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Menopause and sexuality

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ABSTRACT

Many women spend a third of their lives in postmenopause, and it's a given that sexual life must go on after menopause since its benefits were vastly proven. A number of factors influence sexuality in postmenopause: the age at which menopause sets in, how menopause sets in, physical and mental state, quality of sexual life in perimenopause and the quality and duration of the relationship with the partner. The hypoestrogenism that characterizes menopause leads to a decrease in libido, to changes in the genital apparatus (vaginal atrophy, dyspareunia) or other changes (hot flushes, impaired urination, depression), which negatively affect sexual health. Assessing sexual dysfunction is not easy. The interplay between the types of factors that predispose, precipitate and maintain sexual dysfunction requires preparation on the part of the clinician in identifying the elements of interest and indicating appropriate therapy. Research on the quantification of sexual dysfunction in women has led to the development of various scales or questionnaires to assess the impact of menopausal-related changes on sexual function and quality of intimate life. The ultimate goal of the clinician is to find an optimal method of treatment that will improve the condition and enhance the quality of sexual life. The available knowledge about menopausal sexuality may still be the tip of the iceberg in both medical practice and society and further research and information campaigns are greatly needed.

Keywords: menopause, sexuality, hypoestrogenism, sexual dysfunction, quality of life

INTRODUCTION

Menopause is a physiological process characterized by a multitude of hormonal, physical and psychological changes [1]. Menopause cannot be considered as a fixed moment in time, being actually preceded by a transition period (perimenopause / menopausal transition period) that takes place over several years (on average 5 years) and in which the decline of ovarian endocrine function occurs followed by changes in the menstrual cycle, physical and mental state, all of which have an impact on intimate and daily life, sometimes going as far as decreasing the quality of life [2].

A big problem for menopausal women is their sex life, sexual health and sexuality. The perimenopausal and menopausal woman equates menopause with getting older and losing their reproductive capacity [3]. Each woman's perception of her own aging is handled differently, depending on her level of education, her social context and her desire to be sexually active. Sometimes, the need for relationships, the basic psychological need to associate with one's peers, leads the perimenopausal and menopausal woman to make decisions that allow her to reaffirm her sexuality. The gradual increase in life expectancy with women usually living past the age of 80 years in developed countries, means that a woman spends on average one third of her life in the postmenopausal stage. Although there is a tendency to assume that women lose interest in sex after menopause, sexuality remains a moderate to extremely important element for many postmenopausal women [4].

Menopause is an important period of time in every woman's life and the quality of sexual life may not always be a comfortable topic for discussion. Women may not be willing to start a conversation about sexual interest, behavior and activity it-

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self, but may not perceive the experience as unpleasant when questioned by doctors. Careful history taking that includes information about medical, urogenital and obstetrical history, as well as the use of certain medications or other factors that may influence the individual's health (smoking, alcohol or narcotic use) may help the clinician establish a connection between the onset of sexual symptoms and the transition to menopause, or the possible link between organic factors and decreased libido / sexual satisfaction / dyspareunia / the couple's quality of life [5,6].

METHODS

A PubMed, Web of Science systematic electronic search was undertaken using keywords like "menopause", "sexuality", "dyspareunia", "quality of life", "sexual life". The search results included systematic reviews, randomized controlled trials, review articles, meta-analyses and international guidelines and resulted in more than 110 articles, from which only 20 papers were further included in the final review. Also, information from official topic related sites was used.

DEFINING SEXUAL HEALTH DURING MENOPAUSE

Sexuality is an integral part of an individual's life, and WHO defines sexuality as "a central aspect of being human throughout life that encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles and relationships. While sexuality may include all of these dimensions, not all are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors" [7].

The WHO definition of sexuality reinforces the idea that there are a multitude of factors, including sex hormones, involved in modulating sexual function and behavior throughout a woman's reproductive life. Menopause is a turning point in a woman's life as it brings changes from a biopsychosocial perspective. Most middle-aged women feel that maintaining a satisfying sex life is very important to them, in the same way that sex is a relevant aspect of their relationship with their partner [5]. Even though sex is an important component of a woman's life, sexual activity and function physiologically decline with advancing age [8]. Clinicians have long been concerned about the effect of menopause on women's sexual health since the most common problems reported by postmenopausal women are those related to impaired sex life [9].

Sexuality is closely linked to sexual health. WHO says that sexual health is "a state of physical, emotional, mental and social well-being in relation to sexuality, it is not only the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships and the opportunity to have pleasurable and safe sexual experiences, free from coercion, discrimination and violence. For sexual health to be achieved and maintained, the sexual rights of all people must be respected, protected and fulfilled". [7].

