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Assessment of Stroke Patients' Readiness for Discharge using the Therapeutic Self-care Scale C-HOBIC

Ocena gotowości do wypisu pacjentów po udarze mózgu na podstawie skali samoopieki terapeutycznej C-HOBIC

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Abstract

Introduction. Stroke is a leading cause of adult morbidity and long-term disability and the second leading cause of death worldwide. Therapeutic self-care refers to the patient's perceived ability to engage in behaviours aimed at managing the condition and is recognised as a fundamental patient-centred outcome of care.
Aim. The aim of the study was to assess stroke patients' readiness for discharge using the C-HOBIC therapeutic self-care scale.
Material and Methods. The study was conducted at the Adult Neurology Clinic of the University Clinical Centre in Gdańsk and included 100 patients hospitalised for stroke. The majority of respondents were men living in urban areas (N=71). The mean age was 70.8 years. The study used a diagnostic survey method and questionnaire technique. The research tool was a questionnaire containing the C-HOBIC Discharge Readiness/Self-Care Assessment Scale and 19 original questions concerning the socio-demographic situation of the patients, the number and type of strokes suffered, the treatment and rehabilitation received, and the health education process. The non-parametric Mann–Whitney U test and the Spearman correlation test were used for statistical analysis. The significance level was set at $p \leq 0.05$.
Results. Stroke patients are not very ready to be discharged because they need help with activities of daily living and with taking prescribed medication and self-monitoring. Patients who were employed before the stroke and those who received health education showed a greater ability to self-care ($p<0.05$). The older the patients, the lower their self-care ability ($p<0.001$). Gender and place of residence did not have a significant effect on patients' self-care ability ($p>0.05$).
Conclusions. Patients are unable to fully follow the instructions of healthcare staff, take their own medication, recognise worrying symptoms or carry out daily activities. Patients' low level of self-care is due to their current state of health, neurological deficits and insufficient time allocated for their education. **(JNNN 2025;14(3):111–117)**
Key Words: health education, readiness for discharge, self-care, stroke

Streszczenie

Wstęp. Udar mózgu stanowi główną przyczynę chorobowości i długotrwałej niesprawności u osób dorosłych oraz drugą najczęstszą przyczynę zgonów na świecie. Samoopieka terapeutyczna oznacza postrzeganą przez pacjenta zdolność do angażowania się w zachowania ukierunkowane na leczenie choroby i uznano ją za podstawowy, zorientowany na pacjenta, wynik opieki pielęgniarskiej.
Cel. Celem pracy była ocena gotowości do wypisu pacjentów po udarze mózgu na podstawie/za pomocą skali samoopieki terapeutycznej C-HOBIC.

Materiał i metody. Badania przeprowadzono w Klinice Neurologii Dorosłych Uniwersyteckiego Centrum Klinicznego w Gdańsku i objęto nimi 100 pacjentów hospitalizowanych z powodu udaru mózgu. Wśród ankietowanych dominowali mężczyźni, mieszkańcy miast (N=71). Średnia wieku kształtowała się na poziomie 70,8 lat. W badaniach zastosowano metodę sondażu diagnostycznego, technikę ankietową. Narzędzie badawcze stanowił kwestionariusz ankiety, zawierający skalę oceny gotowości do wypisu/zdolności do samoopieki C-HOBIC oraz 19 autorskich pytań, które dotyczyły sytuacji socjodemograficznej pacjentów, a także liczby i typu przebytych udarów, zastosowanego leczenia i rehabilitacji oraz procesu edukacji zdrowotnej. W analizie statystycznej zastosowano test nieparametryczny test U Manna–Whitney'a oraz test korelacji Spearmana. Za poziom istotności przyjęto p≤0,05.
Wyniki. Pacjenci po udarze mózgu w niewielkim stopniu są gotowi do wypisu, bowiem wymagają pomocy w czynnościach dnia codziennego oraz w zakresie aktywności związanych ze stosowaniem zleconych leków i prowadzenia samokontroli. Większą zdolność do samoopieki wykazują pacjenci, którzy przed wystąpieniem udaru byli aktywni zawodowo oraz te osoby, u których przeprowadzono edukację zdrowotną (p<0,05). Wraz ze wzrostem wieku pacjentów malała ich zdolność do samoopieki (p<0,001). Nie stwierdzono istotnego wpływu płci oraz miejsca zamieszkania pacjentów na ich zdolność do samoopieki (p>0,05).
Wnioski. Pacjenci nie są w stanie w zupełności przestrzegać zaleceń personelu, przyjmować samodzielnie leków, rozpoznawać niepokojących objawów oraz wykonywać czynności dnia codziennego. Niewielki poziom gotowości pacjentów do samoopieki wynika z ich aktualnego stanu zdrowia, deficytów neurologicznych oraz niewystarczającej ilości czasu przeznaczonej na ich edukację. **(PNN 2025;14(3):111–117)**
Słowa kluczowe: edukacja zdrowotna, gotowość do wypisu, samoopieka, udar mózgu

