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Original Article

Factors Associated with Psychological Well-Being in Non-Hemorrhagic Post-Stroke Patients

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Abstract

Background: Stroke is a complex condition that often leads to physical impairment and psychological challenges. Psychological well-being plays a crucial role in improving the quality of life and overall recovery in post-stroke patients. This study aimed to identify factors linked to psychological well-being in non-haemorrhagic post-stroke patients.

Methods: A cross-sectional study was conducted in November 2022 included patients with a confirmed diagnosis of non-hemorrhagic stroke at the K.R.M.T Wongsonegoro Hospital, Semarang, Indonesia. Participants were selected through purposive sampling. After obtaining informed consent, data on demographic characteristics, family welfare status, and psychological well-being were collected. Psychological well-being was assessed using a standardized questionnaire. Data were analyzed using SPSS version 26, and associations between variables were examined using the Spearman correlation test.

Results: A total of 80 non-hemorrhagic post-stroke patients participated, with the majority aged over 65 years (53%). Most participants (58.8%) reported strong family support, and had moderate psychological well-being (76%). Both the level of education and the degree of family support were significantly related to psychological well-being (p=0.028).

Conclusion: Education level and family support are related to psychological well-being in non-haemorrhagic post-stroke patients. These findings highlight the need for a holistic approach to stroke recovery that includes psychosocial support, therapeutic interventions, and family involvement. Addressing psychological aspects along with physical rehabilitation can improve mental well-being and optimize recovery outcomes.

Keywords: Education level, family support, non-hemorrhagic post-stroke, psychological well-being

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Introduction

Stroke remains a significant global health burden, with complex neurological consequences that often result in both physical limitation and psychological distress. Stroke-related complications can severely impaired an individuals' ability to perform daily activities, thereby affecting emotional well-being and overall quality of life.[1,2] According to the 2019 Global Burden of Disease data, stroke is the second leading cause of death worldwide.[3] Non-hemorrhagic post-stroke patients experience a range of long-term effects, including persistent physical disabilities and psychological challenges that may hinder recovery and influence the overall quality of life.[4,5] It is estimated that one in three post-stroke patients suffers from moderate to severe physical impairment, which significantly impact their daily activities.[6] These limitations contribute to emotional distress and are strongly associated with compromised psychological well-being.[7] Consequently, post-

stroke care should encompass not only in cognitive and physical rehabilitation but also in psychological and emotional support.[8]

Psychological well-being is characterized by positive emotions, independence, strong social relationships, a desire for personal development, life satisfaction, and clear life goals.[9] However, achieving optimal psychological well-being remains challenging for many stroke survivors. Evidence shows that approximately 20% of post-stroke patients experience anxiety.[10] Other studies also indicate that 40% suffer from depression, 12–43% experience anxiety-related symptoms, and 20–29% present with post-traumatic stress symptoms.[11,12] The ability to psychologically adapt is a crucial aspect of recovery, yet long-term stroke survivors often exhibit inadequate psychological adjustment, detrimentally influencing the rehabilitation process.[13] Another study shows that nearly 50% of stroke patients are unable to return to their pre-stroke functional levels, necessitating the need for integrated psychosocial interventions.[14] Early psychological identification and intervention in stroke patients are important components of effective rehabilitation.[15] Identifying the factors that influence psychologycal well-being is essential for developing tareted support strategies. Several factors, such as family support or socio-economics, play a significant role in a patient's psychologycal adaptation.[16] However, not all patients have good support or socio-economics resources, which is a

Table 1 Classification of Family Welfare Based on the National Population and Family Planning Agency Assessment