Sexual dysfunction is defined as a disturbance in the psychological response to sexual stimuli (sexual desire, arousal, orgasm) or pain associated with sexual intercourse. Sexual relationships are one of the most important factors influencing marital life and family happiness, without which failure, insecurity and decreased quality of life can appear [10,11].

BARRIERS IN THE MANAGEMENT OF MENOPAUSE RELATED SEXUAL DYSFUNCTION

Information, or rather, access to information is one of the most important points in managing issues related to sexuality and sexual health of postmenopausal women. Society is constantly changing and access to information is changing with the times. Today's reliance on electronic devices and a foreign language (i.e. English) at the expense of interpersonal interaction means that poor access to information for many postmenopausal women is sometimes a major barrier to getting professional help and increasing the quality of their sexual lives. It must be taken into account also the existence of other limitations to access to information, such as education, religious beliefs or social background. All these things make professional help rarely sought and equally rarely received. It is not only the menopausal woman's fault that she cannot improve the quality of her sexual (and related) life; equally, health specialists must be prepared to provide care to the women who approach them. Unfortunately, lack of time, lack of specific knowledge, concerns about one's own confidence and abilities, worry about causing offense, personal discomfort and misconceptions about the lack of sexual needs and age-appropriate behavior of menopausal women are some of the mistakes made by specialists in managing the sexuality and sexual health of menopausal women [4].

FACTORS INFLUENCING SEXUAL DYSFUNCTION IN MENOPAUSE

A number of factors influence sexuality in menopause: the age at which menopause sets in and

how menopause sets in, physical and mental state, quality of sexual life in perimenopause or the quality and duration of the relationship with the partner. The hypoestrogenism that characterizes menopause leads, in addition to a decrease in libido, to changes in the genital apparatus (vaginal atrophy, dyspareunia) or other changes (hot flushes, impaired urination, depression), which accumulate and negatively affect sexual health [2,5]. Aging contributes to a decline in sexual function and the development of unpleasant menopausal symptoms. Although aging is an important factor in the decline of sexual performance, the sexual behavior of postmenopausal women is influenced by their physical and mental state, quality of life and relationship with their partner. Education, history of sexual relationships and how they have functioned, socio-economic status and environment, stress factors or negative attitudes towards menopause play an important role in the perception of sexuality in menopause. The menopausal woman shows a decrease in libido, sexual response (arousal, orgasm, satisfaction) and number of sexual acts, as well as increased vaginal dryness and increased dyspareunia [5].

Sexual dysfunction in menopause originates from a mixture of biological, psychosexual and contextual factors that predispose, precipitate and maintain sexual dysfunction (Table 1) [4].

Factors such as disorders of menstrual cycles throughout the fertile life, genetic or autoimmune pathologies, general and / or associated with premature ovarian failure (Turner syndrome, Fragile X syndrome, mosaicisms, deletions or inversions, systemic lupus erythematosus, rheumatoid arthritis etc.) affect through multiple mechanisms sexual life, both before and especially after the cessation of ovarian function, thus contributing to the appearance and severity of sexual dysfunction [12]. Temporary / definite menopause induced by oncological treatments / hormonal treatments / psychiatric treatments / substance abuse / surgery of the ovaries causes physical, biological and psychoemotional changes [13,14]. The study of physiological menopause has allowed the evaluation of changes that occur in the female body by slow ovarian estrogen deprivation, while surgically induced menopause is a clinical model study for acute ovarian estrogen and androgen deprivation. The role of androgens in menopause is intensively studied, and although the level of androgens in menopause decreases physiologically with decreasing adrenal production, the ovary in menopause maintains its ability to secrete reduced amounts of androgens who's beneficial tissular effect depends on the bioavailability of target tissues to respond to androgens. Symptoms associated with menopause (hot flushes, mood swings, sleep disturbances, vaginal dryness etc.) are similar regardless of how menopause sets in, but their severity, effects on quality of life and induced distress vary individually. Surgical menopause is often associated with extremely distressing symptoms and sexual dysfunction, all the more unpleasant as they occur in women younger than those with natural menopause [3].