Introduction

Stroke is a leading cause of adult morbidity and long-term disability and the second leading cause of death worldwide. It is a major risk factor for the development of dementia and depression. The majority of strokes are ischaemic. In 2023, more than 74,700 cases of ischaemic stroke were reported in Poland, of which almost 90% were first strokes [1–3].

The management of patients with ischaemic stroke includes pharmacological treatment, specific surgical interventions, prevention and treatment of complications, as well as early rehabilitation and secondary prevention [1].

Comprehensive care in organised stroke management includes both the biological and psychosocial aspects of the patient's functioning. An important part of nursing care includes tasks aimed at monitoring vital functions, preventing complications, assisting the patient with activities of daily living, following the recommendations of rehabilitation staff, and providing information and emotional support to patients and their families, as well as health education for patients and their carers, with the aim of preparing patients for self-care and their carers for non-professional care [1,4,5].

Therapeutic self-care refers to the patient's perceived ability to engage in self-care behaviours or actions aimed at managing the illness, and has been recognised as a fundamental patient-centred outcome of care [6–9].

The aim of the study was to assess stroke patients' readiness for discharge using the C-HOBIC therapeutic self-care scale.

Material and Methods

The study utilised a diagnostic survey method and a questionnaire technique. The tool was a questionnaire consisting of two parts: the C-HOBIC Discharge Readiness/Self-Care Scale and 19 specially developed questions on the socio-demographic situation of the patients (age, sex, education, place of residence, occupation, family situation), the number and type of strokes suffered, the treatment and rehabilitation received and the extent of health education.

The Discharge Readiness/Self-Care Scale is used to assess patients' ability to care for themselves after discharge from hospital. It covers a total of 12 areas, scored from 0 (no ability) to 5 (very high ability). The scale takes into account the patient's competence in 4 categories: taking medication, recognising and managing symptoms, following treatment recommendations to manage symptoms, and managing changes in health status [6].

The study was conducted at the Adult Neurology Clinic of the University Clinical Centre (UCK) in Gdańsk in 2023. Consent to conduct the study was obtained from the UCK management. Participation in the study was voluntary and anonymous.

A total of 100 patients participated in the study, including 29 women and 71 men. The age of the patients ranged from 27 to 98 years (mean age=70.8 years; SD 11.59). Less than half of the patients had a professional education (N=40). More than three quarters were retired (N=78). The majority of respondents were people living in urban areas (N=71). Table 1 shows information on the social situation of the patients.

Table 1. Social situation of patients

Variable	N (%)
Education	
Primary	13
Vocational	40
Secondary	30
Bachelor's degree	12
Master's degree	5
Occupational and economic situation before hospitalisation	
Professional activity	12
No professional activity	3
Disability pension	5
Retirement pension	78
Sickness benefit	2
Family situation/patient	
Lives with family	53
Lives alone but can always count on help from family/caregiver	28
Lives alone, can rely on occasional help from family/caregiver	19

N — number of observations; % — percent

Results

The largest group (N=78) were patients with a single stroke. In 97% of cases, the stroke was ischaemic and more than half of the patients (N=41) were treated with mechanical thrombectomy. The most common health problems reported by respondents were hemiparesis (N=85) and hypertension (N=71), while the least common were visual disturbances (N=20), disturbances of consciousness (N=25) and loss of appetite (N=27). A variety of methods and interventions were used to help patients recover (Table 2).

