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Understanding Physiology and Pathology of Sexual Health

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ABSTRACT

According to world health organization, Sexual health is a broad area that encompasses many inter-related challenges and problems. Key among the issues and concerns are human rights related to sexual health, sexual pleasure, eroticism, and sexual satisfaction, diseases (HIV/AIDS, STIs, RTIs), violence, female genital mutilation, sexual dysfunction, and mental health related to sexual health. The present review presents physiology and pathology of sexual health which helps the researchers and clinicians to understand and plan and develop new treatment procedures for better reproductive health for the benefit of population in general.

Keywords: *Physiology, Pathology, Sexual health.*

Sexual health is defined as the integration of the somatic, emotional, intellectual, and social aspects of sexual being; in ways that are positively enriching and that enhance personality, communication and love. It means that sexuality is made up of a collection of other concepts- somatic, which means of the body or physical; emotional, meaning feelings affecting the psychological of the person; intellectual, implying cognitive understanding; and social suggesting interaction with others. The end result of having these components in harmony would enhance personality, communication, and love. The present review was undertaken to understand the physiology and pathology of sexual health to promote translational research in this area.

Materials and Methods

We have reviewed indexed journals from PubMed, Scopus and Google Scholar by using key words Breast cancer and sexuality.

Concept of sexuality

Human sexual behavior is learned through the socialization process and conforms to the prevailing norms in a given society. It is our interactions with others that we learn sexual behavior and our feeling about sex; good sex is enjoyable both physically and emotionally, as subjectively experienced by partners. Sex researcher Paul H. Gebhard (1975) observed that

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satisfying sex life is one factor contributing to marital stability. Good sex was positively associated with women's marital happiness.

The happier the marriage to begin with, the better sex life a couple has, and the longer a marriage lasts, the more experience a couple has together, so the better the sexual adjustment and activity they exhibit[1] Sexual activity was defined as activities with a partner including kissing, touching, and other intimate contact, including intercourse[2].

Physiology of sexual response

To gain a better understanding of the total process of sexual response, it is helpful to have a clear understanding of the actual physiological changes that take place during sexual stimulation[3]. Masters and Johnson were the first to describe the sexual response cycle in 1966, listing the following phases: excitement, plateau, orgasm, and resolution. In 1979, Kaplan modified the phases to: desire, arousal, orgasm, and resolution. These phases are the basis for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) definitions of female sexual dysfunction, along with the classification system of the American Foundation of Urologic Disease[4]

According to the research of Master and Johnson (1966) the phases of sexual response may be divided into four phases:

(1) The Excitement Phase

Extends from the beginning of sexual stimulation to the point at which the individual reaches a high degree of sexual excitation. The duration may extend or prolong depending upon the intensity of the stimulation and individual reaction to it. Cessation of stimulation or some form of interruption (uncomfortable move or a displeasing comment) may even abort the process.

(2) Plateau Phase

If sexual stimulation continued and sexual tensions intensified, the individual reaches this phase of sexual cycle, from which he or she move to orgasm.

(3) The Orgasm Phase

Is limited to those few seconds during which sexual tension is at its maximum and then suddenly released.

(4) Resolution Phase

During which sexual tension subsides as the individual moves back through the plateau and the excitement phases to the unstimulated state[3]

Physiological Responses to sexual response:

