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A Non-Typical Course of the Disease and Some Problems of Care of a Patient with Multiple Sclerosis, after a Skin Transplant — A Case Report

Nietypowy przebieg choroby i problemy pielęgnacyjne chorej na stwardnienie rozsiane po przeszczepie skóry — opis przypadku

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Abstract

Introduction. Throughout the year in the department of internal diseases in Kolo there were treated several patients with multiple sclerosis. Their care was directed towards preventions from complications resulting from immobilization and treatment of already existing ones.
Aim. The aim of this study was to describe some nursing problems with a patient suffering from multiple sclerosis after skin transplant and nursing interventions.
Case Report. The study was conducted with the participation of a 39-year — old woman diagnosed with the disease in 2008. The case study was the method applied in this research. Research techniques included an open interview and the analysis of documents. As a research tool the worksheet for collecting data on the patient was used.
Discussion. Total physical dependence of a person with MS is compensated by the support from the staff and the family. Anxiety is possible to overcome in the presence of family.
Conclusions. The presence of the infection of multiple sclerosis causes a disease. Depression is an unfavorable factor for recovery. Appropriate nursing care and the use of special dressings contribute significantly to the process of decubitus wounds healing. The process of rehabilitation of the patient proceeds more smoothly in the presence of immediate family. **(JNNN 2016;5(3):109–116)**
Key Words: multiple sclerosis, nursing problems, bedsore

Streszczenie

Wstęp. W oddziale chorób wewnętrznych w Kole leczonych jest kilka osób ze stwardnieniem rozsianym w ciągu roku. Opieka skierowana jest na prewencje powikłań wynikających z unieruchomienia oraz leczenie już istniejących.
Cel. Celem opracowania było opisanie problemów pielęgnacyjnych chorej ze stwardnieniem rozsianym po przeszczepie skóry i interwencji pielęgniarskich.
Opis przypadku. Badanie przeprowadzono z udziałem 39-letniej chorej z rozpoznaną chorobą w 2008 r. Jako metodę badawczą wykorzystano studium indywidualnego przypadku. Z technik badawczych zastosowano wywiad jawny, analizę dokumentów. Jako narzędzia badawczego użyto arkusza do gromadzenia danych o chorym.
Dyskusja. Całkowita zależność fizyczna osoby z SM jest rekompensowana wsparciem psychicznym czerpanym od personelu i rodziny. Lęk jest możliwy do pokonania w obecności rodziny.
Wnioski. Obecność zakażenia wywołuje rzut choroby. Czynnikiem niesprzyjającym rekonwalescencji jest depresja. Prawidłowa opieka pielęgniarska i wykorzystanie specjalistycznych opatrunków znacznie przyczynia się do procesu gojenia ran odleżynowych. Proces rehabilitacji chorej przebiega sprawniej w obecności najbliższej rodziny. **(PNN 2016;5(3):109–116)**
Słowa kluczowe: stwardnienie rozsiane, problemy pielęgnacyjne, odleżyna

Introduction

Multiple sclerosis is a chronic demyelinating disease of the nervous system leading to invalidity. Seven years ago, there were medical reasons for another etiology; namely an Italian doctor Paolo Zamboni of Ferrara announced that the cause of MS (multiple sclerosis) may be the existence of microemboli in the arteries draining blood from the brain. Lack of evidence supporting this hypothesis only triggered a dispute between neurologists and vascular surgeons [1]. The incidence rate of this disease is observed mainly in countries of moderate climate; in Poland, Canada, in the northern areas of the United States. The disease affects up to 3 times more women than men, and its first signs emerge at the age of 20–40. The most common symptoms of the initial period of MS is the disorder within the sensation of lower limbs, balance and gait disorders, as well as visual disturbances in the form of reduced visual acuity [2–4]. Reporting the cases of patients and care problems associated with them are an excellent material for setting nursing interventions for the purpose of continuing improvement of the quality of medical services.

The aim of the study is to present the case of a patient with a progressive form of multiple sclerosis and an imposing form of projection, as well as the nursing interventions carried out. For the purpose of presentation concerning patient's health condition a case study was used as the research method, belonging to the group of qualitative research. The work was based on relevant literature and a review of medical records. Having obtained the consent from the patient as well as from the management of the centre, we started the study in natural conditions, to an open interview and the analysis of documentation. The observation was carried out as well [5].