Psychosexual factors predispose, precipitate and maintain sexual dysfunction. Sexual experience during fertile life or sexual history profoundly affects the quality of sexual intercourse, especially when there is a history of violence or abuse. Also, affective disorders such as depression or anxiety, temperament and personality type or relationship with a partner can cause or worsen sexual disorders and the quality of intimate life [15]. Premature loss of fertility and the resulting personal, relational and social deception accompanied by decreased self-confidence and self-perception are associated with affective disorders, distress, decreased sexual desire and pleasure, and are psychosexual factors underlying sexual disorders [16].

MENOPAUSE RELATED SEXUAL DYSFUNCTION ASSESSMENT

Assessing sexual dysfunction is not easy. The interplay between the types of factors that predispose, precipitate and maintain sexual dysfunction requires preparation on the part of the clinician in identifying the elements of interest and indicating appropriate therapy. Research on the quantification of sexual dysfunction in women has led to the development of various scales or questionnaires to assess the impact of menopausal changes on sexual function and quality of intimate life (Table 2) [17]. Giraldi et al. [18] published a review of the questionnaires used to assess sexual function and dysfunction in women (27 in total), analyzing the strengths and limitations of each questionnaire already in use or being validated. The authors divided the questionnaires into 4 levels according to their purpose and degree of development / validation. Thus, the questionnaires included in levels I-III (25 in number) are validated questionnaires investigating sexual dysfunction in women, while 2 questionnaires included in level IV are under evaluation / validation [18].

FEMALE SEXUAL FUNCTION INDEX – AN USEFUL TOOL

One of the most widely used questionnaires for the global measurement of female sexual function is the female sexual function index (FSFI) - see Table 3 and Table 4. This questionnaire contains 19 questions organized into 6 domains: desire, arousal, lu-

TABLE 1. Factors influencing sexual dysfunction in menopause [4]

Predisposing factors	Organic	Gynecological operations Premature ovarian failure Endometriosis Iatrogenic induced menopause (bilateral oophorectomy, chemotherapy, radiotherapy), Endocrine factors
	Psychosexual	Sexual history, Perceptions of self Personality traits History of sexual violence / abuse Affective disorders Coping strategies
	Contextual	Ethnic / cultural / religious expectations and constraints Support and personal relations
Precipitating factors	Organic	Age at onset of menopause Natural / iatrogenic menopause Severity and duration of symptoms associated with menopause Comorbidities Substance abuse
	Psychosexual	Interpersonal relationships Affective disorders Loss of partner Previous sexual experience
	Contextual	Distress factors (divorce, infidelity, separation, loss of a loved one) Lack of access to medical treatment Poverty
Factors that maintain	Organic	Changes associated with menopause (hormonal, vascular, muscular, neurological, immunological) Contraindications to HRT Inappropriate HRT Substance abuse Drug treatments
	Psychosexual	Own view of menopause Lack of confidence in own sexuality Affective disorders Elements of emotional, occupational or partner related distress Physical or sexual health of partner
	Contextual	Interpersonal conflicts Lack of access to health services
HRT – hormone replacement therapy		

brication, orgasm, satisfaction and pain. Completion time is approximately 15 minutes, with each question scored using a Likert scale of 0-5 or 1-5 points, with zero indicating participants to be excluded from the analysis due to lack of sexual activity in the past 4 weeks. The questionnaire is available online http://www.fsfi-questionnaire.com and is accessible to women with various clinical conditions. The questions are scored from 0, or 1 to 5, and the value obtained for each question is multiplied by a specific coefficient for each domain, with the final result ranging from 1.2 to 36, with a cut-off of 26.5 for the diagnosis of sexual dysfunction. The FSFI demonstrated adequate test - retest reliability ($r = 0.75$-0.86) and excellent internal consistency for both the total score and its subdomains (Cronbach's $\alpha = 0.89$-0.95). This scale also possesses adequate convergent / discriminant validity when tested against multiple instruments [18-21].

FSFI is a simple to use method for assessing sexual dysfunction; it can be used for all ages and conditions, not just menopausal women. The method involves a high degree of subjectivity, requiring clinical assessment for the diagnosis of atrophic disorders characteristic of the genitourinary syndrome or associated with other treatments or therapies causing local anatomical or functional changes [22,23]. Although it is a widely accepted method, it was designed for heterosexual couples, and additional studies such as validation in gay, bisexual or institutionalized women without access to a partner are needed [19,22,24]. FSFI retains its validity when translated into another language (to date it has been translated into 20 languages other than English) [22].

