provides up-to-date prevalence estimates of dyspareunia in a representative sample of Northern Upper Egyptian women (Beni-Suef), across a wide-age-range. Dyspareunia is a distressing symptom. Most cases can be treated; usually, a combination of counseling and specific treatment is necessary. Our study confirms the strong link between dyspareunic pain and anxiety. Implementation of counseling process using PLISSIT model in a sole study examining a volunteers group of gynecological outpatients, using validated measurements, progressive alleviation participants' intensity of dyspareunic pain, and its associated anxiety. Our results are relevant and important to the work of multidisciplinary practitioners involving gynecologists, and psychosexual counselor and psychologists, physical therapists, sex therapy more broadly in the therapeutic settings.

Recommendations

In the light of the findings of this study, the following is recommended:

i. Active approaches are needed to overcome shame and embarrassment, and the stigma that may be associated with asking about common sexual health issues by activating the role of the maternity, and community health nurse in gynecologic clinics to enhance women's knowledge regarding sexual health issues.

ii. Implementation a strategy to reduce episiotomy rate, reducing assisted vaginal deliveries using the vacuum extractor, and improving perineal repair techniques will, probably, help in decreasing the extent of post-partum dyspareunic pain experienced by women.

iii. National policies aimed at the woman's health involved the issue of sexuality that is why they continue to re-signify it. Therefore, it is the responsibility of preparing future qualified nurses to work at all levels of complexity of care for the human being in its entirety, in the context of the Unified Health System, in a critical-reflexive-creative perspective, committed to not only promotion and prevention of pathologies, but also adapting biopsychosocial issues related to sexuality.

iv. As we have confirmed the link between dyspareunic pain and self-assessed poor general health & experience of chronic health conditions. Therefore, further researches should explore and explain the extent to which dyspareunia might usefully serve as a diagnostic indicator of other health problems.

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Conflict of interest

The author declares that there is no conflict of interest.

References

1. Arafa A, Senosy Sh. Female sexual dysfunction in Egyptian women with anxiety: prevalence and patterns. *Journal of Public Health*. 2018;26(5):545–549.
2. Mostafa A, Khamis Y, Helmy H, et al. Prevalence and patterns of female sexual dysfunction among overweight and obese premenopausal women in Upper Egypt; a cross sectional study. *Middle East Fertility Society Journal*. 2018;23(1):68–71.
3. Zohre M, Minoo P, Ali M, et al. Sexual Function in Woman with Urinary Incontinence: A Cross-Sectional Study from Iran. *Research in Obstetrics and Gynecology*. 2013;2(3):31–35.
4. Fisher K. Management of Dyspareunia and Associated Levator Ani Muscle Overactivity. *Phys Ther*. 2007;87(10):935–941.
5. Fauconnier A, Goltzene A, Issartel F, et al. Late post-partum dyspareunia: Does delivery play a role?. *Progrès en urologie*. 2012;22:225–232.
6. Heim L. Evaluation and Differential Diagnosis of Dyspareunia. *American Family physician*. 2001;63(8):1535–1544.
7. Frank J, Mistretta P, Will J. Diagnosis and treatment of female sexual dysfunction. *Am Fam Physician*. 2008;77(5):635–642.

8. Steege J, Zolnoun D. Evaluation and Treatment of Dyspareunia. *Obstetrics Gynecology*. 2009;113(5):1124–1136.

9. Shaul D. Dyspareunia. *Can Fam Physician*. 1985;31:929–831.

10. Mitchell K, Geary R, Graham C, et al. Painful sex (dyspareunia) in women: prevalence and associated factors in a British population probability survey. *BJOG*. 2017;124(11):1689–1697.

11. Kettle Ch, Ismail Kh, O'Mahony F. Dyspareunia following childbirth. *The Obstetrician Gynaecologist*. 2005;7:245–249.

12. Kao A, Binik Y, Kapuscinski A, et al. Dyspareunia in postmenopausal women: A critical review. *Pain Res Manage*. 2008;13(3):243–254.

13. Meana M, Binik Y, Khalife S, et al. Biopsychosocial profile of women with dyspareunia. Obstet Gynecol. 1997;90(4Pt1):583–589.

14. McDonald E, Woolhouse H, Brown S. Consultation about Sexual Health Issues in the Year after Childbirth: A Cohort Study. *Birth*. 2015;42(4):354–360.