Table 2. Selected aspects of the patient's clinical situation

Evaluation element	N (%)
1	2
Number of strokes experienced	
1	78
2	21
More than 3	1
Type of stroke	
Ischaemic	97
Haemorrhagic	3
Treatment used	
Thrombolysis	33
Mechanical thrombectomy	41
No specific treatment — conservative treatment	26
Patient health problems	
Aphasia	49
Dysphagia	59
Hemiparesis	85
Urinary incontinence	54
Faecal incontinence	52
Visual impairment	20
Balance disorder	33
Memory impairment	43
Disturbance of consciousness	25
Loss of appetite	27
High blood pressure	71
Rehabilitation methods used	
Active (limb exercises with patient standing)	28
Passive (limb exercises in bed)	32
Active and passive	38
Respiratory exercises	2
Equipment used	
Walking frame	31
Walking stick	26
Wheelchair	55
Anti-bedsore mattress	60
Handrails (e.g. in the bathroom)	46
Lift	62

N — number of observations; % — percent

The majority of patients surveyed (N=78) reported that they had received health education on the ward, most commonly from nurses. The most common form of education was an individual discussion with the patient, with an average duration of 15–30 minutes (Table 3).

Table 3. Health education from the patients' perspective

Evaluation element	N (%)
1	2
Educators	
Nurse	78
Physician	34
Physiotherapist	32

Table 3. Continued

1	2
Speech therapist	11
Not applicable, due to lack of education	22
Forms of health education	
Written instructions	31
Individual conversation	66
Group training for patients	2
A variety of forms	4
Not applicable, due to lack of education	22
Total time spent on health education during a patient's hospital stay	
≤15 minutes	36
≤30 minutes	33
≥60 minutes	9
Not applicable, due to lack of education	22

N — number of observations; % — percent

Patients' satisfaction with the form and extent of education was rather moderate (min. 1, max. 5, M=2.52, SD 1.24). 32 patients were dissatisfied, 11 were rather dissatisfied, 19 were satisfied and only 4 patients were very satisfied. The remaining 34 did not give an opinion.

The average overall readiness for discharge of the patients participating in the study was rather low (M=2.27; SD 1.01). In none of the self-care areas assessed did patients score more than 3 points, indicating moderate ability. They reported limited/low ability to perform activities of daily living such as bathing, shopping or preparing meals (M=1.92; SD 1.12) — Table 4.

Responses were statistically analysed to assess the impact of socio-demographic and hospitalisation-related factors on readiness for discharge.

The analysis showed that gender and place of residence had no significant effect on patients' ability to self-care ($p>0.05$). It was also found that employed patients had a significantly greater ability to self-care ($p<0.05$). Details are shown in Table 5.

Table 5. How selected socio-demographic variables influence readiness to be discharged?

Variable	N	$\bar{x}$	SD	Test value Z	p
Gender					
Women	29	2.44	1.04	1.08	0.277
Men	71	2.20	0.99		
Place of residence					
City	29	2.22	1.03	0.42	0.668
Rural area	71	2.28	1.00		
Professional activity					
Patient is employed	12	3.15	1.16	2.84	0.004
Disability/ retirement Pension	83	2.14	0.92		

N — number of observations; $\bar{x}$ — mean; SD — standard deviation; Z — Mann–Whitney U test; p — level of statistical significance

At the same time, a statistically significant correlation between age and readiness for discharge was confirmed, as the ability of patients to care for themselves decreased with increasing age (rHO –0.41; p=0.000) — Figure 1.