A Case Presentation

Nursing history:

Table 1. Socio-demographic data

Full name (initials): A.J.		
Medical diagnosis		Multiple sclerosis, motor aphasia, depression, upper respiratory tract infection, diarrhea
Gender		Woman/aged 39
Marital status		Married
Professional activity		Disability pension
Other illnesses		Depression
Previous treatments		Skin autograft around the ischial
Type of service provided		24-hour hospitalization
Family	Structure	Number of family members — 3, number of generations — 1
	The main caretaker	Husband
	The type of relationship	Correct
	Supporting persons	Husband, son, parents, sister
	Source of income	Income of her husband's, pension and her disability pension

Source: own

The interview carried out on 4th February 2016 on the day of patient's admission to the ward.

Table 2. Data from physical examination

Skin				
Tension	Temperature	Humidity	Other	
Reduced	Fever of 40°C	Over-dry condition	The state after skin transplant around the ischial, bedsore of III degree, infected, diameter of 2 cm	
Respiratory system				
The number of breaths	Type of breathing	Cough	Shortness of breath	Other symptoms
Twenty times a minute	Abdominal	Wet	At rest	Retention of secretions in the bronchial tree
Circulatory system				
Pressure	Pulse	Cough	Swelling	Shortness of breath
90/50 mmHg	110 beats/min	Humid	Lower limbs	At rest
Digestive system				
Swallowing	Defecation		Other	
Aphagia	Diarrhea		Abnormal anal sphincter	
Urinary tract				
Voiding — 1500 ml per day		Colour of straw	Other — a catheter in the urinary tract	

Table 2. Continued

Nervous system			
Awareness	Paresis/tremors		Other
Distorted	Paraplegia		Motor aphasia
Reproductive system			
Menstrual cycle — menstruation			Other — do not exist
Sensory organs			
Sight	Hearing	Feeling	Pain
Correct	Correct	Distorted	Significant, of the whole body

Source: own

Descriptive diagnosis

A woman aged 39, married, 1 child, professionally active until the specific diagnosis. In 2008 in the patient there appeared pain in the lower extremities consisting in the inability to conduct proper course of gait and muscle weakness when trying to climb stairs, slight pain in lower limb muscles and diplopia, which resolved completely within 2 weeks after its emergence.

An alternate projective period of the disease and primarily progressive.

A classified form of the disease referred to as — primarily progressive — has transformed within the period of a few years in the form of progressive with overlapping projections — which was suggested by a short-term deficits in disorders of: taste distinguishing, swallowing, mild cognitive impairment in the form of an incorrect perception of reality.

The patient confined to bed since 2007 due to increased muscle spasticity of the lower limbs and of the left upper limb. The patient after the transplant, the skin around the ischial, has remained under the care of the Department of Neurology in Lodz since 2008. By 2014 frequently hospitalized because of intensified symptoms of paralysis of the upper and lower extremities and increased spasticity and contracture of the right upper limb, in the Department of Neurology in Lodz. During hospitalization in 2014, there occurred paralysis of the lower limbs. As a result of immobilization patient's condition underwent rapid deterioration, which caused a lack of continuity of the skin around the cross on the third day of hospitalization to the third degree.

After qualifying for the skin graft hospitalization in Lodz was discontinued for a short period. In December 2015 there was carried out a skin graft surgery in the department of Plastic Surgery in Lodz due to necrotic changes of ischial area. Since 4th February 2016 she has been hospitalized in the internal medicine ward of the district hospital because of fever, bacterial diarrhea (clostridium difficile) and speech disorders in the form of motor aphasia. Zero points were reported on the Barthel Scale. Right upper limb preserved narrow range of movement within the wrist and fingers, which enables phone service. In the ischia area operated field healed properly, below the change of decubitus of the third degree, with a diameter of 1 cm infected.

For therapeutic purposes, there was applied dressing with silver. Bladder catheter was established due to urine retention. The central venous catheter for the right antibiotic and fluid therapy.

In the treatment of bedsores anti bedsore mattress and skin surface enhancing preparations were used.

Nursing problems

In the course of hospitalization nursing diagnoses were defined and interventions established in reference to the patient in the process of nurturing.

Nursing problem — fever up to 39°C. caused by Clostridium.

Aim of care: elimination of infection.

Nursing interventions:

a. providing the microclimate in a room: ambient temperature 18–20°C, humidity 40–60%,
b. the use of antipyretic drugs under medical card orders,
c. oral and intravenous irrigation to 1000 ml/day according to the order,
d. measurement of body temperature [6].

Result in the patient:

Normothermia and normal hydration status was obtained on the 4th day of hospitalization, maintained for another 2 days — proper response to applied antipyretics was observed.

