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DOI: 10.15225/PNN.2023.12.4.5 JNNN 2023;12(4):177–182 **Review**

Assessment of Psychopathological Changes and Mental Functioning in Patients with Multiple Sclerosis — a Literature Review

Ocena zmian psychopatologicznych i funkcjonowania psychicznego u pacjentów ze stwardnieniem rozsianym — przegląd literatury

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Abstract

MS (Multiple sclerosis) is the most common primary disease of the central nervous system. Although neurological symptoms predominate, an increased incidence of mental health disorders is also observed. The most common are depression and anxiety disorders. Cognitive impairment occurs in half of MS patients. Most often, they are associated with difficulties in concentration, memory disorders, and slower information processing. Changes occurring in the CNS cause long-term chronic fatigue. The loss of sexual drive may be caused by CNS pathology, especially the limbic system and brain stem nuclei, or by psychological mechanisms in response to the impact of MS symptoms. Pain is very troublesome for patients and makes it difficult to function, disturbing the quality of sleep, negatively affecting mood, causing anxiety and depression. A complete understanding of all aspects of MS in the bio-psycho-social dimension is necessary to provide holistic care to a patient with MS. The knowledge of medical staff regarding the image of psychopathological changes in the course of MS may be of great importance for the proper assessment of the mental state of patients and for undertaking adequate medical and nursing interventions. This will undoubtedly contribute to reducing psychopathological symptoms in patients themselves and thus improving the quality of life. **(JNNN 2023;12(4):177–182)**

Key Words: mental functioning disorders, multiple sclerosis, pain, sexual dysfunctions

Streszczenie

SM (Stwardnienie rozsiane) jest najczęstszą chorobą pierwotną ośrodkowego układu nerwowego. Przeważają wprawdzie objawy neurologiczne, ale obserwuje się też zwiększoną częstość występowania zaburzeń zdrowia psychicznego. Najczęściej są to depresja i zaburzenia lękowe. Zaburzenia funkcji poznawczych występują u połowy pacjentów z SM. Najczęściej wiążą się z trudnościami w koncentracji, zaburzeniami pamięci, wolniejszym przetwarzaniem informacji. Zmiany zachodzące w OUN powodują długotrwałe chroniczne zmęczenie. Utrata popędu seksualnego może być spowodowana patologią OUN, zwłaszcza układu limbicznego i jąder pnia mózgu, lub mechanizmami psychologicznymi będącymi odpowiedzią na wpływ objawów SM. Dolegliwości bólowe są bardzo uciążliwe dla pacjentów i utrudniają funkcjonowanie, zaburzając jakość snu, wpływając negatywnie na nastrój, powodując lęk i depresję. Pełne zrozumienie wszystkich aspektów choroby SM w wymiarze bio-psycho-społecznym, jest konieczne, aby zapewnić holistyczną opiekę pacjentowi z SM. Posiadana wiedza personelu medycznego z zakresu obrazu psychopatologicznych zmian w przebiegu SM, może mieć ogromne znaczenie dla właściwej oceny stanu psychicznego pacjentów oraz w podejmowaniu adekwatnych interwencji lekarskich i pielęgniarskich. Co niewątpliwie przyczyni się do zmniejszenia objawów psychopatologicznych u samych pacjentów a tym samym polepszenia jakości życia. **(PNN 2023;12(4):177–182)**

Słowa kluczowe: zaburzenia funkcjonowania psychicznego, stwardnienie rozsiane, ból, dysfunkcje seksualne

Introduction

The aim of the study is to assess psychopathological changes and mental functioning in patients with multiple sclerosis. The symptoms of multiple sclerosis can be transient and very subjective. Patients have difficulty describing them accurately, and their objective assessment is often difficult. A characteristic feature is the variety and tendency to change the nature and severity of symptoms. There is no predictable rule for the appearance of MS symptoms [1]. The most common symptoms are muscle stiffness (spasticity), tremor/seizure disorders, pain, temperature or touch disturbances, and Lhermitte's sign (a feeling of electric current flowing down the spine when bending the head to the sternum) [2]. Equally often, during the exacerbation phase, patients complain of superficial sensory disturbances, reduced fluidity of movements and conscious tremor of the limbs. Common symptoms include nystagmus and eye movement disorders, as well as balance disorders and dizziness [3]. Many genetic risk factors for multiple sclerosis have been identified, such as low vitamin D levels, a history of Epstein-Barr disease, smoking and obesity, especially in childhood [4]. Mental health problems with multiple sclerosis are not uncommon. The disease can complicate patients' lives in various ways. Although neurological symptoms predominate, an increased incidence of mental health disorders is also observed. The most common are depression and anxiety disorders [5]. Demyelinating changes that occur in the nervous system may contribute to the occurrence of mental disorders [6]. Stress, defined as "a state in which homeostasis is actually threatened or perceived as such", has long been recognized as one of the main factors influencing the etiology and progression of MS [7]. Multiple sclerosis is a disease that significantly affects the quality of life, functioning and emotional state of sick people. It promotes mental health disorders resulting from both neurological damage and difficulties in accepting the awareness of a serious, chronic disease and enduring pain [5–7].