Table 4. Readiness of patients to be discharged from hospital (N=100)

Areas of self-care	Min	Max	$\bar{x}$	SD
Awareness of medications	1	5	2.14	1.05
Knowing how to use prescribed medicines	1	5	2.21	1.08
Understanding the purpose of medication	1	5	2.53	1.21
Ability to take medication as prescribed	1	5	2.04	1.05
Recognising symptoms associated with a previous stroke	1	5	2.35	1.12
Knowing who to contact/what number to call if worrying symptoms occur	1	5	2.43	1.21
Ability to independently follow recommendations for blood pressure control	1	5	2.20	1.14
Ability to independently follow recommendations for blood glucose control	1	5	2.21	1.15
Are you able to adapt your work and other activities to your current state of health?	1	5	2.54	1.35
Do you know where to get help if you need help with everyday activities such as bathing, preparing meals or getting dressed?	1	5	2.25	1.07
Getting help in an emergency	1	5	2.44	1.19
Adapting daily activities to symptoms (bathing, shopping, preparing meals)	1	5	1.92	1.12

N — number of observations; Min — minimum value; Max — maximum value; $\bar{x}$ — mean; SD — standard deviation

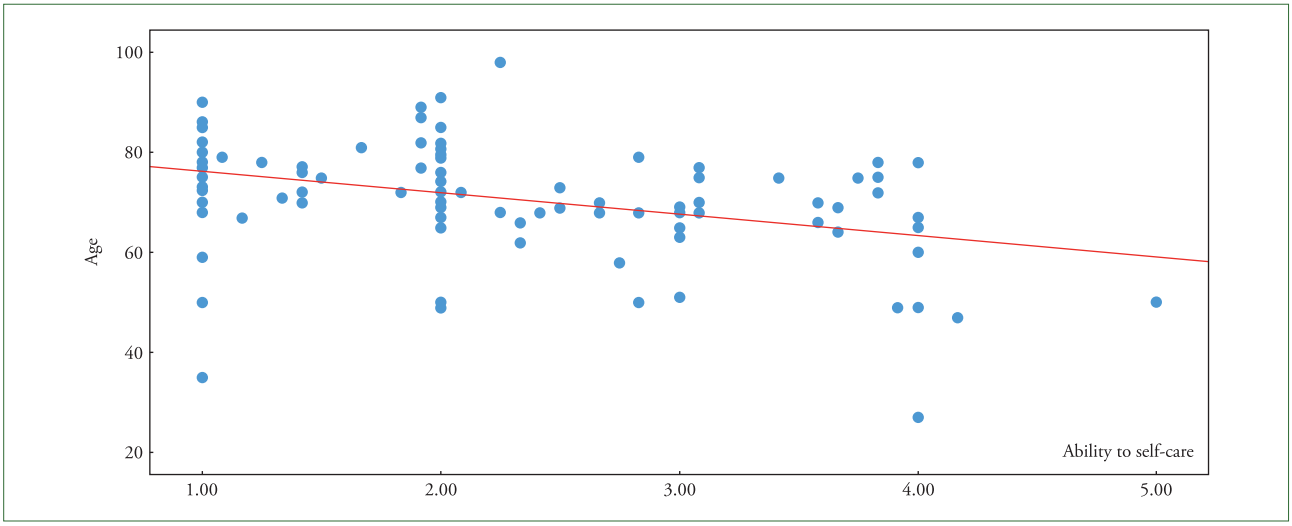

Figure 1. Effect of age on readiness for discharge

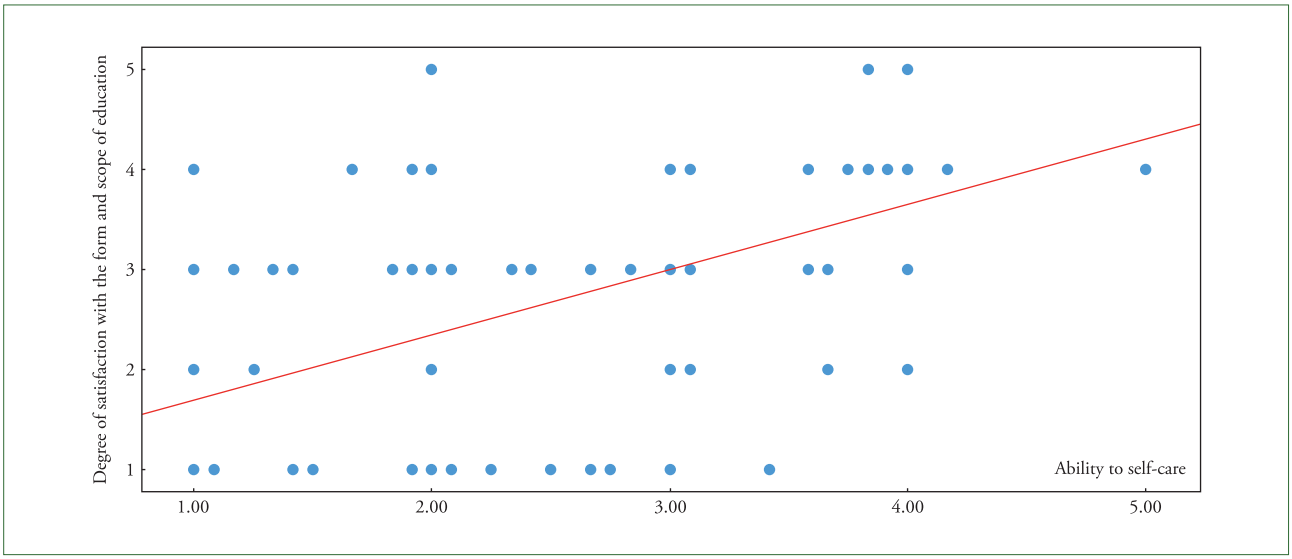

Figure 2. Level of satisfaction with education provided vs. readiness for discharge

Analysis showed that patients who had received education during their hospital stay (M=2.55; SD 0.94) had a significantly greater ability to care for themselves (Z 5.61; p=0.000) than those who had not (M=1.27; SD 0.43). Spearman's correlation test showed a positive, statistically significant correlation between the level of satisfaction with health education and readiness for discharge, as the ability to self-care of the patients surveyed increased with satisfaction with the education provided (rHO 0.52; p=0.000) — Figure 2.

Discussion

Stroke patients' perceived ability to self-care has many dimensions that need to be considered when providing nursing care. In clinical practice, several tools are used to assess patients' self-care ability. Some are relatively complex and comprehensive, while others appear to be much simpler and less time consuming [10,11].

The Readiness for Discharge Scale is a reliable and important tool for assessing the perceived self-care ability of patients who are to be discharged home from hospital. It covers four categories of self-care that patients should practise at home after discharge from hospital, including taking medication as prescribed, recognising and managing symptoms, performing activities of daily living, and managing changes in health status. It can therefore be used to promote recovery and prevent complications after hospitalisation, and to evaluate the effectiveness of nursing interventions and/or general care — both in hospital wards and in other healthcare settings [6,8,12].