Vasocongestion

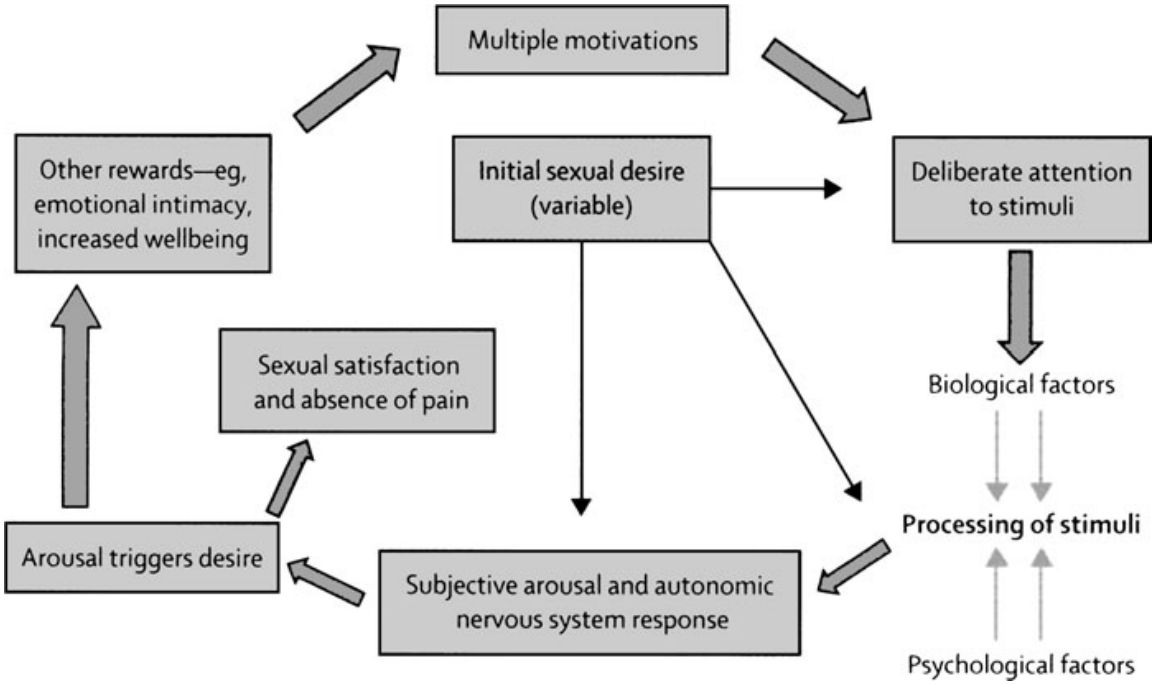
This is the process where the woman's clitoris, labia and nipples become engorged with blood, which causes swelling and enlargement. One of the most important changes in the female is in

the vagina. The outer one-third becomes engorged with blood, reducing the opening, with the outer muscles contracting around the penis.

Lubrication

Within 10-30 seconds after sexual stimulation begins, sweating and self-lubrication of the inner walls of the vagina begin. The presence of lubrication is one indication of sexual response[2]

On the other hand, Basson and Basson et al. have reconceptualized the female sexual response to account for the complexity of female sexual desire and arousal, which does not follow the above linear model of discrete phases of sexual response which proposed by Masters and Johnson and Kaplan. Instead, a circular intimacy-based sexual response cycle was proposed (Fig. 1), with overlapping phases of variable order.



(Fig. 2) Circular model of human sexual response, showing cycle of overlapping phases. The sexual and nonsexual outcomes influence future sexual motivation.

Basson noted that women participate in sexual activity for diverse reasons; including a desire for emotional closeness, but sexual desire is an infrequent factor for women in established relationships[5] as most women in long-term relationships do not frequently think of sex or experience spontaneous hunger for sexual activity. On the contrary, many women may experience spontaneous desire and interest in a new sexual relationship or after a long separation from a partner. In the former cases, Basson suggests that a desire for increased emotional closeness and intimacy or approach from a partner may predispose a woman to participate in sexual activity. From this point of sexual neutrality – where a woman is receptive to being sexual but not initiate sexual activity–the desire for intimacy prompts her to seek ways to

become sexually aroused via conversation, music, reading or viewing erotic materials or direct stimulation. Once she is aroused, sexual desire emerges and motivates her to continue the activity[6].

Sexual stimulation some times divided into two types, those dependent on the brain, such as visual, auditory, olfactory and internal imagery, know as psychic stimulation, and those dependent on touch, called reflexive, because they can be effective without the brain. The previous are interact with one another; psychic stimuli will increase the sensitivity to reflexive stimuli and vice versa moreover considerable external stimulation and only direct touches will succeed in producing sexual responses[7]

Benefit of sexual activities:

In addition to the sheer pleasure of the sexual act, there are positive health benefits that result. Consider that sex:

- *Helps with losing weight and gaining energy:* Sex burns about 150 calories every half hour. Taking part in sexual activities for more than 2 hours can burn up to 600 calories.
- *Improves sleep and relaxation:* Following lovemaking, it's easy to surrender to sleep when you are relaxed and tired from burning calories. It's a great way to overcome insomnia.
- *Relieves pain:* Studies indicate that sex may reduce headaches and joint pains by raising endorphin levels. These endorphins remain in the body for several hours after climaxing.
- *Increases longevity:* Sex actually slows the aging process, enabling us to stay younger.