15. Buurman M, Lagro-Janssen A. Women's perception of postpartum pelvic floor dysfunction and their help-seeking behaviour: A qualitative interview study. *Scand J Caring Sci*. 2013;27(2):406–413.

16. Mostafa A, Khamis Y, Helmy H, et al. Prevalence and patterns of female sexual dysfunction among overweight and obese premenopausal women in Upper Egypt; a cross sectional study. *Middle East Fertility Society Journal*. 2018;23(1):68–71.

17. Fischer G, Bradford J, Cragg T. Vulvovaginal pain and dyspareunia. *Medicine Today*. 2014;15(8):43–50.

18. Sheha E, Hassan H, Gamel W. Association between pre-pregnant overweight and obesity and periodontal disease during pregnancy: a cross sectional study. *International Journal of Studies in Nursing*. 2018;3(1):1–21.

19. Ishak I, Low W, Othman S. Prevalence, risk factors and predictors of female sexual dysfunction in a primary care setting: A survey finding. *J Sex Med*. 2014;7(9):3080–3085.

20. Annon J. The behavioral treatment of sexual problems. *Enabling Systuns*.1975;1:56–58.

21. Ramezani T, Farahmand M, Mehrabi Y, et al. Sexual disorders and related factors: community based study of urban area in four provinces. *Payesh J*. 2014;11:869–897.

22. Hassan H. Infertility profile, psychological ramifications and reproductive tract infection among infertile women, in northern Upper Egypt. *Journal of Nursing Education and Practice*. 2016;6(4):92–108.

23. Haefeli M, Elfering A. Pain assessment. *Eur Spine J*. 2006;15:S17–S24.

24. Kolbaba D. The Body Mass Index Calculation. Health Quest Radio.

25. "BMI Education" CD-ROM 2007.

26. Beck A, Epstein N, Brown G, et al. An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*. 1988;56(6):893–897.

27. Annon J. The PLISSIT Model: a proposed conceptual scheme for the behavioural treatment of sexual problems. *Journal of Sex Education and Therapy*. 1976;2(1):1–15.

28. Annon J. Behavioral Treatment of Sexual Problems: Brief Therapy. Oxford, England: Harper & Row; 1976.

29. Blonna R, Watter D. Health Counseling: A Microskills Approach. Massachusetts: Jones & Bartlett Learning. 2013.

30. Comprehensive Management of Chronic Obstructive Pulmonary Disease. Shelton, Connecticut: USA, 2014.

31. Fagan P. Sexual Disorders: Perspectives on Diagnosis and Treatment. Baltimore: Johns Hopkins University Press. 2014.

32. Makkii M, Yazdi N. Sexual dysfunction during primiparous and multiparous women following vaginal delivery. *Tanzan J Health Res*. 2012;14 4):263–268.

33. Saraiva R, Rosas A, Marques E, et al. The Comprehension of the Sexuality of the Brazilian and Portuguese Elderly, in the Nursing Consultation Context. American Journal of Nursing Science. 2018;7(2):49–53.

34. Arafa A, Elbahrawe R, Shawky Sh, et al. Risk factors associated with female sexual dysfunction among married women in Upper Egypt; a cross sectional study. *International Journal of Community Medicine and Public Health*. 2018;5(2):449–453.

35. Danielsson I, Sjoberg I, Stenlund H, et al. Prevalence and incidence of prolonged and severe dyspareunia in women: results from a population study. *Scand J Public Health*. 2003;31(2):113–118.

36. Harlow B, Kunitz C, Nguyen R, et al. Prevalence of symptoms consistent with a diagnosis of vulvodynia: population-based estimates from 2 geographic regions. *Am J Obstet Gynecol*. 2014; 210(1):40:40–48.

37. Shiahna M. Factors affecting the impact of breast cancer on body image and sexual functioning. 2012.

38. Sayed M, Masoud A. Sexual Function Disorders Affecting Quality of Life of Women with Gynecological Cancer at Al-Fayoum University Hospital. *American Journal of Nursing Research*. 2018;6(2):39–46.

39. Arnold L, Bachmann G, Rosen R, et al. Assessment of vulvodynia symptoms in a sample of US women: a prevalence survey with a nested case-control study. *Am J Obstet Gynecol*. 2007;196(2):128.e1–128.e6.