The results of our own research confirmed a low level of readiness for discharge in almost all areas assessed, particularly in relation to the ability to perform activities of daily living. Similar findings have been reported by other authors, including Przychodzka et al [13], Antczak [5] and Jafari-Golestan [14]. Lack of self-care has a significant impact on patients' commitment to

self-care and adherence to recommended treatment regimens. Grochulska, on the other hand, found that although stroke patients' ability to self-care for activities of daily living was the biggest barrier in the early days of hospitalisation, this ability improved significantly over time [15]. It was also found that the ability to self-care tends to decrease with age [13,16], which correlates with the results of our own research.

The study by Fidecki et al. on a group of 113 patients, which aimed to assess the functional capacity of elderly patients in a neurological ward (based on the Barthel and ADL scales), also showed a correlation between the functional capacity of patients and their age. The patients' ability to self-care decreased with increasing age. On the other hand, the results for patients' ability to self-care were slightly different: in our own study, the patients' functional capacity was assessed as low, whereas in the cited study, it was assessed as moderate [4].

The dependence of stroke patients on the help of others was also observed by Królikowska [17], who confirmed, as in her own research, the significant influence of age on the deterioration of patients' independence and the influence of work activity, which in turn increased the self-care resources of patients compared to those on disability/retirement pension. The author did not find a significant influence of gender, similar to the group of patients in her own research.

Conclusions

1. Stroke patients have low discharge/self-care readiness, require assistance with activities of daily living, and are unable to effectively adhere to treatment recommendations.
2. Patients who were employed before the stroke and those who received health education showed a greater ability to self-care ($p<0.05$). As patients age, their ability to self-care decreases ($p<0.001$). Gender and place of residence did not have a significant effect on patients' self-care ability ($p>0.05$).
3. Patients' low level of self-care is due to their current state of health, neurological deficits and insufficient time allocated for their education.