Classification	Indicator	Criteria
Basic needs (KS-I)	1. Eating two or more meals daily. 2. Having different clothing for various activities (e.g., at home, work, school, and travel). 3. Living in a house with a proper roof, floor, and sturdy walls. 4. Seeking medical care at a health facility if a family member is ill. 5. Fertile-age couples (PUS) using contraceptive services. 6. All children aged 7–15 years in the family attend school.	Welfare Family I If unable to meet one or more KS-I indicators, the family is categorized as Below Poverty Line.
Psychological needs (KS-II)	1. Practicing religious beliefs 2. Consuming meat, fish, or eggs at least once a week. 3. Obtaining at least one new set of clothes annually. 4. Having a minimum floor area of 8 m^2 per person. 5. All family members in good health in the past three months. 6. Having at least one family member with income. 7. All family members aged 10–60 years can read and write Latin. 8. Fertile-age couples (PUS) with 2 or more children use contraception.	Welfare Family II If unable to meet one or more KS-II indicators, the family is categorized as Welfare Family I.
Development needs (KS-III)	1. Improving religious knowledge 2. Saving part of the family's income in the form of money or goods. 3. Eating together at least once per week for communication. 4. Participating in community activities. 5. Accessing information through newspapers, magazines, radio, or TV	Welfare Family III If unable to meet one or more KS-III indicators, the family is categorized as Welfare Family II.
Actualization needs (KS-IV)	1. Regularly providing material donations. 2. Actively serving as a manager or leader in a community organization	Welfare Family III Plus If unable to meet one or more KS-IV indicators, the family is categorized as Welfare Family III

challenge, and these influencing factors have not been extensively studied in the context of non-hemorragic stroke.[16,17] Therefore, this study aimed to identify and analyze the factors linked to psychological well-being and adaptive functioning among non-hemorrhagic post-stroke patients.

Methods

This analytic study employed a cross-sectional design and was conducted in November 2022 at the K.R.M.T Wongsonegoro Hospital, Semarang, Indonesia. Non-hemorrhagic post-stroke patients aged over 40 years who had experienced a stroke for more than 3 months, were selected using purposive sampling based on their willingness to participate. Exclusion criteria included patients with severe disabilities, uncooperative behavior, and incomplete answers on any of the three questionnaires. Demographic data collected included age, gender, educational background, and marital status.

The Family Welfare Assessment Questionnaire, developed by the National Population and Family Agency, consisted of 21 questions, categorized into basic needs,

Table 2 Psychological Well-Being Scale (PWBS) Questionnaire Items

No.	Statements
1.	I am not afraid to express my opinion, even if it conflicts with others.
2.	I have trouble organizing my life the way I want.
3.	Most people consider me a kind person who is willing to make time for others.
4.	I enjoy seeking new experiences that can broaden my view of myself.
5.	I enjoy making plans for the future and trying to make them happen.
6.	When I look back on the past, I am happy with the way things are now.
7.	I worry about what other people think of me.
8.	The way I treat myself is not as good as the way others treat themselves.
9.	For me, life is a process of learning, changing, and growing.
10.	Maintaining close relationships with others is very difficult and makes me desperate.
11.	I have a clear direction and purpose in life.
12.	In general, I feel confident and self-assured.
13.	I am able to create a lifestyle that suits my desires.
14.	I do not fit in with the people and environment around me.
15.	I feel underdeveloped for the past few years.
16.	I have never experienced warm and trusting relationships with others.
17.	I can trust my friends, and they trust me in return.
18.	In many ways, I feel disappointed with my achievements in life.
19.	I have difficulty expressing my opinions on controversial matters.
20.	I have a clear purpose in life.
21.	I feel that I have grown and developed significantly over time.
22.	I am unable to make major changes in my life.
23.	I do not know what I want to achieve in life.
24.	I like most of my personality traits.
25.	Too many responsibilities overwhelm me
26.	I take life as it comes and do not think much about the future.
27.	When I compare myself to my friends, I feel good about being myself.
28.	When my friends make mistakes, I remind or advise them
29.	I take responsibility for the decisions I make.
30.	I help my friends when they are in trouble.
31.	I have difficulty adjusting to new environments.
32.	I feel sad when I see my friends in trouble.
33.	I am less interested in discussing things with my friends.
34.	I feel less optimistic about achieving my goals.
35.	It is difficult for me to build good relationships with others.
36.	I am overwhelmed by having a busy daily routine.