Review

Depression, Anxiety Disorders

Depression is considered the most common mental illness in the multiple sclerosis patient population. The risk of full-blown depression in this group of patients is significantly increased. It is estimated that the lifetime incidence of depression in people with multiple sclerosis reaches 50% [8]. Dizziness, postural instability and ataxia are very debilitating symptoms that worsen the mental condition of MS patients. Overlapping depression and multiple sclerosis in the same patient can lead to worsened MS treatment outcomes. Finally, a depressed patient may neglect medications or skip follow-up visits to a neurologist [9]. Another common mental disorder in MS patients is anxiety disorders. Obsessive-compulsive disorders increase in the group of MS patients to 8.6%, while in the general population their incidence is 1.2% [10]. A less common but possible side effect of glucocorticoid use is episodes of psychotic disorders. There is also no evidence that the type of preparation, dose used and route of administration translate into the clinical effectiveness of glucocorticoids [11].

Coping with the Disease and Quality of Life in Patients with MS

Typically, coping with illness refers to taking actions focused on regulating emotions, task or avoidance [12]. Coping is considered a variable category, referring to the individual way of behaving and acting in various situations. Each patient will use different, universal defense mechanisms, depending on their personality [13]. Over time, the patient will learn to cope with the disease and develop adaptive coping mechanisms. This relationship is proven by research by K. Snarska et al. The author shows that there is a high degree of relationship between the duration of the disease and the general well-being of MS patients [14]. In the case of coping with an illness, a person focused on self-regulation of emotions takes actions aimed at reducing the emotional tension that occurs as a result of stressful stimuli [15]. The disease situation in MS patients causes a feeling of threat, uncertainty, helplessness, makes it difficult to achieve important life goals and negatively changes one's self-image [16]. The lives of patients begin to focus on observing the symptoms of the disease, which additionally causes fear and a sense of threat, compounded by an uncertain prognosis. There are similarities here with the phenomenon of learned helplessness. There is also a greater need to receive support from outside and a feeling of dependence on other people [17]. However, some patients, despite being diagnosed with a chronic disease, show a positive attitude. Such patients reported fewer symptoms associated with negative affect, such as anxiety and depression, and tried to maintain their habitual relationships and social roles [18]. In the literature on the subject, when discussing how to cope with the disease, Eysenck's concept of personality is mentioned [19]. Neurotics are anxious, prone to depression, timid, irrational in their actions, and emotionally withdrawn. They tend to be restless and often complain about their ailments. For a neurotic, even relatively mild situations cause unpleasant experiences. The problems he is involved in are very difficult for him [20]. An extrovert is a socially active, sociable, bold person who seeks new solutions.

He is much more positive about his health and less susceptible to depression. It also shows great ability to adapt to situations [21]. In turn, coping strategies in the concept of Lazarus and Folkman show that people who are ready to fight the disease have a style focused on taking action. In turn, people who focus on themselves most often use an emotion-based strategy for coping with MS [22]. Their goal is to reduce tension and stress, but it often happens that the decisions they make their well-being even worse because they think intensely about the disease. Therefore, people adopting a task-focused strategy demonstrate better adaptation to the disease, in turn, people adopting strategies focused on emotions have a worse adaptation of MS [23]. Sports influence the quality of life of MS patients. There is promising evidence that exercise training benefits patients. It helps reduce tension and improves well-being by increasing endorphins and serotonin released during physical exercise. Training is therefore a good alternative to improve the patient's condition [24]. Despite the benefits that sport has on the health of people with MS, their activity level is still very limited and they continue to suffer from impaired functioning [25]. One of the factors that determine better well-being is attitude to life, high self-esteem and optimism. This is confirmed by the research of M. Szcześniak et al., who indicate that sick people who tend to be optimistic and see life in colorful colors, despite the disease, adapt much better and persist in the disease [26].

Cognitive Disorders

Cognitive impairment occurs in half of MS patients. Most often, they are associated with difficulties in concentration, memory disorders, and slower information processing. Due to demyelinating changes occurring in the brain, patients often experience emotional disorders [27]. The incidence of cognitive impairment in multiple sclerosis varies with lifespan and may be difficult to distinguish from other causes in old age [28]. Patients with cognitive disorders in the course of MS most often suffer from impairment of individual functions, such as speech disorders, abstract thinking, attention, memory and slow thinking. This has its origins in clinical fatigue. As the disease progresses, they may deepen [9].

Tiredness

Fatigue is one of the most common symptoms of multiple sclerosis. Changes occurring in the CNS cause long-term chronic fatigue. Symptoms usually worsen in the afternoon and are accompanied by drowsiness and muscle pain. Many people with multiple sclerosis report feeling really tired, even if they have slept well [29]. Fatigue may be disproportionate to the activities performed, overwhelming and associated with a lack of motivation to use resources [30]. Patients describe feeling tired as a lack of physical and mental energy. These symptoms cause patients to withdraw from life activities such as social gatherings, professional activity, and participation in rehabilitation, which increases anxiety and depression [31].