Renewed increase in body temperature to 40°C. occurred on the 7th day of treatment.

Nursing problem: diarrhea against bacterial.

Aim of care: proper course of defecation.

Nursing interventions:

a. risk assessment of nutritional status available in the ward scale,
b. observation and documentation of the frequency of bowel movements and consistency,
c. care of buttocks, observation of changes in the skin,
d. protection of the area after transplantation and of bedsore changes against infection by the use of dressings,
e. intravenous hydration,
f. monitoring of water — electrolyte treatment [7,8].

Result in the patient:

Total points on a scale of risk associated with nutritional status — 4.

Proper hydration status on the 4th day, no evidence of hypovolemia, renal function normal according to the indicators of renal potassium levels 4.5 mmol/l, chloride 135 mmol/l, diuresis to 2500 ml/d, decubitus change protected properly without contamination, transplant places clean.

Care problem: speech disorders caused by the projection of the disease in the form of motor aphasia.

Aim of care: proper logical contact.

Nursing interventions:

a. multiple repetition of easy to repeat simple words, simple tasks to perform,
b. at a later time a provocation to wide mouth opening, maintaining eye contact, distending cheeks, tongue exercises, blowing [9].

Result in the patient:

The patient performed the commissioned tasks with resistance: opened her mouth, blew, removed the surging sputum.

Verbal contact was achieved on the 4th day of her stay.

Nursing problem: shortness of breath caused by the retention of secretions in the bronchial tree.

Aim of care: to maintain airway patency.

Nursing interventions:

a. repeated aspiration of the bronchial tree by means of vacuum method,
b. application of fluter inhalation, oxygen therapy to 3 liters per minute,
c. mouth hygiene [10–12].

Result in the patient:

The procedure effective in the treatment of bronchial tree. Without symptoms of hypoxia.

Nursing problem: no swallowing reflex caused by the projection of the disease.

Aim of care: regular intake of food and fluids.

Nursing interventions:

a. feeding with the use of a probe into the stomach for the first four days of hospitalization,
b. two hours after each feeding, checking the retention of contents in the stomach,
c. whenever the backlog of sputum, mouth suction and performance of mouth hygiene [13].

Results in the patient:

Food does not stack up in the stomach, the peristalsis correct. On day 4 of treatment an attempt made to provide fluids orally.

When the reflex of swallowing saliva had appeared the probe was removed. The oral cavity without lesions. A positively completed attempt to feed with the use a spoon.

Nursing problem: increased muscle spasticity caused by fever, infection, projection of the disease.

Aim of care: correct muscle tension.

Nursing interventions:

a. applying the microclimate in a room by means of air conditioning — temperature of 20°C, humidity of 40 to 60%,
b. use of loose cotton underwear,
c. supplying drinks up to 2,5 liters a day,
d. cold compresses to the painful areas of the body,
e. proper position for comfort and lack of feeling pain,
f. physiotherapy — passive exercises of the lower limbs, supporting exercises of upper limbs,
g. participation in pharmacotherapy, observation of adverse reaction to drugs [9].

Results in the patient:

Subjective feeling of positive microclimate, a feeling of psycho-physical comfort, a feeling of pleasant coolness, proper hydration of the patient (in a later stage of treatment lack of water — electrolyte disorders), a decrease of lower limbs tremors, no adverse reactions to drugs.

It was most difficult to achieve a comfortable position in bed because of wound healing after skin transplant around the ischial area as well as due to the bedsore wound infected. The patient sought to lay in the right-side position for most of the day, which caused pain. She was accompanied by her belief in the rapid healing of wounds by positioning in the right-side rotation.

Nursing problem: wired chronic pain throughout the body, paresthesia caused by increased spasticity and projection of the disease.

Aim of care: the psycho-physical comfort, lack of pain.

Nursing interventions:

Pharmacological agents: analgesics according to the medical card orders.

Non-pharmacological measures:

a. warmth only temporary, ice packs,
b. simple massages, changing body position,
c. stimulation of breathing by deep breaths [10,11, 14,15].

Results in the patient:

Only a slight improvement of perception of the lack of pain caused by permanent enforcement of the right-side position. A short-lived effects resulted from breathing exercises and massage. The best result was obtained after the application of pharmacotherapy.

Nursing problem: sphincter dysfunction in the form of urinary retention.

Aim of care: proper course of micturition.