Table 3 Analysis of Factors Associated with Psychological Well-Being of Post-Stroke Patients.

Characteristic	Psychological Well Being			P-value
	Low n (%)	Moderate n (%)	High n (%)	
Age				
46–55 years	0 (0)	2 (100)	0 (0)	0.927
56–65 years	1 (2.9)	26 (74.3)	8 (22.9)	
>65 years	2 (4.7)	31 (72.1)	10 (23.3)	
Gender				
Male	1 (2)	36 (72)	13 (26)	0.393
Female	2 (6.7)	23 (76.7)	5 (16.7)	
Education				
Did not attend school	0 (0)	5 (83.3)	1 (16.7)	0.028*
Elementary	2 (9.5)	18 (85.7)	1 (4.8)	
Junior high	0 (0)	13 (76.5)	4 (23.5)	
High school	0 (0)	15 (68.2)	7 (31.8)	
Diploma/Bachelor	1 (7.1)	8 (57.1)	5 (35.7)	
Family support				
Less	1 (100)	0 (0)	0 (0)	0.000*
Enough	2 (6.3)	28 (87.5)	2 (6.3)	
Good	0 (0)	31 (66)	16 (34)	
Income				
Below minimum wage	3 (6.7)	33 (73.3)	9 (20)	0.378
Minimum wage	0 (0)	6 (66.7)	3 (33.3)	
Above minimum wage	0 (0)	20 (76.9)	6 (23.1)	
Sosioeconomic status				
Below poverty line	0 (0)	3 (100)	0 (0)	0.298
Welfare Family I	3 (13.6)	13 (59.1)	6 (27.3)	
Welfare Family II	0 (0)	13 (86.7)	2 (13.3)	
Welfare Family III	0 (0)	19 (76)	6 (24)	
Welfare Family III plus	0 (0)	11 (73.3)	4 (26.7)	

Note: *p-value<0.05 was considered statistically significant, Significant factors: Education (p=0.028) and Family Support (p=0.000)

psychological needs, development needs, and actualization needs. The assessment included indicators such as food, clothing, housing, health, family planning, education, religion, income, family interaction, social relationship, access to information, and participation in society role. The family welfare level was categorized into 'Below Poverty Line', 'Welfare Family I' (answering questions no. 1-6), 'Welfare Family II' (answering questions no. 7–14), 'Welfare Family I III' (answering questions no. 15–19), and 'Welfare Family III Plus" (answering all questions) (Table 1).

The Family Support Questionnaire comprised 20 questions to assess the level of perceived support from the family. The total scores were classified into three levels, namely less (score 20–33), enough (score 34–47) and good levels of family support (score 48–60).

Psychological well-being was assessed using the Psychological Well-Being Scale (PBWS), consisting of 36 items divided into favorable and unfavorable statements (Table 2). This instrument measured six key dimensions of psychological well-being, which were autonomy, personal growth, environmental mastery, positive relationships with others, life goals, and self-acceptance. Based on the total score, psychological well-being was classified as low (score 36–72), moderate (score 73–108), and high (score 109–144). All instruments used in this study had been previously tested for validity and reliability.

Data were analyzed using SPSS version 26. Descriptive statistics were used to summarize the characteristic of the respondents and the distribution of family welfare, family support, and psychological well-being. The Spearman rank correlation test was used

to analyze the relationship between family welfare, family support, demographic factors, and psychological well-being. Statistical significance was set at a p-value less than 0.05.

This study has obtained ethical permission from the Ethics Committee of the K.R.M.T Wongsonegoro Hospital, Semarang, with approval number no. B/8193/070/X/2022. All participants provided informed consent, and confidentially as well as data privacy were maintained throughout the study.