Social and Professional Activity

Multiple sclerosis is a complex disease with a very individual course, which is why it affects the performance of social roles by patients. Some of them, despite the diagnosis, are able to perform their previous social roles, but some patients gradually limit their implementation until they completely withdraw from social life [32]. One of the most important roles is professional activity. Work allows you to meet not only financial but also interpersonal needs. However, most disabled patients become unemployed as the disease progresses. First of all, progressive disability means that they are no longer able to perform their previous work [33]. Multiple sclerosis is the most common cause of non-traumatic, chronic neurological disability affecting young adults during their key years of employment [34]. Regardless of gender and age, people with MS are afraid of losing their jobs. Much evidence shows that unemployed people have lower levels of physical and mental well-being than those who are employed. Data show that the longer a person remains out of work (either on sick leave or unemployment), the more difficult it is for him or her to return to professional activity [35]. Being professionally active forces patients to be among people, as well as counteracting depression and social isolation. Being able to feel needed at work is uplifting, and what's more, there is a positive correlation between professional performance and physical and mental health [36]. However, not all people can work. Therefore, the state should guarantee disabled people such a sense of security that none of the social threats such as hunger, homelessness, unemployment, lack of medical care and rehabilitation are a reason for excluding these people. The development of technology enables the inclusion of people with dysfunctions in social life [35]. Other social roles that people with multiple sclerosis can perform despite the disease include being a parent, but also the role of a student and self-development. Multiple sclerosis is not a contraindication to planning a pregnancy, but also to fulfilling parental roles [36]. The ability to actively participate in your children's lives gives you additional strength to fight the disease. However, health care workers must pay attention to children because their parents' illness affects them. This would benefit not only children but also their parents because their concern for children would decrease [37]. An important aspect for the mental well-being of patients is fulfilling social and professional roles. Interpersonal relationships and the opportunity to work increase the motivation to overcome the symptoms of the disease [36–38]. However, it should be remembered that the illness of a family member is a difficult experience for all their relatives, especially minor children, so they should be provided with appropriate support [38].

Sexual Dysfunction

People suffering from MS experience numerous disorders in sexual functioning, which, due to the fact that this aspect of life is considered important by a significant number of people, also negatively affects the well-being of patients [39–41]. Sex life is an important factor for 60% of women and 76% of men. Women suffering from MS often experience various types of sexual disorders (Table 1) [39]. People suffering from multiple sclerosis have problems with self-identification and self-acceptance. Sexual disorders in MS are influenced by the interdependence between the nervous system and psychological factors [40]. The loss of sexual drive may be caused by pathology of the CNS, especially the limbic system and brain stem nuclei, or psychological mechanisms in response to the impact of MS symptoms [3]. The topic of sexuality is important for MS patients, so they should be provided with the opportunity to talk and consult on this topic [41].

Table 1. Type of sexual dysfunction in women suffering from MS and their percentage distribution [39]

A type of sexual disorder in women suffering from MS	Percentage distribution
Desire disorders	57.7%
Hydration disorders	48.4%
Genital disorders	47.3%
Cognitive disorders	45.2%
Augasmic disorders	39.8%

Pain

Typical MS pain syndromes include optic neuritis and Lhermitte's symptom, which is one of the sensory lesions of the spinal cord that often occurs in demyelinating diseases. The most common types of pain are: spastic limb pain, painful tonic muscle spasms, trigeminal neuralgia, back pain and headache [2]. Pain is very troublesome for patients and makes it difficult to function, disturbing the quality of sleep, negatively affecting mood, causing anxiety and depression. Patients withdraw from contact with acquaintances, friends and family. Pain in MS may be primary, resulting from demyelination, or secondary pain, resulting from treatment [42]. Multiple sclerosis is associated with various pain syndromes, characterized by various symptoms. The type of pain syndrome is usually related to the part of the nervous system involved, but has little to do with the type of multiple sclerosis or the duration of the disease [43]. In a survey conducted on the website multiplesclerosis.net, over half of respondents in each of four pain severity categories reported being satisfied with their relationships, but the percentage of satisfaction decreased as pain levels increased (Table 2).

Table 2. Pain intensity and satisfaction with interpersonal relationships

Pain intensity	Percentage distribution of satisfaction with interpersonal relationships
No pain	69.3%
Mild pain	58.4%
Moderate pain	56.9%
Severe pain	55.7%

Conclusions

A complete understanding of the disease and all its bio-psycho-social dimensions is crucial in providing holistic and interdisciplinary treatment for MS patients. This applies to both the medical and nursing community. Knowledge of the psychopathology of medical staff will allow them to better understand and assess the needs of patients both in and outside the hospital ward. Moreover, proper understanding of mental mechanisms will trigger adequate reactions of medical staff in response to the manifested psychopathological symptoms of patients. And ultimately, it will encourage staff to provide the mental support they need. If necessary, further steps include establishing therapeutic cooperation with a psychologist or psychiatrist.

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