Nursing interventions:

a. training the bladder, catheterization of the urinary bladder,
b. antiseptic proceedings,
c. observation of the urinary tract infection symptoms,
d. fluid balance monitoring [6,16].

Results in the patient:

Aseptic keeping the catheter in the urinary tract. Water balance is positive. Urinary tract without infection symptoms. In the patient's health condition reported, physiological course of micturition was not obtained. The catheter was applied permanently.

Nursing problem: lack of continuity of the skin in the gluteal region due to immobilization.

Aim of care: to prevent the development of pressure sores.

Nursing interventions:

a. assessing the bedsore wound by the Torens Scale — (third degree),
b. a swab from the wound for the bacteriological examination,
c. the use of variable pressure mattress against pressure sores, positional changes every 2 hours with forced right-side rotation, with night break preserved,
d. washing the infected places with 9% saline, use of dressings with silver, use of preparations strengthening skin elasticity,
e. implementation of the recommendations from the national consultant for the prevention and treatment of bedsores [17,18].

Results in the patient:

The patient forced the right-side rotation due to the subjective feeling of poorly healing wound, did not apply the nursing recommendations, negative emotions were relieved in tears. However, she willingly agreed to treatments of the skin, experiencing a short-lived feeling of the lack of back pain and in the right shoulder.

Nursing problem: fatigue syndrome caused by infection, respiratory problems, depression.

Aim of care: to provide physiological relaxation.

Nursing interventions:

a. measures to reduce infection — medicines, ice packs,
b. limitation of exercise done with the physiotherapist,
c. introduction of a balance between the hours of activity and sleep — earlier performance of evening hygiene,
d. ensuring peace in the room and as well as in the area surrounding the patient [9].

Results in the patient:

Reduction of pain as well as longer sleep observed. Fatigue slightly limited.

Nursing problem: ineffective coping with stress induced by hospitalization, anxiety about her son.

Aim of care: appropriate mental state.

Nursing interventions:

a. the assessment of reaction to the disease with the method of observing behaviors, attitudes towards the personnel,
b. showing empathetic attitude towards the patient, active listening, kindness, interest in the problems of the patient,
c. providing physical and mental safety and welfare,
d. breathing exercises,
e. strengthening self-esteem by praising her efforts aimed at health improvement,
f. constant contact with the family,
g. interview with a psychologist, spiritual support [19].

Results in the patient:

The woman experienced alternating periods of increased emotional tension, and impaired concentration. Breathing exercises and regular conversation with her son brought the patient the best result. Confidence in the nurses deserved particular attention. The patient expressed her appreciation for the tremendous support provided to her by the nursing staff.

Nursing problem: self-service difficulties due to lack of muscular — nervous conduction.

Aim of care: mitigation of immobilization effects, provision of assistance in the acceptance of food, personal hygiene regarding dressing up and locomotion.

Nursing interventions:

a. the reorganization of space in the room for a patient with limited mobility of the right upper extremity: access to water container embedded in a soft sponge with a hole within the reach of the hand, the use of a drinking straw, placement of the phone within the wrist movement, access to the buzzer,
b. during meals, handing small pieces of food to hand, soups in the container with a tube, mouth hygiene after the completion of feeding, constant presence of a medical caretaker during the aforementioned steps,
c. complete assistance with activities of hygiene, changing clothes and bedding,
d. movement by wheelchair with the assistance from other persons [20].

Results in the patient:

The patient received 0 points on the Barthel Scale.

Only self-supply of water, soup, minimal phone service constitute the minimum self-service activities for the patient.

Nursing problem: impaired family functioning caused by long-term disease.

Aim of care: to prepare the family to exercise unprofessional care, providing knowledge on the functioning of the family during a long-term disease.

Nursing interventions:

a. recognition of family crisis in the sphere of financial — economic, social and social care function,
b. completing the knowledge about the disease,
c. assessment of the potential and limits to the capacity of the family,
d. an indication of support groups in the field of medical care, material, information and spiritual support,
e. completing preparation of the family to participate in the rehabilitation [21].

Results in the patient:

At stage of the 9th year of the disease duration, there was diagnosed a narrow but important section of the family functions disturbed. After identifying the sources of emotional support, the patient became periodically calmer about the education of her son, a significant risk of social isolation.

The presented case concerns the physical, psychological and social sphere of the patient with multiple sclerosis. The data collected on the basis of the analysis of medical records, sheets with medical history including nursing process, data from reports on the 39-year old female patient with MS indicate the complexity of nursing problems occurring in the reported case. Many of these problems occur within people suffering from long-term physical disabilities, but there also emerge others, resulting from the patient's autonomy; fears of the patient regarding prolonged, ineffective treatment of decubitus changes and the forced right-side rotation of the body resulting from them. Prolonged fever greatly influenced the decrease in the effectiveness of rehabilitation making it even impossible.

