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Psychological Factors in Sexual Pain: Fear-Avoidance Model in Chronic Pelvic Pain Syndrome Therapy

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Abstract

The presences of sexual dysfunctions in women were not a subject of scientific debate until the 21st century. At the beginning of the new millennium interdisciplinary groups of scientists agreed that female sexuality and sexual dysfunctions have to be taken seriously and analyzed independently of male sexuality. Finally, Rosemary Basson's description of the cyclic model of sexual response resulted in abandon of the linear model, which was characteristic for male sexual response, and creating circular models of female sexual response.

The researchers are still studying the nature of sexual pain in women. The aim of this article is to interest physicians, especially gynaecologists, in aetiology and treatment options for chronic pelvic pain syndrome (CPPS). The causes of CPPS may lie in sexual disorders which were until recently classified by the American Psychiatric Association in DSM-IV (Diagnostic and Statistical Manual of Mental Disorders) as dyspareunia and vaginismus and changed in DSM-5 to Genito-Pelvic Pain/Penetration Disorder (GPPD). The DSM-5 classification emphasizes treatment focusing on elimination fear and anxiety more than on relaxation of vaginal muscles. Therapeutic experience confirms that such an approach is well-grounded; a therapy focusing on non-organic factors gives excellent and promising results. If we point to the necessity of introducing changes in the approach to treatment of GPPD, then we also have to allow for the role of fear and anxiety in the aetiology of these disorders. The Fear-Avoidance Model - FAM – presented in this article gives a scientific bases for psychological treatment of CPPS.

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Introduction

In the last few years sexual health has become a subject of a growing number of scientific studies. However, it is still marginalized despite the fact, that it constitutes an integral part of every medical specialty.

Human sexuality is currently described as integration of sexual function, sexual reactions and sexual identity, influenced by social, psychological and cultural factors [1]. Any disorders or problems concerning sexuality have adverse impact on health and quality of life. Taking a patient's history does not, however, obligate to ask about sexual health of the patient. This problem does not only exist in Poland. Although there is an ongoing discussion on human sexuality in the scientific societies, the consensus is difficult to reach even in such basic issues as definitions and classifications [2,3,4].

The grounds for the undertaken analysis are the guidelines of the Royal College of Obstetricians and Gynaecologists (RCOG) entitled: "The initial management of chronic pelvic pain" published in 2012, which were addressed to family doctors. In the part analysing non-organic causes the guidelines recommend to ask about sexual abuse experienced by a woman in her life as a potential cause of dyspareunia and secondary cause of chronic pelvic pain syndrome (CPPS) [5,6].

What seemed interesting in aforementioned guidelines is the lack of recommendations for asking about the physiology of the sexual function. Taking a medical history and questioning about sexuality would allow detecting disorders or dysfunctions in the sexual activity during or before the occurrence of pain in pelvis minor. It seems that women before sexual initiation may experience fear of pain related to the first intercourse. That fear could lead to avoiding sexual contact and could be the cause of lifelong genitor-pelvic pain disorders (primary and secondary, if the pain was present during sexual initiation). Even if family doctors do not ask questions about sexual health, diagnosing chronic pelvic pain in women should include inquiring about the presence of fear and anxiety related to sexual pain.

Gynaecologists, in particular, should make and afford to understand the necessity of including questions about the presence of fear of pain related to sexual activity in the everyday clinical practise, as vagina and pelvis minor are only the effectors necessary for sexual satisfaction. Sexual activity, as a psychophysical activity, is initiated and controlled by the central nervous system, in particular by the brain. It is a centre for sexual satisfaction but also the source of fear and sexual anxiety.

On the basis of a review of Pub-med-indexed literature and of non-indexed papers, we present the recently agreed definitions of sexual disorders accompanied by pain as well as some other aspects of female sexual response. Non-organic factors, such as fear and anxiety related with sexual intercourse or any other sexual activity, have impact on experiencing sexual pain by a woman and they may contribute to developing chronic pelvic pain syndrome [3]. Currently, it is suggested that in diagnosing women with CPPS psychological factors should be taken into account – anxiety and fear accompanying women during sexual activity, related with penetration or not, may manifest as sexual pain [7,8].

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Prevalence

CPPS is currently the second cause of pain in women of reproductive age; it accounts for up to 20% of appointments at gynaecologists' and is also the main indication for up to 52% of diagnostic laparoscopy. Prevalence of CPPS in the USA, Great Britain and New Zealand is 14.7%, 24%, 25%, accordingly [9-12]. The cost per patient with CPPS involves: malaise, depression and anxiety, sleep disorders, absence at work due to illness, as well as worsened relationship with the partner [13,14].

