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**CLINICAL FEATURES OF SEXUAL DYSFUNCTIONS IN WOMEN WITH NEUROLOGICAL DISEASES****Mirkhamidova N..***Basic doctoral student of the Department of "Rehabilitation, Folk Medicine and Physical Culture" of the Tashkent Medical Academy***Usmankhodjaeva A..***Candidate of Medical Sciences, Associate Professor, Head of the Department of "Rehabilitation, Folk Medicine and Physical Culture" of the Tashkent Medical Academy***Artikhhodjaeva D.***Assistant of the Department of Biomedical Sciences "EMU University"*<https://doi.org/10.5281/zenodo.7437284>**Abstract**

Scientific research related to neurological diseases in women has tended to increase in recent years. Among the main aspects of interest from the study is the quality of life, and one of the key links in reducing the quality of life are sexual problems arising in women with various pathologies of the nervous system. According to the conducted studies, women with diseases such as Parkinsonism, multiple sclerosis, who have suffered traumatic brain injuries and strokes remain sexually active. However, in 85% of cases, they had some problems related to sexual dysfunction (Andreeva E.N. et al., 2019). [1] The purpose of our study is to study publications related to the sexual disorders in women with neurological pathologies, methods for assessing their condition, as well as the possibility of providing rehabilitation services to this contingent of persons.

**Keywords:** rehabilitation, sexual disorders, stroke, Parkinson's disease, multiple sclerosis, brain injury, spinal cord injury

**Materials and methods:** We have searched for scientific articles in MEDLINE electronic databases through PubMed and Research 4 life over the past 10 years. As a result, it was found that 323 articles on sexual dysfunction in women after stroke, 292 – with multiple sclerosis (MS), 210 - with Parkinson's disease, 293 – after brain injuries (BI) and 211 after spinal cord injuries (SC) were published.

**Introduction:**

It was only at the end of the 20<sup>th</sup> century that the society began to recognize and emphasize that sexuality and reproductive health have a profound impact on the quality of life and participation in society, regardless of physical status or age. But the extent to which sexual activity is considered as part of the standard rehabilitation process is limited, both in clinical practice and in research.[2] Previously, discussion of sexual and reproductive activities was considered inappropriate, especially when discussing disabled or elderly people.[3] With the emergence of awareness of sexual well-being as a key indicator of the patient's quality of life and more effective treatment of sexual dysfunction, ignoring sexuality has become more unacceptable, especially in conditions of neurorehabilitation.[4]

Sexual dysfunction, such as lack of libido, as well as insufficient lubrication, dyspareunia and problems with orgasm in women, is not uncommon among the general population in whole. [5] If we take the population of patients with CNS disorders, the prevalence of sexual dysfunction is higher, despite the fact that few comparative studies have been conducted. For example, X. Robin, S. Angell, M. Scott, H. Flora, D. Maestas, etc. in their studies reveal that up to 71% of patients are completely satisfied with their sexual life. On the contrary, R. Aloni and S.Katz made all sorts of conclusions indicating that the causes and consequences of

sexual functioning after CBT are very confusing and that it is impossible to accurately distinguish between the primary and secondary sexual problems in such patients. Also, since many neurological diseases affect, first of all, elderly patients, and also bear the burden of any chronic lesion, sexual dysfunction, "specific" for neurological lesions, should be established against the background of valid control groups. For example, some cognitive impairments, personality changes and sensorimotor disability may remain after a traumatic brain injury. After all, sexual dysfunction (either as a consequence of brain damage or psychosocial factors) occurs in these people with a much higher frequency. [6] In particular, the decrease or increase in sexual desire may occur, at least partially, as a consequence of post-traumatic pituitary dysfunction. It is worth noting that frontal and temporal lesions seem to lead to sexual disorders more often than parieto-occipital lesions. The symptoms such as hypersexuality, disinhibited and inappropriate sexual behavior, sexually aggressive behavior and changes in sexual preferences sometimes follow basal frontal and limbic traumatic brain injury and can lead to sexual crimes. Meanwhile, bilateral anteroparietal lesion can lead to Kluwer-Bucy syndrome with hypersexuality and pansexuality (that is, sexual attraction, which is directed not only at people, but also at animals and inanimate objects). [6]

Unlike brain injuries, the best predictor of decreased sexuality after a stroke between partners is the degree of dependence in everyday life. Scientists like Me. Vikan, H. Snekkevik, M. Nielsen, J. Stangelle, E. Heydral, K. Fugl-Meyer write that only up to 35% of patients after stroke are satisfied with sexual life. At the same time, about 75 percent of patients who were sexually active before the stroke report the subsequent de-

crease in coital frequency. Moreover, poor sexual functioning can persist even with good dynamics of the disease. Such women experience a decrease in vaginal lubrication and the inability to achieve orgasm. Meanwhile, patients and their partners may avoid sexual intercourse due to concerns that another stroke may be accelerated. Namely, the heart rate during sexual activity can exceed 180 beats per minute; the load during sexual activity is similar to the load when climbing stairs or walking fast. Although the exact risk of stroke during sexual activity is not known, it seems low. Thus, patients and their partners can be sure that when resuming sexual activity, the benefits, in most cases, outweigh any minor risks. These issues should be considered at the consultation. As for hypersexuality after the stroke, it has been described, but it occurs rare. In parallel, sexual problems after the stroke can be complicated by another condition - depression. Since depression is a common consequence after acute cerebral circulatory disorders, it can be expected that sexual dysfunction and loss of libido may be associated with it. However, the authors noted sexual dysfunction in women after stroke, independent of the effect of depression. For example, the authors report that 60.8% of women after a stroke had a significant level of depression, but this was apparently underestimated and not treated. [7] But still, the interaction of depression and sexual functioning has been thoroughly studied in other studies [8] and this indicates the need to assess and eliminate symptoms of depression during subsequent visits. Therefore, the treatment of depression can have a beneficial effect on stroke patients who experience sexual dysfunction. [9] It follows that clinicians should be aware of the potential sexual side effects of antidepressants and consider choosing medications with the least sexual side effects, as well as make appropriate referrals for non-pharmacological interventions. [10]