The emotional state of the patient was mostly positively affected by talks with the patient's son.

Discussion

There is a nursing model of care focused on the ability to provide self-care and nearest surroundings, described by Dorothy Orem, the creator of the theory of self-care [22].This model is applicable in the case described. Research shows patient's deficits in all areas of life activities.

In the literature, the thematic self-care deficits developed by Orem perfectly reflect deficits in the patient with MS. Her demand for care exceeded what she had an access to. The model of care for the patient is of a completely compensatory nature [5].

Research conducted by Kozłowska revealed that nurses support patients with their empathic attitude and behavior. Such an opinion was shared by a large group of 100 respondents included in the studies by Kozłowska [23]. Our study confirms these results. The patient received emotional support from nurses.

According to Juszczak and his research team, a person with multiple sclerosis is distinguished by fear having no connection with the basic symptoms. It is the result of concerns about the further progressing disability, fear of immobilization and full dependence on caregivers. It certainly applies to suffering and death, analgesia, loss of relationships with the loved ones, dependence on third parties, replacement as well as the failure to fulfill the primary role in the family [24]. The research carried out by Eriksson has shown a strong correlation between the sense of coherence acceptance of the disease. This case confirms the results of the research [25]. The patient showed great concern about the area transplanted in the body.

Also, the research conducted by Kowalik shows that both physical as well as mental problems contribute to the difficult performance of social roles [26]. Our study confirms the results obtained by Kowalik and Juszczak and their research team. The patient during the performance of nursing activities manifested concern about the lack of effective healing of the skin graft and extorted, despite the pain, the right-sided position of the body, firmly believing that it will result in her earlier recovery.

According to Jabłońska and her research team, demographic factors, mainly gender, have a significant impact on the quality of life of respondents [27]. This study confirms the previous results obtained by Jabłońska and the team. The patient participating in the study was the mother manifesting concern about her son, which considerably affected her rehabilitation progress.

In addition, there was a person dependent because of the considerable deficit of self-service, and the research by Karabanowicz and the team shows that it is not sufficient for physical fitness to perform self-service alone. It is also a mental process [28]. The correct cognitive processes are certainly a guarantee of the simplest manual operations which was showed by the patient, but the lack of ability to perform movements became a cause of stress found in our studies.

Fruehwald's research included 60 patients with MS and carried out in the Department of Psychiatry in Austria has shown that anxiety is a factor significantly lowering the quality of life of patients with MS, which coincided with our research [29].

Conclusions

1. The presence of the infection causes a disease.
2. Diseases associated with febrile greatly hinder the healing process of patients with MS.
3. The patient requires an application of the entirely compensative model in the field of self-service.
4. Depression is a factor unfavorably affecting recovery.
5. Proper nursing care and the use of specialized dressings contribute significantly to the process of decubitus wound healing.
6. The process of rehabilitation of the patient proceeds smoothly in the presence of the immediate family.

Implications for Nursing Practice

1. The conducted study showed that the presence of fever and pain adversely affects convalescence, therefore nursing interventions should focus on efforts to suppress the symptoms of infection running with hyperthermia, as well as eliminate unbearable pain by participation in pharmacotherapy.
2. Symptoms of depression accompanying patients with multiple sclerosis, can be eliminated by contact with family and friends, therefore the family and close friends should be always included in the cooperation in the course of the nursing process.
3. The patient trusted the nurses looking after her, therefore it is a current and timeless issue to present ethical attitude, awakening confidence in the profession.