Problems with CPPS Definition

The main problem related with CPPS definition is lack of agreement among experts as to the final wording of the definition and using various descriptions in diagnosing, therapy and in scientific studies. Lack of the definition and various interpretations often lead to misapprehension and misunderstanding and it is the cause of differences in estimating and comparing studies results in the literature [3,4,9,14]. According to the most recent definition by European Association of Urology chronic pelvic pain (CPP) is defined as chronic or persistent (lasting at least 6 months) pain perceived in structures related to the pelvis of either men or women. It is often associated with negative cognitive, behavioural, sexual and emotional consequences as well as with symptoms of lower urinary tract, sexual, bowel, pelvic floor or gynaecological dysfunction [15]. If non-acute and central sensitization pain mechanisms are present, then the condition is considered chronic, regardless of the time frame [14].

Causes of CPP

CPP is not a disease – it is rather a condition caused by organic on non-organic (psychological) causes. The major aetiology of CPP is presented in Table 1. When there is pain in the absence of proven infection or other obvious local pathology that may account for the pain, the condition is called chronic pelvic pain syndrome [14,16]. The complex aetiology and multidimensionality of CPPS may cause difficulties at diagnosis and the treatment process. Pain associated with a well-described disease requires the disease to be treated as the priority. However, when non-organic causes are suspected, psychological approach seems to be more appropriate.

Sexual Disorders, Sexual Pain and CPPS

According to the classification of the American Foundation for Urologic Disease (American Urological Association) established during the First International Consensus Development Conference Definitions of Women's Sexual Dysfunction in 1998, sexual disorders related to pain constituted Sexual Pain Disorders. This group includes dyspareunia, vaginismus and non-coital sexual pain disorder [3,17,18].

1. Dyspareunia was defined as recurrent or persistent genital pain associated with sexual intercourse.
2. Vaginismus was defined as recurrent or persistent involuntary spasm of the musculature of the outer third of the vagina that interferes with vaginal penetration, which causes personal distress.
3. Non-coital sexual pain disorder was defined as recurrent or persistent genital pain induced by non-coital sexual stimulation unrelated with intercourse [17]. A certain group of women experiences pain during stimulation in other situations, but they do not meet the criteria for diagnosing vaginismus nor dyspareunia.

The authors of the Classification suggested that precise diagnostics should also include a description of the following characteristic features: are the dysfunctions lifelong or acquired? are they generalized or situational? are they of specified origin (organic, psychogenic, mixed, of unknown origin)?

According to the Consensus the possibility of some problems with diagnosing sexual dysfunction among physicians could not be avoided. They often fail to specify the cause of sexual problems in a patient. Probably, in order to emphasize the fact that the problem of sexological diagnostics is still open and not finalized in terms of definitions, they decided that it was important to indicate that disorder aetiology was unknown instead of guessing or calling a disease a "mixed" one (which might suggest involvement of both psychological as well as physical factors) [3,18].

In 2000, as the understanding of female sexuality increased, Rosemary Basson published the results of her work, in which the linear model of sexual response, characteristic for men, was criticized. The linear model assumes that desire, arousal and orgasm appears during sexual activities in a linear fashion – first desire, then arousal and finally – orgasm. Furthermore in that mode female orgasm was the culmination of sexual response. In her researches Basson showed that healthy women during sexual intercourse may feel the desire of intimate union with the partner (for many positive reasons or in order to avoid negative consequences) rather than experience orgasm, which made them sensitive to sexual stimuli or urged them to seek such stimuli [3,4,17,18]. She also concluded that woman who does not feel desire may seek sexual contact with the partner in fear of him

Organs	Cause of pain
Reproductive organs	Pelvic inflammatory disease
	Vulvar pain syndrome
	Endometriosis
	Peritoneal adhesions
	Pelvic congestion syndrome
	Ovarian remnant syndrome
Gastrointestinal system	Irritable bowel syndrome
	Diverticulitis
	Regional ileitis
	Chronic appendicitis
Bladder and urinary system	Urethral syndrome
	Interstitial cystitis
	Pelvic kidney
	Renal calculi
Muscle and nervous system	Nerve entrapment
	Myofascial pain
	Low back pain syndrome
Non-organic (psychological)	Physical/sexual abuse
	Depression
	Anxiety
	Child abuse
	Rape
	Personal disorders

Table 1: Different aetiology of chronic pelvic pain. Adapted from Alappattu MJ, Bishop MD. Psychological Factors in Chronic Pelvic Pain in Women: Relevance and Application of the Fear-Avoidance Model of Pain. Phys Ther. Oct 2011; 91(10): 1542–1550 [15].

moving away from her or being irritated or unhappy, if the interval between intercourses is too long. The woman might also wish to warm the atmosphere and increase the feeling of closeness by bilaterally satisfying sexual intercourse, not necessarily feeling the need of sexual relaxation. Both internal and external factors may motivate a woman to adopt an open attitude or become susceptible to sexual stimulation, but they may also impel her to become closed/insensitive to such stimuli. Many women make a conscious decision to become sexually excited. The decision leads to arousal, which releases sexual desire, at which point the whole normal sexual response ending with orgasm may be launched [3,4,17,18].