40. Arnold L, Bachmann G, Kelly S, et al. Vulvodynia: characteristics and associations with co-morbidities and quality of life. *Obstet Gynecol*. 2006;107(3):617–624.

41. Morin M, Carroll M, Bergeron S. Systematic review of the effectiveness of physical therapy modalities in women with provoked vestibulodynia. *Sex Med Rev*. 2017;5(3):1–28.

42. Hamilton L, Meston C. Chronic stress and sexual function in women. *J Sex Med*. 2014;10(10):2443–2454.

43. Ibrahim Z, Ahmed M, Ahmed W. Prevalence and risk factors for female sexual dysfunction among Egyptian women. *Arch Gynecol Obstet*. 2013;287(6):1173–1180.

44. LinM, Lu M, Livneh H, et al. Factors associated with sexual dysfunction in Taiwanese females with rheumatoid arthritis. *BMC Women's Health*. 2017;17(1):12.

45. Ahmed M, Madny E, Ahmed W. Prevalence of female sexual dysfunction during pregnancy among Egyptian women. *J Obstet Gynaecol Res*. 2014;40(4):1023–1029.

46. Valadares A, Pinto-Neto A, Conde D, et al. A population-based study of dyspareunia in a cohort of middle-aged Brazilian women. Menopause. 2008;15(6):1184–1190.

47. Ismail S, Abbas A, Habib D, et al. Effect of female genital mutilation/cutting; types I and II on sexual function: case-controlled study. *Reproductive Health*. 2017;14(1):1–6.

48. Abdel-Azim S. Psychosocial and sexual aspects of female circumcision. *African J Urol*. 2013;19(3):141–142.

49. Biglu M, Farnam A, Abotalebi P, et al. Effect of female genital mutilation/cutting on sexual functions. *Sex Reprod Healthc*. 2016;10:3–8.

50. Alsibiani S. Rouzi A. Sexual function in women with female genital mutilation. *Fertil Steril*. 2010;93(3):722–724.

51. Andersson S, Rymer J, Joyce W, et al. Sexual quality of life in women who have undergone female genital mutilation: a case-control study. *BJOG*. 2012;119(13):1606–1611.

52. Makkii M, Yazdi N. Sexual dysfunction during primiparous and multiparous women following vaginal delivery. *Tanzan J Health Res*. 2012;14 4):263–268.

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53. Forster C. Psychological and sexual changes after the cessation of breast-feeding. *Obstet Gynecol*. 1994;84(5):872–76.

54. Solana-Arellano E, Villegas-Arrizón A, Legorreta-Soberanis J, et al. Women's dyspareunia after childbirth: a case study in a hospital in Acapulco, Mexico. *Revisita Panamericana de Salud Pública*. 2008;23(1):44–51.

55. Sleep J, Grant A. West Berkshire perineal management trial: three year follow up. *Br Med J (Clin Res Ed)*. 1987;295(6601):749–751.

56. Glazener C. Sexual function after childbirth: women's experiences, persistent morbidity and lack of professional recognition. *BJOG*. 1997;104(3):330–335.

57. Kettle C, Hills R, Jones P, et al. Continuous versus interrupted perineal repair with standard or rapidly absorbed sutures after spontaneous vaginal birth: a randomised controlled trial. *Lancet.* 2002;359(9325):2217–2123.

58. Barrett G, Pendry E, Peacock J, et al. Women's sexual health after childbirth. *BJOG*. 2000;107(2):186–195.

59. Bergeron S, Likes W, Steben M. Psychosexual aspects of vulvovaginal pain. *Best Pract Res Clin Obstet Gynaecol.* 2014;28(7):991–999.

60. Sutherland O. Qualitative analysis of heterosexual women's experience of sexual pain and discomfort. *J Sex Marital Ther*. 2012;38(3):223–344.

61. Hassan H, Bayoumi M, Atwa A. Emotional Distress Associated with Gynecologic and Breast Cancer in Beni-Suef City. *International Journal of Science and Research*. 2016;5(2):1118–1129.

62. Hassan H. Call for psychosocial well-being among pregnant women associated with medical disorder in Beni-Suef governorate. *IOSR Journal of Nursing and Health Science*. 2016;5(2):81–94.

63. Mitchell K, Jones K, Wellings K, et al. Estimating the prevalence of sexual function problems: the impact of morbidity criteria. *J Sex Res*. 2016;53(8):955–967.