Results

The majority of respondents were aged over 65 years (53.8%), and were predominantly male (62.5%). Most participants reported having good family support (58.8%). In terms of socio-economic status, the largest proportion of respondents belonged to Welfare Family III category (31.8%). Regarding psychological well-being, the majority of respondents (76%) were classified as having moderate psychological well-being, whereas 17 (21.3%) reported high psychological well-being, and only 3 (3.8%) had low psychological well-being (Table 3).

The analysis revealed a significant association between education level and psychological well-being (p=0.028), suggesting that higher education levels were correlated with better psychological well-being in post-stroke patients. Furthermore, family support was strongly associated with psychological well-being, with a highly significant result (p=0.000), indicating that stronger family support contributed positively to psychological well-being (Table 3).

Discussion

This study demonstrates a correlation between education level and psychological well-being in non-hemorrhagic post-stroke patients. Individuals with higher education levels tend to have better physical and mental health outcomes. Education serves as a fundamental determinant of health by enabling individuals to access better income, make informed choices about healthcare services, select nutritious food, and adopt a healthier lifestyle.[18,19] Additionally, higher education enhances psychosocial and cognitive abilities, serving as a protective factor against stress and promoting better mental health.[20] These findings align with previous study showing that age and education level significantly influences psychological well-being in both general populations and healthcare workers.[21,22] Individuals with higher educational attainment often possess better coping mechanism and problem-solving skills, which are important for adapting to post-stroke challenges.

Furthermore, this study confirms a correlation between family support and the psychological well-being. Social support, defined as the exchange of emotions between the giver and receiver, can come from family, close friends, neighbors, or the community.[23] Family plays a crucial role in boosting self-confidence and motivating patients to manage the aftermath of stroke. Family support helps individuals navigate emotional challenges, foster self-acceptance, and prevent the development of negative emotions such as sadness and hopelessness.[24] Consistent with a previous study, adequate family support reduces the risk of depression and psychological distress in post-stroke patients.[25] Moreover, family support enhances patients' self-efficacy, improves adaptation, and accelerates revcovery.[26] Additionally, family education programs have also been shown to mitigate caregiver burdens and further alleviate depressive symptoms among stroke survivors.[27]

In contrast, this study found no significant correlation between age and psychological well-being. Although aging is theoretically linked to changes in psychological status, with younger individuals generally exhibiting higher satisfaction, this relationship is often mediated by other factors.[28] Psychological well-being is influenced by both modifiable and non-modifiable factors. Non-modifiable factors include genetics, age, parental characteristics and life expectancy. Meanwhile, modifiable factors include health status and disabilities, education, physical activity, longevity expectations, work, biomedical knowledge, environment, social relationships, psychological support, and personal beliefs.[28] this suggest that appropriate intervention targeting modifiable factors can enhance psychological well-being even among older populations.

Similarly, income and socioeconomic status were not significantly associated with psychological well-being in this study. Although several studies have shown that lower income and poor socioeconomic condition are associated with sleep disorders, eating disorders, weight changes, and difficulty concentrating at work and at home,[29] these associations were not observed in our study.

One possible explanation is that strong family support and adequate level of knowledge among respondents may mitigate the negative impact of economic hardship.[30] This finding highlight the importance of psychosocial factors, such as emotional and family support, in mitigating the impact of financial constraints on mental health.

This study has several limitations. Some respondents required assistance from family members to complete the questionnaire, potentially introducing response bias. Although researchers attempted to verify responses directly with patients, independent self-reporting would have reduced the potential for bias. Future studies should consider using interview-based assessments or simplified tools to ensure more accurate self-reporting among individuals with cognitive communication difficulties post-stroke

In conclusion, psychological well-being is a crucial component of the recovery process for post-stroke patients. Higher education level and strong family support are positively associated with improved psychosocial well-being. These findings underscore the need for health care providers to incorporate family-centered interventions and patient education into rehabilitation programs. In addition, further research is needed to explore patients' perspectives on adaptation and to develop targeted psychosocial interventions that may improve psychological well-being and overall quality of life for post-stroke patients.

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