The conclusion of Basson's work was the basis for presenting a new concept of sexual response in women - the cyclic model of sexual response. The key elements of cyclic model of sexual response is that, in contrast to linear models, arousal and desire may occur in women in any order, where one of them stimulates the other through the positive feedback mechanism. This model is perceived as a model in which each phase stimulates the next one and is stimulated by the previous one - not in a systematically linear way but in a cyclic way, by combination of all the elements. Furthermore, the orgasm is not a goal of sexual activity – the goal is sexual satisfaction and enhancing the relationship [3,4,17,18].

The most current modification of the definition of sexual dysfunction was made in 2013, when DSM-5 was published. This classification, that combined sexual pain disorders into one category - Genito-Pelvic Pain/Penetration Disorder, was criticized both before and after publishing [19]. Due to research difficulties in the area of female sexuality DSM-5 should be verified and further discussed. However, introducing the term Genito-Pelvic Pain/Penetration Disorder into the current version is a great progress in understanding the pathogenesis of sexual pain. This also results in a change of the practical clinical point of view of gynaecologists which involves the necessity of incorporating sexual pain and fear in diagnosing CPPS [4].

Sexual pain might be a difficult diagnostic and therapeutic problem especially in case of unconsummated marriage. Those couples visit gynaecologists because they are unable to have a full sexual intercourse sometimes after more than a dozen years of living in an relationship [20-23]. The prevalence of unconsummated marriages is estimated to be at the level of 2% of all relationships. The woman feels pain even when she only imagines being in sexual contact. Every sexual activity which might potentially end up with a sexual intercourse causes fear which intensifies pain. Fear is also present during or before the foreplay in women who have experienced or experience pain during sexual contacts with vaginal penetration. The women, when asked about the quality of sexual contacts, define this state with the words "I manage somehow". The result of being in a relationship without the possibility of having sexual intercourse or with painful intercourses is the occurrence of anxiety. That anxiety causes deterioration of all the spheres of life, not only sexual one. Although the terms "fear" and "anxiety" are commonly used interchangeably, anxiety related with pain is less intense than fear. It is characterized by adopting a protective attitude, emotional oversensitivity and avoiding any activity that might cause sexual pain, while fear is characterized by defensive behaviours in the presence of sexual pain [13].

Primary fear of experiencing pain that occurs before engaging in sexual activity or secondary fear that stems from pain during sexual activity may result as somatisation in the form of CPPS [4]. The clinical picture of that somatisation is characterized by the presence of ailments suggesting a somatic disease (non-psychiatric) with lack of other pathological grounds revealed in laboratory tests, imaging or in physical examination. It is actually sign of autonomous nervous system disorders related with non-conscious fear and anxiety [6,22].

Fear-Avoidance Model (FAM) – Therapeutic Intervention for CPPS Related to Sexual Pain

The treatment of CPPS related to sexual pain is difficult and requires interdisciplinary approach. One of proposed therapeutic intervention is cognitive behavioural therapy based on the Fear–Avoidance Model (FAM). This theoretical model introduced by Lethem et al. in 1983 was created in order to show how some individuals recover from a painful injury whereas others develop certain type of behaviours and finally chronic pain [14,16,24]. The basis for the FAM is a theory according to which some people are more susceptible to intensification and persistence of pain after a trauma due to their emotional state and the way they respond to pain (Figure 1). The FAM includes two extremes