TABLE 2. 28 questionnaires assessing sexual dysfunction [17-19]

Questionnaire	Questions (n)	Area of interest
Derogatis Sexual Function Inventory (DSFI)	213	General information, experience, attitude, body image, fantasy, satisfaction, sexual desire etc.
Derogatis Interview for Sexual Function (DISF/DISF-SR)	25	Sexual awareness/fantasy, sexual arousal, sexual behavior/experience, orgasm and sexual desire/relationship
Female sexual function index (FSFI)	19	See text
Sexual Function Questionnaire (SFQ)	26	Arousal - sensation, lubrication and orgasm; desire and pleasure pain; relationship with partner
Sexual Activity Questionnaire (SAQ-F)	10	Pleasure, discomfort, habit,
Brief Index of Sexual Functioning for Women (BISF-W)	22	Interest/desire, activity, satisfaction
Changes in Sexual Functioning Questionnaire (CSFQ) and CSFQ-14	14	Desire, excite, orgasm
Golombok-Rust Inventory of Sexual Satisfaction (GRISS)	28	Sexual maladjustment, Psychological maladjustment, Sexual experience, Female anhedonia (inability to feel pleasure)
Female Sexual Distress Scale (FSDS/FSDS-R)	12/13	One-dimensional concept of associated personal suffering with sexual problems
Sexual Satisfaction Scale for Women (SSS-W)	30	Thankfulness, communication, compatibility, concern for own person/ partner
Sexual Life Quality Questionnaire (SLQQ)	16	Quality of sex life, treatment of sexual satisfaction
Treatment Satisfaction Scale (TSS)	variable	Designed as a patient and partner satisfaction questionnaire during the treatment of male sexual dysfunction. The female part of the original TSS focuses mainly on partner satisfaction correlated with the erectile and ejaculatory functioning of the male partner, and as well as on desire, orgasm and sexual pleasure.
Life Satisfaction Checklist (LiSat-9/-11)	8(9)-11	Sexual Satisfaction, Approach, Health, leisure and mood
HSDD Screener	4	Desire/interest, distress
Sexual Arousal and Desire Inventory (SADI)	54	Arousal/desire, evaluation, motivation, aversion/negative attitude, physiology
Sexual Interest and Desire Inventory-Female (SIDI-F)	12	Interest/greed
Cues for Sexual Desire Scale (CSDS)	40	Emotional/love connection, erotic, visual closeness, romantic involvement
Women's Sexual Interest Diagnostic Interview (WSID) and the WSID-Short Form (WSID-SF)	39	Suffering, objective and subjective arousal, relationship with partner
Decreased Sexual Desire Scale (DSDS)	5	Desire/interest, suffering
Orgasm Rating Scale (ORS)	28	Orgasm
Scale for Quality of Sexual Function (QSF)	32	Quality of life (overall) in older people, psychosomatic quality of life, sexual function and activity, partner opinion
McCoy Female Sexuality Questionnaire (MFSQ)	19	Assesses sexual interest, satisfaction with frequency of sexual activity, vaginal lubrication at orgasm, sexual partner. Measure aspects of women's sexuality sensitive to changes in hormone levels Remains valid when translated into another language
Short form of the Personal Experiences Questionnaire (SPEQ)	9	Derived from MSFQ Reduced number of questions A score of </= 7 determines 79% specificity and sensitivity of those postmenopausal women with sexual dysfunction. Correlates sexual symptoms with possible sexual failure on the part of the partner.
Profile of Female Sexual Function (PFSF)	37	Desire, pleasure, receptivity, arousal, orgasm, self-image, sexual interest
Menopausal Sexual Interest Questionnaire (MSIQ)	10	Short questions One-dimensional instrument Focuses on investigating sexual desire, receptivity and satisfaction
The Arizona Sexual Experiences Scale (ASEX)	5	quantifies sexual desire, arousal, vaginal lubrication/penile erection, ability to orgasm and orgasm satisfaction separately for men and women

Questionnaire	Questions (n)	Area of interest
The Female Sexual Encounter Profile	*6*	- under evaluation *- assesses a woman's arousal*
The Detailed Inventory of Sexual Health Experience Survey (DISHES)	-	*- under evaluation* *- aims to provide a measure of sexual function, satisfaction or distress, the relationship between sexual function and intimate relationships, women's health and hormonal status*

TABLE 3. FSFI questionnaire [20]