On the contrary, in Parkinson's disease, sexual disorders are associated with the dysfunction of the bladder and intestines, which is characterized by the specific involvement of the autonomic nervous system. Thus, the dopaminergic system is closely related to the neural circuits that control desire and arousal. For this reason, women with Parkinson's disease have a decrease in libido, the frequency of sexual acts and the ability to achieve orgasm. According to G. Bronner, V. Reuter, A. D. Korchin, N. Giladi and others, women with Parkinson's disease have a loss of libido in 43% of cases, which correlates with the age, depression and cognitive impairment. Due to this, women with Parkinsonism report difficulties with arousal, tightness of the vagina, involuntary urination and sexual dissatisfaction. Moreover, depression is common in such patients and can affect sexual activity; its treatment can further compromise sexual function. Additionally, the tremor may increase during sexual arousal, thereby limiting the patient. In addition, muscle rigidity and bradykinesia can also make sexual activity difficult and worsen in the late evening if drug dose planning is aimed at supporting daytime activity. Accordingly, dopaminergic treatment can lead to the obvious increase or normalization of libido without the corresponding improvement in Parkinsonism. In contrast, a true increase

in desire and hypersexuality may occur as the adverse reaction to treatment with Levodopa and dopamine agonists, in particular. [7]

Disorders of sexual function are common in patients with multiple sclerosis, regardless of gender, and ultimately affect the majority of patients. For example, in the works of F. Courtois, M. Gerard, K. Charvier, D. Vodusek, J. Amarenko in joint works, it is noted that, in general, up to 85% of women with MS report one or more sexual dysfunctions. This is due to the fact that most of these disorders are characterized by involvement of the spinal cord and, as a rule, but not always, urination disorders and damage to the lower extremities. Sexual dysfunction also correlates with destructive lesions in the varolium bridge in patients with relapsing-remitting multiple sclerosis. Moreover, the interest in resuming sexual activity persists in most patients. At the same time, anorgasmia correlates with MRI data of brain stem and corticospinal artery abnormalities, as well as with the total area of lesions.<sup>8</sup> In the study of multiple sclerosis in women, decreased vaginal lubrication and sensory disturbances associated with the genital area (hypesthesia, hyperesthesia and various types of pain) are common and can manifest themselves already in the early stages of the disease. [9] At the same time, dysesthesia of the sacral segment can be so serious that patients cannot maintain direct genital or non-genital contact. For example, electrodiagnostic data — cortical evoked potentials of the dorsal nerve of the clitoris — suggest that pudendal somatosensory input is necessary for female orgasmic function, and that this may be impaired even with early MS. Again, some patients have the decrease in libido as the outcome of emotional and cognitive impairments. And increased sexual desire is sometimes a problem. Other symptoms associated with multiple sclerosis, such as fatigue, depression, cognitive dysfunction, spasticity of the lower extremities, urinary and intestinal disorders, as well as the use of aids to manage incontinence, can interfere with sexuality, as well as paroxysmal motor and sensory disorders caused by sexual intercourse. [10]

Injury or damage to the spinal cord can lead to a serious neurological deficit. In support of this, in various scientific publications concerning research on female sexuality after SCI, it is noted that the number of women leading an active sexual life after trauma ranges from 57 to 63%. [11] The significant reduction in the frequency of sexual acts is also indicated. In addition, the papers write that for the prediction of sexual activity, the number of years that have passed since the injury and the level of damage to the spinal cord are significant, but not the degree of damage. [12] Nevertheless, scientists note that women with complete tetraplegia have the most rare sexual contacts, but still without significant differences from women with paraplegia or with incomplete damage. [13] However, several works note the ability of women with complete and incomplete damage to achieve orgasm. It is believed that people with incomplete spinal cord injury are more likely to have an orgasm than people with complete damage. [12] In contrast to what has been said, in some scientific articles, scientists justify that there is no relationship between the level of damage and the ability to

have an orgasm, although in some cases they note that the absence of damage in the sacral segments is the necessary condition for having orgasm when stimulating the genitals. [14,15]

**Conclusions:** Thus, a deep understanding of the psychological and social consequences that may result from sexual dysfunction is crucial for the rehabilitation process for every neurological disorder. Therefore, honest communication and openness of the patient, partner, their support systems and the doctor are important tools for treatment. These tools are optimized through proper education and awareness of the physical, emotional, psychosocial, intellectual and spiritual factors that affect sexuality. Moreover, a person with a neurological disorder should know that sexual dysfunction can occur as one of the symptoms of their condition, and that treatment will be available when they are ready. It is extremely important that the clinician creates the atmosphere of acceptance, so that the patient trusts the patient, and initiates communication. It is important to solve these problems at the early stage of the disease and maintain the possibility of dialogue throughout the course of treatment. [16] As the result of all these actions, we will be able to imagine a new era when sexual problems can finally be solved in rehabilitation departments, when patients and caregivers are provided with correct information about sexuality and disability, and medical professionals are trained to objectively assess sexual dysfunction. [17] To achieve this fundamental goal, we need more research in this area aimed at the deeper study of the neurological foundations of sexual behavior and the main changes following neurological disorders. [18]

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