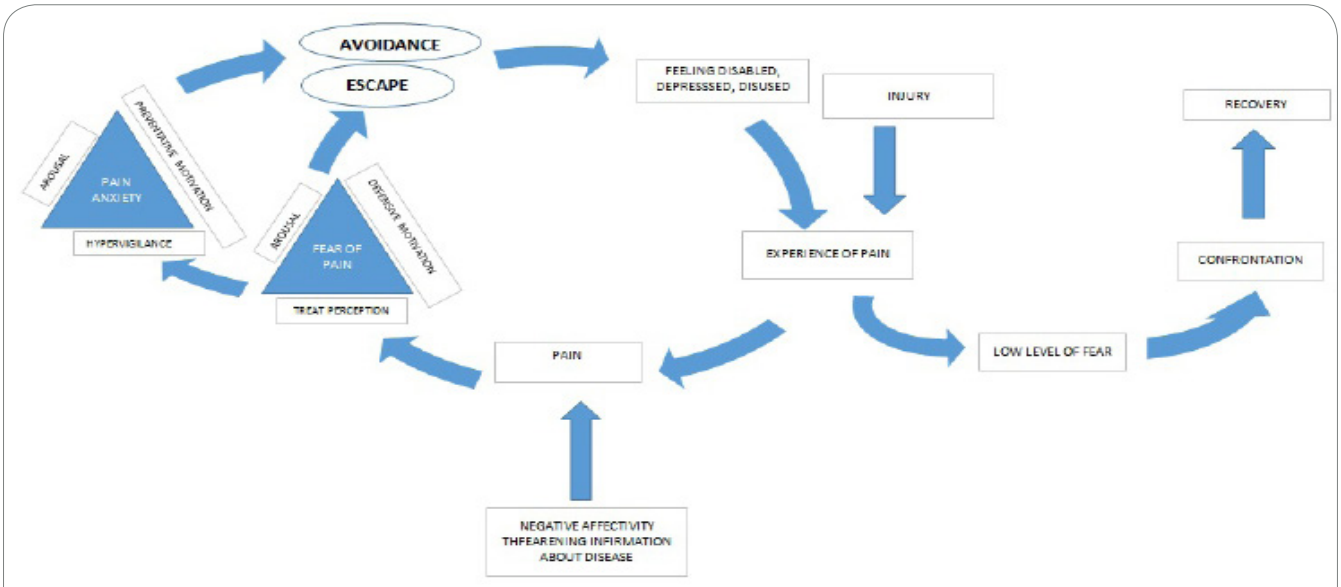

Figure 1: Fear Avoidance Model. Adapted from Alappattu MJ, Bishop MD. Psychological Factors in Chronic Pelvic Pain in Women: Relevance and Application of the Fear-Avoidance Model of Pain. Phys Ther. Oct 2011; 91(10): 1542–1550 [15].

on a spectrum of coping response to pain: confrontation and avoidance. People who confront with pain after the trauma are highly motivated to quick recovery and return to previous normal activities. People, who have a pessimistic attitude to life events, perceive pain as a disaster and avoid activities and experiences that they assumed to be painful. This cause exclusion and avoidance of any activities in life leading to malfunction or disability [14].

The results of recent available studies suggest that psychological factors in women with CPPS have an important role in experiencing pain, behaviour and attitude towards sexual stimulation. The personality of women with CPP has the following traits: increased alertness, catastrophic thinking and anxiety [14]. There is evidence that women with CPPS exhibit lower level of sexual desire and arousal.

In the recent work by Thomtén & Linton the results of studies on dyspareunia were analysed to confirm the theoretical bases of FAM in case of sexual pain disorders. The results suggest that experiencing pain in dyspareunia may be similar to experiencing pain in other situations. Pain catastrophizing, oversensitivity or impairment, that are the key variables of the FAM, are experienced also in case of sexual pain. The difference between sexual pain and other types of pain comes from experiencing it during a psychosexual relation with the partner, however, the results prove that the application of the FAM to sexual pain is correct [30]. Thus FAM adaptation to the sexual pain disorders opens new ways of treating sexual disorders in gynaecological clinics.

Take Home Message for Gynaecologists

CPP man not always be a result of organic causes – in many cases sexual pain may lead to CPPS. For that reason it is important to ask female patients, when taking their history, about their subjective experiences during and after sexual intercourse as well as objectifying their physiological responses e.g. in sexual organs. It has to be emphasize that genital symptoms of arousal are often not accompanied by sexual satisfaction, as females may go through physiological stages of sexual response without experiencing sexual pleasure [7,8,21]. Fear of disclosing a sexual dysfunction or difficulties in a relationship with the partner may be a problem with self-evaluation and according to Basson's model of sexual response; it may become another cause of dyspareunia. Physicians, especially gynaecologists, should carefully take time for good communication, listen to the patient without necessarily knowing the therapeutic options, but they must know where to refer the patient [14].

Competing Interests

The authors declare that they have no competing interests.

Author Contributions

Beata Wróbel: Study design, data collection, paper preparation, paper review.
Krzysztof Nowosielski: Study design, data collection, paper preparation, paper review.
Patrycja Sodowska: Data collection, paper review.
Sodowski Krzysztof : Data collection, paper review.

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