Sex also improves stress and mood, strengthens and improves immunity, improves cardiovascular health, lowers cholesterol and increases intimacy within a relationship[8]

Female Sexual dysfunction

Nationally representative survey of sexual behavior in a young population, reporting sexual function problems is relatively common and is associated with a number of socio-demographic, sexual and health behavioral and attitudinal variables. The prevalence of reporting sexual function problems is significantly higher in women, relative to men, as others have reported. Furthermore, women with young children in the home were significantly more likely to report problems. In accordance with other studies, some association was found with increasing age, having young children in the home, but contrary to others' findings, no significant association with education and ethnicity was observed for either men or women[9]

Medical risk factors and causes of female sexual dysfunction has been classified into three different categories, depending on whether it is ***primary*** (realistic sexual expectations have never been met under any circumstances), ***secondary*** (all phases have functioned in the past, but one or more no longer do so), or ***situational*** (the response cycle functions under some circumstances, but not others[4]

Sexual dysfunction may involve a decreased interest in or desire to engage in sexual activity, decreased arousal, difficulty achieving orgasm, or pain during sexual activity. A diagnosis of female sexual dysfunction (FSD) is made when one or more of these symptoms is present and causes distress or interferes substantially with interpersonal relationships. Understanding FSD continues to grow, but there is still much to be learned, especially regarding treatment[10]

Sexual desire disorders

a) *Hypoactive sexual desire disorder* is a recurrent or persistent deficiency or absence of sexual thoughts, fantasies, and/or receptivity to sexual activity that causes personal distress. It may be related to certain medical conditions such as hormone deficiencies, surgery, or medications, or may be associated with emotional or psychological factors. Sexual desire (libido) can decrease when women undergo menopause, whether natural or surgically or medically induced, and in women with endocrine disorders[4] more over sexual thoughts are generally infrequent in women and the frequency of sexual thoughts has relationship to sexual satisfaction in women[3]

Sexual arousal disorder

Is defined as the inability to attain or maintain sufficient sexual excitement, expressed as a lack of subjective excitement or somatic response such as genital lubrication. This may include absent or diminished vaginal lubrication, decreased clitoral and labial engorgement or sensation, and lack of vaginal smooth muscle relaxation. While psychological factors may be the key player in arousal, there often is a medical basis, as in the decreased vaginal or clitoral blood flow secondary to medications, pelvic trauma, or surgery[4]

The factors that influence desire and arousal in women are incompletely understood but are likely the results of a complex interaction among the autonomic nervous system (various neurotransmitters), sex hormones (estrogen, testosterone), and environmental factors (mental health, fatigue, quality of the partner relationship)[3]

Orgasmic disorder is a persistent and/or recurrent difficulty, delay in, or absence of attaining orgasm after sufficient sexual stimulation and arousal, which causes personal distress. It may be primary when a woman has never achieved orgasm, (sometimes the result of emotional trauma or sexual abuse). Secondary orgasmic disorder occurs in situations were orgasms were achieved in the past, and causes may be the result of hormonal deficiency, medications, surgery, or trauma.

Sexual pain disorders include the following:

a) *Dyspareunia* is recurrent or persistent genital pain associated with sexual intercourse.

It may be psychological, or it may be associated with medical causes such as menopause, infections, or certain conditions.

b) ***Vaginismus*** is defined as severe pain and /or involuntary spasm of the distal vaginal and pelvic floor muscles during attempted penetration. Examination reveals no organic pathologic condition, but the pubococcygeal muscles are tight and vaginal penetration by speculum or examining finger is painful and difficult, if not impossible

Causes of FSD

1) **Psychogenic**: Emotional and relationship problems can have a significant impact on sexual desire, arousal, and/or orgasm. Depression, or the medications used to treat it, may decrease desire, arousal, and genital sensation in women and interfere with their ability to achieve orgasm. A woman's morals, body image, and self-esteem are all possible contributing factors to FSD.

2) **Endocrinologic**: Hormonal imbalances as a result of menopause, hypothalamic-pituitary axis dysfunction, surgical or medical castration, or premature ovarian failure are some of the endocrine causes of FSD. Menopausal women often complain of vaginal dryness; decreased desire or arousal; or dyspareunia, often secondary to decreased levels of estrogen and testosterone. At menopause there is a sharp decline in estradiol level, and although androgen levels decline over time, testosterone production can decrease by up to 25% in some women.

3) Muscular: The levator ani, bulbocavernosus, and ischiocavernosus muscles contribute to sexual arousal and orgasm. Vaginismus, dyspareunia, or vaginal hypoanesthesia may result as a consequence of muscular dysfunction[4]

CONCLUSION

The present review presents physiology and pathology of sexual health which helps the researchers and clinicians to understand and plan and develop new treatment procedures for better reproductive health for the benefit of population in general.

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Conflict of Interests

The author declared no conflict of interests.

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