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References

[1] Walewski P. *Naukowy spór o stwardnienie rozsiane. Rozsiane nadzieje*, Retrieved July 9, 2013, from http://www.polityka.pl/tygodnikpolityka/nauka/1548237,1,naukowy-spor-o-stwardnienie-rozsiane.read.
[2] Członkowska A., Mirowska-Guzel D. Stwardnienie rozsiane. W: Choroby wewnętrzne. Stan wiedzy na rok 2011, Medycyna Praktyczna, Kraków 2011;2011–2015.
[3] Jabłońska R., Ślusarz R. *Wybrane problemy pielęgnacyjne pacjentów w schorzeniach układu nerwowego*. Continuo, Wrocław 2012;14.
[4] Selmaj K. *Stwardnienie rozsiane*. Medycyna Praktyczna, Kraków 2006;2011–2015.
[5] Lenartowicz H. *Metodologia badań w pielęgniarstwie*. PZWL, Warszawa 2010–2011;98–108.
[6] Czaja E. Wydalanie moczu: zatrzymanie (retencja) moczu. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;103–105.
[7] Twarduś K. Wydalanie stolca: biegunki. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;86–92.
[8] Reczek A. Gospodarka wodna: deficyt płynów. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;115–119.
[9] Słomian I., Olkiewicz J. Problemy pielęgnacyjne pacjentów ze stwardnieniem rozsianym. W: Jabłońska R., Ślusarz R. (Red.), *Wybrane problemy pielęgnacyjne pacjentów w schorzeniach układu nerwowego*. Continuo, Wrocław 2012;54–70.
[10] Augustyn B., Burger-Miltenberger A., Fisher T. et al. Klinikleitfaden Pflege. Urban & Partner 2008.
[11] Rohm-Kleine S. Klinikleitfaden Pflege. Urban & Partner 2008.
[12] Kózka M. Oddychanie: nieefektywne oczyszczanie drzewa oskrzelowego. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. Warszawa 2008;138–141.
[13] Kowalewska M. Odżywianie: zaburzenia połykania. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;63–65.
[14] Biniecki M. *Usprawnianie ruchowe w SM. Zestaw ćwiczeń dla osób chorych na stwardnienie rozsiane*. Polskie Towarzystwo Stwardnienia Rozsianego Oddział Warszawski, Warszawa 2011;7–14.
[15] Kowalewska M. Ból: ból u dorosłych. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;213–217.
[16] Fisher T. Klinikleitfaden Pflege. Urban & Partner 2008.
[17] Kózka M. Skóra i błony śluzowe: odleżyna/ryzyko wystąpienia. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;183–187.
[18] Szewczyk M. Zalecenia profilaktyki i leczenia odleżyn. Polskie Towarzystwo Leczenia Ran, *Leczenie Ran*. 2010; 7(3–4):79–106.
[19] Pieczyrak U., Wilczek-Różyczka E. Stres i lęk: nieefektywne radzenie sobie ze stresem. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;251–255.
[20] Radzik T., Gawor A. Samopielęgnacja: deficyty w zakresie wykonywania czynności samoobsługowych. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;163–174.

[21] Kawalec E., Malinowska-Lipień I. Rodzina: zaburzenia funkcjonowania rodziny w sytuacji choroby. W: Kózka M., Płaszewska-Żywko L. (Red.), *Diagnozy i interwencje pielęgniarskie: podręcznik dla studiów medycznych*. PZWL, Warszawa 2008;295–299.
[22] Poznańska S., Płaszewska-Żywko L. *Wybrane modele pielęgniarstwa*. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 2001;103–133.
[23] Kozłowska D., Wojciechowska M. Realizowanie zadań funkcji rehabilitacyjnej przez pielęgniarki w opinii pacjentów niepełnosprawnych ruchowo. *Problemy Pielęgniarstwa*. 2007;15(2–3):162–167.
[24] Juszczak D., Talarowska M., Kowalewski M., Filewski A. Charakterystyka zaburzeń lękowych — występowanie w stwardnieniu rozsianym, możliwości leczenia oraz wpływ na proces rehabilitacji. *Pol. Merk. Lek*., 2009; 27(162):532–534.
[25] Kurowska K. Rola poczucia koherencji i zachowań zdrowotnych u przewlekle chorych. *Zdrowie Publiczne*. 2005;115(3):385–390.
[26] Kowalik J. Niesprawność ruchowa, a jakość życia chorych na stwardnienie rozsiane poddanych rehabilitacji. *Problemy Higieny i Epidemiologii*. 2012;93(2):334–340.
[27] Jabłońska R., Gajewska P., Ślusarz R., Królikowska A. Ocena jakości życia chorych ze stwardnieniem rozsianym. *Problemy Pielęgniarstwa*. 2012;20(4):442–452.
[28] Karabanowicz A., Panas A., Ślusarz R. i wsp. Evaluation of functional efficiency in people with nervous system diseases. *Annales Universitatis Mariae Curie-Skłodowska*. Lublin 2005; vol. LX, suppl. XVI, 190:352–354.
[29] Fruewald S., Loeffler-Stastka H., Eher R. et al. Depression and quality of life in multiple sclerosis. *Acta Neurol Scand*. 2001;104(5):257–261.

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