Query no.	Enquiry	Answer options
1	In the last 4 weeks, how often felt sexual desire or interest?	5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never
2	In the last 4 weeks, how would you rate your level of sexual desire or interest?	5 = very high 4 = redundant 3 = moderate 2 = low 1 = very low or absent
3	In the past 4 weeks, how often have you been aroused during sex?	0 = no sexual activity 5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never
4	In the last 4 weeks, what was the degree of arousal during sex	0 = no sexual activity 5 = very high 4 = redundant 3 = moderate 3 = low
5	In the last 4 weeks, how confident have you been during sexual activity	0 = no sexual activity 5 = very confident 4 = increasing 3 = highly confident 2 = somewhat untrustworthy 1 = non-confident
6	In the last 4 weeks, how often have you been satisfied with the degree of arousal during sex?	0 = no sexual activity 5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never
7	In the last 4 weeks, how often have you spontaneously lubricated (wet) yourself during sexual activity?	0 = no sexual activity 5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never
8	In the last 4 weeks, how difficult has it been to lubricate spontaneously during sexual activity?	0 = no sexual activity 1 = extremely difficult or impossible 2 = very difficult 3 = difficult 4 = difficult to find 5 = no difficulty
9	In the last 4 weeks, how fecund have you kept yourself lubricated(wet) during sexual activity?	0 = no sexual activity 5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never

Query no.	Enquiry	Answer options
10	In the last 4 weeks, how difficult has it been to maintain your lubrication during sexual activity?	0 = no sexual activity 1 = extremely difficult or impossible 2 = very difficult 3 = difficult 4 = difficult to find 5 = no difficulty
11	In the last 4 weeks, how often have you come during sexual activity?	0 = no sexual activity 5 = all or most of the time 4 = most of the time 3 = sometimes 2 = rarely 1 = almost never or never
12	In the last 4 weeks, how difficult has it been to reach orgasm during sexual activity?	0 = no sexual activity 1 = extremely difficult or impossible 2 = very difficult 3 = difficult 4 = difficult to find 5 = no difficulty
13	In the last 4 weeks, how satisfied have you been with the fact that you were able to orgasm during sexual activity?	0 = no sexual activity 5 = very satisfied 4 = moderately satisfied 3 = neither satisfied nor dissatisfied 2 = moderately dissatisfied 1 = very dissatisfied
14	In the past 4 weeks, how satisfied have you been with your emotional connection with your partner during sex?	0 = no sexual activity 5 = very satisfied 4 = moderately satisfied 3 = neither satisfied nor dissatisfied 2 = moderately dissatisfied 1 = very dissatisfied
15	In the last 4 weeks, how satisfied have you been with your sexual relationship with your partner?	5 = very satisfied 4 = moderately satisfied 3 = neither satisfied nor dissatisfied 2 = moderately dissatisfied 1 = very dissatisfied
16	In the last 4 weeks, how satisfied are you overall with your sex life?	5 = very satisfied 4 = moderately satisfied 3 = neither satisfied nor dissatisfied 2 = moderately dissatisfied 1 = very dissatisfied
17	In the past 4 weeks, how often have you had discomfort or pain during vaginal intercourse?	0 = avoids sexual contact 1 = all or most of the time 2 = most of the time 3 = sometimes 4 = rarely 5 = almost never or never
18	In the past 4 weeks, how often have you had discomfort or pain after vaginal intercourse?	0 = avoids sexual contact 1 = all or most of the time 2 = most of the time 3 = sometimes 4 = rarely 5 = almost never or never
19	In the last 4 weeks, what is the degree of discomfort or pain during vaginal intercourse?	0 = avoids sexual contact 1 = very high 2 = redundant 3 = moderate 4 = low 5 = very low

TABLE 4. FSFI questionnaire – the way of calculating the final score [20]

Domain	Questions	Score limits	Coefficient	Minimum score	Maximum score	Final score
Desire	1,2	1-5	0.6	1,2	6.0	
Excitement	3,4,5,6	0-5	0.3	0	6.0	
Lubrication	7,8,9,10	0-5	0.3	0	6.0	
Orgasm	11,12,13	0-5	0.4	0	6.0	
Satisfaction	14,15,16	0(1)-5	0.4	0	6.0	
Pain	17,18,19	0-5	0.4	0	6.0	
		Limit		1,2	36.0	Total

CONCLUSIONS

Even though sexual problems in menopause are common, menopausal women find it difficult to verbalize these difficulties, and it is sometimes easier for them if during routine medical consultations the clinician approaches the subject requiring patients to answer to tactfully and sensitively asked questions about sexual difficulties, the ultimate goal being to find an optimal method of treatment that will improve the condition and enhance the quality of daily and sexual life.

Currently available knowledge about menopausal sexuality may still be the tip of the iceberg in both medical practice and society, so it sems that further research and public information campaigns are greatly needed.

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