Implications for Nursing Practice

It should be emphasised that the results obtained in this study are not fully representative of the stroke population, but can be used to plan patient health education and optimise patient care.

References

[1] Błażejewska-Hyżorek B., Czernuszenko A., Członkowska A. i wsp. Wytyczne postępowania w udarze mózgu. *Pol Przegl Neurol*. 2019;15(Supl. A).

[2] Kruk M., Pawlewicz A. *NFZ o zdrowiu. Udar niedokrwienny mózgu*. NFZ, Warszawa 2023.

[3] Gierczyński J., Kułakowska A., Rejdak K. (Red.), *Neurologia w Polsce. Stan obecny i perspektywy rozwoju*. Polskie Towarzystwo Neurologiczne, Fundacja Zdrowie i Edukacja Ad Meritum, Warszawa 2024, https://ptneuro.pl/sites/scm/files/2024-09/Raport_Neurologia%20w%20Polsce.%20Stan%20obecny%20i%20perspektywy%20rozwoju.pdf [dostęp: 00.00.0000].

[4] Fidecki W., Wysokiński M., Wrońska I. et al. Functional Efficiency of Elderly Patients Hospitalized in Neurological Departments. *J Neurol Neurosurg Nurs*. 2017;6(3):102–106.

[5] Antczak A., Filipska K., Raszka A. Care Issues of the Patient after a Stroke — Case Report. *J Neurol Neurosurg Nurs*. 2017;6(1):28–32.

[6] Sidani S., Doran D.I. Development and Validation of a Self-Care Ability Measure. *Can J Nurs Res*. 2014;46(1):11–25.

[7] Söderhamn O., Self-care Activity as a Structure: A Phenomenological Approach. *Scand J Occup Ther*. 2000;7(4):183–189.

[8] Doran D., Harrison M.B., Laschinger H. et al. Relationship between nursing interventions and outcome achievement in acute care settings. *Res Nurs Health*. 2006;29(1):61–70.

[9] Doran D.M., Harrison M.B., Laschinger H.S. et al. Nursing-sensitive outcomes data collection in acute care and long-term-care settings. *Nurs Res*. 2006;55(Suppl 2):S75–81.

[10] Hudon É., Hudon C., Lambert M., Bisson M., Chouinard M.C. Generic Self-Reported Questionnaires Measuring Self-Management: A Scoping Review. *Clin Nurs Res*. 2021;30(6):855–865.

[11] Jafari-Golestan N., Dalvandi A., Hosseini M. et al. Designing and validating of a questionnaire measuring perceived self-care ability (PSCA) in chronic stroke patients at home. *BMC Neurol*. 2024;24(1):125.

[12] Cardoso A.F., Queirós P., Amaral A.S. et al. Validation of the Therapeutic Self-Care Scale-European Portuguese Version in Primary Care Type 2 Diabetes Adults. *Int J Environ Res Public Health*. 2022;19(7):3750.

[13] Przychodzka E., Grudzień A., Celej-Szuster J., Turowski K. Ocena wydolności funkcjonalnej chorych po udarze mózgu. *Gerontol Pol*. 2019;27:272–279.

[14] Jafari-Golestan N., Dalvandi A., Hosseini M. et al. Perception of self-care ability among patients with stroke post-discharge: A qualitative descriptive study in Iran. *IHTP*. 2021;1(3):328–335.

[15] Grochulska A., Jastrzębska M. Poprawa stanu funkcjonalnego osób po przebytym udarze mózgu — rola pielęgniarki. *Probl Pielęg*. 2012;20(3):300–309.

[16] Biercewicz M. Functional Assessment of Elderly Patients after Stroke. *J Neurol Neurosurg Nurs*. 2020;9(2):59–64.

[17] Królikowska A., Rusinek M.B., Filipska-Blejder K., Ślusarz R. Functioning of Stroke Patients during Hospitalisation. *J Neurol Neurosurg Nurs*. 2024;13(2):54–61.

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